

**COMPREHENSIVE TRANSPORTATION REVIEW**

# **YARDS PARCEL I**

**WASHINGTON, DC**

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## EXECUTIVE SUMMARY

The following report is a Comprehensive Transportation Review for the Yards Parcel I Design Review. This report reviews the transportation aspects of the project. The Zoning Commission Case Number is 18-20.

The purpose of this study is to review the design of the project and evaluate whether the project will generate a detrimental impact to the surrounding transportation network. This evaluation is based on a technical comparison of the existing conditions, background conditions, and total future conditions. This report concludes that **the project will not have a detrimental impact** to the surrounding transportation network assuming that all planned site design elements (including the loading, curbside, parking, and transportation demand measures proposed herein) are implemented.

### Proposed Project

The Yards Parcel I site currently serves as a surface parking lot with 217 spaces. The site is generally bound by N Street SE to the north, (as-yet constructed) Canal Street SE to the east, N Place SE to the south, and an existing surface parking lot (Yards Parcel H) to the west. Immediately to the east of Canal Street SE is the DC Water Main Pumping Station.

The application proposes to develop the site into a mixed-use development including residential and retail uses. The project will include one structure containing approximately 348 dwelling units, up to 18,000 square feet of ground-floor retail, and approximately 243 below-grade parking spaces. Parking and loading will be accessed through two curb cuts on N Place SE on the southern frontage of the site.

Pedestrian facilities along the perimeter of the site will be improved to include sidewalk and buffer widths that meet or exceed District Department of Transportation (DDOT) requirements. The mixed-use parking garage will supply 118 secure long-term bicycle parking spaces, an amount which meets the current zoning requirements. Furthermore, 22 short-term bicycle parking spaces will be provided around the perimeter of the site.

The parking and loading provided by the project will adequately serve the demands set forth by the project's program.

### Multi-Modal Impacts and Recommendations

#### *Transit*

The site is served by regional and local transit services such as Metrorail, Circulator, and Metrobus. The site is 0.2 miles from the Navy Yard Metrorail Station portal at New Jersey Avenue SE and M Street SE, and many Metrobus stops are located within a block of the site along M Street SE. Although the project will generate new transit trips, existing facilities have enough capacity to handle the new trips.

#### *Pedestrian*

The site is surrounded by a well-connected pedestrian network. Most roadways within a quarter-mile radius of the site provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes. There are some pedestrian barriers, such as the Interstate to the north, further from the site.

Pedestrian facilities along the perimeter of the site will be improved, including those along the future Tingey Square to the north, and the future Canal Street SE east of the site. The project will further improve sidewalks adjacent to the site such that they meet or exceed DDOT requirements and provide an improved pedestrian environment.

#### *Bicycle*

Capital Bikeshare stations can be found within a block of the site. The nearest station is located near the intersection of N Street SE and 1<sup>st</sup> Street SE. The site is also just blocks away from trails and bike lanes, such as the Anacostia River Trail to the south and bike lanes along 1<sup>st</sup> Street SE and 4<sup>th</sup> Street SE to the west and east of the site respectively. On site, the project will provide short-term bicycle parking along the perimeter of the site and secure indoor long-term bicycle parking for residents and employees.

#### *Vehicular*

The site is well-connected to regional roadways such as I-295 and I-695, primary and minor arterials such as New Jersey Avenue SE and 4<sup>th</sup> Street SE, and an existing network of collector and local roadways.

In order to determine if the project will have a negative impact on this transportation network, this report projects future conditions with and without the project and performs analyses of intersection delays and queues. These delays are compared to the acceptable levels of delay set by DDOT standards to



determine if the project will negatively impact the study area. Delays were found at a few intersections under all study scenarios, however, most of these impacts were not a result of the project and can be found under the existing and background conditions. Thus, no mitigation measures are recommended. The analyses concludes that the planned project will not have adverse impacts on the surrounding transportation network.

#### *Summary and Recommendations*

This report concludes that the project will not have a detrimental impact to the surrounding transportation network assuming that all planned site design elements (including the loading, curbside, parking, and transportation demand measures proposed herein) are implemented.

The project has several positive elements that minimize potential transportation impacts, including:

- The site's close proximity to Metrorail.
- The inclusion of secure long-term bicycle parking spaces and on-street, short-term bicycle spaces.
- The proposed improvements to pedestrian facilities adjacent and surrounding the site. These improvements include creating a new sidewalk along the proposed 1½ Street SE, creating a new sidewalk along the proposed Canal Street SE, and enhancing the sidewalks along N Street SE adjacent to the project.
- A comprehensive TDM plan aimed at reducing overall trips to the site.
- A curbside management plan providing pick-up/drop-off areas to reduce the required number of parking on site.
- A loading management plan ensuring all deliveries are made during off-peak hours and ensuring no deliveries are made curbside.



# INTRODUCTION

## PURPOSE OF STUDY

This report reviews the transportation elements of the project, supplementing material provided in the Design Review Application submitted to the Zoning Commission for the Yards Parcel I project.

The Yards Parcel I mixed-use project will contain a residential building with ground-floor retail. The site, shown in Figure 1 and Figure 2, is located in the Yards West neighborhood in southeast DC.

The purpose of this report is to:

1. Review the transportation elements of the project's site plan and demonstrate that the plan conforms to DDOT's general policies of promoting non-automobile modes of travel and sustainability.
2. Provide information to DDOT and other agencies on how the project will influence the local transportation network. This report accomplishes this by identifying the potential trips generated by the project on all major modes of travel and where these trips will be distributed on the network.
3. Determine if project will lead to adverse impacts on the local transportation network. This report accomplishes this by projecting future conditions with and without the project and performing analyses of vehicular delays. These delays are compared to the acceptable levels of delay set by DDOT standards to determine if the project will negatively impact the study area. The report considers what improvements if any to the transportation network are needed to mitigate adverse impacts, if any.

## CONTENTS OF STUDY

This report contains nine sections as follows:

- Study Area Overview

This section reviews the area near and adjacent to the project and includes an overview of the site location.

- Project Design

This section reviews the transportation components of the project, 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 project. It summarizes the expected trip generation.

- 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.

- 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 safety impacts of the project. This includes a review of crash data at intersections in the study area and a qualitative discussion on how the project 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.



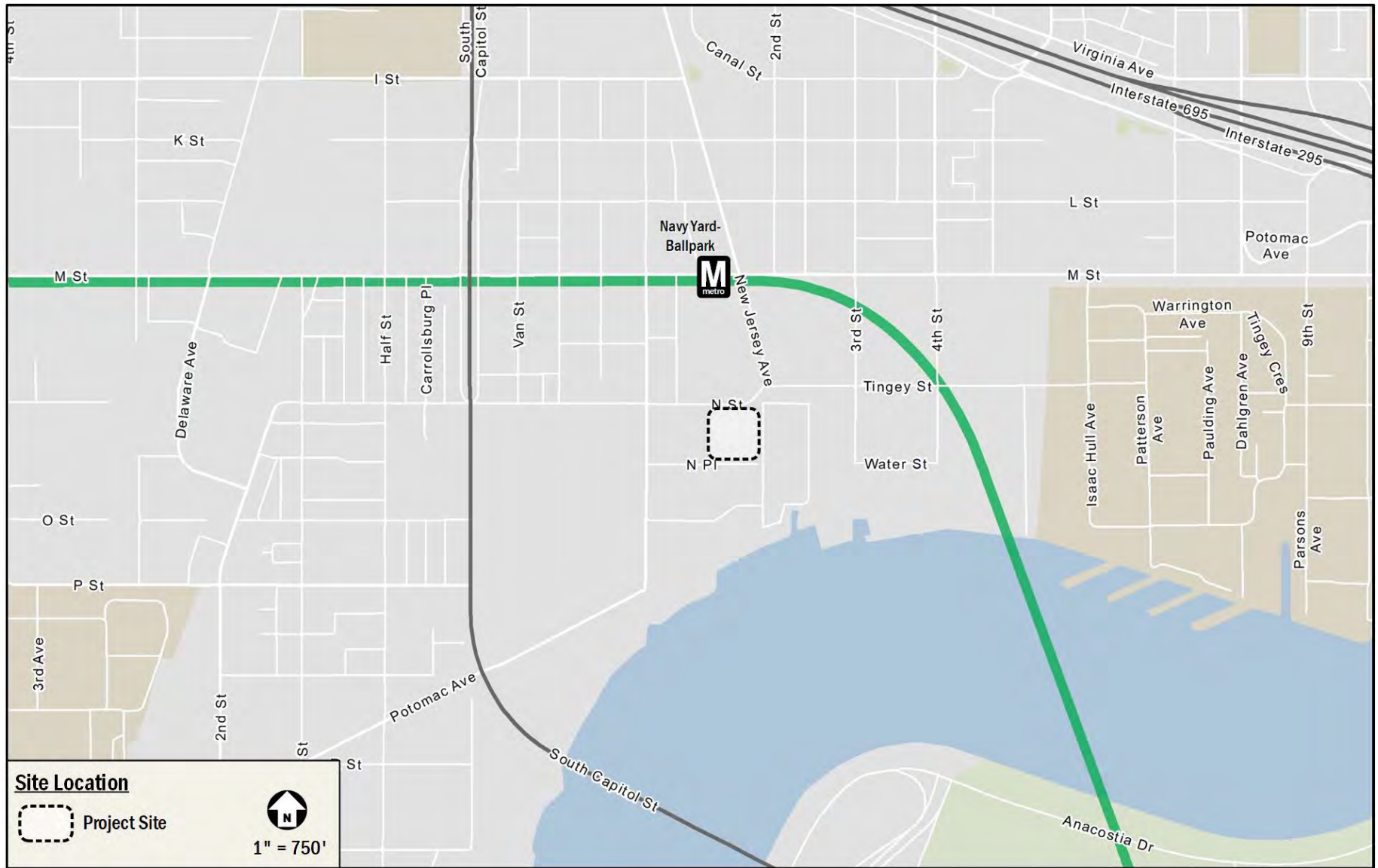


Figure 1: Site Location



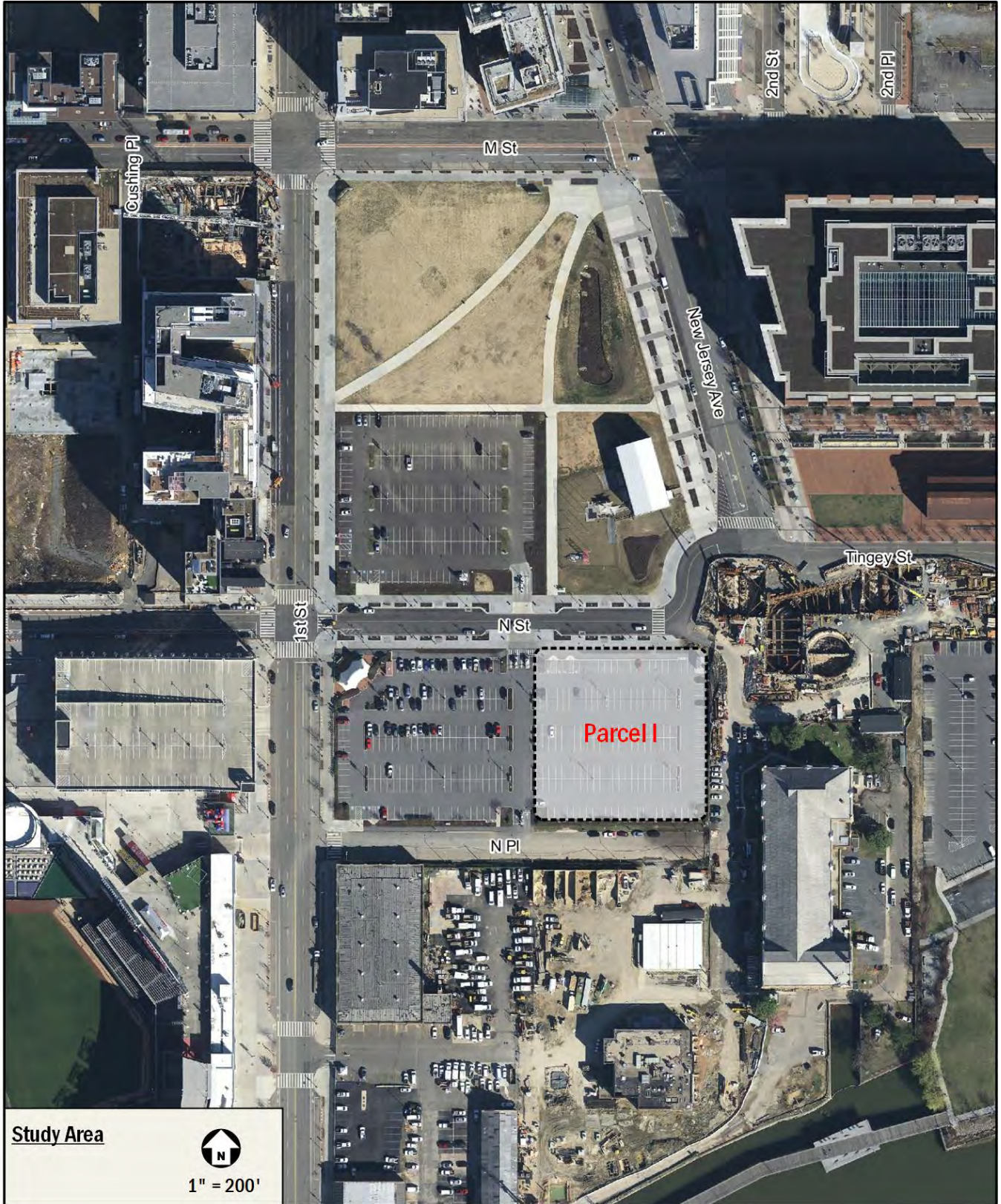


Figure 2: Site Aerial





## 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 will connect the residents, employees, and patrons to the project.
- The site is well-served by public transportation with access to Metrorail, and several local and regional Metro bus lines.
- There is some existing bicycle infrastructure including the Anacostia River Trail and several bike lanes in the vicinity of the site.
- Pedestrian conditions are generally good, particularly along anticipated major walking routes.

### MAJOR TRANSPORTATION FEATURES

#### Overview of Regional Access

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

The site is accessible from I-295 and I-695. These interstates connect to several US highways such as US-50 (New York Avenue NW) and US-1, as well as Interstate 395. The highways and interstates create connectivity to the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs. All these roadways bring vehicular traffic within half-mile of the site, at which point arterials and local roads can be used to access the site directly.

Near the site there are several local and regional bus stops that connect the city limits with the innermost roads of Washington, DC. The multiple bus route options allow for more frequent bus pickups, and specified travel destination options, as shown in Figure 5.

The site is located close to the Navy Yard Metrorail station portals at Half Street SE and M Street SE and at New Jersey Avenue SE and M Street SE. The project has access to the Green line which provides connections to areas in the District and Maryland. The Green Line connects Branch Avenue with

Greenbelt and provides access to the District core. In addition, the Green 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 5.

The site is served by a local vehicular network that includes several primary and minor arterials such as South Capitol Street and M Street SE. 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, including a connection to Union Station which acts as a primary hub for Amtrak, VRE, and Marc services. As shown in Figure 5, there are nine (9) bus routes that service the site. In the vicinity of the site the majority of bus routes, including the Circulator, travel along M Street. These bus routes connect the site to many areas of the District.

There are existing bicycle facilities that connect the site to areas within the District, most notably the Anacostia River Trail and the 4<sup>th</sup> Street SE bike lanes, as shown in Figure 5. West of the site, the 1<sup>st</sup> Street SE bike lanes provide additional connections.

In the vicinity of the site, most roadways provide sidewalks with crosswalks present at most intersections. Anticipated pedestrian routes, such as those near public transportation stops, retail zones, and community amenities provide acceptable pedestrian facilities; however, there are some pedestrian barriers in the area that limit the overall connectivity to and from the site. A detailed review of existing and proposed pedestrian access and infrastructure is provided in a later section of this report.

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



### Car-sharing

Four carsharing companies provide service in the District: Zipcar, Maven, Car2Go, and Free2Move. All four services are private companies that provide registered users access to a variety of automobiles. Of these, Zipcar and Maven have designated spaces for their vehicles. Currently, there are four (4) Carshare locations located within a quarter-mile of the site and one (1) location just beyond the quarter-mile walkshed. The locations and the number of available vehicles are listed in Table 1.

Car-sharing is also provided by Car2Go and Free2Move, which provides point- to-point car sharing. Unlike Zipcar or Maven, which require two-way trips, Car2Go and Free2Move can be used for one-way rentals. Car2Go and Free2Move currently have fleets of vehicles located throughout the District. Car2Go and Free2Move vehicles may park in any non-restricted metered curbside parking space or Residential Parking Permit location in any zone throughout the defined “Home Area”. Members do not have to pay meters or pay stations. Car2Go and Free2Move do not have permanent designated spaces for their vehicles; however, availability is tracked through their website, which provides an additional option for carsharing 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 project is located in the Navy Yard neighborhood. The site has a walk score of 87 (or “Very Walkable”), a transit score of 78 (or “Excellent Transit”), and a bike score of 86 (or “Very Bikeable”). Figure 3 shows the neighborhood borders in relation to the site and displays a heat map for walkability and bikeability.

**Table 1: Carshare Locations**

Carshare Location	Number of Vehicles
<b>Zipcar</b>	
Tingey Street SE & 4th Street SE	1 Vehicle
Navy Yard Metro Station	1 Vehicle
K Street SE & 3rd Street SE	3 Vehicles
<b>Maven</b>	
1331 4th Street SE	2 vehicles
300 M Street SE	3 Vehicles
<b>Total</b>	<b>10 vehicles</b>

The site is situated in an area with good walk scores because of the abundance of neighborhood serving retail locations, where most errands can be completed by walking.

The site is situated in an area with good bike scores due to its proximity to bike facilities and flat topography. The high transit score was based on the proximity to the Navy Yard Metrorail station, car share, and multiple bus lines.

Overall, the Navy Yard neighborhood has high walk, high transit, and high bike scores. Additionally, other planned developments and roadway improvements will help increase the walk and bike scores in the Navy Yard neighborhood.

### FUTURE REGIONAL PROJECTS

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

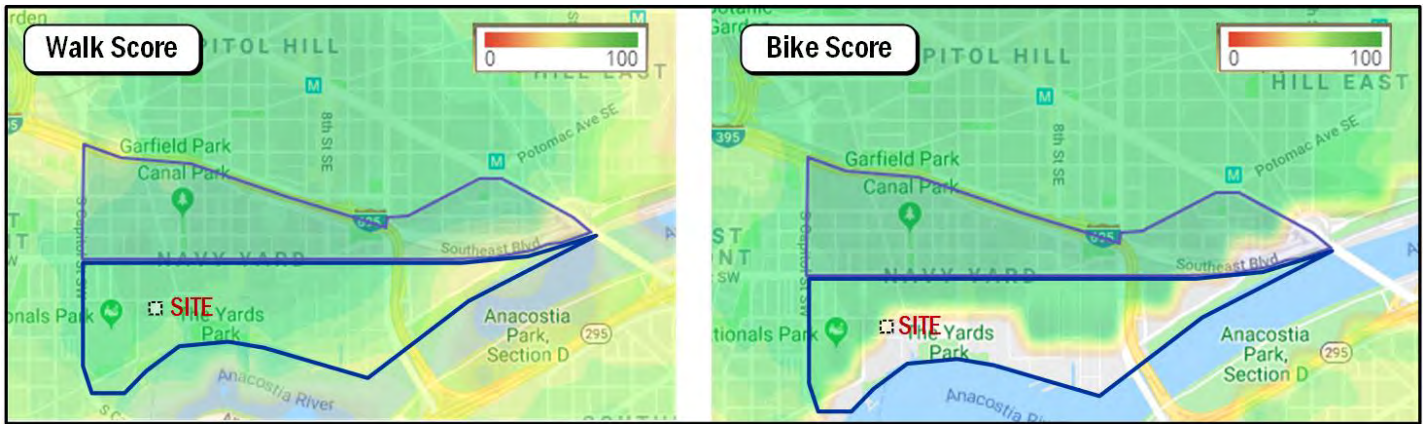
#### Local Initiatives

##### *MoveDC: Multimodal Long-Range Transportation Plan*

MoveDC is a long-range 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 or bus)
- 200 miles of on-street bicycle facilities or trails
- Sidewalks on at least one side of every street
- New street connections
- Road management/pricing in key corridors and the Central Employment Area
- A new downtown Metrorail loop
- Expanded commuter rail
- Water taxis



**Figure 3: Summary of Walkscore and Bikescore**

In direct relation to the project, the MoveDC plan outlines recommended transit and bicycle improvements such as a high-capacity surface transit route and new bicycle trails and cycle tracks. These recommendations would create additional multi-modal capacity and connectivity to the project and are discussed later in this report.

#### *South Capitol Street Project*

Along South Capitol Street, at-grade intersections will be reconstructed at I, N, O, P, K, L, and M Streets. The existing ramp from northbound South Capitol Street to I-395 will also be reconstructed as an at-grade intersection.

A four- to five-lane traffic oval will be constructed to connect South Capitol Street, Potomac Avenue, R Street, and Q Street. The existing Frederick Douglas Memorial Bridge will be replaced and will include bicycle and pedestrian facilities.

An additional traffic circle will be constructed to connect South Capitol Street, Suitland Parkway, and Howard Road, and several other roadway improvements are included on the eastern/southern side of the Anacostia River.

#### **Planned Developments**

There are 15 development projects in the vicinity of the site that have been approved and are expected to be completed prior to the project, approximately the same time of the project or are part of the Yards West Master Plan with an origin/destination within the study area and are thus included. A detailed list of the background developments considered and a description of their applicability for incorporation in the study is included in the Technical Appendix. The background developments included in the analysis are described below.

Figure 6 shows the location of these developments in relations to the project.

#### **Background Developments (2023)**

##### *DC Water Headquarters*

The DC Water Headquarters specifically will be a 167,000 square foot office building. The current 51,000 square foot site contains a warehouse and distribution building and the façade will be incorporated into the development. This development has an expected delivery date of 2018.

##### *The Riverfront*

This development has been completed over multiple phases and will include approximately 465,000 square feet of office space, 80,000 square feet of retail space, and 324 hotel rooms. This development has an expected delivery date of 2018.

##### *Yards Parcel O*

The Yards Parcel O site includes a total of 330 residential units and 19,200 square feet of retail. The parcel was split into two parts to develop two individual buildings. Both developments have an expected delivery date of 2019.

##### *Square 769*

Square 769 is proposed to contain 171 residential units and 4,000 square feet of retail with 215,000 square feet of office space. This development has an expected delivery date of 2019.

##### *Monument Valley*

This development includes a mixed-use building with 60,000 square foot of retail and 445 residential units. This development is currently under construction and has an expected completion year of 2019.



#### *West Half Street SE*

This development includes a mixed-use building with 60,000 square foot of retail and 423 residential units. This development is currently under construction and is expected to be complete by the first quarter of 2020.

#### *Yards Parcel L1*

This development contains a hotel with 227 rooms and is currently under construction with an expected completion of early 2020.

#### *Yards Parcel L2*

This development includes a mixed-use building with 285 residential units and up to 18,000 square foot of retail space. This development is currently under construction with an expected completion year of 2020.

### **Total Future Background Developments (2023)**

#### *Yards Parcel F*

This development is adjacent to Parcel I and is planned to have approximately 290,000 square foot of office space and 25,000 square foot of retail space. The proposed development has an anticipated completion year of 2023.

#### *Yards Parcel G*

This development is adjacent to Parcel I and is planned to have approximately 260,000 square foot of office space and 20,000 square foot of retail space. The proposed development has an anticipated completion year of 2023.

### **Total Future Background Developments (2028)**

#### *Yards Parcels G1, G2, G3*

This development includes mixed-use buildings with 45,000 square foot of retail and 600 residential units. Parcels G1, G2, and G3 are in the study area and are included as background developments. They are expected to be complete by 2028.

#### *Yards Parcel H*

This development is adjacent to Parcel I and is planned to have 160,000 square foot of office space and 17,000 square foot of retail space. The development is planned to be completed before 2028.

#### *Yards Parcel F1*

This development includes a 66,400 square foot theatre with nine (9) floors and 320 parking spaces. The resulting theatre

will contain 1,500 seats. The full timeline of the project has been altered and will be assumed to be complete before 2028.



