

**COMPREHENSIVE TRANSPORTATION REVIEW**

# **ECKINGTON PARK PUD**

**WASHINGTON, DC**

**October 19, 2017**



**ZONING COMMISSION**  
District of Columbia  
CASE NO.17-09  
EXHIBIT NO.26A

Prepared by:



1140 Connecticut Avenue NW  
Suite 600  
Washington, DC 20036  
Tel: 202.296.8625  
Fax: 202.785.1276

3914 Centreville Road  
Suite 330  
Chantilly, VA 20151  
Tel: 703.787.9595  
Fax: 703.787.9905

15125 Washington Street  
Suite 136  
Haymarket, VA 20169  
Tel: 703.787.9595  
Fax: 703.787.9905

[www.goroveslade.com](http://www.goroveslade.com)

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## EXECUTIVE SUMMARY

The following report is a Comprehensive Transportation Review (CTR) for the Eckington Park project. This report reviews the transportation aspects of the project's Consolidated Planned Unit Development (PUD) application. The Zoning Commission Case Number is 17-09.

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 and mitigations are implemented.

### Proposed Project

The project will redevelop the existing vacant lot into a residentially-focused mixed-use development with a thriving, pedestrian-friendly environment surrounded by parks. The development will be comprised of a mixed-use building with 328 residential units and up to 8,400 square feet of ground-floor retail space. The project includes the creation of an approximately 20,500 square foot park on the eastern portion of the site that will be deeded to the NoMa Parks Foundation (NPF) for ownership and maintenance. The East Park will include a realignment of the metropolitan branch trail, a neighborhood dog park, and open space. The Applicant will fund up to \$165,000 for costs and expenses of the East Park in addition to \$80,000 towards the realignment of the Metropolitan Branch Trail.

The building will be served by a below-grade parking garage accessible from R Street containing 124 spaces, with 110 devoted to residential uses and 14 to retail uses, accommodating the anticipated parking demand generated by the project.

Shared loading operations comprised of two (2) 30' loading berths and two (2) 100 square foot loading platforms will take place on the ground floor, with the entrance adjacent to the garage ramp on R Street. The proposed loading berths will supply the appropriate facilities to accommodate the practical needs of the site.

The development will meet or exceed the minimum amount of bicycle facilities required. The development will also include improvements to the pedestrian facilities adjacent to the site, including seamless connections to the future NoMa Green park located immediately east and south, and the Metropolitan Branch Trail located immediately east. These improvements will include sidewalk and landscape improvements to integrate the site with the future parkland.

In addition to funds allocated for the East Park, the Applicant has pledged up to \$350,000 to benefit the southern portion of NoMa Green (the South Park). This funding will be allocated to programming improvements such as food service kiosks, public art, and/or a performance amphitheater.

### Multi-Modal Impacts and Recommendations

#### *Transit*

The site is well-served by regional and local transit services such as Metrorail and Metrobus. Although the development will be generating new transit trips on the network, the existing facilities have enough capacity to handle the new trips.

#### *Pedestrian*

The site is surrounded by a well-connected pedestrian network. The existing pedestrian infrastructure surrounding the site provides an excellent walking environment. There are some barriers east of the site due to the WMATA/Amtrak rail tracks and railyard, but overall there is a well-connected pedestrian network.

The site will improve the overall pedestrian environment by providing new sidewalks along the interior and perimeter of the site, most notably by integrating with the future NoMa Green park to the south and east and the realigned Metropolitan Branch Trail that will run on the eastern perimeter.

#### *Bicycle*

The site has access to several on- and off-street bicycle facilities including the Metropolitan Branch Trail and bike lanes on Eckington Place and Harry Thomas Way. The site is exceptionally well-placed to take advantage of key bike infrastructure, particularly in conjunction with the realignment of the Metropolitan Branch Trail. Although bicycling will be an important mode for getting to and from the site, with facilities located on site and routes to and from the site, the impacts



from bicycling will be relatively less than impacts to other modes.

The development site will exceed zoning requirements by including approximately 174 long-term bicycle parking spaces within the parking garage and 30 short-term bicycle parking spaces in the form of 15 U-racks along the public space adjacent to the site. Additionally, the Applicant is proposing to locate a bicycle repair station within the long-term bicycle parking room.

#### *Vehicular*

The site is accessible from several principal arterials such as North Capitol Street, New York Avenue, Florida Avenue, and Rhode Island Avenue. The arterials create connections to I-395, I-695, I-295, and ultimately the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs as well as regional access to I-95. All of these roadways bring vehicular traffic within a half-mile of the site, at which point minor arterials, collectors, and local roads can be used to access the site directly.

In order to determine if the proposed development 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.

The analysis concluded that two intersections triggered further review for mitigations:

- 3<sup>rd</sup> Street & Rhode Island Avenue, NE  
Under existing conditions, delay along the northbound and southbound approaches of 3<sup>rd</sup> Street at Rhode Island Avenue operate under unacceptable conditions during the morning and afternoon peak hours. These conditions are likely due to the two-way unsignalized nature of the intersection and the high volumes along Rhode Island Avenue that result in minimal crossing gaps. These conditions are worsened by the inclusion of background and site-generated volumes such that delay along the southbound approach increases by more than 5 seconds over the background conditions during the morning and afternoon peak hours.

This same conclusion was reached as part of the Eckington Yards PUD and the 680 Rhode Island Avenue PUD. It was determined in the CTRs prepared for these developments that a signal is warranted at this location. Conditions of

approval for both of these projects included monetary contributions to a signal at this location.

Specifically, Zoning Commission Order No. 15-15 for the Eckington Yards development required that the Applicant fund \$115,000 toward the signal, and Zoning Commission Order No. 15-16 for the 680 Rhode Island Avenue development required that the Applicant fund \$60,000 toward the signal. For ZC Case No. 15-16, DDOT indicated that if the remaining cost of the signal exceeds \$60,000, the Applicant shall work with DDOT to reallocated funds otherwise dedicated to TDM measures.

As such, this signal is expected to be fully funded; however, the exact timing of installation is not known. For this reason, the signal was not included as a background improvement, but is analyzed in the mitigations scenario to show that no additional mitigation measures are necessary as a result of the Eckington Park development.

As shown in Table 8 and Table 9, the signal results in acceptable levels of service along all approaches, consistent with results of the Eckington Yards and 680 Rhode Island Avenue CTRs.

- Eckington Place & Harry Thomas Way, NE  
According to the capacity analysis results, this intersection requires mitigation under the 2019 Future Conditions, due to the increase in traffic along Harry Thomas Way as a result of the development. The westbound approach (exhibiting an LOS of F in background conditions) exhibits an increase in delay by 116 and 43 seconds in the morning and afternoon peak hour, respectively.

Two potential mitigations were studied at this intersection: (1) separating the left and right turn lanes along the westbound approach of Harry Thomas Way, and (2) converting the intersection to an all-way stop controlled intersection. It was found that the all-way stop control condition greatly improves LOS and delay at the intersection whereas the separate left and right-turn lanes only minimally improve delay. Based on methodology outlined in the Manual on Uniform Traffic Control Devices (MUTCD), an all-way stop is warranted at this location. The warrant analysis is included in the Technical Attachments. The mitigated all-way stop results are shown in Table 8 and Table 9.



This same conclusion was reached as part of the Eckington Yards PUD. The CTR prepared for the Eckington Yards development proposed that the Applicant install the appropriate signage and striping associated with converting the intersection to an all-way stop; however, this mitigation was not ultimately included as a condition of approval.

Thus, this report proposes that the Applicant fund the conversion of Eckington Place and Harry Thomas Way to an all-way stop controlled intersection. This report recommends that this mitigation be explored with DDOT, and coordinated with the recommendations from the Livability project.

#### *Summary and Recommendations*

This report analyzed the potential impacts of the PUD, and concluded that the PUD will not have a detrimental impact to the surrounding transportation network, assuming all planned site design elements and mitigations are implemented including the following:

- Implementation of the TDM plan detailed in the body of the report, which includes establishing TDM leaders, providing transit information and an electronic message screen in each residential lobby, unbundling the parking from leasing costs, car-sharing parking spaces, long- and short-term bicycle parking, and a bicycle repair station.
- The Applicant agrees to fund the conversion of Eckington Place and Harry Thomas Way to an all-way stop-controlled intersection. Given the amount of development and District initiatives surrounding the Eckington Park site, other areas of concern are being addressed as part of other projects.
- Focus on the development of a multi-modal project that caters to non-vehicular users through the inclusion of bicycle parking, high-quality pedestrian accommodations, and the realignment of the Metropolitan Branch Trail.





## INTRODUCTION

This report reviews the transportation elements of the Eckington Park PUD, Zoning Case number 17-09. The site, shown in Figure 1, is located in the Eckington neighborhood of Northeast DC.

The purpose of this report is to:

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

### Proposed Project

The site, which is currently a vacant grassy lot, is located in the Eckington neighborhood, in the Northeast quadrant of Washington, DC. The site is generally bounded by Harry Thomas Way to the west, the existing Metropolitan Branch Trail (MBT) and WMATA tracks to the east, R Street to the north, and a vacant lot to the south which will become the future NoMa Green Park. The eastern portion of the site will be transferred to the NoMa Parks Foundation for use as a neighborhood dog park, open space and the realignment of the MBT.

The building will consist of 328 residential units and up to 8,400 square feet of ground-floor retail space. The building will be served by a below-grade parking garage accessible from R Street. This driveway will be situated to allow traffic in and out

of the development while maintaining separation between pedestrians and bicyclists using the MBT. The garage will supply 124 parking spaces: 14 of which will be allocated to the retail component and 110 to the residential component. Residential and retail loading facilities will be shared and accessed off of R Street, adjacent to the garage entrance.

Pedestrian facilities along the perimeter of the site will be improved to include sidewalk and buffer widths that meet or exceed DDOT requirements. Notably the development proposes streetscape integration with the future NoMa Green Park immediately south of the site to create a safe and inviting pedestrian environment. The final design of these features will be coordinated with DDOT's Livability project and within the public space approval process.

There are many existing bicycle facilities surrounding the site with a direct connection to the Metropolitan Branch Trail, thus the site will include ample long-term bicycle parking spaces within the garage and short-term bicycle parking spaces along the perimeter of the site.