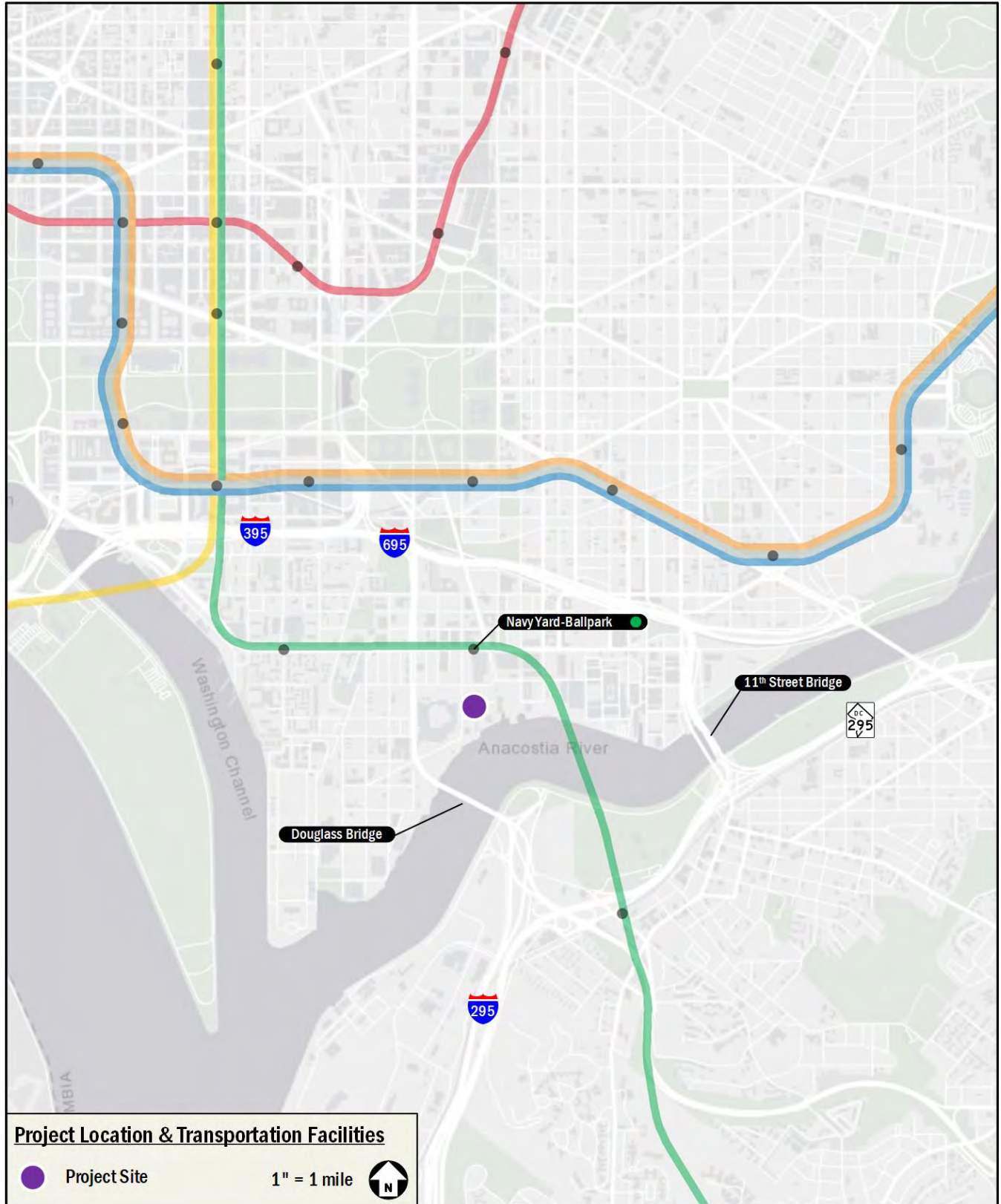


Figure 4: Major Regional Transportation Facilities



Figure 5: Major Local Transportation Facilities



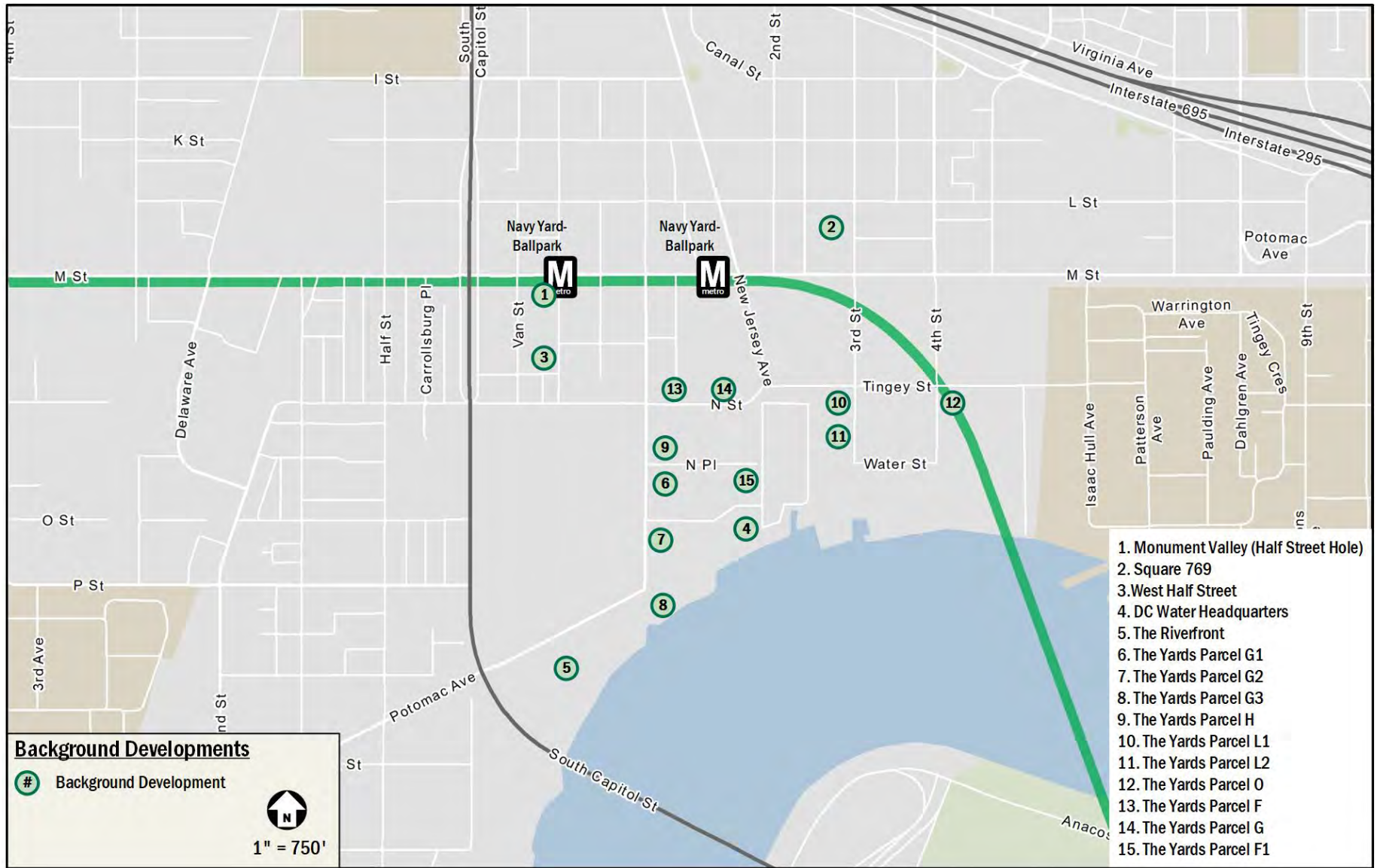


Figure 6: Planned Development Map



## PROJECT DESIGN

This section reviews the transportation components of the site, including the proposed site plan and access points. It includes descriptions of the site's vehicular access, curbside management, loading, parking, and TDM plan.

The planned project will replace the existing public surface parking lot of 217 spaces with one mixed-use building. There are currently two curb cuts that access the existing surface parking lots on the site. One such curb cut is along N Street SE and one along N Place SE. The site is surrounded by the historic DC Water Pumping Station and Canal Street SE to the east, N Street SE to the north, 1<sup>st</sup> Street SE to the west and N Place SE to the south.

The project will include up to 18,000 square feet of ground floor retail, approximately 348 residential dwelling units, and a two-level underground parking facility containing approximately 243 spaces. The program also includes a fitness center on the eighth floor and a daylit stair tower to encourage use of the stairs. Figure 7 shows an overview of the program and site plan elements.

### ACCESS AND LOADING

#### **Pedestrian Access**

Pedestrian access to the residential component of the project will occur predominately via the proposed new street, 1½ Street SE along the western frontage of Parcel I. The secondary entrance will be on the northeast part of Parcel I off the proposed Canal Street SE. There are entrances to individual residential units along Canal Street SE. For the retail component, pedestrian access will be on N Street SE. Pedestrian access points are outlined on the site plan in Figure 7.

A fence along the eastern frontage of Parcel I will be placed to restrict pedestrian access to Canal Street SE. All pedestrians wishing to cross Canal Street SE will do so at the intersection of N Street SE and Canal Street SE.

#### **Vehicular Access**

Vehicular access to the site will be off N Place SE, which is a local roadway. A curb cut on N Place SE will provide access to the underground garage and the secure bicycle storage. Access to the parking garage and loading bay is shown on Figure 7.

N Place SE is proposed to be 28' wide providing space for two 10' lanes and an 8' parking lane along the south side of the street. The sidewalk adjacent to Parcel I will have a 6' 9" sidewalk and 5' 9" of buffer space. A full cross section of N Place is shown on Figure 8.

Sight distance was evaluated for vehicles exiting from the proposed driveway onto N Place SE. The required sight distance for right turning vehicles onto a street with a design speed of 25 mph is 155 ft. There is sufficient sight distance as currently designed for vehicles to safely make a right turn onto N Place SE. Figure 9 shows the sight distance evaluation for the proposed parking garage driveway. Sight distance for left turning vehicles was not evaluated given the access control of DC Water over N Place SE.

As part of the Yards West Master Plan, 1½ Street will be created as a pedestrian friendly street with vehicular access between N Street SE and N Place SE. The two-way street will provide curbside pick-up and drop-off adjacent to Parcel I. N Street SE on the north frontage of the site will provide two pick-up/drop-off spaces and provide on street parking along the remaining portion of the frontage.

The Applicant has regularly met with DC Water concerning Canal Street SE. An agreement has been reached to provide 12 feet of space for sidewalk and public planting zone to serve Parcel I adjacent to the eastern side of Parcel I. The balance of the right-of-way will be reserved for DC Water access, security and operational needs.

#### **Curbside Management**

The Applicant is committed to ensure 1½ Street SE is designated for short term pick-up and drop-off and loading. Long term parking will be patrolled and allowed on other streets and in the parking garage. In coordination with DDOT, the following improvements to curbside management along N Place SE and N Street SE are proposed as shown on Figure 10:

- On the northern blockface of N Place SE, a no parking zone will be signed.
- Along the eastern and western blockfaces of 1½ Street SE, pick-up/drop-off spaces will be provided.
- Along the southern blockface of N Street SE, two (2) pick-up/drop-off spaces and five (5) metered spaces will be provided.



The proposed changes will remove existing metered parking on the northern blockface of N Place SE and remove two (2) metered parking spaces on the southern blockface of N Street SE. The northern blockface of N Street SE will remain largely unaffected by the proposed curbside management plan.

### **Bicycle Access**

Primary bicycle access to the site will be off N Place SE that provides access to the long-term secure bicycle parking and amenities located on both levels of the below-grade parking garage. The majority of the short-term bicycle parking will be found along 1½ Street SE and N Street SE near the ground floor retail entrances.

### **Loading Facilities**

According to the Zoning Regulations, the site is required to provide one (1) 30-foot loading bay and one (1) 20-foot service and delivery space. The project will contain two (2) 30-foot loading bays and one (1) 20-foot service and delivery spaces, which will exceed the required loading needs of the project.

The project is expected to generate up to 12 truck trips per day. This includes daily trash removal services, mail and parcel delivery, retail pickup and delivery, and residential move-in and move-out trips. One (1) trash removal truck, two (2) mail and parcel delivery trucks, eight (8) retail pickup and delivery trucks, and up to one (1) residential move-in or out trucks (calculated using an average of 18 months average turnover per unit), will service the project on a daily basis. The loading facilities provided by the project will be sufficient to accommodate this demand.

Truck routing to and from the site will be focused on M Street SE, a DDOT designated primary truck route, which is approximately 0.3 miles from the site. From M Street SE truck should be routed to 1<sup>st</sup> Street SE to N Place SE. Trucks should not be routed through 1½ Street given the pedestrian friendly nature of 1½ Street. The existing width of N Place SE combined with the planned improvement of N Place SE prove to serve as an adequate amount of space for trucks to maneuver in and out of the site in a safe manner. The truck turning diagrams illustrating the accessible inbound and outbound paths for the site can be found in the Technical Appendix.

Given the low volume of vehicular traffic on N Place SE, the project has been designed to accommodate head-in/head-out maneuvers. The following loading management plan outlines the expected loading maneuvers for 30-foot trucks.

### **Loading Management Plan**

The Applicant has proposed the following measures to address any potential impacts the loading activities of the project might have on the surrounding intersections:

- A loading dock manager will be designated by building management. The dock manager will coordinate with vendors and tenants to schedule deliveries and will be on duty during delivery hours.
- All retail tenants will be required to schedule deliveries that utilize the loading docks-defined here as any loading operation conducted using a truck 20 feet in length or larger.
- All residential move-ins and move-outs will be required to be scheduled.
- The dock manager(s) will schedule deliveries for trucks using the loading berths such that the dock's capacity is not exceeded. In the event that an unscheduled delivery vehicle arrives while the dock is full, that driver will be directed to return at a later time when a berth will be available so as to not impede the drive aisle that passes in front of the loading dock.
- The dock manager(s) will monitor inbound truck maneuvers and will ensure that trucks accessing the loading dock do not block vehicular traffic except during those times when a truck is actively entering the loading facilities.
- Trucks using the loading dock will not be allowed to idle and must follow all District guidelines for heavy vehicle operation including but not limited to DCMR 20 – Chapter 9, Section 900 (Engine Idling), the regulations set forth in DDOT's Freight Management and Commercial Vehicle Operations document, and the primary access routes listed in the DDOT Truck and Bus Route System.
- The dock manager(s) will be responsible for disseminating suggested truck routing maps to the building's tenants and to drivers from delivery services that frequently utilize the loading dock. The dock manager(s) will also distribute flyers materials as DDOT's Freight Management and Commercial Vehicle Operations document to drivers as needed to encourage compliance with idling laws. The dock manager(s) will also post these documents in a prominent location within the service area.



As stated previously, the loading berths will accommodate head-in/head-out movements. Back-in and back-out maneuvers onto N Place SE are also possible and can be readily managed given the low volumes expected for that dead-end street. All trucks attempting delivery to the project will make maneuvers in public space on N Place SE. The nature of N Place SE is such that a dead end occurs east of the loading berths, meaning few vehicles will be attempting to travel beyond the curb cut of the loading berth. It is expected that loading will not impede vehicles on N Place SE.

## PARKING

### On-Site Parking

The zoning regulations for the site do not require any minimum amount of parking.

A total of approximately 243 parking spaces will be supplied in a below-grade parking garage. The 243 parking spaces will not be exclusively for residential use; rather, a portion of the spaces will serve as parking for the retail portions of the project. As a result, the residential portion of the project will have a parking ratio of 0.4 to 0.6 parking spaces per unit, which is consistent with market demand.

The majority of the parking spaces in the garage will be reserved for residential use and unable to be used for game day parking. The non-residential parking will be geared to serve the ground floor retail uses within the project and other buildings in the Yards that lack parking. Those who use the current parking lot at Parcel I will need to relocate to other parking lots/garages or switch to alternative modes of transportation.

## BICYCLE AND PEDESTRIAN FACILITIES

The project will include 22 short-term public bicycle spaces at street level along the perimeter of the site. These short-term spaces will include inverted U-racks placed in high-visibility areas. The Applicant is working with DDOT in selecting locations for the racks in public space.

The project will also include secure long-term bicycle parking. The plans identify 118 long term bicycle parking spaces for the project. According to the Zoning Regulations, all residential developments must provide at least one secure bicycle parking space for each 3 residential units and 1 space for each 10,000 square feet of retail space. Based on these regulations the project should provide a total of 118 long-term bicycle parking

spaces. There are 116 bicycle parking spaces planned for the residential component. Two (2) bicycle parking spaces are planned for the retail component. The project meets the zoning requirements.

## TRANSPORTATION DEMAND MANAGEMENT

TDM is the application of policies and strategies used to reduce travel demand or to redistribute demand to other times or spaces. TDM 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 TDM plan for the project is consistent with DDOT expectations for TDM programs. The Applicant proposes the following TDM measures:

- The Applicant will identify a TDM Leader (for planning, construction, and operations) at the building, who will act as a point of contact with DDOT/Zoning Enforcement with annual updates. The TDM Leader will work with residents to distribute and market various transportation alternatives and options;
- The Applicant will provide TDM materials to new residents in the Residential Welcome Package materials;
- The Applicant will meet zoning requirements by providing 118 long-term bicycle parking spaces in the building garage;
- 22 short-term bicycle parking spaces will be provided along 1½ Street and N Street SE, meeting zoning requirements;
- All parking on site will be priced at market rates, at minimum, defined as the average cost for parking at a 0.25 mile radius from the site;
- The Applicant will unbundle the cost of residential parking from the cost of lease of each unit;
- The Applicant will provide a bicycle repair station will be located in the secure long-term bicycle storage room;
- The Applicant will provide an on-site business center to residents with access to copier and internet services;
- The Applicant will install a Transportation Information Center Display (electronic screen) within



the residential lobby containing information related to local transportation alternatives; and

- The Applicant will work with the Capital Riverfront BID's marketing efforts targeting SE/SW. The effort will go towards posters in bus shelter map cases, transit oriented promotional materials, and special transit maps in Navy Yard area.