## CONTENTS OF STUDY

This report contains nine sections as follows:

- *Study Area Overview*  
This section reviews transportation-related elements of the area near and adjacent to the proposed project and includes an overview of the site location.
- *Project Design*  
This section reviews the transportation components of the 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 proposed project. It summarizes the proposed trip generation of the project.
- *Traffic Operations*  
This section provides a summary of the existing roadway facilities and an analysis of the existing and future roadway capacity in the study area. This section highlights the vehicular impacts of the project, including presenting proposed mitigation measures.
- *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 development will influence safety.
- *Summary and Conclusions*  
This section presents a summary of the recommended mitigation measures by mode and presents overall report findings and conclusions.

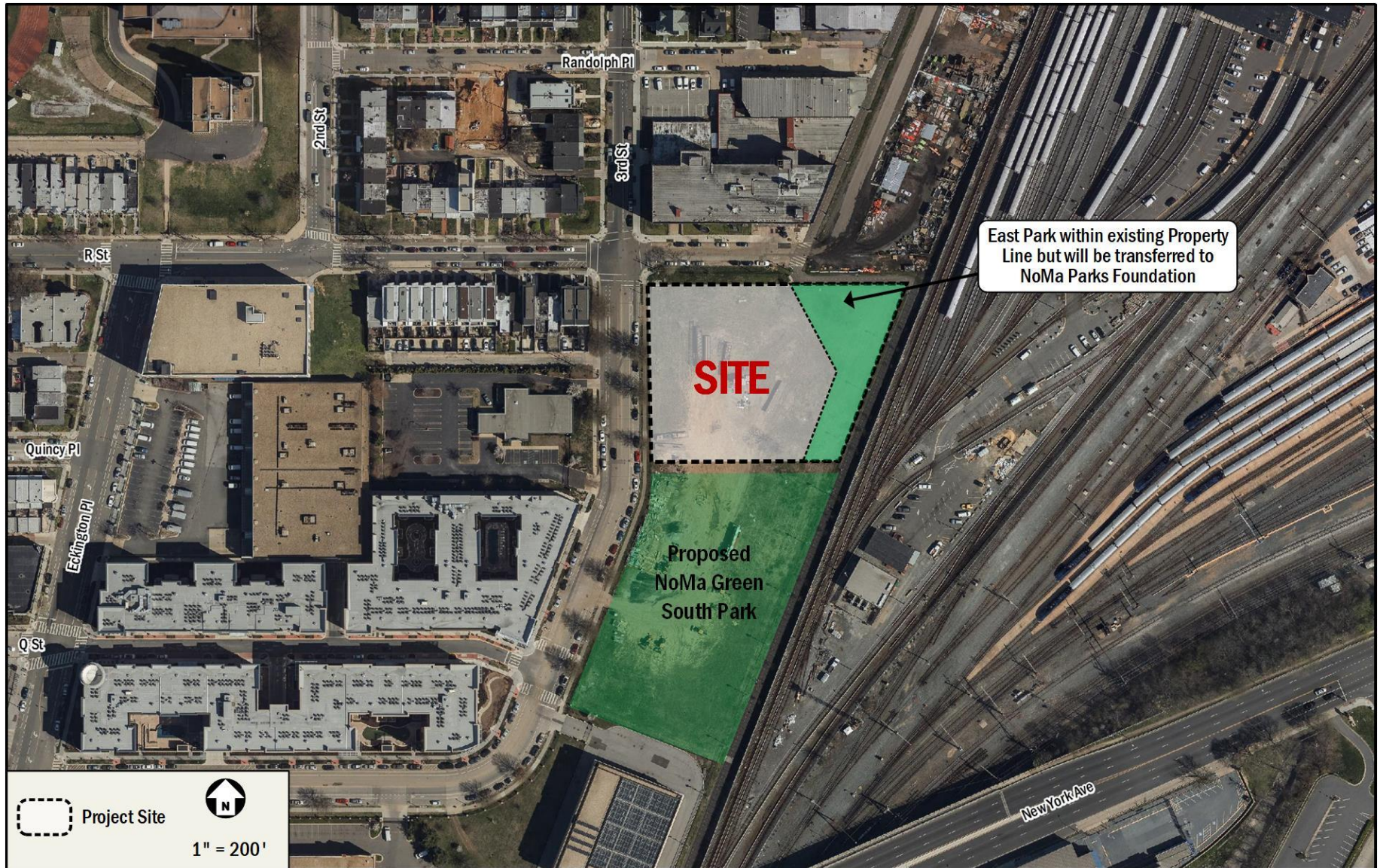


Figure 1: Site Location



## STUDY AREA OVERVIEW

This section reviews the existing conditions of the surrounding transportation network and includes an overview of the site location, including a summary of the major transportation characteristics of the area and of future regional projects. More specific characteristics of each mode and their subsequent study areas will be defined in later sections of this report.

The following conclusions are reached within this chapter:

- The site is surrounded by an extensive regional and local transportation system that will accommodate the residents, employees, and patrons of the proposed development.
- The site is well-served by public transportation with access to the Metrorail's Red line and several local and regional Metrobus lines.
- There are several bicycle facilities surrounding the site including the Metropolitan Branch Trail and multiple east-west and north-south on-street bicycle facilities.
- The site is surrounded by a well-connected pedestrian environment, with the majority of sidewalks and crossings meeting DDOT requirements.

### MAJOR TRANSPORTATION FEATURES

#### Overview of Regional Access

Under existing conditions, the Eckington Park site has ample access to regional vehicular- and transit-based transportation options, as shown in Figure 3, that connect the site to destinations within the District, Virginia, and Maryland.