**Parcel I Site Plan**  
348 Apartments  
18,000 SF Retail

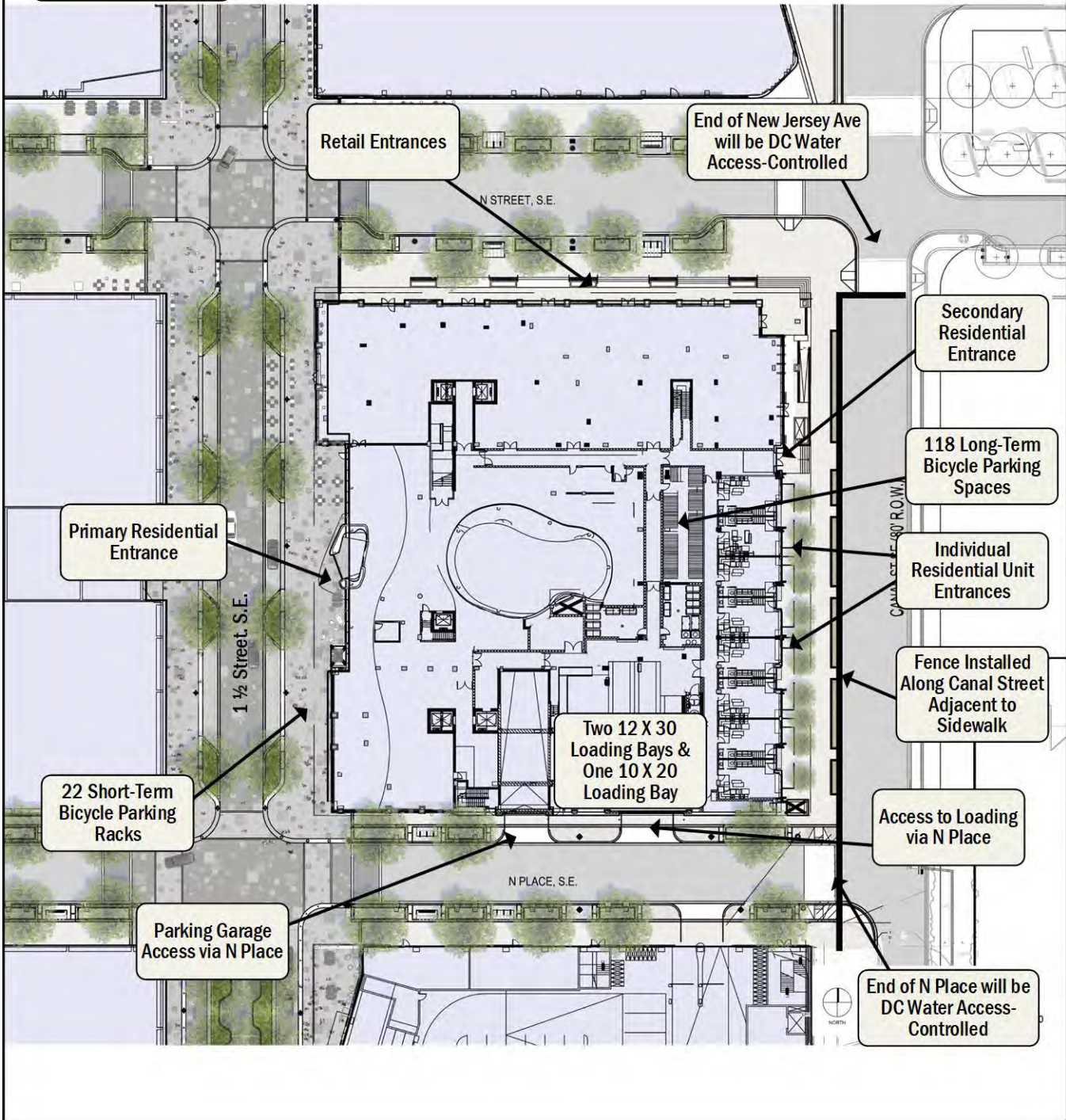


Figure 7: Site Plan

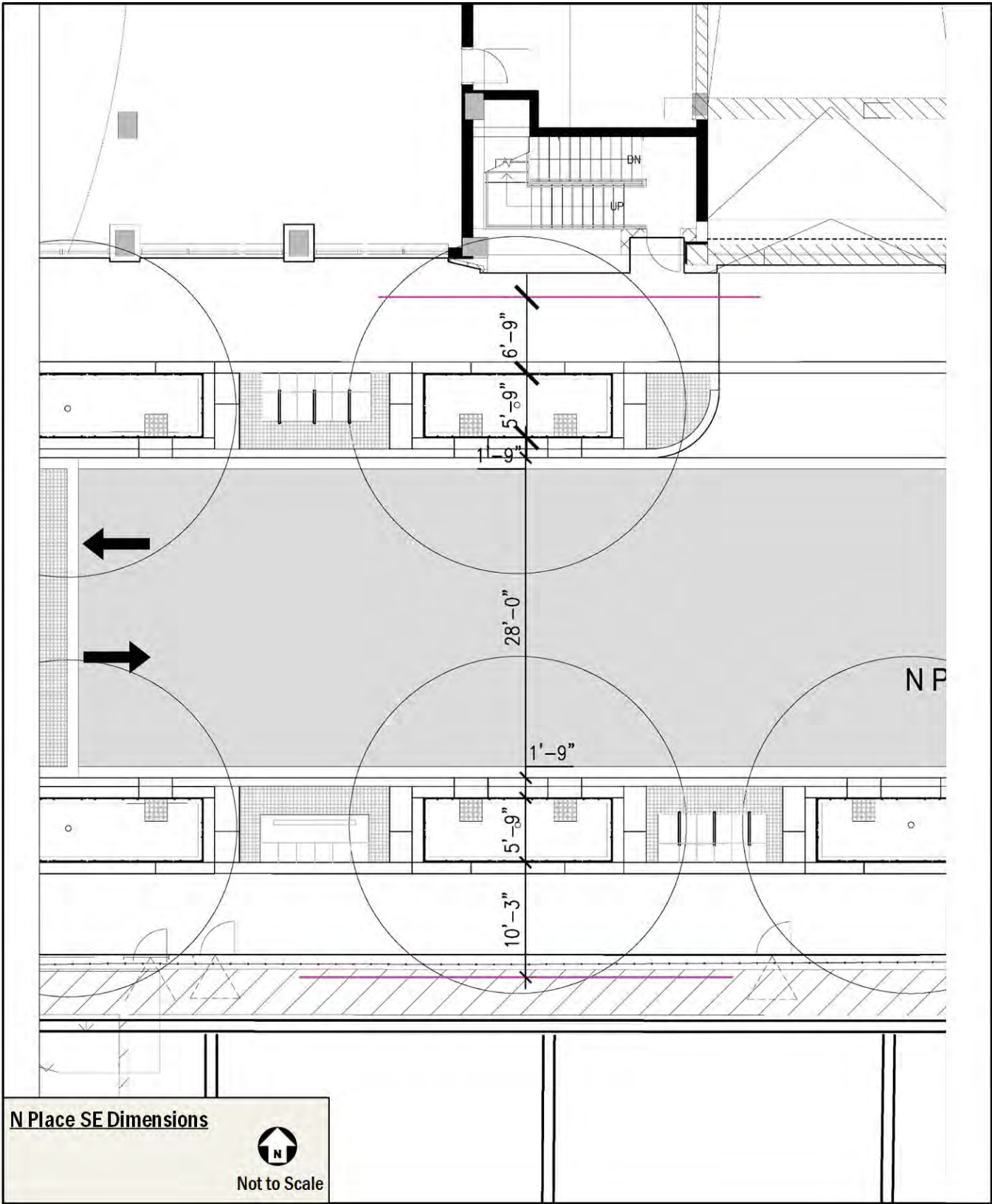


Figure 8: N Place SE Dimensions



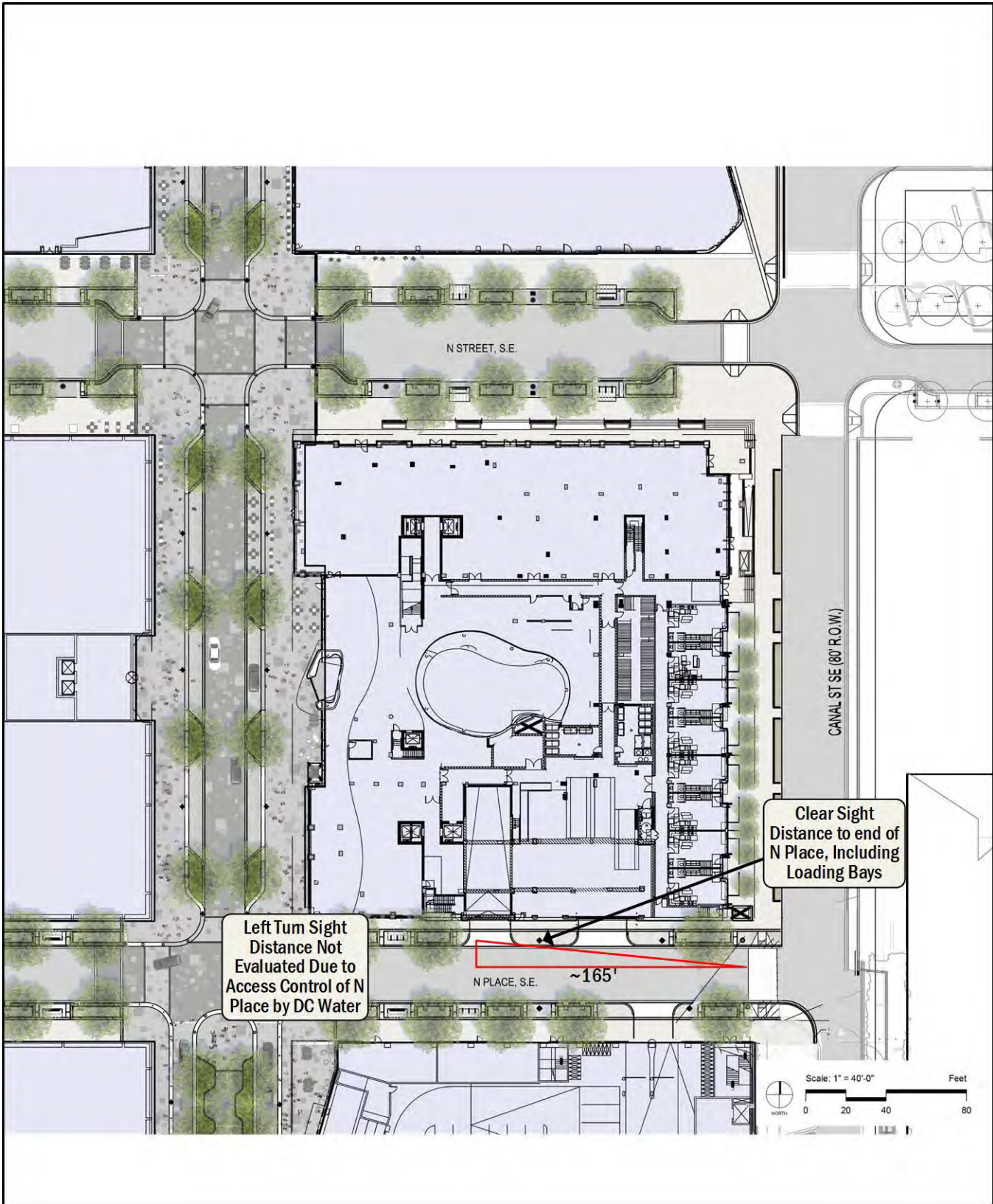


Figure 9: Sight Distance Evaluation



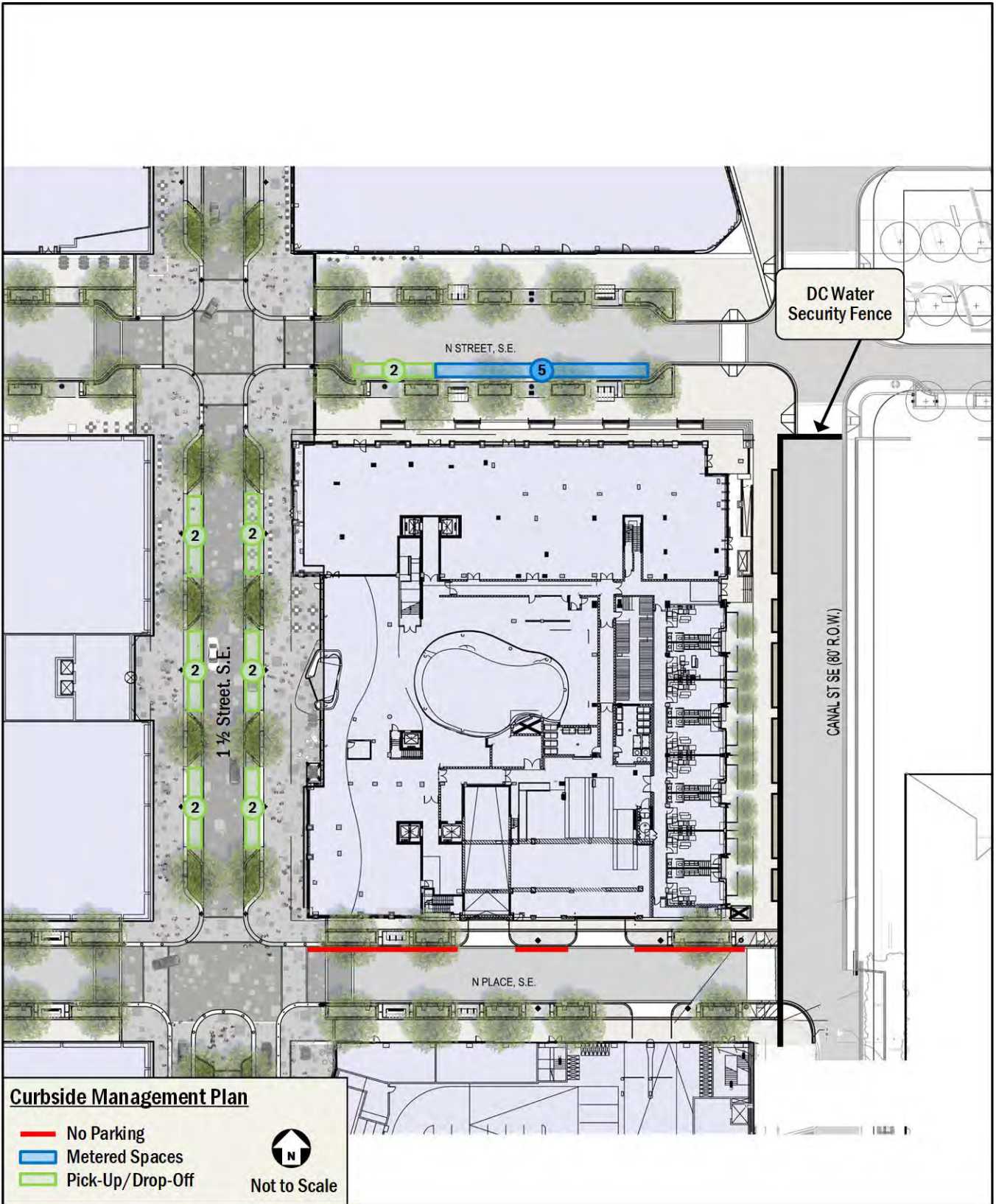


Figure 10: Proposed Curbside Management Plan



## TRIP GENERATION

This section outlines the transportation demand of the project. It summarizes the projected trip generation of the project by mode and forms the basis for the chapters that follow.

Traditionally, weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10<sup>th</sup> Edition. However, DDOT has recently implemented the use of the TripsDC tool. The TripsDC tool is a locally calibrated and validated trip generation tool based on more than 50 residential over retail developments within the district. The TripsDC tool directly estimates the total person trips and is sensitive to the number of parking spaces provided at the site as well as proximity to Metrorail stations and nearby employment. The nature of the project is a residential over retail project, requiring the use of TripsDC.

The residential over retail trip generation for the project was calculated based on the TripsDC tool. The TripsDC tool calculates multimodal splits for both the AM and PM peak hours. The TripsDC tool does not differentiate between residential and retail uses.

A summary of the multimodal trip generation for the project is provided in Table 2 for the morning and afternoon peak hours. The mode split assumptions for all land uses within the project is summarized in Table 3. Detailed calculations are included in the Technical Appendix.

**Table 2: Multi-Modal Trip Generation Summary**

Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Auto	32 veh/hr	92 veh/hr	124 veh/hr	76 veh/hr	49 veh/hr	125 veh/hr
Transit	28 ppl/hr	79 ppl/hr	107 ppl/hr	51 ppl/hr	33 ppl/hr	84 ppl/hr
Bike	4 ppl/hr	13 ppl/hr	17 ppl/hr	16 ppl/hr	10 ppl/hr	26 ppl/hr
Walk	41 ppl/hr	118 ppl/hr	159 ppl/hr	164 ppl/hr	105 ppl/hr	269 ppl/hr

**Table 3: Summary of Mode Split Assumptions**

Land Use	Mode			
	Drive	Transit	Bike	Walk
AM Mode Split	34%	25%	4%	51%
PM Mode Split	28%	16%	5%	37%



## TRAFFIC OPERATIONS

This section provides a summary of an analysis of the existing and future roadway capacity in the study area. Included is an analysis of potential vehicular impacts of the project and a discussion of potential improvements.

The purpose of the capacity analysis is to:

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

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

1. 2018 Existing Conditions
2. 2023 Future Conditions without the project (2023 Background)
3. 2023 Future Conditions with the project (2023 Future)
4. 2028 Future Conditions with the project (2028 Future)

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

This chapter concludes that:

- The majority of intersections in the study area operate at an acceptable level of service during all analysis scenarios for both the morning and afternoon peak hours.
- There are no study intersections that operate at an unacceptable level of service as a result of the project. However, there are two (2) intersections that operate at an unacceptable level of service under existing and background conditions.
- Overall, the project will not have a detrimental impact to the surrounding transportation network.

### 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 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 whether the project 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 future scenarios: (1) without the project (referred to as the Background condition) and (2) with the project approved and constructed (referred to as the Future condition).

Specifically, the roadway capacity analysis examined the following scenarios:

1. 2018 Existing Conditions
2. 2023 Background Conditions without the project (2023 Background)
3. 2023 Future Conditions with the project (2023 Total Future)
4. 2028 Future Conditions with the project (2028 Future)

#### 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 project. 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. M Street SE & 1st Street SE
2. M Street SE & New Jersey Avenue SE
3. M Street SE & 3rd Street SE
4. M Street SE & 4th Street SE
5. N Street SE & South Capitol Street
6. N Street SE & 1st Street SE
7. N Street SE & Tingey Street SE & New Jersey Avenue SE
8. Tingey Street SE & 3rd Street SE



9. Tingley Street SE & 4th Street SE
10. N Place SE & 1st Street SE
11. 4th Street SE & Water Street SE
12. Potomac Avenue SE & South Capitol Street
13. 2<sup>nd</sup> Street SE & Tingley Street SE (NE Node of Tingley Square) – *Future Intersection*
14. New Jersey Avenue SE & Tingley Street SE (NW Node of Tingley Square) – *Future Intersection*

Figure 11 shows a map of the study area intersections.

### Traffic Volume Assumptions

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

#### *Existing Traffic Volumes*

The existing traffic volumes are composed of turning movement count data, which were collected on Wednesday, June 1, 2016 and Thursday, June 9, 2016. The results of the traffic counts are included in the Technical Appendix. The approved growth rates were applied to the traffic volumes from 2016 to create the 2018 existing volumes. The existing peak hour traffic volumes are shown on Figure 12. For all intersections the individual intersection morning and afternoon peak hours were used.

#### *2023 Background Traffic Volumes (without the project)*

The traffic projections for the 2023 Background conditions consist of the existing volumes with two additions:

- Traffic generated by project expected to be completed prior to the project (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 that of the project.

Based on these criteria, and as discussed previously, eight (8) developments were included in the 2023 Background scenario. These developments are:

1. Monument Valley
2. Square 769
3. West Half Street
4. DC Water Headquarters
5. The Riverfront
6. The Yards Parcel L1
7. The Yards Parcel L2
8. The Yards Parcel O

There are existing studies available for many of these developments but for the developments with no existing studies, trip generation was calculated based on the *ITE Trip Generation Manual*, 9th Edition, with mode splits based on those used for similar developments in the Navy Yard neighborhood. Trip distribution assumptions for the background developments were based on those determined for the project and altered where necessary based on anticipated travel patterns. Mode split and trip generation assumptions for the background developments are shown Table 4. The background development volumes are shown on Figure 13.

While the background developments represent local traffic changes, regional traffic growth is typically accounted for using growth rates. The growth rates used in this analysis are derived using the Metropolitan Washington Council of Government's currently adopted regional transportation model, comparing the difference between the year 2015 and 2020 model scenarios. The growth rates observed in this model served as a basis for analysis assumptions, and where negative growth was observed, a conservative 0.25 percent annual growth rate was applied to the roadway. The applied growth rates are shown in Table 7. The volumes with applied growth rates are shown on Figure 14.

The traffic volumes generated by background developments and the inherent growth along the network were added to the existing traffic volumes in order to establish the 2023 Background traffic volumes. The traffic volumes for the 2023 Background conditions are shown on Figure 15.

#### *2023 Total Future Traffic Volumes (with the project)*

The 2023 Total Future traffic volumes consist of the 2023 Background volumes with the addition of the traffic volumes





generated by the project (site-generated trips). Two additional background developments are included with the 2023 Total Future volumes. These developments were included due to their close proximity to the project as well as the planned completion near the same time as the project. Trip generation was calculated based on the ITE *Trip Generation Manual*, 9<sup>th</sup> Edition, with mode splits based on those used for similar developments in the Navy Yard neighborhood. Trip distribution assumptions for the background developments were based on those determined for the project and altered where necessary based on anticipated travel patterns. Mode split and trip generation assumptions for the background developments are shown in Table 5. The background development volumes are shown on Figure 17. The additional background developments are:

1. The Yards Parcel F
2. The Yards Parcel G

Thus, the 2023 Total Future traffic volumes include traffic generated by: the existing volumes, background developments, the inherent growth on the study area roadways, and the project.

Trip distribution for the site-generated trips was determined based on: (1) CTPP TAZ data, (2) existing travel patterns in the study area, and (3) the allotted parking locations of various users of the development.

Given the use of TripsDC to generate trips to and from the site, site trips were not divided by the residential and retail uses. The residential trip distributions scoped with DDOT were used due to the low percentage of retail vehicle trips anticipated to and from the site. The residential trip distribution was significantly influenced by the CTPP TAZ flow data for drivers commuting from the site's TAZ and adjusted based on traffic volumes and patterns. The origin of outbound and destination of inbound residential vehicular trips was the below-grade parking garage accessed from N Place SE on the south side of the project.

Based on this review and the site access locations, the site-generated trips were distributed through the study area intersections. A summary of trip distribution assumptions and specific routing is provided on Figure 16 for inbound and outbound trips.

The traffic volumes for the 2023 Total Future conditions were calculated by adding the project-generated traffic volumes to the 2023 Background traffic volumes. Thus, the future condition with the project includes traffic generated by: existing volumes, background developments through the year 2023, inherent growth on the network, and the project. The site-generated traffic volumes are shown on Figure 18 and the 2023 Total Future traffic volumes are shown on Figure 19.

To provide a conservative analysis, the existing vehicles accessing the existing surface level parking lot occupying the site were not removed from the roadway network.

#### *2028 Total Future Traffic Volumes (with the project)*

The 2028 Total Future traffic volumes consist of the existing volumes with applied growth rates from Table 7 projected to the year 2028, the Parcel I, F, and G site volumes, the 2023 Background development volumes, and five additional background developments. Similar to previous sections, an existing study was available for one of these five 2028 developments. The other four (4) background developments with no existing studies, trip generation was calculated based on the ITE *Trip Generation Manual*, 9<sup>th</sup> Edition, with mode splits based on those used for similar developments in the Navy Yard neighborhood. Trip distribution assumptions for the background developments were based on those determined for the project and altered where necessary based on anticipated travel patterns. Mode split and trip generation assumptions for the background developments are shown in Table 6. This scenario projects the total buildout of the Yards West Master Plan. The background development traffic volumes are shown on Figure 20. The additional background developments included in this scenario are:

1. The Yards Parcel G1
2. The Yards Parcel G2
3. The Yards Parcel G3
4. The Yards Parcel H
5. The Yards Parcel F1

The traffic volumes generated by background developments and the inherent growth along the network were added to the Total Future 2023 volumes in order to establish the 2028 Total Future traffic volumes. The applied growth rates from Table 7 were applied to the 2028 Total Future scenario. The traffic volumes for the 2028 Total Future conditions are shown on Figure 21.



## 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 on Figure 22.

### *Future Geometry and Operations Assumptions*

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

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

Based on these criteria, Tingey Square was included as a background improvement in the background and future scenarios.

The future Tingey Square will replace the intersection of New Jersey Avenue SE & N Street SE/Tingey Street SE with traffic flowing generally in a counterclockwise movement. In the analysis, the northwestern and northeastern node of Tingey Square were analyzed as additional study intersections in the background and future scenarios (intersections 13 & 14). The northwestern node is planned as a stop-controlled intersection with the westbound approach as stop-controlled and the southbound and northbound approach as free-flowing. The northeastern node is planned as a stop-controlled intersection with the northbound approach as stop-controlled and westbound and eastbound approaches as free-flowing. The southwestern node is planned as an all-way stop-controlled intersection.

The future 1½ Street will be a private pedestrian friendly street constructed as part of the Yards West Master Plan. 1½ Street will be a two-way street. The northern terminus of 1½ Street

will occur at the future Quander Street with the northbound movement stop controlled and the eastbound and westbound movements free-flowing. The southern intersection of 1½ Street with N Place SE will be all-way stop controlled with the eastbound and westbound movements free-flowing.

As part of the DC Water HQ project, Canal Street SE will be closed to public traffic and pedestrians. Due to this closure, site traffic is not routed through Canal Street SE.

The construction of 1½ Street SE, the changes being made to Canal Street SE, and the changes to N Place SE were also taken into account for the vehicular analysis. The locations of the planned improvements are shown on Figure 23. The lane configurations and traffic controls for the Background and Future conditions are shown on Figure 24.

## Vehicular Analysis Results

### *Intersection Capacity Analysis*

Intersection capacity analyses were performed for the three scenarios outlined previously at the intersections contained within the study area during the morning and afternoon peak hours. Synchro version 9.2 was used to analyze the study intersections based on the *Highway Capacity Manual* (HCM) 2000 methodology.

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

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



Table 8 shows the results of the capacity analyses, including LOS and average delay per vehicle (in seconds) for the Existing, 2023 Background, 2023 Future, and 2028 Future scenarios. It should be noted that some improvements in delay were observed from the Existing to 2023 Background due to the increased peak hour factor to a minimum of 0.92 from a minimum of 0.85. The capacity analysis results are shown on Figure 25 for the morning peak hour and Figure 26 for the afternoon peak hour.

The majority of study intersections operate at acceptable conditions during the morning and afternoon peak hours for the Existing, 2023 Background, and 2023 Future scenarios. However, three (3) intersections operate above capacity during the morning and/or afternoon peak hours:

- N Street SE & South Capitol Street
- N Place SE & 1<sup>st</sup> Street SE
- Potomac Avenue & South Capitol Street

With the addition of the site-generated traffic, delays are slightly increased at all the study intersections, but no major impacts are seen as a result of the project.

#### *Queuing Analysis*

In addition to the capacity analyses presented above, a queuing analysis was performed at the study intersections. The queuing analysis was performed using Synchro software. The 50<sup>th</sup> percentile and 95<sup>th</sup> percentile queue lengths are shown for each lane group at the study area signalized intersections. The 50<sup>th</sup> percentile queue is the maximum back of queue on a median cycle. The 95<sup>th</sup> percentile queue is the maximum back of queue that is exceeded 5% of the time. For unsignalized intersection, only the 95<sup>th</sup> percentile queue is reported for each lane group (including free-flowing left turns and stop-controlled movements) based on the HCM calculations. Table 9 shows the AM queuing results for the study area intersections and Table 10 shows the PM queuing results for the study area intersections. Several of the study intersections have a lane group that exceeds its storage length during at least one peak hour in all the study scenarios. These intersections are as follows:

- M Street SE & New Jersey Avenue SE
- M Street SE & 4<sup>th</sup> Street SE
- N Street & South Capitol Street
- Potomac Avenue & South Capitol Street
- Tingey Street SE & 2<sup>nd</sup> Street SE

With the addition of the site-generated traffic, queues are slightly increased at all the study intersections, but no major impacts are seen as a result of the project.

#### **No Mitigation Measures Required**

Generally speaking, the project is considered to have an impact at an intersection within the study area if the capacity analyses show an LOS E or F, or where the 95<sup>th</sup> percentile queues increase by more than 150 feet at an intersection or along an approach in the future conditions with the project where one does not exist in the existing or background conditions. The project is also considered to have an impact if there is an increase in delay at any approach or the overall intersection operating under LOS E or F of greater than 5 percent, when compared to the background condition. Following these guidelines, there are no impacts as a result of the project. It is noted that the eastbound approach on N Place SE and 1<sup>st</sup> Street SE increased in delay by more than 5 percent, however, the eastbound approach is a private driveway with four (4) AM peak hour vehicles and two (2) PM peak hour vehicles.

TDM measures discussed previously will serve as a mitigation to the study area. Given the site's close proximity to the metro and the TDM measures that will be implemented by the Applicant, residents will be discouraged from using private vehicles.