The site is accessible from several principal arterials such as North Capitol Street, New York Avenue, Florida Avenue, and Rhode Island Avenue. The arterials create connections to I-395, I-695, I-295, and ultimately the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs as well as regional access to I-95. All of these roadways bring vehicular traffic within a half-mile of the site, at which point minor arterials, collectors, and local roads can be used to access the site directly.

The site has access to the Red Line via the NoMa-Gallaudet U Metrorail station, which is located approximately 0.4 miles from the site and provides connections to areas in the District

and Maryland. The Red Line connects Rockville, MD with Glenmont, MD while providing access to the District core. Of particular importance, the Red Line provides a direct connection to Union Station, which is a hub for commuter rail – such as Amtrak, MARC, and VRE – in addition 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 under existing conditions, as shown on Figure 4.

The site is served by a local vehicular network that includes several minor arterials and collectors such as R Street, Lincoln Road, T Street, Eckington Place, 2<sup>nd</sup> Street, and 3<sup>rd</sup> Street. In addition, there is an existing network of connector and local roadways that provide access to the site.

The Metrobus system provides local transit service in the vicinity of the site, including connections to several neighborhoods within the District and additional Metrorail stations. As shown in Figure 4 there are multiple bus routes that service the site. In the vicinity of the site the majority of routes travel along North Capitol Street, Florida Avenue, R Street, and T Street.

There are existing bicycle facilities that connect the site to areas within the District, most notably the Metropolitan Branch Trail which travels along the Red Line Metrorail tracks and provides a connection to Union Station. Other facilities include bicycle lanes on Eckington Place, Harry Thomas Way, 2<sup>nd</sup> Street, 3<sup>rd</sup> Street, 4<sup>th</sup> Street, R Street, and Q Street, cycle tracks along First Street and M Street, and shared lanes along R Street. A detailed review of existing and proposed bicycle facilities and connectivity is provided in a later section of this report.

In the vicinity of the site, most sidewalks meet DDOT requirements. Anticipated pedestrian routes, such as those to public transportation stops, retail zones, and community amenities, provide well-connected pedestrian facilities. There are some pedestrian barriers in the area that limit the overall connectivity to and from the site and some sidewalks that do



not meet DDOT standards. 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 extensive local transportation network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

**Carsharing**

Three carsharing companies provide service in the District: Zipcar, Maven, and Car2Go. All three 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. There are two Zipcar locations located within a quarter-mile of the site. These locations and the number of available vehicles are listed in Table 1.

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

however availability is tracked through their website, which provides an additional option for carsharing patrons.

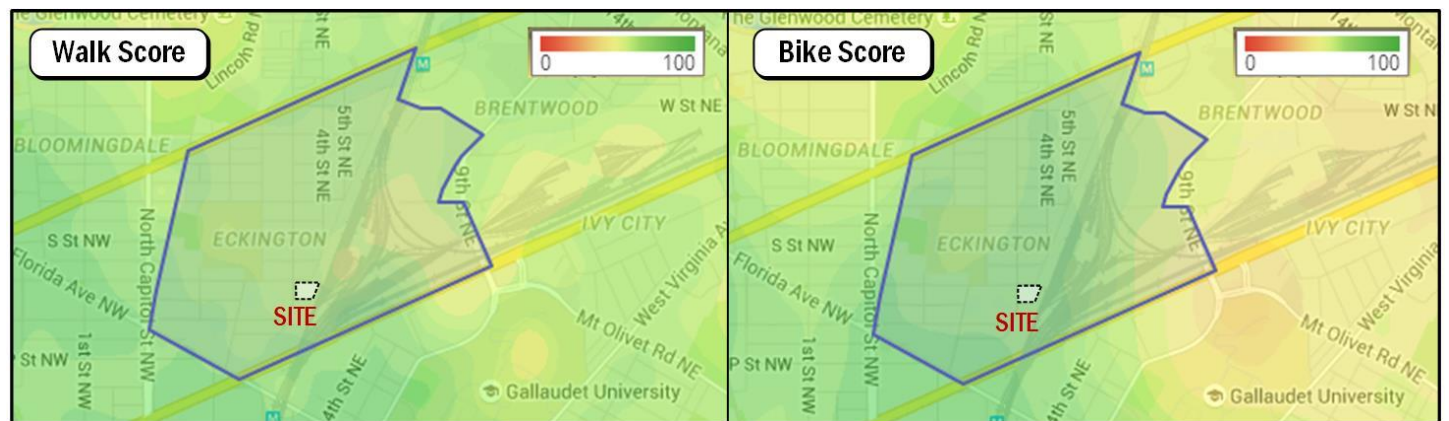
**Walkscore**

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 planned development is located in the Eckington Neighborhood. This project location itself has a walk score of 85 (or “Very Walkable”), transit score of 71 (or “Excellent Transit”), and a bike score of 87 (or “Very Bikeable”). Figure 2 shows the neighborhood borders in relation to the site location and displays a heat map for walkability and bikeability.

As shown in Figure 2, the site is situated in a neighborhood that encompasses good walk and bike scores, but there is limited connectivity to the east due to the WMATA/Amtrak tracks and rail yard. The site itself is situated in the southern portion of the neighborhood and therefore is less cut off by the railroad tracks than other parts of the neighborhood and is surrounded by existing bicycle lanes with a direct connection to the Metropolitan Branch Trail. Overall, the Eckington neighborhood has extensive pedestrian, transit, and bike facilities, particularly in the direct vicinity of the site.

**Table 1: Carshare Locations**

Carshare Location	Number of Vehicles
<b>Zipcar</b>	
151 Q Street NE (The Gale Eckington)	3 vehicles
66 New York Avenue NE (Atlantic Parking Lot)	3 vehicles
<b>Total</b>	<b>6 vehicles</b>



**Figure 2: Summary of Walk and Bike Scores**



## FUTURE REGIONAL PROJECTS

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

### Local Initiatives

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

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

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

- 70 miles of high-capacity transit (streetcar 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

In direct relation to the proposed development, the MoveDC plan outlines recommended bicycle improvements such as bicycle lanes along Florida Avenue, R Street, and Q Street and a new trail along New York Avenue. These recommendations would create additional multi-modal capacity and connectivity to the proposed development.

#### *Mid-City East Livability Study*

The purpose of this plan is to improve the overall livability of the Bloomingdale, Eckington, eastern Shaw, and LeDroit Park neighborhoods by: (1) addressing day to day transportation challenges faced by residents; (2) enhance community access and circulation (particular for walking and bicycling) for all residents; (3) protect local streets as the "home zone" of neighborhoods and communities; and (4) provide opportunities in the public rights of ways to celebrate community identity and place.

These goals are proposed to be addressed by designating pedestrian priority streets, prioritizing safety improvements at

major intersections, enhancing multimodal travel options along minor corridors, creating unique, functional landscapes that provide mitigation for stormwater runoff, and where possible replacing pavement with green stormwater management spaces.

In direct relation to the proposed development, the Mid-City East Livability Study proposes improvements along the North Capitol Street and Eckington Place corridor. These improvements include the closure of Lincoln Road between North Capitol Street and Quincy Place, a mini roundabout at Eckington Place and Q Street, curb extensions, and left-turn lane pockets in place of the existing two-way left-turn lane. With the exception of the closure of Lincoln Road, most of these improvements are not funded nor do they have an expected completion date, therefore they were not included in the analysis; however, the Eckington Park development reflects the ideas presented in this study within the proposed streetscape plans, by improving the sidewalk along Harry Thomas Way and Q Street. The final design of these features will be coordinated with DDOT's Livability project and within the public space approval process.

#### *North Capitol Street and Lincoln Road, NE Tactical Urbanism*

In 2017, DDOT initiated steps towards improving safety at the North Capitol Street and Lincoln Road intersection. As mentioned earlier, this area will see improvement in the long term in the form of closing Lincoln Road from North Capitol Street to Quincy Place. As an immediate, short-term measure, DDOT will close access from southbound Lincoln Road onto southbound North Capitol Street, eliminating an unusual intersection which is stop-controlled in the northbound direction and signalized in the southbound direction. This closure will reduce potential conflicts between traffic on Lincoln Road and traffic entering mainline North Capitol Street. The proposed pattern is planned for installation by late Summer 2017.

### Planned Developments

There are several potential development projects in the vicinity of the Eckington Park site. For the purpose of this analysis, only approved developments expected to be complete prior to planned development with an origin/destination within the study area were included. A detailed list of all background developments considered and a description of their applicability for incorporation in the study is included in the Technical Attachments. Figure 5 shows the location of these



developments in relation to the proposed development. Of the background developments considered, only two were ultimately included:

- 50 Florida Avenue

The 50 Florida Avenue project is a mixed-use development that will include 185 residential units, approximately 8,000 square feet of ground-floor retail space, and 210 on-site parking spaces in an underground garage. The development is expected to be opened by late 2017.

- Eckington Yards

The Eckington Yards project is a mixed-use development at 1615 Eckington Place that will include four buildings housing 695 residential units, approximately 77,000 square feet of retail space and makerspace, and 331 on-site parking spaces in an underground garage. The development is expected to be complete by 2019.