**Table 4: Summary of Background (2023) Development Trip Generation**

Background Development	ITE Land Use Code		Quantity	AM			PM		
	Trip Generation, 9th Ed.			In	Out	Total	In	Out	Total
Monument Valley (Half St Hole)	220	Apartment	445 du	44	178	222	170	92	262
			55% Non-Auto Reduction:	-24	-98	-122	-94	-51	-144
	820	Shopping Center (Rate)	60,000 sf	36	22	58	107	116	223
			60% Non-Auto Reduction:	-22	-13	-35	-64	-70	-134
		<b>Total Trips</b>		<b>34</b>	<b>89</b>	<b>123</b>	<b>119</b>	<b>88</b>	<b>207</b>
Square 769	220	Apartment	171 du	18	70	88	73	39	112
			55% Non-Auto Reduction	-13	-49	-62	-51	-27	-78
	820	Shopping Center (Rate)	4,000 sf	2	2	4	7	8	15
			65% Non-Auto Reduction:	-1	-1	-3	-5	-5	-10
		<b>Total Trips</b>		<b>6</b>	<b>22</b>	<b>28</b>	<b>24</b>	<b>15</b>	<b>39</b>
West Half Street	Based on Approved CTR		423 du	<b>35</b>	<b>85</b>	<b>120</b>	<b>119</b>	<b>91</b>	<b>210</b>
			60,000 sf Retail						
DC Water Headquarters	Based on Approved CTR		167,000 sf Office	<b>112</b>	<b>13</b>	<b>125</b>	<b>19</b>	<b>102</b>	<b>121</b>
The Riverfront (Florida Rock)	Based on Approved CTR		465,000 sf Office	<b>297</b>	<b>131</b>	<b>428</b>	<b>163</b>	<b>285</b>	<b>448</b>
			80,000sf Retail						
			324 Hotel Rooms						
Yards Parcel L1	Based on Submitted CTR		227 Hotel Rooms	<b>37</b>	<b>26</b>	<b>63</b>	<b>40</b>	<b>39</b>	<b>79</b>
Yards Parcel L2	Based on Approved CTR		285 du	<b>17</b>	<b>58</b>	<b>75</b>	<b>64</b>	<b>37</b>	<b>101</b>
			18,000 sf Retail						
Yards Parcel O	220	Apartment	328 du	33	131	164	129	69	198
			65% Non-Auto Reduction	-21	-85	-107	-84	-45	-129
	820	Shopping Center (Rate)	19,200 sf	11	7	18	34	37	71
			75% Non-Auto Reduction	-8	-5	-14	-26	-28	-53
		<b>Total Trips</b>		<b>14</b>	<b>48</b>	<b>62</b>	<b>54</b>	<b>33</b>	<b>86</b>





**Table 5: Summary of Total Future (2023) Development Trip Generation**

Background Development	ITE Land Use Code		Quantity	AM			PM		
	Trip Generation, 9th Ed.			In	Out	Total	In	Out	Total
Yards Parcel G	820	Shopping Center (Rate)	20,000 sf	12	7	19	44	48	92
		60% Non-Auto Reduction		-7	-4	-11	-26	-29	-55
	710	General Office (rate)	260,000 sf	357	49	406	66	321	387
		60% Non-Auto Reduction		-214	-29	-244	-40	-193	-232
<b>Total Trips</b>			<b>148</b>	<b>22</b>	<b>170</b>	<b>44</b>	<b>148</b>	<b>192</b>	
Yards Parcel F	820	Shopping Center (Rate)	25,000	15	9	24	53	57	110
		60% Non-Auto Reduction		-9	-5	-14	-32	-34	-66
	710	General Office (rate)	290,000	398	54	452	73	359	432
		60% Non-Auto Reduction		-239	-32	-271	-44	-215	-259
<b>Total Trips</b>			<b>165</b>	<b>25</b>	<b>190</b>	<b>50</b>	<b>166</b>	<b>217</b>	

**Table 6: Summary of Total Future (2028) Development Trip Generation**

Background Development	ITE Land Use Code		Quantity	AM			PM		
	Trip Generation, 9th Ed.			In	Out	Total	In	Out	Total
Yards Parcel H	820	Shopping Center Rate)	17,000 sf	10	6	16	39	42	81
		60% Non-Auto Reduction		-6	-4	-10	-23	-25	-49
	710	General Office (rate)	160,000	220	30	250	40	198	238
		60% Non-Auto Reduction		-132	-18	-150	-24	-119	-143
<b>Total Trips</b>			<b>92</b>	<b>14</b>	<b>106</b>	<b>32</b>	<b>113</b>	<b>179</b>	
Yards Parcel F1	Based on Approved CTR		1,500 seats	0	1	1	45	79	124
Yards Parcel G1	Based on Approved CTR		350 du	21	66	87	77	48	125
			20,000 sf Retail						
Yards Parcel G2	Based on Approved CTR		250 du	15	47	62	55	36	91
			15,000 sf retail						
Yards Parcel G3	Based on Approved CTR		10,000 sf Retail	2	2	4	8	8	16



**Table 7: Applied Annual and Total Growth Rates**

Road	Direction	Proposed Annual Growth Rate		Total Growth between 2018 and 2023		Total Growth between 2023 and 2028	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
South Capitol Street	NB	0.25%	0.25%	1.30%	1.30%	1.30%	1.30%
	SB	0.50%	0.25%	2.50%	1.30%	2.50%	1.30%
M Street	EB	1.00%	0.50%	5.10%	2.50%	5.10%	2.50%
	WB	0.25%	0.75%	1.30%	3.80%	1.30%	3.80%
New Jersey Avenue	NB	0.25%	2.00%	1.30%	10.40%	1.30%	10.40%
	SB	0.25%	0.25%	1.30%	1.30%	1.30%	1.30%
N Street	EB	0.25%	2.00%	1.30%	10.40%	1.30%	10.40%
	WB	0.50%	0.25%	2.50%	1.30%	2.50%	1.30%
Tingey Street	EB	0.25%	1.00%	1.30%	5.10%	1.30%	5.10%
	WB	1.25%	0.75%	6.40%	3.80%	6.40%	3.80%
4th Street	NB	0.25%	2.00%	1.30%	10.40%	1.30%	10.40%
	SB	0.25%	0.25%	1.30%	1.30%	1.30%	1.30%