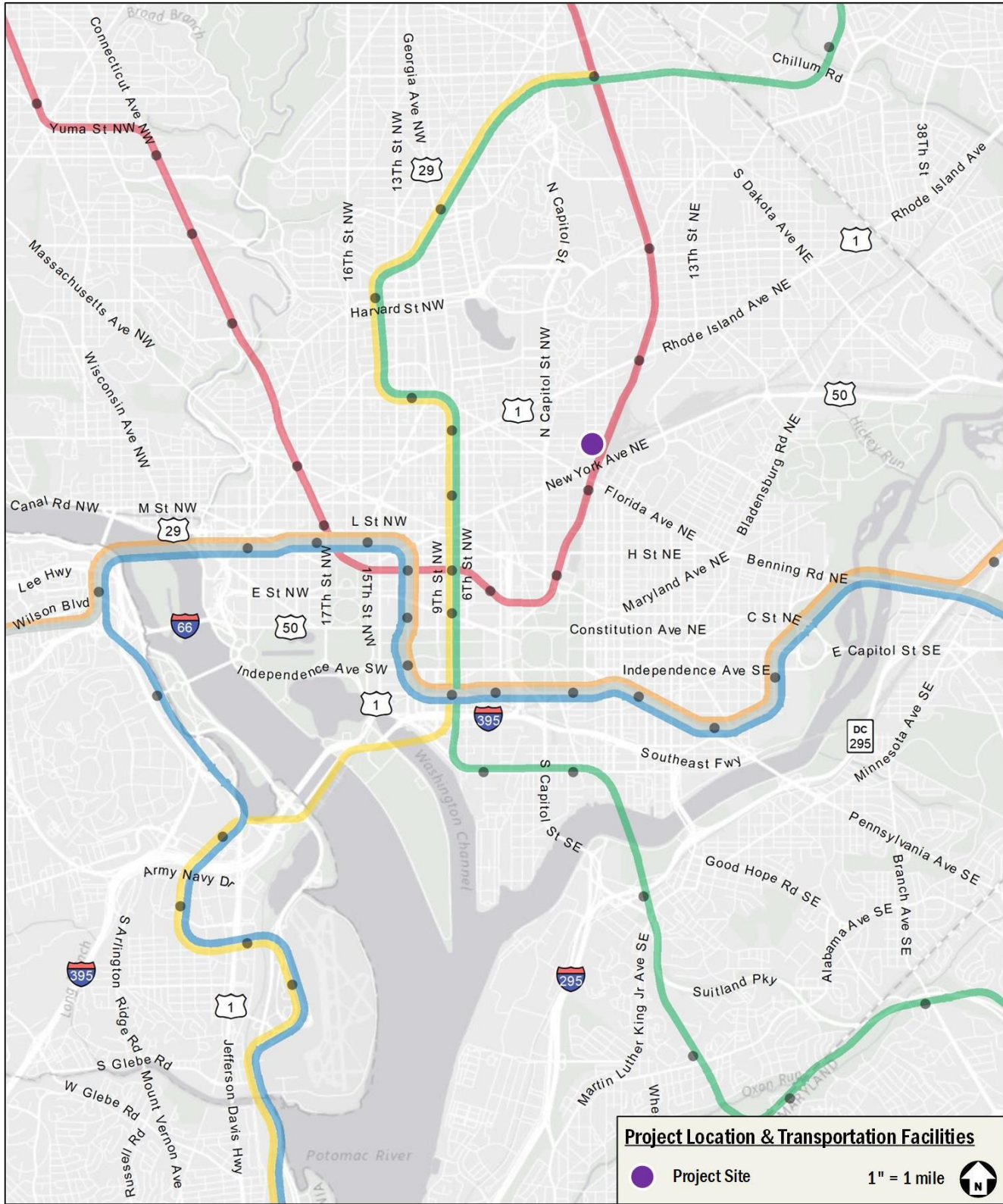


Figure 3: Major Regional Transportation Facilities



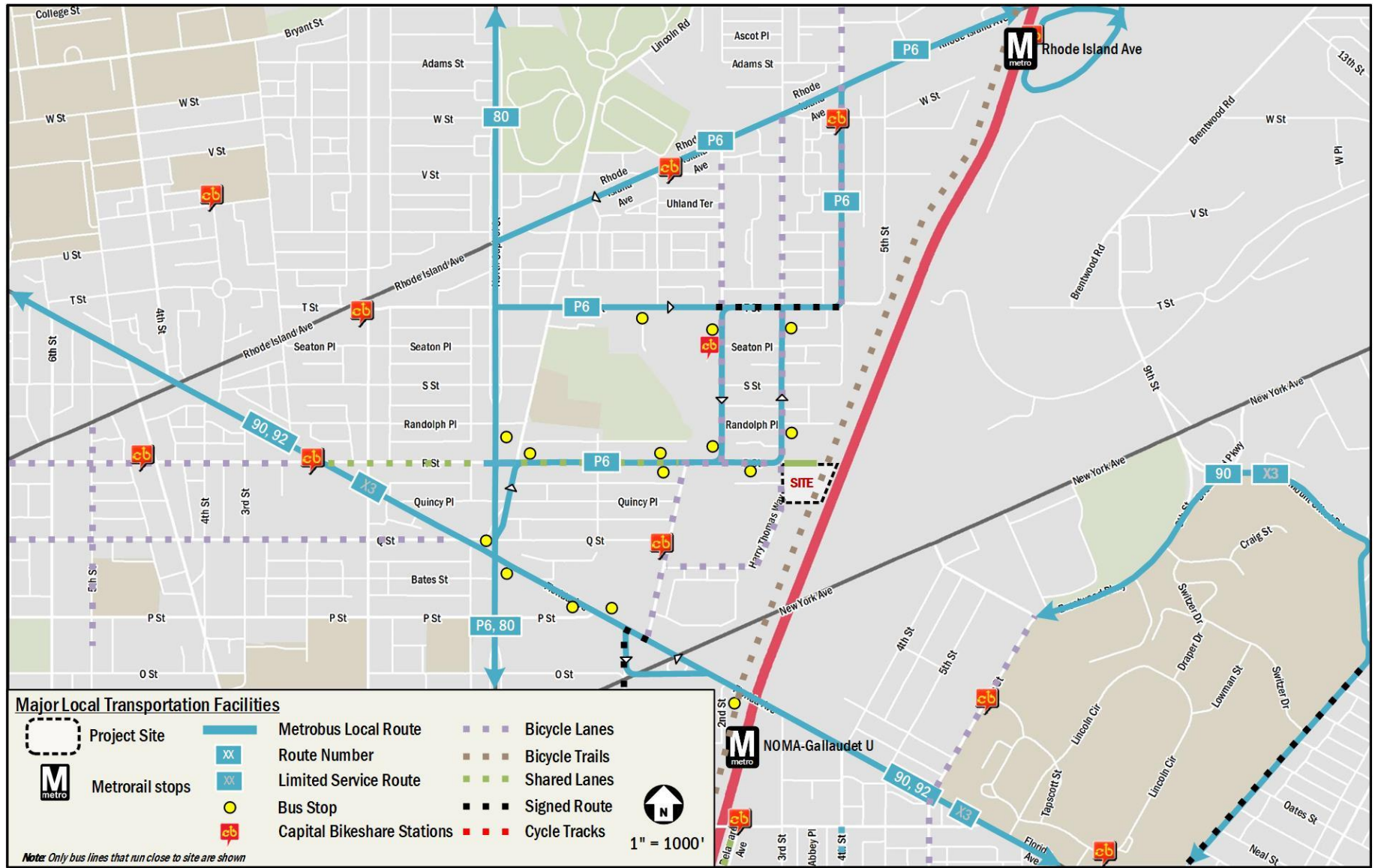


Figure 4: Major Local Transportation Facilities

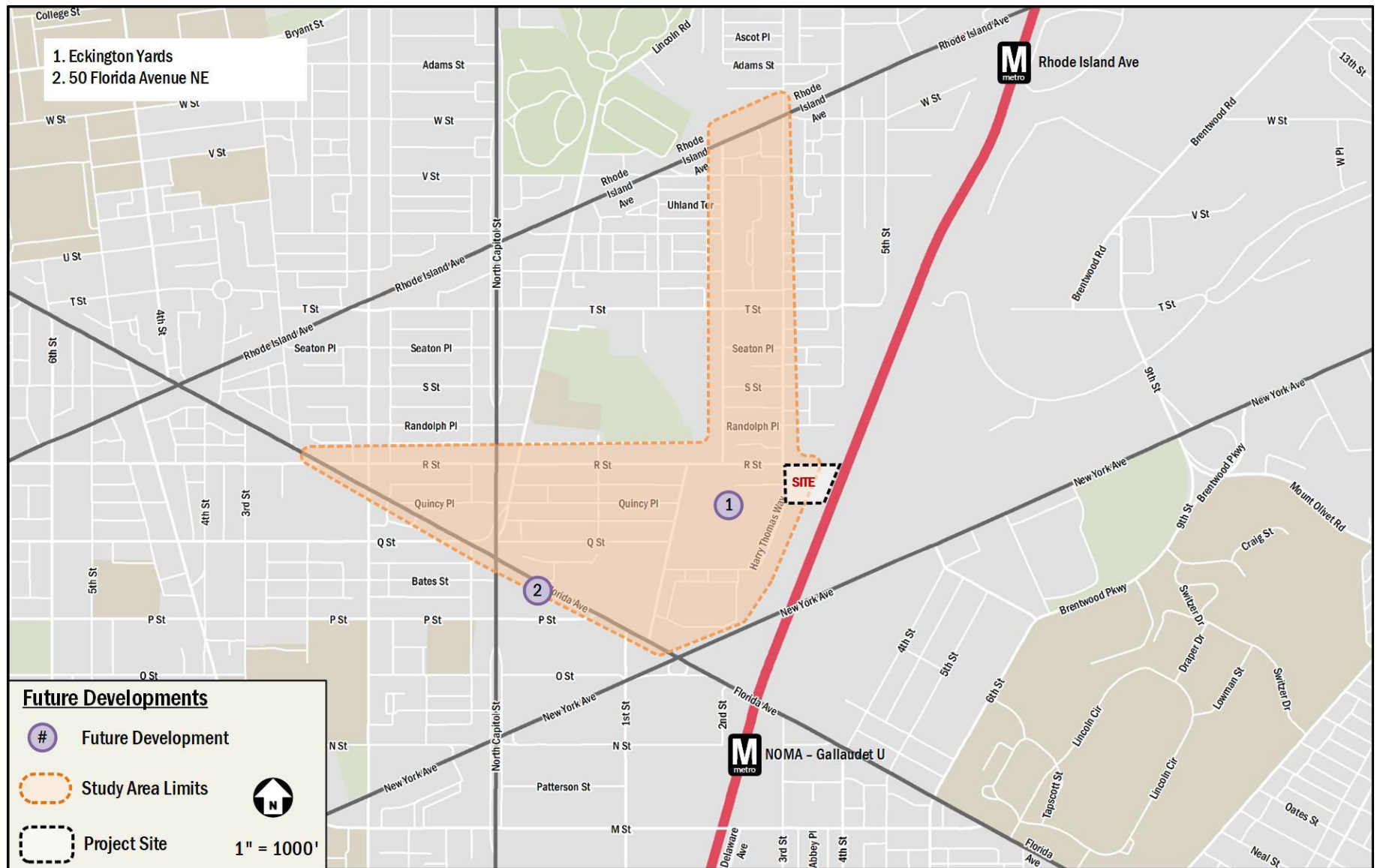


Figure 5: Background Development Map



## PROJECT DESIGN

This section reviews the transportation components of the Eckington Park development, including the proposed site plan and access points. It includes descriptions of the site's vehicular access, loading, parking, and Transportation Demand Management (TDM) plan. It supplements the information provided in the site plan package that accompanied the Zoning Application, which includes several illustrations of site circulation and layout.