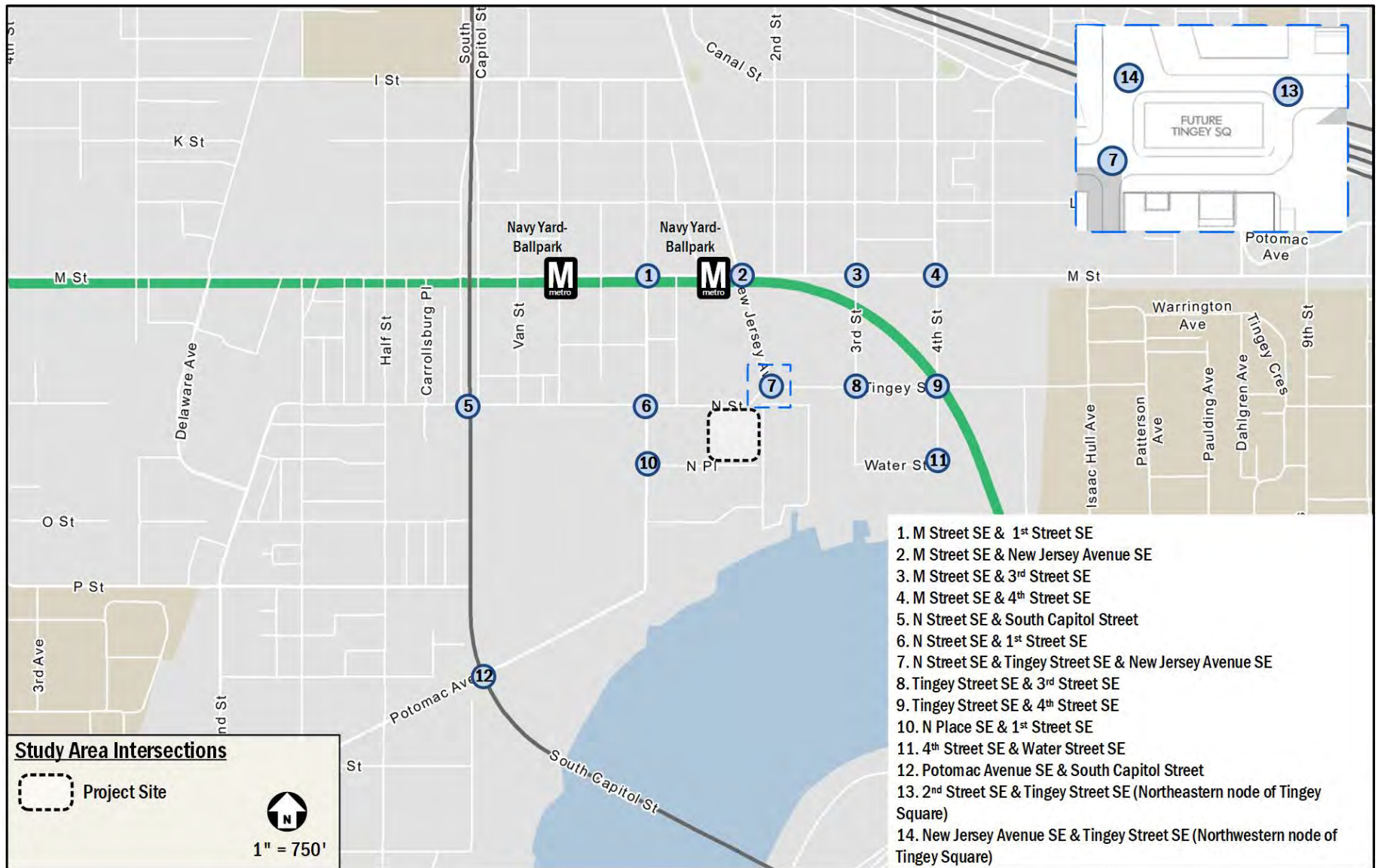


Figure 11: Study Area

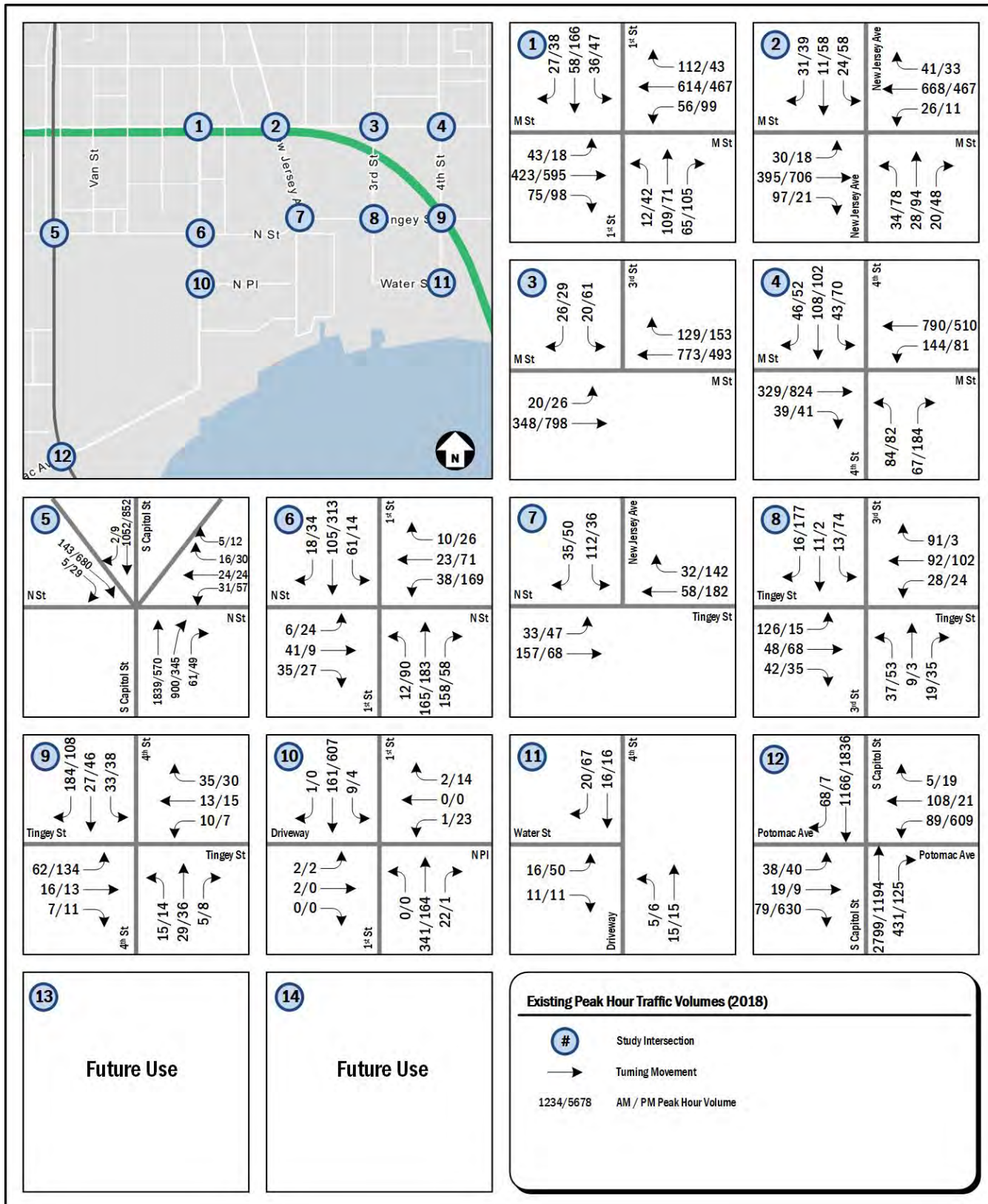


Figure 12: Existing Peak Hour Traffic Volumes



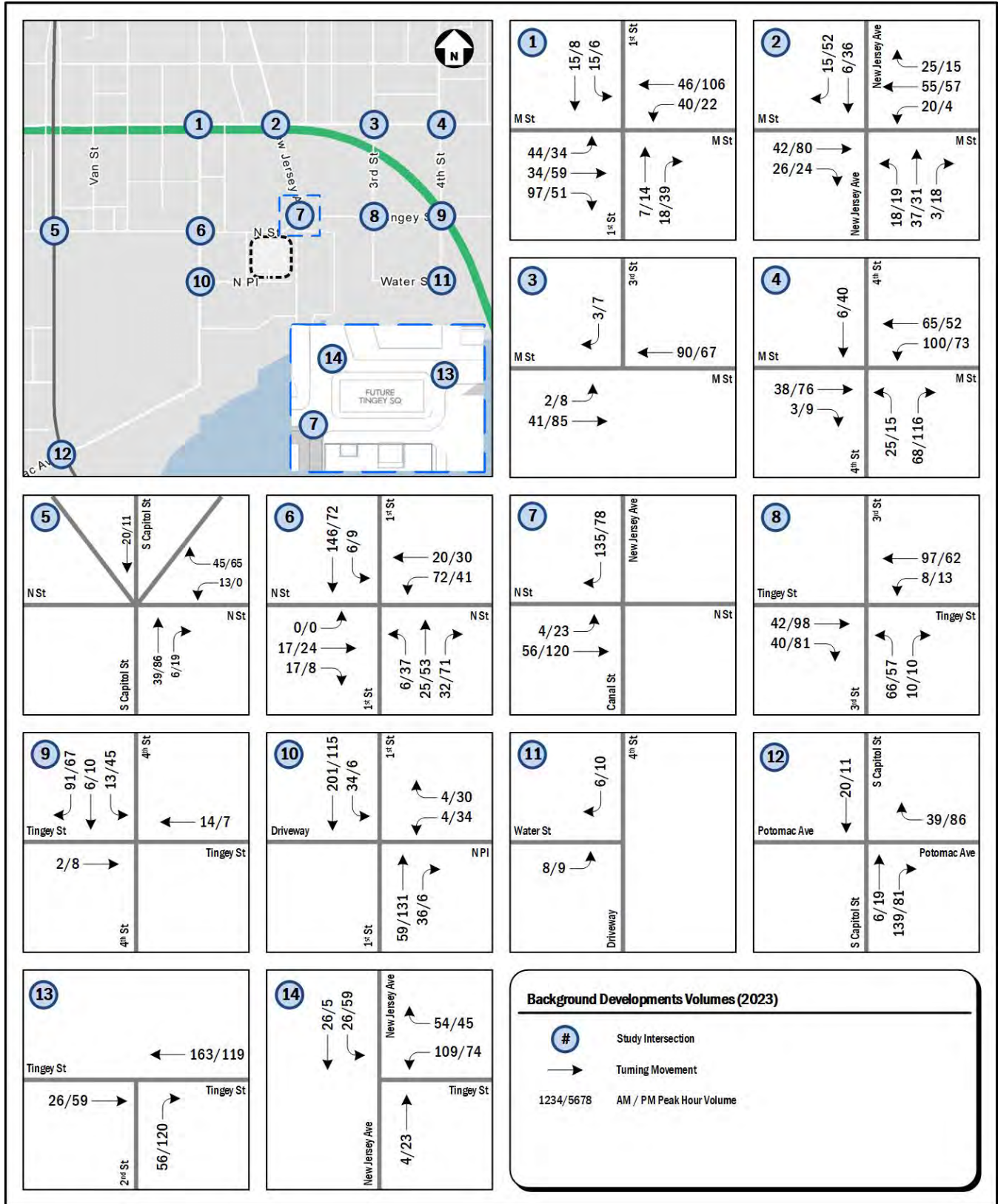


Figure 13: Background Developments Volumes 2023

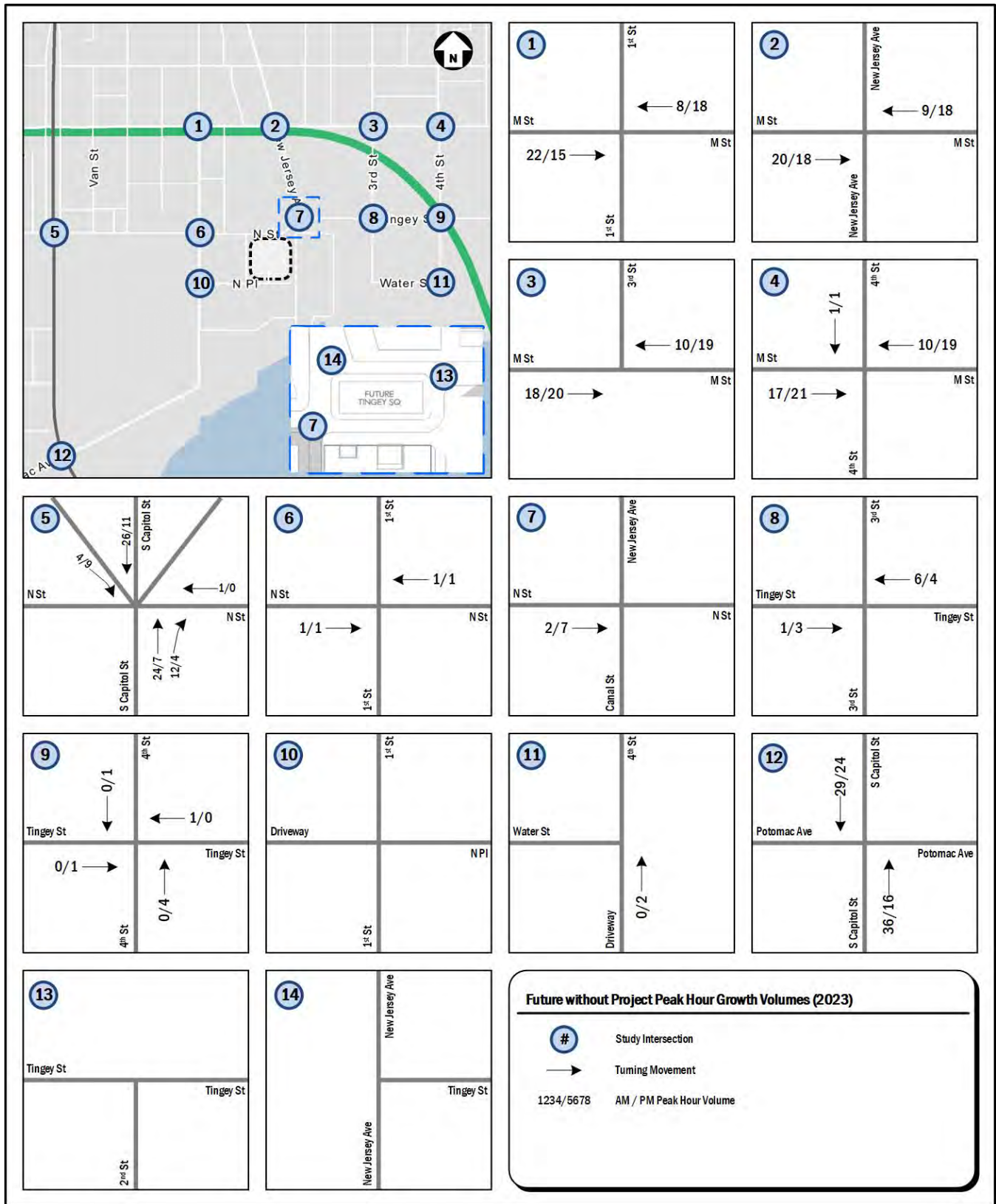


Figure 14: Background Growth Volumes 2023



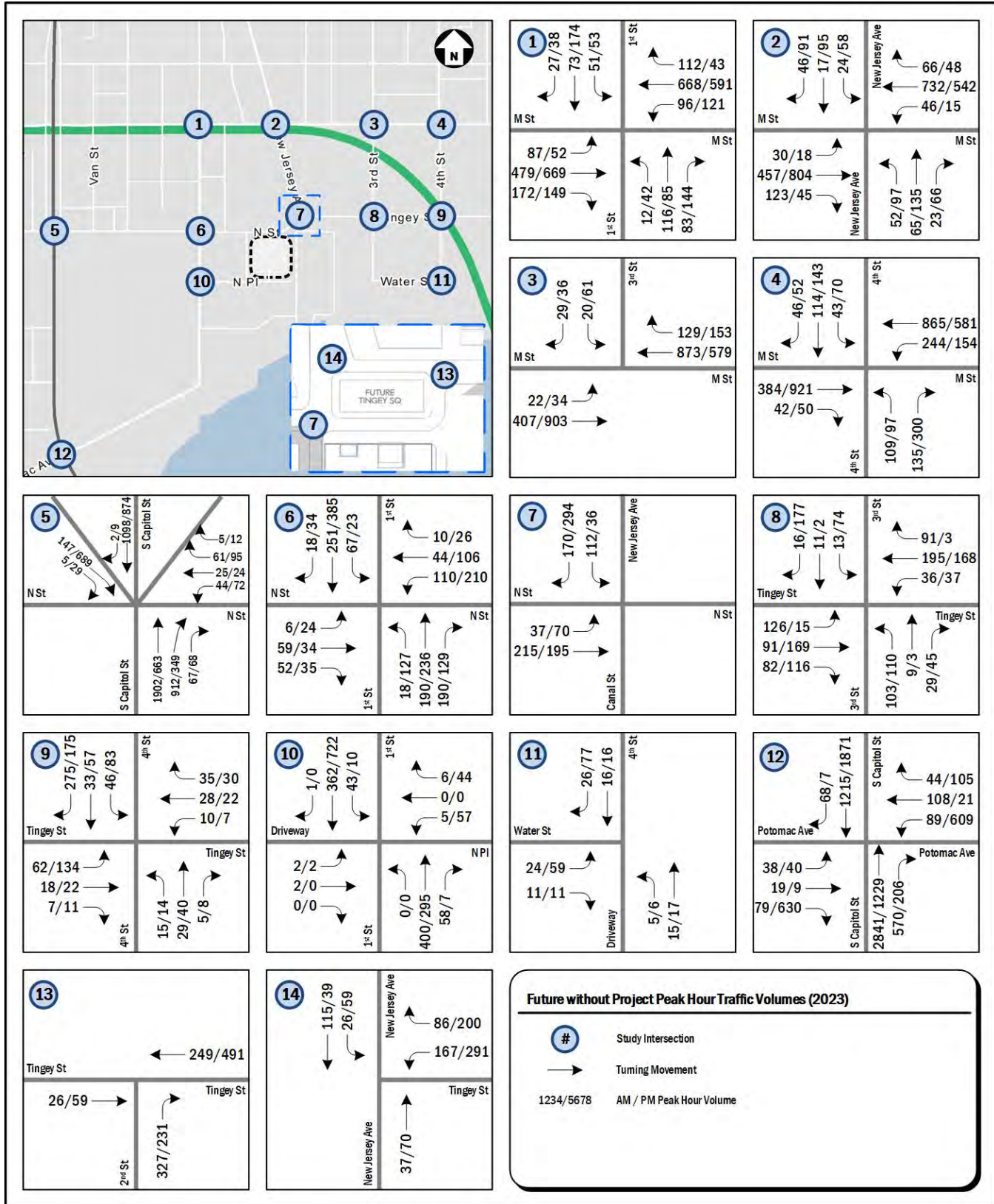


Figure 15: Background Peak Hour Traffic Volumes 2023

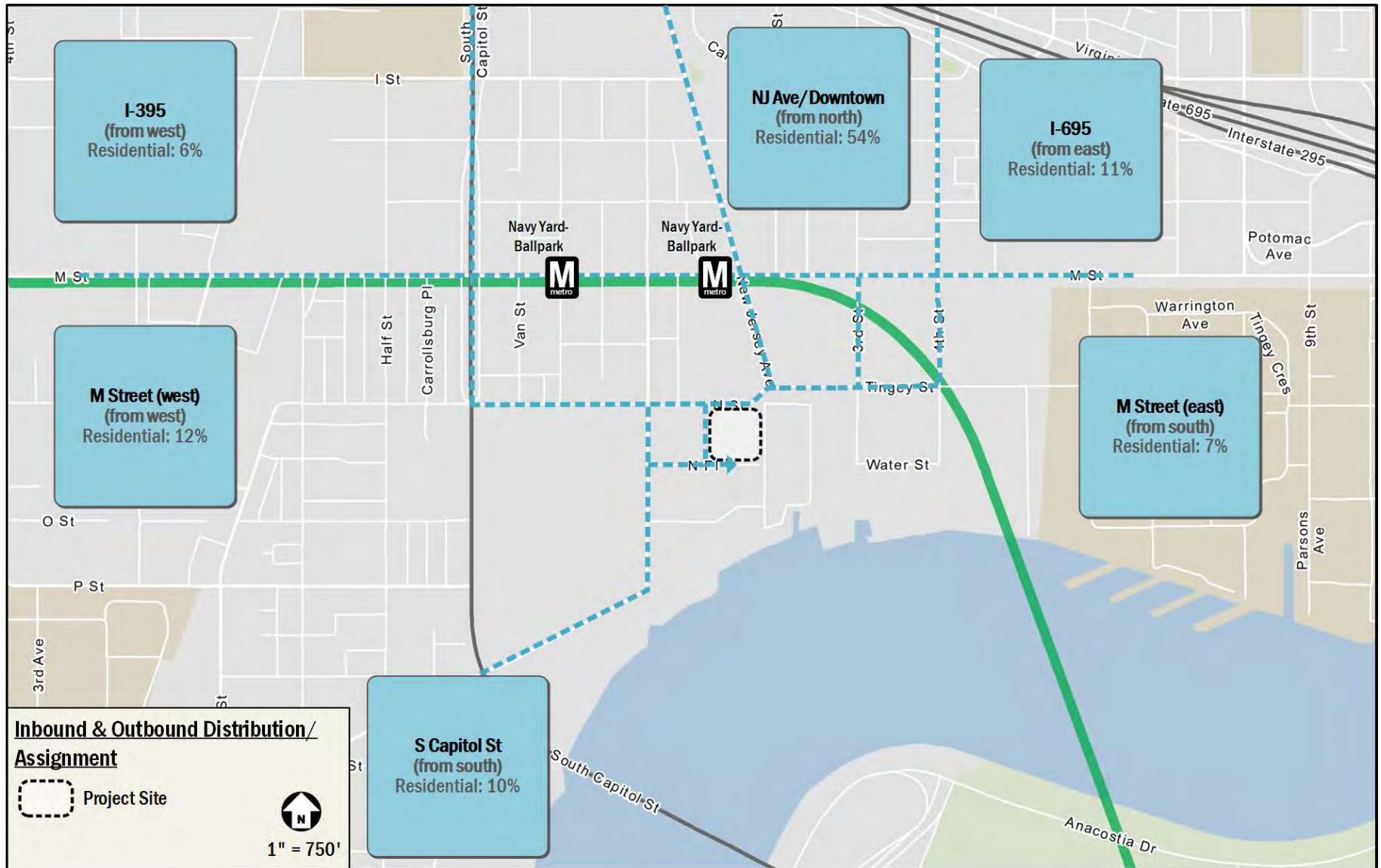


Figure 16: Inbound and Outbound Trip Distribution and Routing



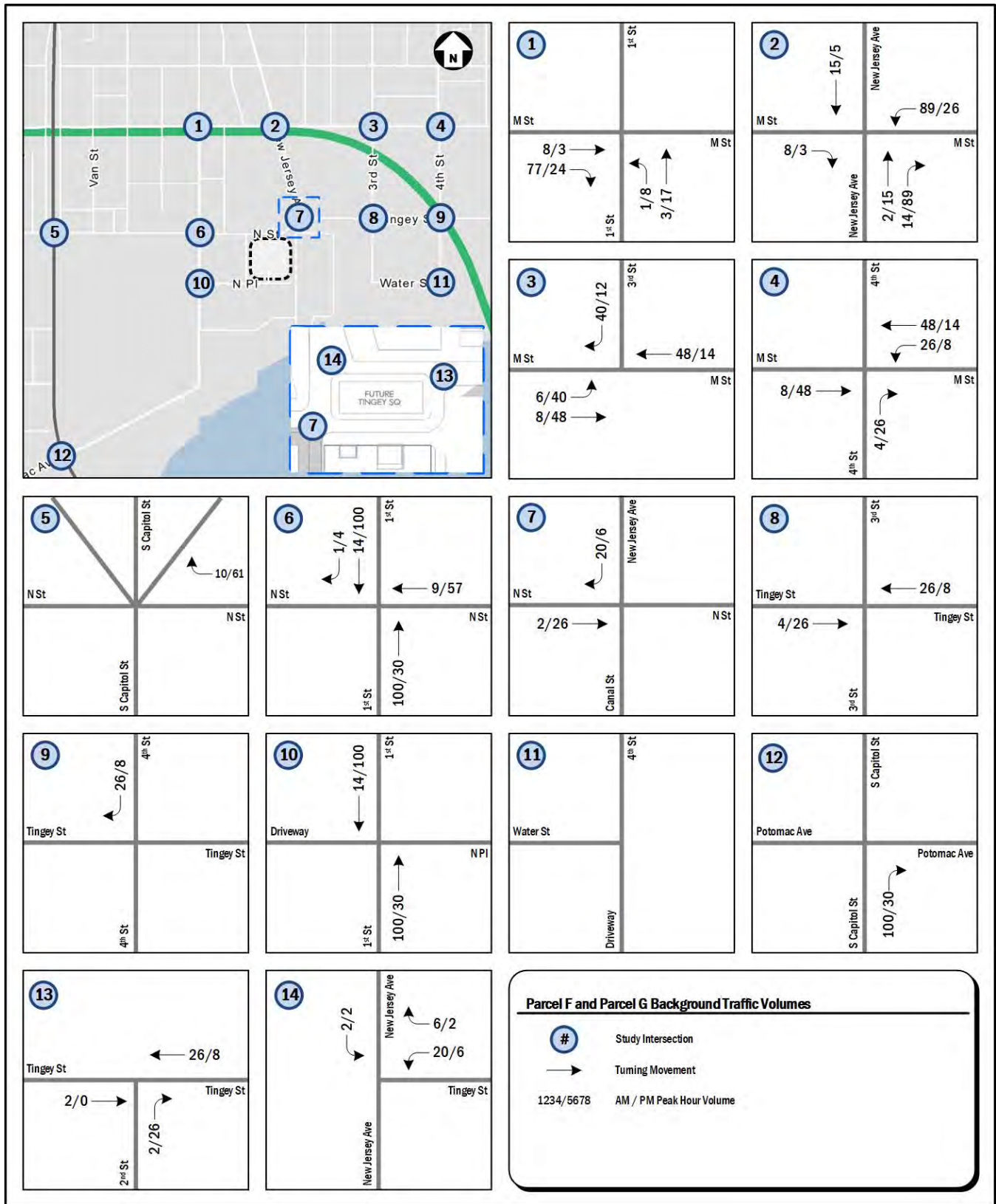


Figure 17: Parcel F and Parcel G Background Traffic Volumes

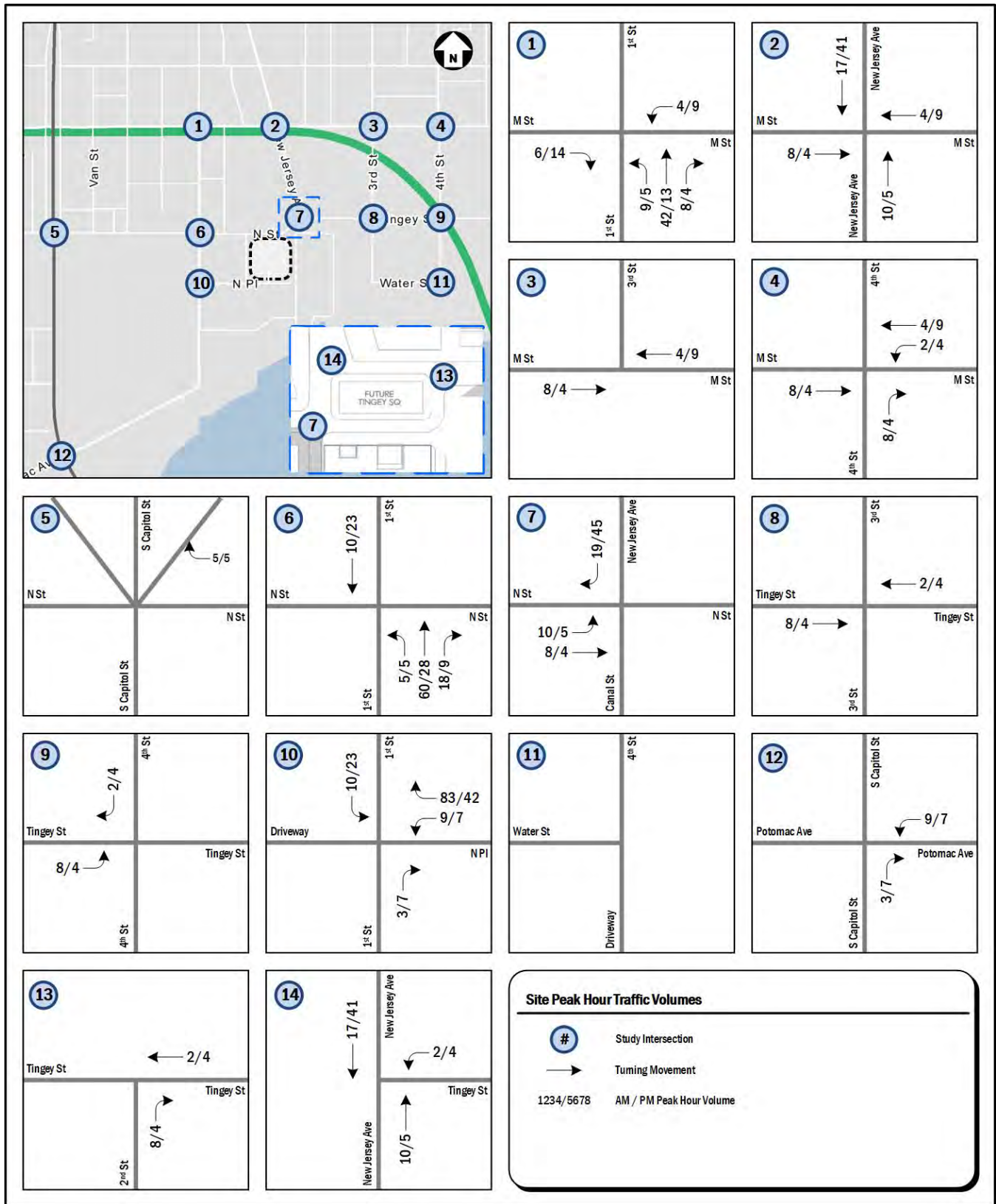


Figure 18: Site-Generated Peak Hour Traffic Volumes

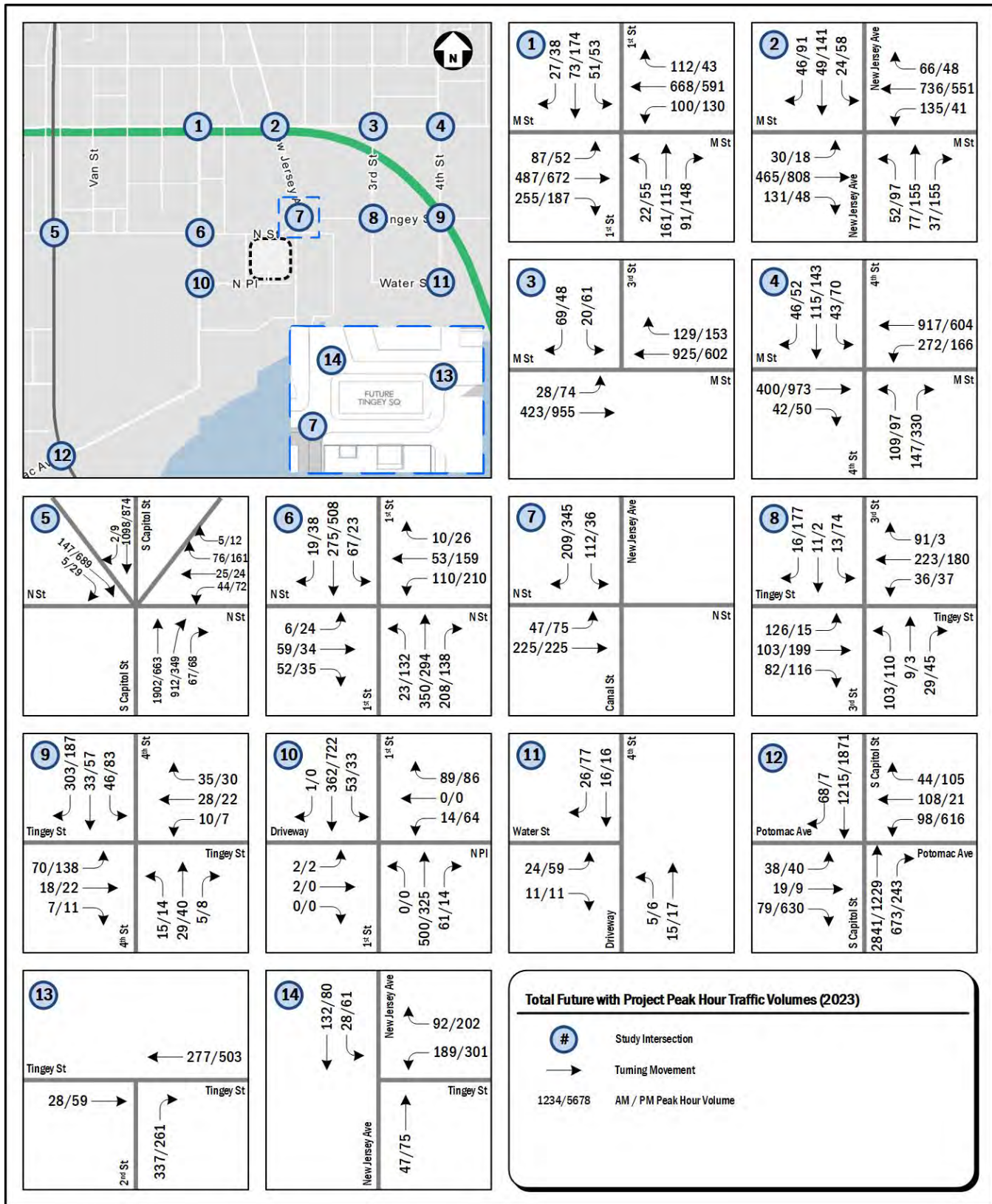


Figure 19: Total Future 2023 Peak Hour Traffic Volumes



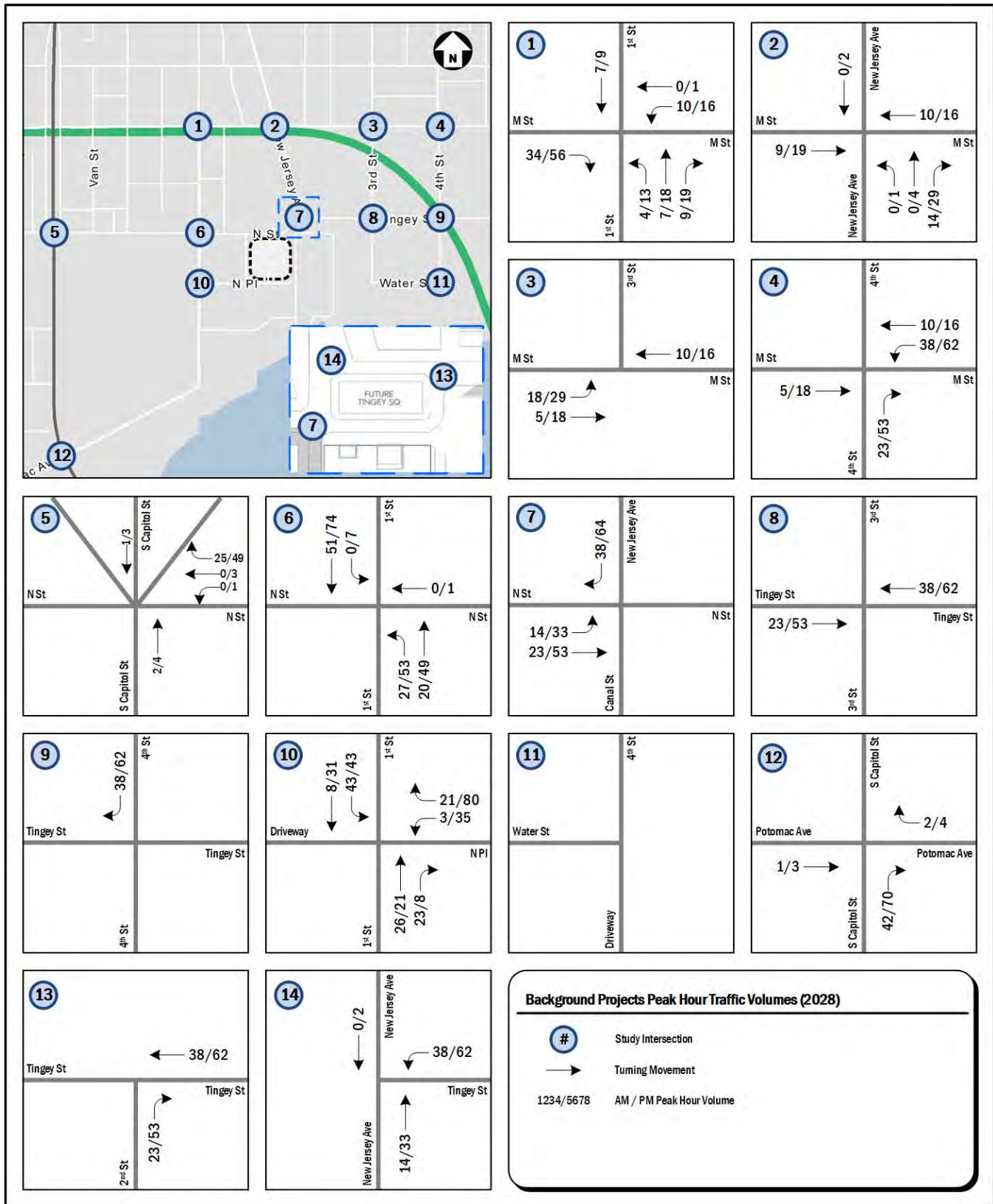


Figure 20: Total Future 2028 Background Developments



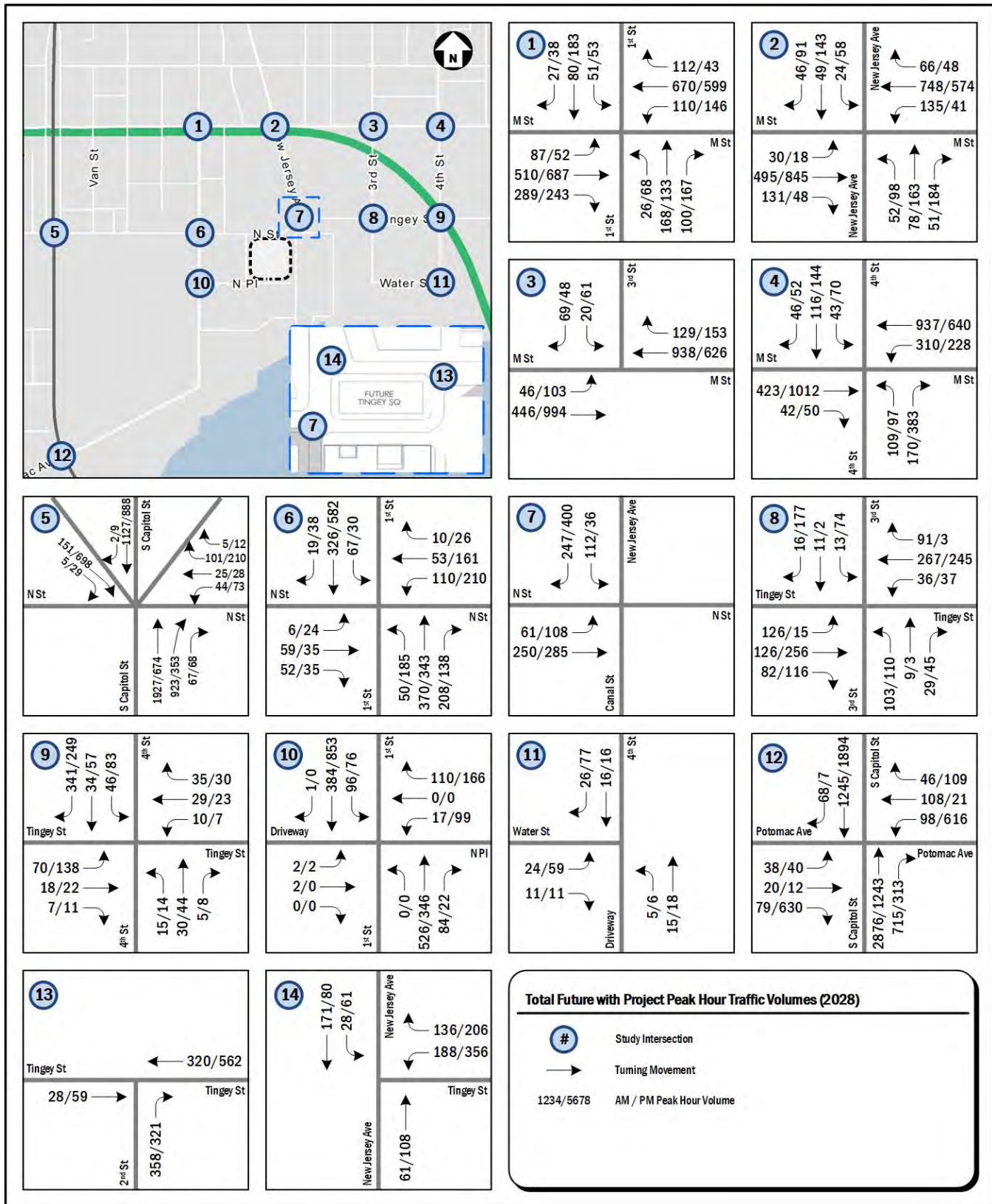


Figure 21: Total Future 2028 Peak Hour Traffic Volumes

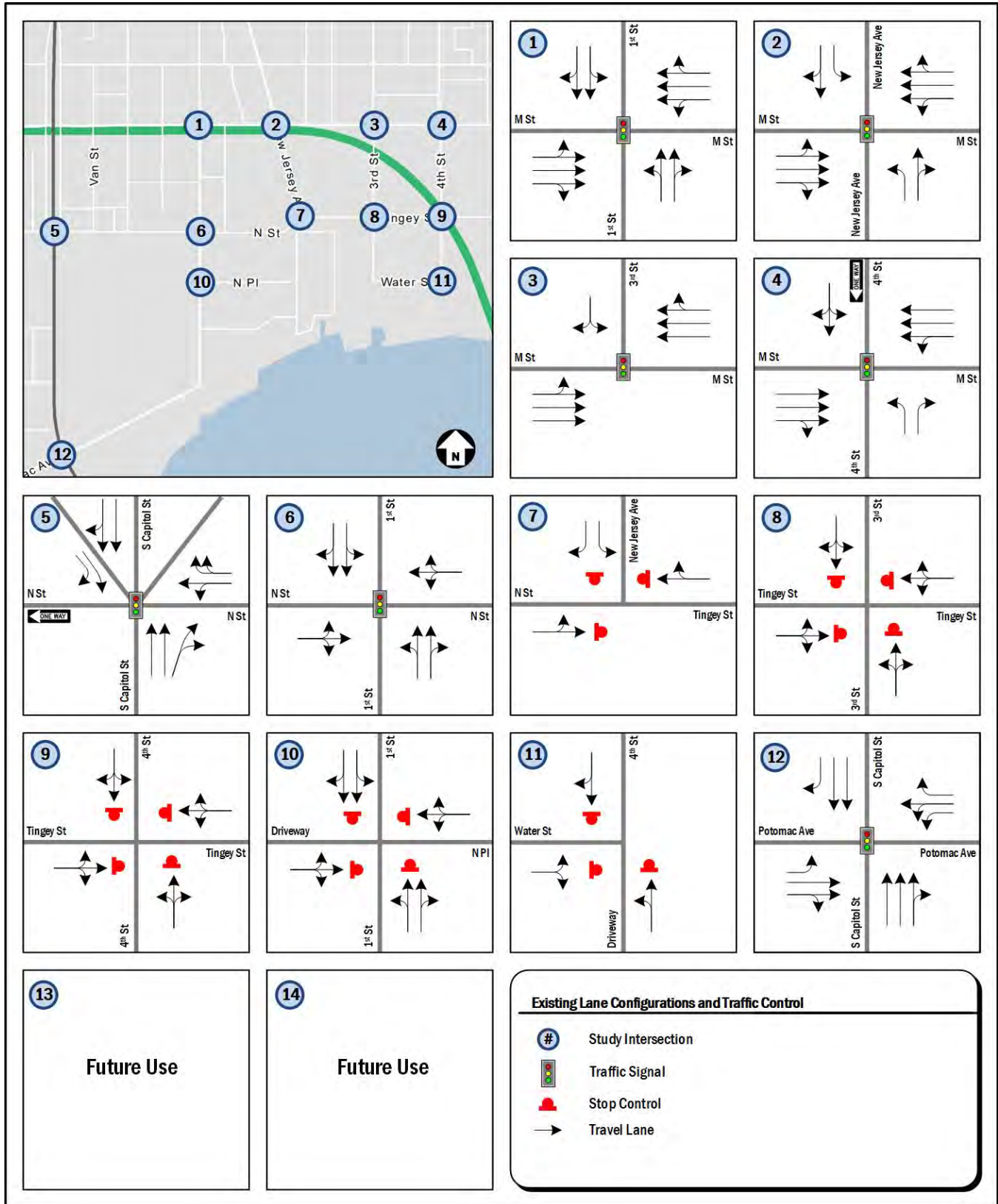


Figure 22: Existing Lane Configuration and Traffic Control



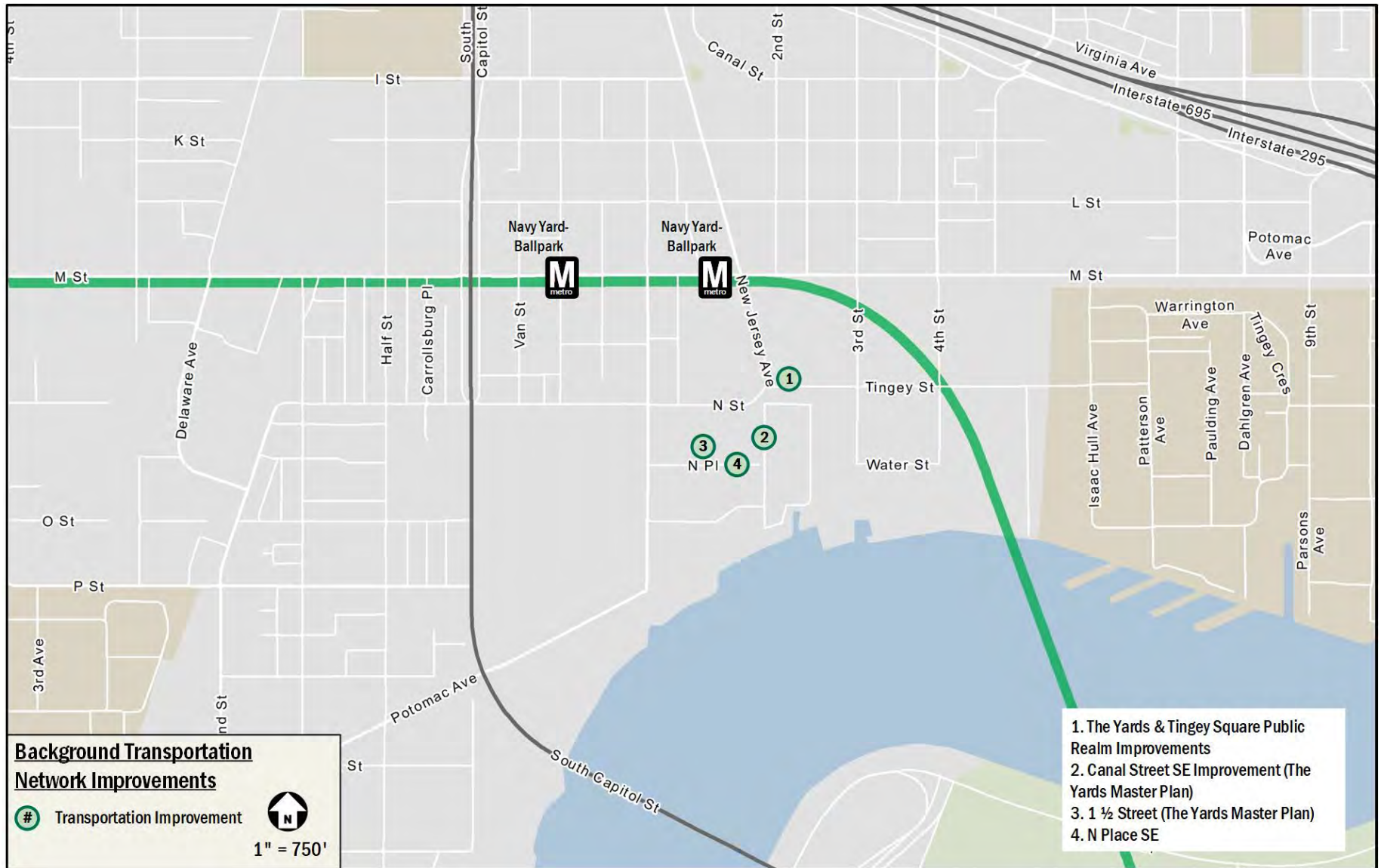


Figure 23: Background Transportation Network Improvements

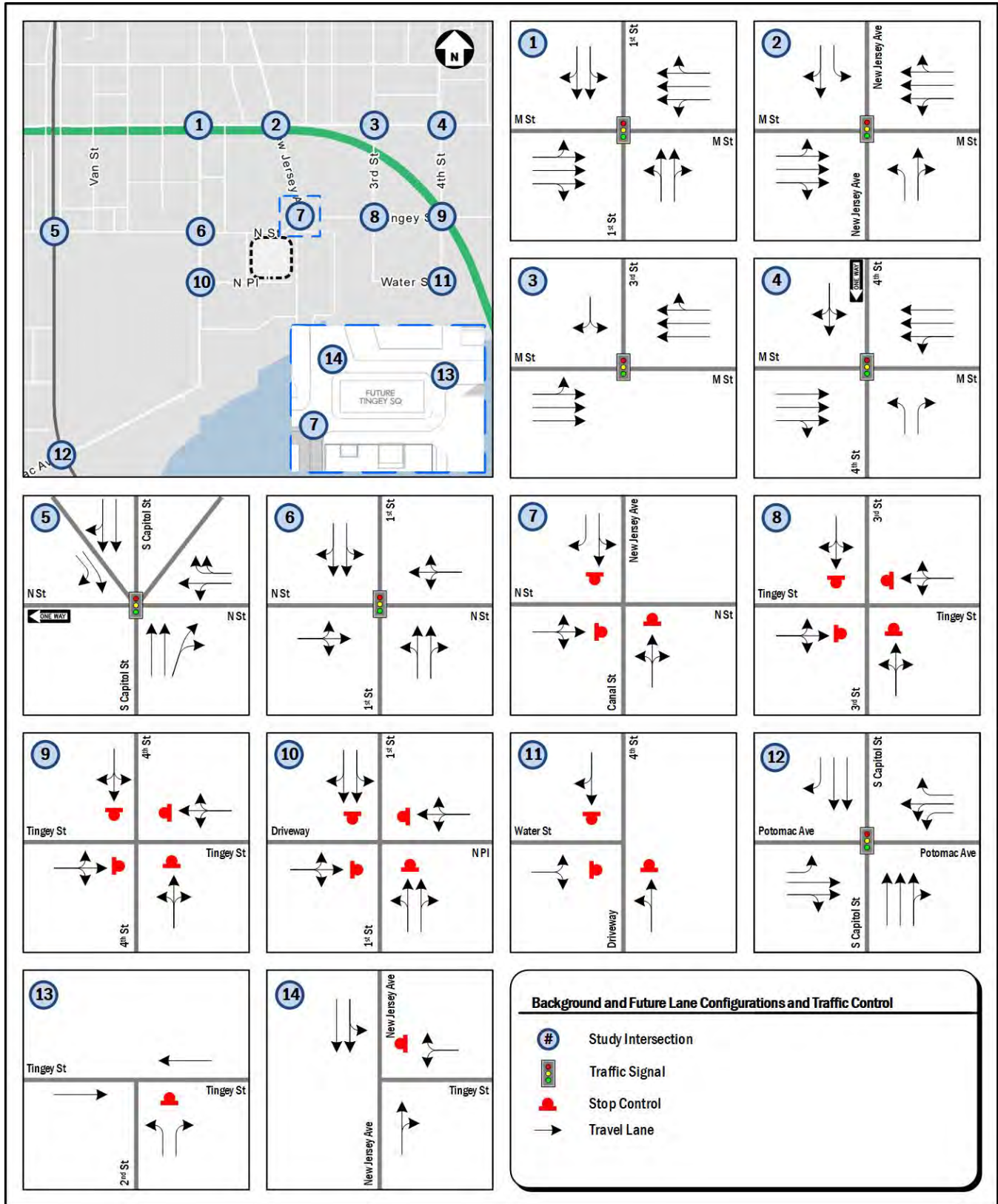


Figure 24: Background and Future Lane Configuration and Traffic Control





**Table 8: LOS Results**

Intersection	Approach	Existing (2018)				Background (2023)				Total Future (2023)				Total Future (2028)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. 1st Street SE & M Street SE	Overall	10.8	B	18.9	B	12.2	B	19.3	B	13.6	B	20.0	C	14.1	B	21.2	C
	Eastbound	17.7	B	18.7	B	20.1	C	20.5	C	21.1	C	20.9	C	21.9	C	21.8	C
	Westbound	1.6	A	4.0	A	2.2	A	4.4	A	3.6	A	4.1	A	4.0	A	4.4	A
	Northbound	19.7	B	55.1	E	17.4	B	51.8	D	16.7	B	52.0	D	15.8	B	53.0	D
	Southbound	22.2	C	23.8	C	22.8	C	24.2	C	22.8	C	24.3	C	23.0	C	24.6	C
2. M Street SE & New Jersey Avenue SE	Overall	12.8	B	17.1	B	14.4	B	19.0	B	17.8	B	22.3	C	18.2	B	24.6	C
	Eastbound	11.4	B	8.7	A	13.3	B	9.3	A	14.6	B	9.8	A	15.4	B	10.4	B
	Westbound	11.9	B	24.8	C	13.2	B	26.2	C	18.5	B	27.1	C	18.7	B	27.6	C
	Northbound	21.3	C	24.3	C	22.1	C	26.3	C	22.7	C	36.5	D	23.3	C	45.7	D
	Southbound	21.6	C	23.4	C	22.0	C	27.1	C	22.5	C	29.7	C	22.5	C	30.5	C
3. M Street SE & 3rd Street SE	Overall	9.0	A	10.9	B	9.4	A	11.0	B	9.7	A	11.6	B	9.8	A	12.1	B
	Eastbound	14.6	B	12.3	B	15.7	B	12.6	B	16.2	B	13.4	B	16.9	B	14.7	B
	Westbound	5.9	A	7.9	A	6.2	A	7.8	A	5.9	A	7.6	A	5.6	A	7.2	A
	Southbound LR	20.1	C	20.8	C	20.1	C	20.8	C	20.7	C	20.9	C	20.8	C	20.9	C
4. M Street SE & 4th Street SE	Overall	14.1	B	13.0	B	15.3	B	15.9	B	15.9	B	18.6	B	16.5	B	23.2	C
	Eastbound	7.7	A	7.3	A	7.4	A	8.8	A	7.2	A	13.0	B	6.9	A	16.1	B
	Westbound	13.5	B	11.2	B	15.1	B	12.3	B	16.2	B	12.5	B	17.2	B	13.1	B
	Northbound	21.3	C	24.9	C	23.1	C	33.2	C	23.4	C	38.4	D	24.1	C	55.6	E
	Southbound	23.2	C	24.9	C	23.2	C	25.6	C	23.2	C	25.6	C	23.3	C	25.7	C
5. South Capitol St & N Street SE	Overall	14.3	B	261.4	F	14.7	B	224.9	F	15.5	B	223.1	F	17.7	B	226.0	F
	Westbound	74.4	E	70.3	E	71.4	E	72.4	E	71.2	E	71.7	E	71.1	E	78.0	E
	Northbound	7.7	A	5.8	A	7.6	A	5.5	A	8.0	A	6.5	A	9.8	A	7.2	A
	Southbound	12.1	B	20.6	C	13.9	B	21.4	C	14.9	B	25.6	C	16.9	B	28.4	C
	Southeastbound Right	111.5	F	967.8	F	103.4	F	882.2	F	103.4	F	882.2	F	107.3	F	899.0	F
	Southeastbound Right 2	57.3	E	47.6	D	57.3	E	47.6	D	57.3	E	47.6	D	57.3	E	47.6	D



Intersection	Approach	Existing (2018)				Background (2023)				Total Future (2023)				Total Future (2028)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
6. 1st Street SE & N Street SE	Overall	11.0	B	16.4	B	11.8	B	17.7	B	11.6	B	19.9	B	11.3	B	23.0	C
	Eastbound	25.4	C	14.1	B	26.4	C	14.4	B	26.4	C	14.4	B	26.4	C	14.4	B
	Westbound	26.2	C	20.1	C	32.9	C	22.7	C	33.5	C	25.2	C	33.5	C	25.4	C
	Northbound	7.1	A	16.6	B	7.0	A	18.5	B	7.7	A	21.0	C	8.1	A	28.0	C
	Southbound	5.8	A	14.0	B	2.1	A	13.7	B	2.3	A	15.9	B	2.5	A	17.7	B
7. N Street SE /Tingey Street SE & New Jersey Avenue SE	Eastbound	9.3	A	8.5	A	10.2	B	10.8	B	10.8	B	12.0	B	11.9	B	16.1	C
	Southbound	8.5	A	7.6	A	8.2	A	9.3	A	8.5	A	10.7	B	9.1	A	13.8	B
8. Tingey Street SE & 3rd Street SE	Eastbound	9.4	A	9.0	A	11.8	B	13.6	B	12.3	B	15.0	C	13.4	B	20.5	C
	Westbound	9.0	A	9.3	A	12.2	B	12.2	B	13.1	B	12.8	B	15.1	C	16.3	C
	Northbound	8.7	A	8.7	A	10.8	B	11.6	B	11.0	B	12.0	B	11.4	B	13.3	B
	Southbound	8.3	A	9.8	A	8.4	A	10.0	A	8.6	A	10.3	B	8.8	A	11.4	B
9. Tingey Street SE & 4th Street SE	Eastbound	8.7	A	9.4	A	9.0	A	9.9	A	9.2	A	10.0	B	9.3	A	10.3	B
	Westbound	8.0	A	7.9	A	8.5	A	8.4	A	8.6	A	8.4	A	8.7	A	8.7	A
	Northbound	8.1	A	8.2	A	8.2	A	8.5	A	8.3	A	8.5	A	8.4	A	8.7	A
	Southbound	8.8	A	8.8	A	10.2	B	10.5	B	10.7	B	10.7	B	11.4	B	11.9	B
10. N Place SE & 1st Street SE	Eastbound	18.2	C	21.6	C	30.0	D	30.6	D	40.8	E	36.2	E	54.9	F	78.8	F
	Westbound	11.4	B	12.1	B	14.6	B	15.6	C	14.6	B	16.3	C	17.0	C	32.4	D
	Northbound	0.0	A	0.0	A	0.0	A	0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Southbound	0.5	A	0.1	A	1.1	A	0.2	A	1.5	A	0.5	A	2.5	A	1.1	A
11. 4th Street SE & Water Street SE	Eastbound	7.3	A	7.6	A	7.4	A	7.7	A	7.4	A	7.7	A	7.4	A	7.7	A
	Northbound	7.2	A	7.4	A	7.2	A	7.4	A	7.2	A	7.4	A	7.2	A	7.4	A
	Southbound	7.0	A	7.0	A	7.0	A	7.0	A	7.0	A	7.0	A	7.0	A	7.0	A
12. Potomac Avenue & South Capitol Street	Overall	35.0	D	94.9	F	47.9	D	92.5	F	58.7	E	91.8	F	66.0	E	93.6	F
	Eastbound	64.6	E	160.8	F	64.7	E	160.8	F	64.7	E	160.8	F	64.7	E	164.1	F
	Westbound	74.1	E	115.0	F	71.8	E	107.4	F	71.8	E	110.1	F	71.7	E	109.8	F
	Northbound	41.2	D	26.7	C	60.6	E	27.8	C	76.3	E	28.2	C	87.2	F	29.1	C
	Southbound	9.3	A	111.2	F	9.2	A	110.2	F	9.2	A	108.3	F	9.3	A	113.4	F



Intersection	Approach	Existing (2018)				Background (2023)				Total Future (2023)				Total Future (2028)				
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
13.	<b>2nd Street SE &amp; Tingey Street (NE Node of Tingey Sq.)</b>	Northbound Right	<i>Future Node</i>				10.2	B	9.8	A	10.3	B	10.0	B	10.5	B	10.5	B
14.	<b>New Jersey Avenue SE &amp; Tingey Street SE</b>	Westbound Left	<i>Future Node</i>				11.0	B	17.4	C	11.6	B	19.5	C	12.4	B	28.5	D
		Westbound Right					1.4	A	4.6	A	1.3	A	3.3	A	1.1	A	3.3	A



**Table 9: AM Queuing Results (in Feet)**

Intersection	Approach	Storage Length (ft)	Existing Conditions (2018)		Future Background Conditions (2023)		Total Future Conditions (2023)		Total Future Conditions (2028)	
			AM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour	
			50th	95th	50th	95th	50th	95th	50th	95th
1. 1st Street SE & M Street SE	Eastbound LTR	340	71	97	94	133	104	147	113	160
	Westbound LTR	380	11	15	17	22	17	50	17	54
	Northbound LTR	660	27	55	18	48	23	52	16	30
	Southbound LTR	255	20	42	26	51	26	51	28	54
2. M Street SE & New Jersey Avenue SE	Eastbound LTR	380	43	55	52	82	56	93	60	102
	Westbound LTR	115	126	167	153	201	185	243	189	247
	Northbound Left	470	15	36	21	51	21	51	21	51
	Northbound TR	470	21	45	36	72	47	90	54	101
	Southbound Left	290	10	29	9	29	9	29	9	29
	Southbound TR	290	18	41	25	57	39	78	39	78
3. M Street SE & 3rd Street SE	Eastbound LTR	485	57	82	65	95	67	97	72	104
	Westbound LTR	330	22	28	28	35	28	35	28	35
	Southbound Left	285	8	31	8	33	21	57	22	57
4. M Street SE & 4th Street SE	Eastbound TR	330	22	25	23	26	24	26	24	26
	Westbound LT	235	109	136	129	164	142	180	152	191
	Northbound Left	470	34	72	45	91	45	91	45	91
	Northbound Right	140	26	57	55	104	61	113	72	131
	Southbound LTR	285	84	144	85	146	85	146	86	147
5. N Street & South Capitol Street SE	Westbound LT	145	61	104	72	124	71	121	69	118
	Westbound Right	90	23	51	68	120	84	141	110	172
	Northbound Thru	505	111	m133	121	m133	123	m132	126	m135
	Northbound Right	505	113	m285	127	m240	126	m203	144	m192
	Southbound Thru	550	280	359	297	396	310	416	343	463
	Southeastbound Right	545	165	m#282	156	#292	156	#292	160	#300
	Southeastbound Right 2	545	0	0	0	0	0	0	0	0

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

\* HCM methodology does not provide queuing results at all-way stop-controlled intersections

\*\* HCM methodology does not provide 50th percentile queuing results at two-way stop-controlled intersections





Intersection	Approach	Storage Length (ft)	Existing Conditions (2018)		Future Background Conditions (2023)		Total Future Conditions (2023)		Total Future Conditions (2028)	
			AM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour	
			50th	95th	50th	95th	50th	95th	50th	95th
6. N Street SE & 1st Street SE	Eastbound LTR	345	22	55	33	79	33	79	33	79
	Westbound LTR	435	29	64	77	141	82	148	82	148
	Northbound LTR	225	19	36	22	41	42	66	53	82
	Southbound LTR	545	15	26	8	11	8	16	10	18
7. N/Tingey Street SE & New Jersey Avenue SE	Eastbound	315								
	Westbound	325	*Not Available		*Not Available		*Not Available		*Not Available	
	Southbound	475	*Not Available		*Not Available		*Not Available		*Not Available	
8. Tingey Street SE & 3rd Street SE	Eastbound	335								
	Westbound	330	*Not Available		*Not Available		*Not Available		*Not Available	
	Northbound	300	*Not Available		*Not Available		*Not Available		*Not Available	
	Southbound	100	*Not Available		*Not Available		*Not Available		*Not Available	
9. Tingey Street SE & 4th Street SE	Eastbound	325								
	Westbound	185	*Not Available		*Not Available		*Not Available		*Not Available	
	Northbound	295	*Not Available		*Not Available		*Not Available		*Not Available	
	Southbound	475	*Not Available		*Not Available		*Not Available		*Not Available	
10. N Place SE & 1st Street SE	Eastbound LTR	50	--	1	--	2	--	3	--	4
	Westbound LTR	510	--	0	--	2	--	22	--	34
	Northbound LTR	210	--	0	--	0	--	0	--	0
	Southbound LTR	230	--	1	--	4	--	5	--	10
11. 4th Street SE & Water Street SE	Eastbound	320								
	Northbound	100	*Not Available		*Not Available		*Not Available		*Not Available	
	Southbound	315	*Not Available		*Not Available		*Not Available		*Not Available	

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

\* HCM methodology does not provide queuing results at all-way stop-controlled intersections

\*\* HCM methodology does not provide 50th percentile queuing results at two-way stop-controlled intersections



Intersection	Approach	Storage Length (ft)	Existing Conditions (2018)		Future Background Conditions (2023)		Total Future Conditions (2023)		Total Future Conditions (2028)	
			AM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour	
			50th	95th	50th	95th	50th	95th	50th	95th
<b>12. Potomac Avenue &amp; South Capitol Street</b>	Eastbound Left	465	42	74	39	75	39	75	39	75
	Eastbound TR	465	10	35	10	37	10	37	11	38
	Westbound Left	815	85	148	84	145	93	158	93	158
	Westbound LT	815	129	#216	127	#206	128	#208	128	#208
	Westbound Right	205	0	0	0	26	0	26	0	28
	Northbound TR	1835	1085	#1473	~1354	#1611	~1439	#1691	~1500	#1748
	Southbound Thru	355	222	m283	230	292	231	292	237	299
	Southbound Right	355	0	m9	0	m9	0	m9	0	m9
<b>13. 2nd Street SE &amp; Tingey Street SE</b>	Westbound Thru	50			--	0	--	0	--	0
	Northbound Left	25	<i>Future Approach</i>		--	0	--	0	--	0
	Northbound Right	25			--	38	--	40	--	44
<b>14. New Jersey Avenue SE &amp; Tingey Street SE</b>	Westbound Left	50			--	34	--	41	--	53
	Westbound Right	50	<i>Future Approach</i>		--	0	--	0	--	0
	Northbound Thru	12.5			--	0	--	0	--	0
	Southbound Thru	37.5			--	1	--	1	--	1

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

\* HCM methodology does not provide queuing results at all-way stop-controlled intersections

\*\* HCM methodology does not provide 50th percentile queuing results at two-way stop-controlled intersections



**Table 10: PM Queueing Results (in Feet)**

Intersection	Approach	Storage Length (ft)	Existing Conditions (2018)		Future Background Conditions (2023)		Total Future Conditions (2023)		Total Future Conditions (2028)	
			PM Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour	
			50th	95th	50th	95th	50th	95th	50th	95th
<b>1. 1st Street SE &amp; M Street SE</b>	Eastbound LTR	340	104	128	123	165	127	171	138	185
	Westbound LTR	380	20	19	17	25	16	35	16	41
	Northbound LTR	660	44	75	41	80	56	97	72	m99
	Southbound LTR	255	51	84	55	90	55	60	57	93
<b>2. M Street SE &amp; New Jersey Avenue SE</b>	Eastbound LTR	380	41	51	50	64	54	67	60	74
	Westbound LTR	115	93	129	113	154	120	163	125	169
	Northbound Left	470	35	71	42	88	42	91	43	93
	Northbound TR	470	65	110	88	153	153	#284	179	#339
	Southbound Left	290	25	58	24	58	25	64	25	67
	Southbound TR	290	42	80	83	148	106	183	107	185
<b>3. M Street SE &amp; 3rd Street SE</b>	Eastbound LTR	485	148	191	168	214	175	228	194	m238
	Westbound LTR	330	71	106	80	98	80	99	71	89
	Southbound Left	285	24	60	24	61	24	63	24	63
<b>4. M Street SE &amp; 4th Street SE</b>	Eastbound TR	330	37	64	36	87	67	120	88	141
	Westbound LT	235	61	82	76	101	81	106	94	121
	Northbound Left	470	36	70	40	83	40	83	40	83
	Northbound Right	140	86	142	145	#273	165	#314	203	#383
	Southbound LTR	285	104	162	116	192	116	192	117	193
<b>5. N Street &amp; South Capitol Street SE</b>	Westbound LT	145	91	141	99	158	94	151	94	158
	Westbound Right	90	46	81	111	174	179	260	229	#368
	Northbound Thru	505	63	73	72	82	74	84	78	86
	Northbound Right	505	67	81	67	84	67	84	69	85
	Southbound Thru	550	308	371	295	392	328	424	361	433
	Southeastbound Right	545	~1352	#1502	~1249	#1500	~1249	#1500	~1269	#1520
	Southeastbound Right 2	545	0	0	0	1	0	1	0	1



Intersection	Approach	Storage Length (ft)	Existing Conditions (2018)		Future Background Conditions (2023)		Total Future Conditions (2023)		Total Future Conditions (2028)	
			PM Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour	
			50th	95th	50th	95th	50th	95th	50th	95th
6. N Street SE & 1st Street SE	Eastbound LTR	345	11	32	18	47	18	48	19	48
	Westbound LTR	435	103	174	136	228	168	277	169	278
	Northbound LTR	225	60	87	84	130	108	165	151	#254
	Southbound LTR	545	63	90	82	114	114	150	137	182
7. N/Tingey Street SE & New Jersey Avenue SE	Eastbound	315								
	Westbound	325	*Not Available		*Not Available		*Not Available		*Not Available	
	Southbound	475								
8. Tingey Street SE & 3rd Street SE	Eastbound	335								
	Westbound	330	*Not Available		*Not Available		*Not Available		*Not Available	
	Northbound	300								
	Southbound	100								
9. Tingey Street SE & 4th Street SE	Eastbound	325								
	Westbound	185	*Not Available		*Not Available		*Not Available		*Not Available	
	Northbound	295								
	Southbound	475								
10. N Place SE & 1st Street SE	Eastbound LTR	50	--	1	--	1	--	1	--	3
	Westbound LTR	510	--	6	--	24	--	37	--	133
	Northbound LTR	210	--	0	--	0	--	0	--	0
	Southbound LTR	230	--	0	--	1	--	2	--	2.1
11. 4th Street SE & Water Street SE	Eastbound	320								
	Northbound	100	*Not Available		*Not Available		*Not Available		*Not Available	
	Southbound	315								

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

\* HCM methodology does not provide queuing results at all-way stop-controlled intersections

\*\* HCM methodology does not provide 50th percentile queuing results at two-way stop-controlled intersections





Intersection	Approach	Storage Length (ft)	Existing Conditions (2018)		Future Background Conditions (2023)		Total Future Conditions (2023)		Total Future Conditions (2028)	
			PM Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour	
			50th	95th	50th	95th	50th	95th	50th	95th
12. Potomac Avenue & South Capitol Street	Eastbound Left	465	35	73	35	73	35	73	35	73
	Eastbound TR	465	~412	#543	~412	#543	~412	#543	~417	#547
	Westbound Left	815	~356	#568	~356	#568	~363	#572	~363	#572
	Westbound LT	815	~350	#560	~350	#560	~358	#570	~358	#570
	Westbound Right	205	0	0	0	54	0	54	0	54
	Northbound TR	1835	324	370	363	412	375	426	404	456
	Southbound Thru	355	~1204	m778	~1244	m836	~1244	m820	~1271	m829
	Southbound Right	355	0	m0	0	m0	0	m0	0	m0
13. 2nd Street SE & Tingey Street SE	Westbound Thru	50			--	0	--	0	--	0
	Northbound Left	25	<i>Future Approach</i>		--	0	--	0	--	0
	Northbound Right	25			--	25	--	29	--	39
14. New Jersey Avenue SE & Tingey Street SE	Westbound Left	50			--	125	--	145	--	28.5
	Westbound Right	50	<i>Future Approach</i>		--	0	--	0	--	0
	Northbound Thru	12.5			--	0	--	0	--	0
	Southbound Thru	37.5			--	3	--	3	--	5.4

~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

\* HCM methodology does not provide queuing results at all-way stop-controlled intersections

\*\* HCM methodology does not provide 50th percentile queuing results at two-way stop-controlled intersections

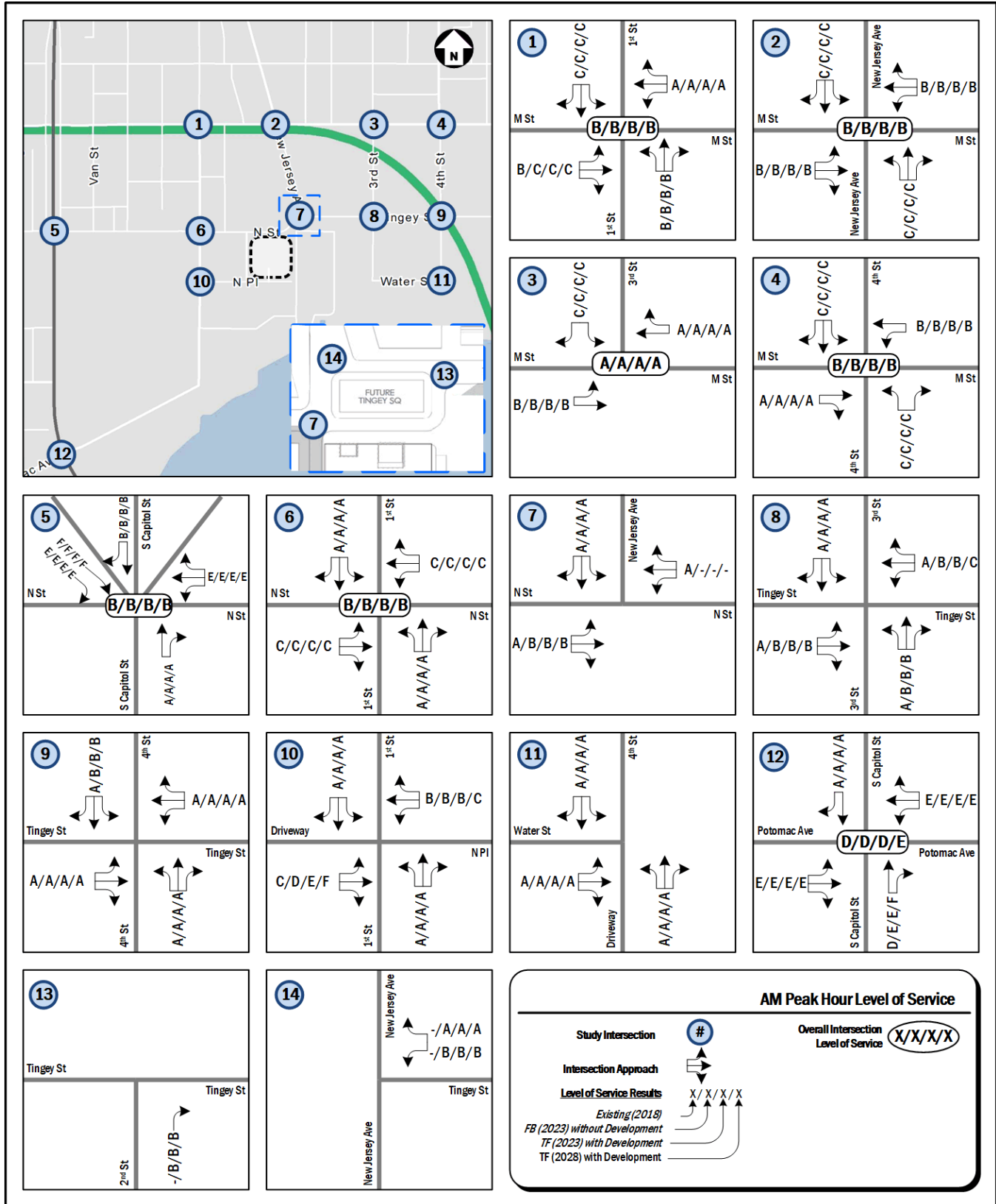


Figure 25: Morning Peak Hour Capacity Analysis Results

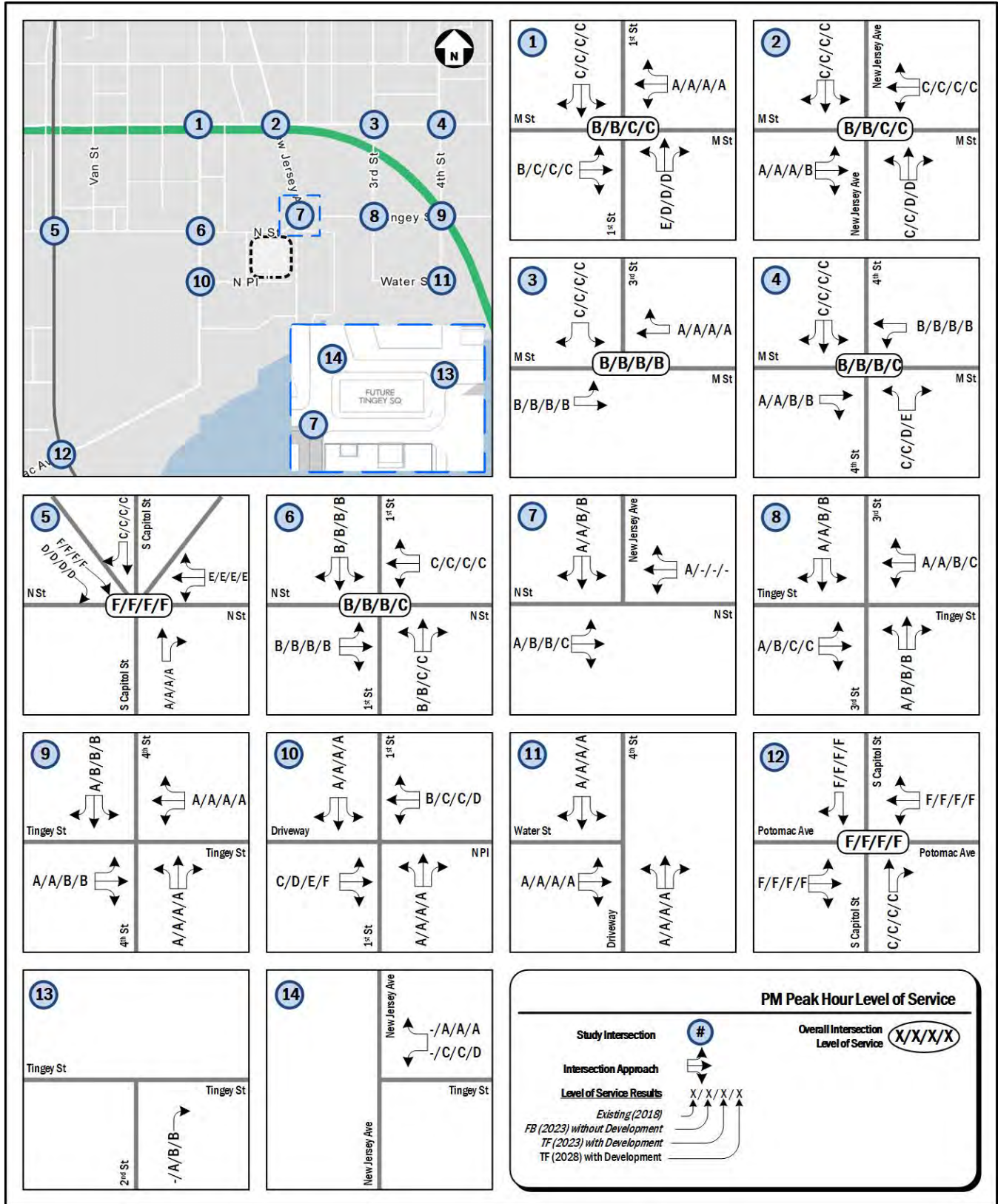


Figure 26: Afternoon Peak Hour Capacity Analysis Results



## 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 project.

This chapter concludes that:

- The project has excellent access to transit;
- The site is surrounded by several Metrobus routes that travel along multiple primary corridors; and
- The site is expected to generate a manageable amount of transit trips, and the existing service is capable of handling these new trips.

### EXISTING TRANSIT SERVICE

The study area is well served by Metrorail, Metrobus, Circulator and several other regional commuter buses. 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 27 identifies the major transit routes, stations, and stops in the study area.

The Navy Yard Metrorail station is located 0.2 miles from the site and is served by the Green line which provides connections to areas in the District and Maryland. The Green Line connects Greenbelt with Branch Avenue while providing access to the District core. Trains run approximately every eight minutes during the morning and afternoon peak hours. They run about every 12 minutes during weekday non-peak hours, every 15 to 20 minutes on weekday evenings after 9:30PM and 12 to 20 minutes on the weekends.

The site is also serviced by Metrobus, Circulator and several other regional commuter buses along multiple primary corridors. These bus lines connect the site to many areas of the District, Maryland and Virginia, including several Metrorail stations. Table 11 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.

An assessment on the existing conditions of the bus stops servicing the site was conducted using criteria that can be found in the Technical Appendix. The assessment included whether the bus stop had a sign, acceptable sidewalk clearance, seating, shelter, and other features.

### 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. 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.

The Anacostia Waterfront was identified as a corridor in need of a Metro Express route by the *Transit Future System Plan* report. The suggested route would connect the Anacostia Waterfront, Barracks Row, H Street NE, NoMa, U Street NW, Adams Morgan, and Woodley Park commercial districts. The plan proposes the route service South Capitol Street and M Street near the project.

Additionally, WMATA and local transportation agencies in the District, Maryland, and Virginia have been reviewing Metrobus lines and system wide facilities for service improvements since 2009. In direct relation to the project, routes 90, 92, V1, and V4 were studied.

WMATA and DDOT published the *Metrobus U Street-Garfield Line Study*, which includes routes 90, 92, and 93, in March 2011. The purpose of this study was to improve issues such as poor customer experience, reliability, travel times, safety, and passenger crowding. In order to find solutions, rider surveys and public meeting were conducted. Many solutions were proposed such as implementing a limited-stop or express bus service, cameras and undercover officers to provide better security, and better supervision to monitor service along the line, maintain headway separation, and ensure that bus operators give their best effort.

WMATA and DDOT published the service recommendations section of the *Metrobus Service Evaluation Study: U-V Lines* in March 2015, which discusses route changes and improvements to Metrobus Routes U2, U4, U5/6, U8 and V7, 8, 9. Issues regarding reliability and crowding were cited as potential areas of concern. In June 2015 changes to the U and V lines were made, which were designed to improve service and better match the travel needs of riders. These changes included the





elimination of routes U2, V7, V8, shortening U8, extending V9, and the establishment of new routes U7, V1, V2, and V4.

In April 2016, WMATA published a final report evaluating the location of a third entrance to the Navy Yard Metrorail Station. The report proposes to locate the third entrance at the southwest corner of the intersection of New Jersey Avenue SE and M Street SE. The Applicant has integrated this potential entrance into its planning for Yards West, which focuses on 1½ Street as a critical spine linking this potential entrance to the riverfront. The proposed entrance would be located on the northern end of the “A2 Parcel”. The approximate location of the third Metrorail entrance is shown on Figure 27.

### SITE-GENERATED TRANSIT IMPACTS

The project is projected to generate 107 transit trips (28 inbound, 79 outbound) during the morning peak hour and 84 transit trips (51 inbound, 33 outbound) during the afternoon peak hour.

US Census data were used to determine the distribution of those taking Metrorail and those taking Metrobus. The site lies in TAZ 20367 but due to the lack of data in that region, TAZ 20372 and TAZ 20364 nearby were used. These TAZs show that approximately 96 percent of residential transit riders use Metrorail and the remainder use Metrobus. That said, approximately 51 people will use Metrorail and 2 will use Metrobus during the morning peak hour; approximately 91 people will use Metrorail and 4 will use Metrobus during the afternoon peak hour.

WMATA studied capacity of Metrorail stations in its *Station Access & Capacity Study (2008)*. 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 a station’s 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, the Navy Yard station can currently accommodate future growth at all access points.

WMATA released its *Navy Yard – Ballpark Station Access Improvements Study* in April 2016, which discusses the analysis of the required station and access facilities for a second East Entrance at the Navy Yard-Ballpark Metrorail station. The

study focused on typical non-game day operations at the study as well as passenger activity at the East Mezzanine and East Entrance. As of 2014, the station had more than 10,000 passenger boardings on an average weekday. Ridership is expected to increase by close to 4,000 average daily passenger boardings by 2025 as the multiple phases of *The Yards* redevelopment and nearby projects are constructed. The study recommends WMATA perform internal station improvements at the East Mezzanine as well as include a new station entrance at the southwestern corner of the M Street SE /New Jersey Avenue SE intersection in its future plans in order to account for the increase of passengers.

WMATA studied capacity along Metrobus routes. DC’s *Transit Future System Plan (2010)* 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 Metrobus routes that travel near the site operate at an acceptable load factor during all periods of the day.

Based on this information and the extensive Metrobus and Metrorail service surrounding the site, project-generated transit trips will not cause detrimental impacts to Metrobus or Metrorail service.



**Table 11: Metrobus Route Information**

Route Number	Route Name		Service Hours	Headway
74	Convention Center-SW Waterfront Line	Weekdays	Northbound: 5:03 am - 11:56 pm Southbound: 5:03 am - 11:56 pm	12 - 25 min
		Weekend	Northbound: 5:04 am - 12:05 am Southbound: 5:04 am - 12:05 am	20 min
90,92	U Street-Garfield Line	Weekdays	24 hours	6 - 30 min
		Weekend	24 hours	13 - 30 min
A9	Martin Luther King Jr Ave Limited Line	Weekdays	6:17 am - 9:18 am & 3:59 pm - 7:18 pm	15 min
P6	Anacostia-Eckington Line	Weekdays	Northbound: 4:40 am - 2:58 am Southbound: 4:22 am - 3:25 am	10 - 30 min
		Weekend	Northbound: 4:30 am - 2:30 am Southbound: 4:20 am - 3:02 am	10 - 30 min
V1	Benning Heights-M Street Line	Weekdays	Westbound: 5:33 am - 9:23 am Eastbound: 3:11 am - 7:12 am	22 min
V4	Capitol Heights-Minnesota Avenue Line	Weekdays	Westbound: 4:43 am - 2:22 am Eastbound: 4:50 am - 2:25 am	15 - 30 min
		Saturday	Westbound: 4:58 am - 2:12 am Eastbound: 5:03 am - 2:20 am	30 - 40 min
		Sunday	Westbound: 4:58 am - 1:02 am Eastbound: 5:05 am - 1:08 am	30 - 40 min
Circulator	Eastern Market-L'Enfant Plaza	Weekdays	6:00 am - 9:00 pm	10 min
		Weekends	7:00 am - 9:00 pm	10 min
Circulator	Congress Heights-Union Station	Weekdays	6:00 am - 9:00 pm	10 min
		Weekends	7:00 am - 9:00 pm	10 min
315	Columbia and Silver Spring to Washington DC MTA Line	Weekdays	Northbound: 2:40 am – 6:10 pm Eastbound: 6:12 am- 9:36 am	20 – 30 min
PRTC D-300	Dale City- Washington Navy Yard Omni-Ride Line	Weekdays	Eastbound: 4:38 am- 8:28 am Westbound: 12:13 pm- 9:03 pm	16-102 min
LCT	Loudon County Transit	Weekdays	Eastbound: 5:20 am -9:35 am Westbound: 12:45 pm- 7:39 pm	1-38 min

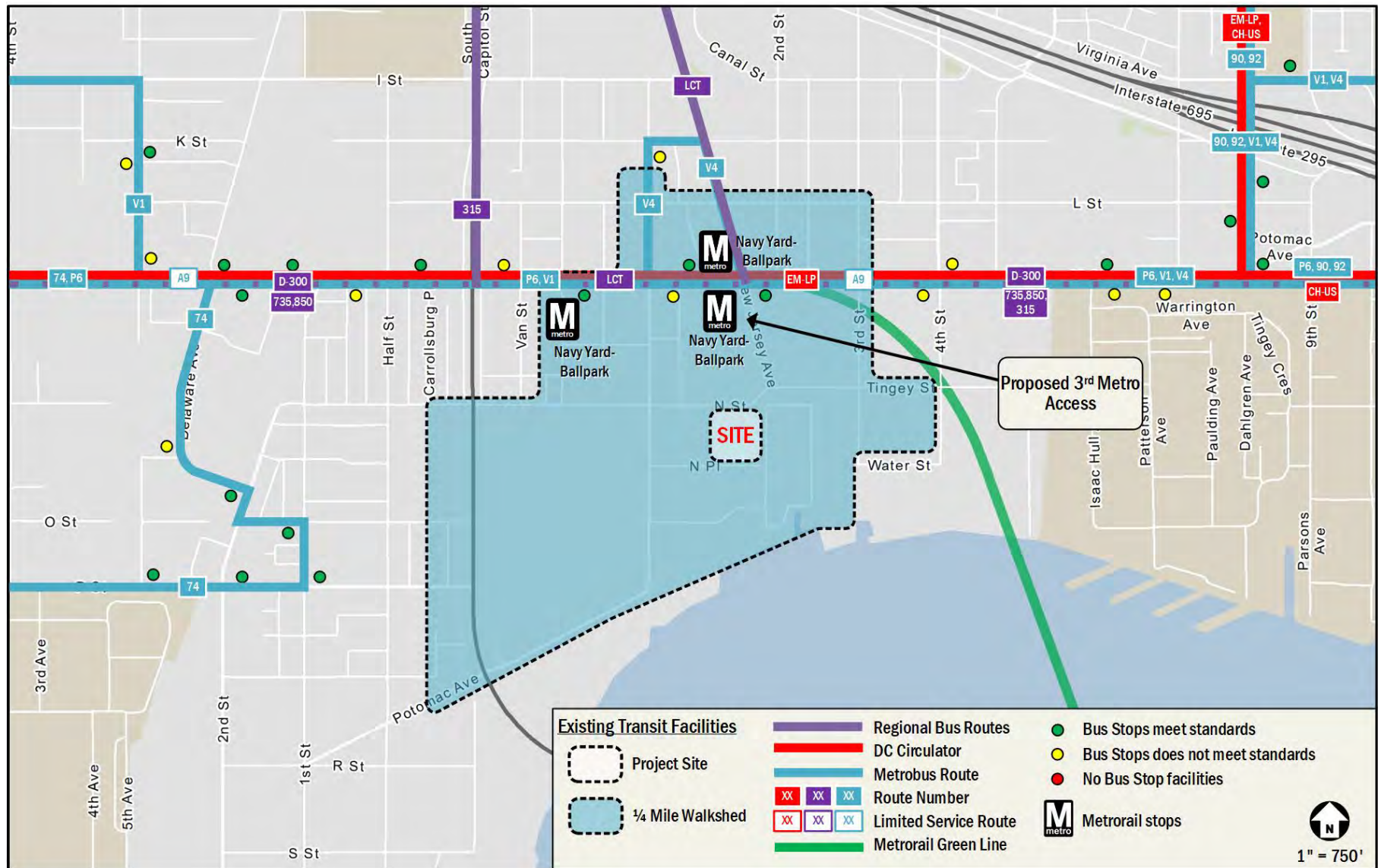


Figure 27: Existing Transit Service



## PEDESTRIAN FACILITIES

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

This chapter concludes that:

- The existing pedestrian infrastructure surrounding the site provides a good walking environment. There are some gaps in the system, but there are sidewalks along all primary routes to pedestrian destinations.
- The site is not expected to generate a significant number of pedestrian trips; however, the pedestrian trips generated by walking to and from transit will be more substantial, particularly along M Street.

### PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the site were evaluated as well as routes to nearby transit facilities and prominent retail and neighborhood destinations. The site is easily accessible to transit options such as bus stops along M Street and the Navy Yard Metro Station. There are some existing barriers and areas of concern within the study area that negatively impact the quality of and attractiveness of the walking environment. Areas of concern include roadway conditions that reduce the quality of walking conditions, narrow or nonexistent sidewalks, incomplete or insufficient crossings at busy intersections, and Interstate 695 that limits connectivity to the north. Figure 28 shows suggested pedestrian pathways, walking time and distances, and barriers and areas of concern.

### PEDESTRIAN INFRASTRUCTURE

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

#### Existing Conditions

A review of pedestrian facilities surrounding the project shows that most facilities meet DDOT standards and provide a quality

walking environment. Figure 29 shows a detailed inventory of the existing pedestrian infrastructure surrounding the site. 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 12.

Within the area shown, most roadways are considered non-downtown retail and commercial which require wider sidewalks while some areas north of M Street SE are considered residential with low to moderate density. Most of the sidewalks surrounding the site comply with DDOT standards; however, there are some existing areas which have inadequate sidewalks or no sidewalks at all that are located directly north, west, and east of the site. Most non-existent sidewalks are due to current construction of new developments. All primary pedestrian destinations are accessible via routes with sidewalks, most of which met DDOT standards.

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 most with crosswalks and curb ramps are present near the site.

#### Pedestrian Infrastructure Improvements

Pedestrian facilities along the perimeter of the site will be improved. The project will improve sidewalks adjacent to the site such that they meet or exceed DDOT requirements and provide an improved pedestrian environment.

### SITE IMPACTS

This section summarizes the impacts of the project on the overall pedestrian operations in the vicinity of the site.

#### Pedestrian Trip Generation

The project is expected to generate 159 walking trips (41 inbound, 118 outbound) during the morning peak hour and 269

**Table 12: 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





walking trips (164 inbound, 105 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 outside of the site; and
- Neighborhood destinations such as schools, libraries, and parks in the vicinity of the site.

In addition to these trips, the transit trips generated by the project will also generate pedestrian demand between the site and nearby transit stops.

Currently the existing pedestrian network has the capacity to absorb the newly generated trips from the site. The project will incorporate a new sidewalk along the proposed 1½ Street SE on the west frontage of the project. The planned sidewalk and pedestrian landscape improvements on Tingey Street SE and New Jersey Avenue SE as well as future sidewalks complying with DDOT standards will further improve and expand the pedestrian network in the vicinity of the site.

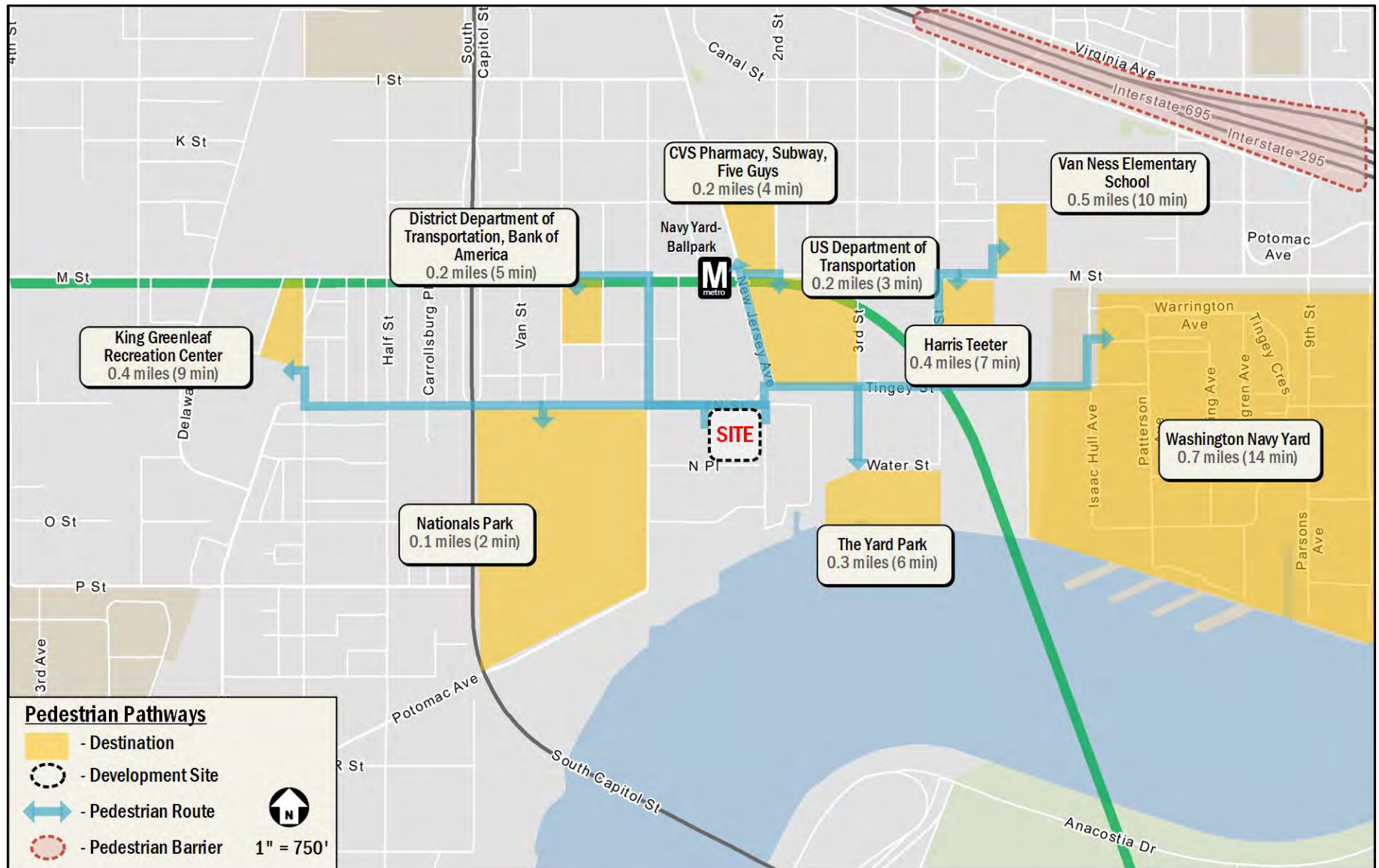


Figure 28: Pedestrian Pathways

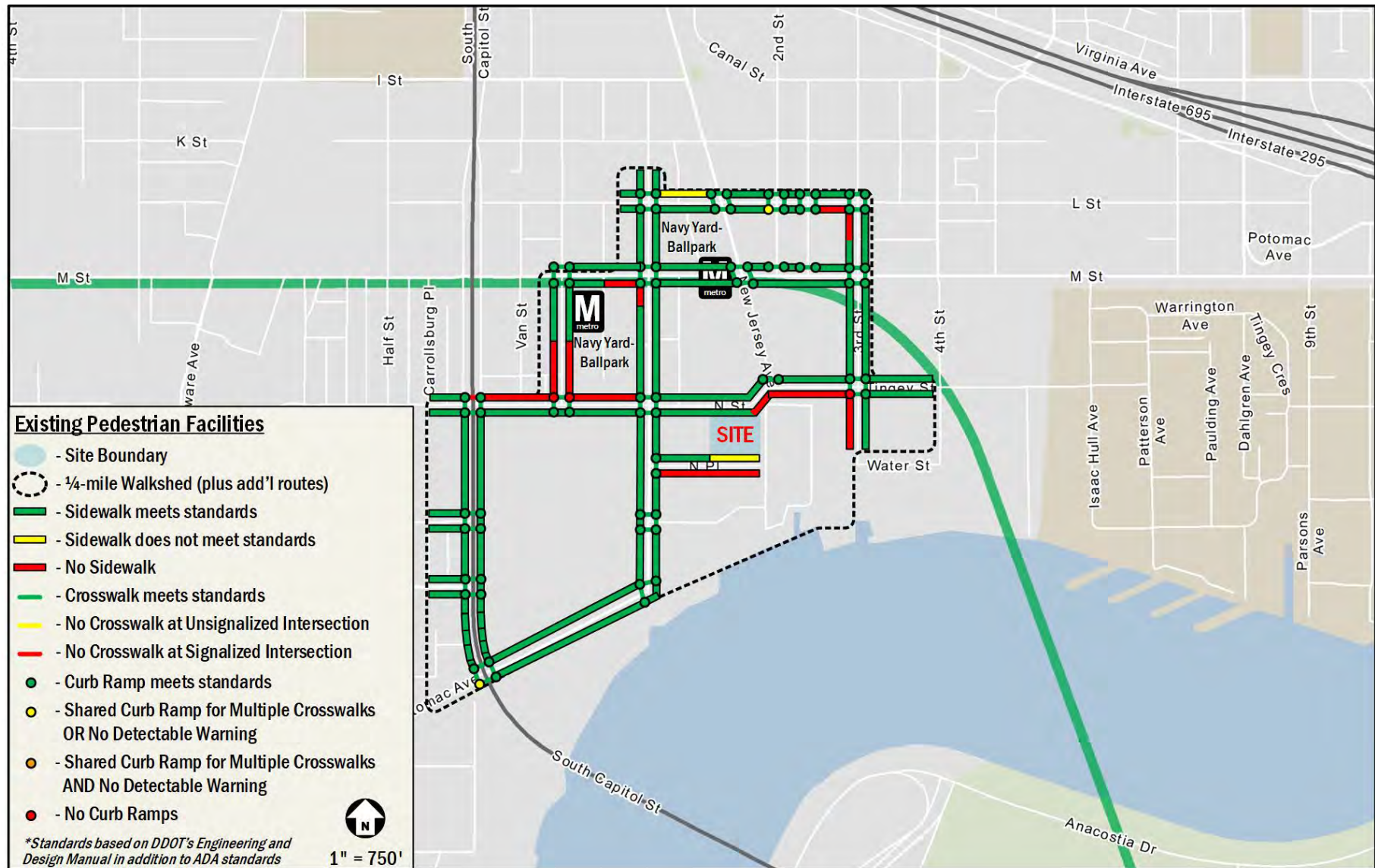


Figure 29: Existing Pedestrian Infrastructure





## BICYCLE FACILITIES

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

This chapter concludes that:

- The site has access to one bike trail located to the south of the site, as well as bike lanes to the east and west.
- The site is not expected to generate a significant amount of bicycle trips; therefore, all site-generated bike trips can be accommodated on existing infrastructure.
- The project will include secure bicycle parking on site, and short-term bicycle racks along the perimeter of the site.

### EXISTING BICYCLE FACILITIES

The site is adequately connected to existing on- and off-street bicycle facilities. Connectivity to the south is provided along the Anacostia River Trail. There are bicycle lanes located to the east of the site along 4<sup>th</sup> Street SE and to the west of the site along 1<sup>st</sup> Street SE that provide connectivity to the north. Figure 30 illustrates the existing bicycle facilities in the area.

In addition to personal bicycles, the Capital Bikeshare program provides additional cycling options for residents, employees, and patrons of the project. The Bikeshare program has placed over 350 Bikeshare stations across Washington DC, Arlington, and Alexandria, VA, and most recently Montgomery County, MD, with over 3,000 bicycles provided. Within a quarter-mile of the site, there are three Bikeshare stations that house a total of 72 bikes. An additional Bikeshare station is proposed to be installed on the northwest corner of M Street SE and 1<sup>st</sup> Street SE. Figure 30 illustrates the existing Capital Bikeshare facilities in the area as well as the proposed Capital Bikeshare facility.

### PROPOSED BICYCLE FACILITIES

The MoveDC plan outlines several 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.

The Capitol South Trail is a bicycle trail planned from Southwest Drive SE to M Street SE. This will greatly improve the bicycle connectivity near the site.

- 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.

There are no tier 2 improvements planned in the vicinity of the site.

- 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.

The Anacostia Riverwalk at Buzzard Point is planned from D Street SW to Potomac Avenue SE. This will provide additional bicycle connectivity near the site.

- 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.

There are no tier 4 improvements planned in the vicinity of the site.

Although these projects are discussed in the MoveDC plan, they are not currently funded or included in DDOT’s Transportation Implementation Plan thus they will not be assumed as complete for this analysis.

### SITE IMPACTS

This section summarizes the impacts of the project on the overall bicycle operations surrounding the site and develops recommendations for connectivity improvements.





### **Bicycle Trip Generation**

The project is expected to generate 17 bicycle trips (4 inbound, 13 outbound) during the morning peak hour and 26 bicycle trips (16 inbound, 10 outbound) during the afternoon peak hour. Bicycling is an important mode for getting to and from the site, with significant facilities located on site, and existing and planned routes to and from the site, so the project is well positioned to take full advantage of the future expansion of bicycle infrastructure in the area. In the meantime, the surrounding low volume neighborhood streets provide suitable interim connectivity for bicycles.

### **On-Site Bicycle Elements**

The project will provide amenities that cater to cyclists including short-term bicycle racks around the perimeter of the site as well as on-site secure long-term bicycle parking, which will increase the attractiveness of cycling to the site.

The project will provide 118 secure bicycle parking spaces within its parking garage. In addition, 22 exterior bicycle parking spaces will be provided by the applicant in the public space. Each inverted “U” shaped bicycle rack will comply with DDOT’s *Bicycle Rack Design and Placement Guidelines*. The Applicant is working in conjunction with DDOT to determine the exact locations of bicycle racks within public space.

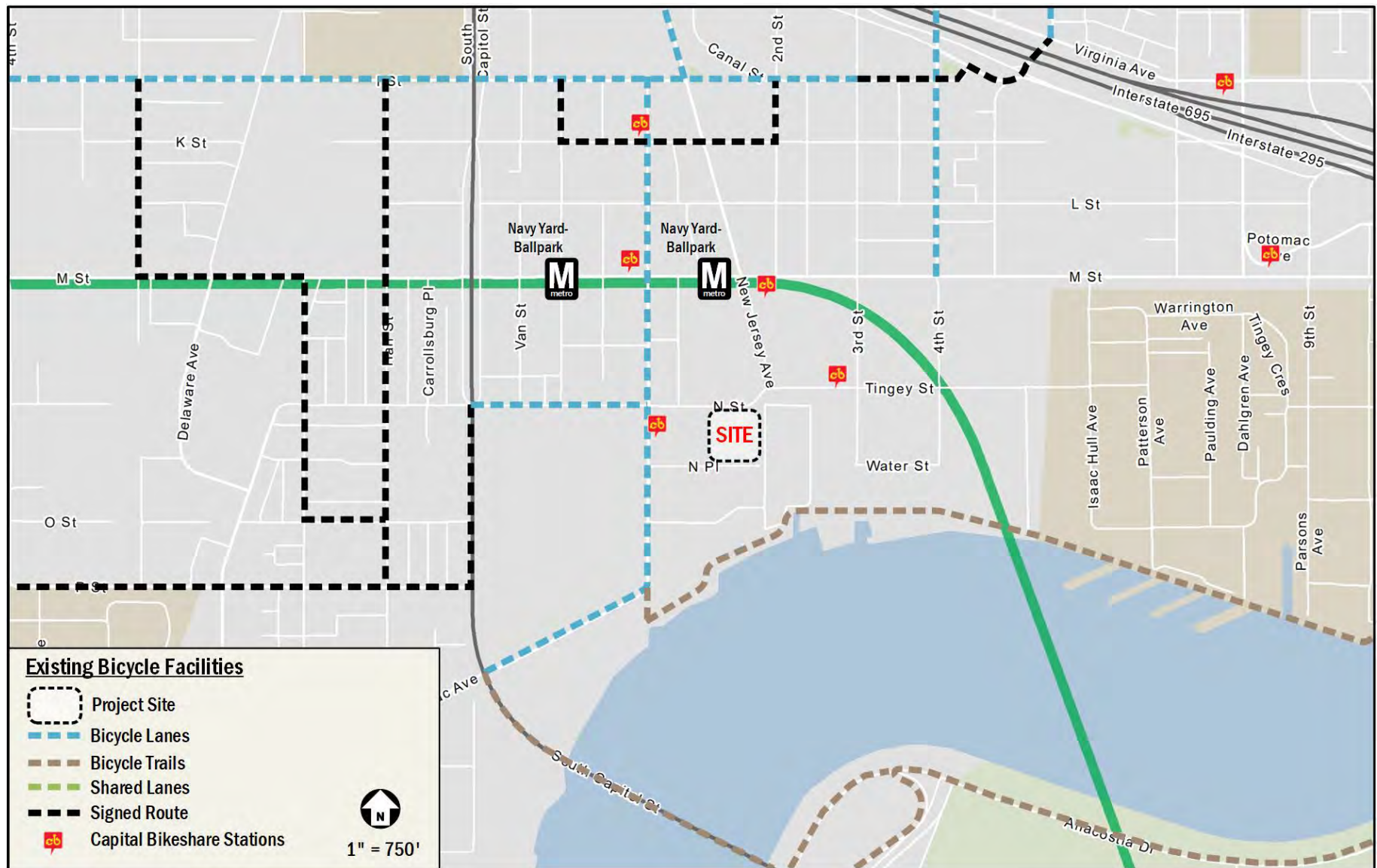


Figure 30: Existing Bicycle Facilities



## CRASH DATA ANALYSIS

This section of the report reviews available crash data within the study area and reviews potential impacts of the project on crash rates. Mitigation measures are not needed.

### SUMMARY OF AVAILABLE CRASH DATA

A crash analysis was performed to determine if there was an abnormally high crash rate at any study area intersection. DDOT provided the last three years of intersection crash data, from 2015 through 2017 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 13.

According to the *ITE Transportation Impact Analysis for Site Development*, a crash rate of 1.0 or higher is an indication that further study is required. Three (3) intersections in this study area meet this criterion (as shown in detail in Table 13 and in red in Table 14).

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 do not provide detailed location information. In some cases, the crashes were located near the intersections and not necessarily within the intersection.

For these two 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 14 contains a breakdown of crash types reported for the two intersections with a crash rate over 1.0 per MEV.

### POTENTIAL IMPACTS

This section reviews the three (3) locations with existing crash rates over 1.0 MEV and reviews potential impacts of the project.

- 1<sup>st</sup> Street SE & M Street SE

This intersection exceeds the threshold of 1.0 crashes per MEV, with a rate of approximately 1.37 crashes per MEV over the course of the 3-year study period. A majority of the crashes at this intersection were side swiped and unspecified. Side swiped instances usually occur on streets with parking with high traffic volumes, as is the case for M Street SE and 1<sup>st</sup> Street SE.

This report does not recommend mitigation measures at this intersection as the project is not projected to make changes to the commuting patterns, operations, or geometry of this intersection that could negatively influence safety.

- N Street SE & Tingey Street SE & New Jersey Avenue SE

This intersection also exceeds the threshold of 1.0 crashes per MEV, with a rate of approximately 1.35 crashes per MEV. The majority of crashes at this intersection were side swiped vehicles. Side swiped instances usually occur on streets with parking with high traffic volumes, as is the case for N Street SE and Tingey Street SE.

As previously described, the planned improvements to this intersection involve creating a square with two additional intersections. As part of the planned Tingey Square, on street parking will be eliminated providing for the potential to limit the presence of side swiped crashes at this intersection. This report does not recommend additional mitigation measures at this intersection as the project is not projected to make changes to the commuting patterns, operations, or geometry of this intersection that could negatively influence safety.

- 3<sup>rd</sup> Street SE & Tingey Street SE

This intersection also exceeds the threshold of 1.0 crashes per MEV, with a rate of approximately 1.80 crashes per MEV. The majority of crashes at this intersection were side swiped and parked vehicles. Side swiped and parked instances usually occur on streets with parking with high traffic volumes, as is the case for 3<sup>rd</sup> Street SE and Tingey Street SE.

This report does not recommend mitigation measures at this intersection as the project is not projected to make changes to the commuting patterns, operations, or geometry of this intersection that could negatively influence safety.



**Table 13: Intersection Crash Rates**

Intersection	Total Crashes	Ped Crashes	Bike Crashes	Rate per MEV*
1. 1st Street SE & M Street SE	33	3	0	<b>1.37</b>
2. M Street SE & New Jersey Avenue SE	7	1	2	0.34
3. M Street SE & 3rd Street SE	10	0	1	0.50
4. M Street SE & 4th Street SE	21	2	1	0.83
5. N Street & South Capitol Street SE	12	0	0	0.29
6. N Street SE & 1st Street SE	7	0	0	0.58
7. N Street SE & Tingey Street SE & New Jersey Avenue SE	7	0	0	<b>1.35</b>
8. Tingey Street SE & 3rd Street SE	12	0	0	<b>1.80</b>
9. Potomac Avenue & South Capitol Street SE	36	0	0	0.71

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

**Table 14: Crash Type Breakdown**

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
1. 1st Street SE & M Street SE	<b>1.37</b>	2	0	0	1	13	0	1	0	0	0	0	0	0	16
		6%	0%	0%	3%	39%	0%	3%	0%	0%	0%	0%	0%	0%	48%
7. N Street SE & Tingey Street SE & New Jersey Avenue SE	<b>1.35</b>	0	0	0	0	3	0	2	0	0	0	0	0	0	2
		0%	0%	0%	0%	43%	0%	29%	0%	0%	0%	0%	0%	0%	29%
8. Tingey Street SE & 3rd Street SE	<b>1.80</b>	0	0	0	0	3	0	3	0	0	0	1	0	0	5
		0%	0%	0%	0%	25%	0%	25%	0%	0%	0%	8%	0%	0%	42%





## SUMMARY AND CONCLUSIONS

This report presents the findings of a Comprehensive Transportation Review for the project. The purpose of this study is to evaluate whether the project will generate a detrimental impact to the surrounding transportation network. This evaluation is based on a technical comparison of the existing conditions, background conditions, and future conditions. This report concludes that **the project will not have a detrimental impact** to the surrounding transportation network assuming that all planned site design elements are implemented.

### Proposed Project

The Yards Parcel I site currently serves as a surface parking lot with 217 spaces. The site is generally bound by N Street SE to the north, Canal Street SE right-of-way to the east, N Place SE to the south, and an existing surface parking lot (Yards Parcel H) to the west.

The application proposes to develop the site into a mixed-use development including residential and retail uses. The project will include one structure containing approximately 348 dwelling units, up to 18,000 square feet of ground-floor retail, and approximately 243 below-grade parking spaces.

Parking and loading will be accessed through two curb cuts on N Place SE on the southern frontage of the site.

Pedestrian facilities along the perimeter of the site will be improved to include sidewalk and buffer widths that meet or exceed DDOT requirements. The mixed-use parking garage will supply 118 secure bicycle parking spaces which meets the current zoning requirements. Furthermore, 22 short-term bicycle parking spaces will be provided around the perimeter of the site.

The parking and loading provided by the project will adequately serve the demands set forth by the project program.

### Multi-Modal Impacts and Recommendations

#### *Transit*

The site is served by regional and local transit services such as Metrorail, Circulator, and Metrobus. The site is 0.2 miles from the Navy Yard Metrorail Station portal at New Jersey Avenue SE and M Street SE, and many Metrobus stops are located within a block of the site along M Street SE. Although the project will

generate new transit trips, existing facilities have enough capacity to handle the new trips.

#### *Pedestrian*

The site is surrounded by a well-connected pedestrian network. Most roadways within a quarter-mile radius provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes. There are some pedestrian barriers surrounding the site such as limited connectivity due to the Interstate to the north.

Pedestrian facilities along the perimeter of the site will be improved, including those along the future Tingey Square to the north, along the future Canal Street SE east of the site. The project will further improve sidewalks adjacent to the site such that they meet or exceed DDOT requirements and provide an improved pedestrian environment.

#### *Bicycle*

Capital Bikeshare stations can be found within a block of the site. The nearest station is located near the intersection of N Street SE and 1<sup>st</sup> Street SE. The site is also just blocks away from trails and bike lanes, such as the Anacostia River Trail to the south and bike lanes along 1<sup>st</sup> Street SE and 4<sup>th</sup> Street SE to the west and east of the site respectively. On site, the project will provide short-term bicycle parking along the perimeter of the site and on-site secure long-term bicycle parking for residents and employees.

#### *Vehicular*

The site is well-connected to regional roadways such as I-295 and I-695, primary and minor arterials such as New Jersey Avenue SE and 4<sup>th</sup> Street SE, and an existing network of collector and local roadways.

In order to determine whether the project will have a negative impact on this transportation network, this report projects future conditions with and without the development of the site and performs analyses of intersection delays and queues. These delays are compared to the acceptable levels of delay set by DDOT standards to determine whether the project will negatively impact the study area. Delays were found at a few intersections under all study scenarios; however, these impacts were not a result of the project and can be found under the existing and background conditions. Thus, no additional mitigation measures are recommended. The analyses concluded that the project will not have adverse impacts on the surrounding transportation network.



### *Summary and Recommendations*

This report concludes that the project will not have a detrimental impact to the surrounding transportation network assuming that all planned site design elements (including the loading, parking, and TDM plans set forth herein) are implemented.

The project has several positive elements that minimize potential transportation impacts, including:

- The site's close proximity to Metrorail.
- The inclusion of secure long-term bicycle parking spaces and on-street, short-term bicycle spaces.
- The pedestrian facilities adjacent and surrounding the site that will be greatly improved. This includes creating a new sidewalk along the proposed 1½ Street SE, creating a new sidewalk along the proposed Canal Street SE, and enhancing the sidewalks along N Street SE adjacent to the project.
- A comprehensive TDM plan aimed at reducing overall trips to the site.
- A curbside management plan providing pick-up/drop-off areas to reduce the required number of parking on site.

A loading management plan ensuring all deliveries are made during off-peak hours and ensuring no deliveries are made curbside.