The project will redevelop the existing vacant lot into a mixed-use development with a thriving, pedestrian-friendly environment. The development will comprise of a mixed-use building with 328 residential units and up to 8,400 square feet of ground-floor retail space. The building will be served by a below-grade parking garage accessible from R Street. The garage will supply 124 spaces, with 110 devoted to residential uses and 14 to retail uses. Shared loading operations will take place on the ground floor, with the entrance adjacent to the garage ramp on R Street.

Figure 6 shows the proposed ground floor site plan and circulation.

### SITE ACCESS

As shown in Figure 6, there will be several retail pedestrian entrances along Harry Thomas Way, R Street, and the new connection to the future NoMa Green Park. Residential pedestrian access points will be located along Harry Thomas Way and the new pedestrian connection to NoMa Green.

Vehicular access to the parking garage will be along R Street, adjacent to the Metropolitan Branch Trail. This location was determined in consultation with DDOT and approved by the Public Space Committee. The parking garage driveway will be located near the northeast corner of the building. The driveway for the loading area will be located just to the west of the garage driveway. The internal loading area was designed to accommodate head-in/head-out maneuvers such that no backing maneuvers are required within public space. As such, vehicular traffic is not expected to conflict with bicycle and pedestrian traffic along the Metropolitan Branch Trail.

### LOADING

Truck routing to and from the site will be focused on designated primary truck routes, such as Florida Avenue, Eckington Place, and Harry Thomas Way.

Residential and retail loading activity for the building will take place at the ground floor loading dock, accessible from R Street and located just west of the garage entrance. The dock will include two (2) 30' loading berths and two (2) 100 square foot loading platforms. Both of these loading docks will accommodate head-in/head-out maneuvering. Head-in/head-out maneuvers will help mitigate potential conflicts between trucks accessing the site and cyclists utilizing R Street to access the Metropolitan Branch Trail. An AutoTURN turning maneuver analysis was performed to verify with the separation between users of the Metropolitan Branch Trail and trucks utilizing the loading dock. Turning maneuver exhibits are provided in the Technical Attachments.

The amount of loading activity expected at this loading dock is estimated as follows:

- As a baseline, it is assumed that there will be three (3) daily truck deliveries (covering trash, a general shared delivery, and mail). This analysis assumes that loading activity for USPS, the shared delivery (UPS or FedEx), and trash pick-up will occur in the loading dock.
- Residential loading activity is estimated assuming an expected rental turnover of 18 months, with two (2) trucks per move – one move in and one move out.
- Retail loading activity is estimated to be two (2) daily deliveries per retailer. At this time, two retailers are assumed.

Using these estimates, it is anticipated that there will be approximately eight to nine (8-9) total loading activities per day, including approximately one to two (1-2) residential loading activities per day. This amount of loading activity can be adequately accommodated within the two (2) 30' loading berths provided.

### PARKING

Based on current District zoning laws, the following outlines the parking requirements for all land uses of the development:

- Residential  
1 space for each 3 dwelling units in excess of 4 units, amounting to a minimum requirement of 108 spaces.
- Retail



1.33 spaces per 1,000 square feet of retail space in excess of 3,000 square feet, amounting to a minimum requirement of 8 spaces.

Overall, the parking supply meets zoning requirements and provides parking ratios consistent with what is expected by current market conditions.

The overall residential parking ratio of 0.34 spaces per unit fits within data from Gorove/Slade’s library showing residential developments with parking demand of 0.30 to 0.45 spaces per unit. With the proposed demand management measures recommended later in this report in place, the proposed parking should adequately serve all demand. The retail parking ratio of 0.96 per 1,000 square feet of retail area is close to the common observed District retail demand of 1.0 spaces per 1,000 square feet and will adequately accommodate all expected parking demand on-site.

A summary of the parking supply by land use is shown in Table 2.

**Table 2: Proposed Parking Supply**

Parking Supply	
Residential	110 spaces
Retail	14 spaces
<b>Total</b>	<b>124 spaces</b>

### BICYCLE AND PEDESTRIAN FACILITIES

The project will include both short- and long-term bicycle parking spaces. Secure long-term bicycle parking that meets or exceeds the zoning requirements will be provided in the garage. There are 174 secure bicycle parking spaces proposed for the garage. In addition, 30 short-term bicycle parking spaces will be placed along the interior and perimeter of the site. These short-term spaces will include inverted U-racks placed in high-visibility areas. The applicant will work with DDOT to determine the exact location of bicycle racks in public space. Additionally, the Applicant is proposing to locate a bicycle repair station within the long-term bicycle parking room.

Pedestrian facilities directly surrounding the site generally meet DDOT requirements, but will be improved along R Street and the Metropolitan Branch Trail to provide a more inviting pedestrian environment and comply with the improvements

laid out in the *Mid-City East Livability Study*. As shown in Figure 6, sidewalks will be completed along the northern perimeter on R Street and integrated with the new alignment of the Metropolitan Branch Trail which will provide a more streamlined route, avoiding a sharp turn for bicyclists and pedestrians. The final design of these features will be coordinated with DDOT’s Livability project during the public space approval process.

The project includes the creation of an approximately 20,500 square foot park on the eastern portion of the site that will be deeded to the NoMa Parks Foundation (NPF) for ownership and maintenance. The East Park will include a realignment of the metropolitan branch trail, a neighborhood dog park, and open space. The Applicant will fund up to \$165,000 for costs and expenses of the East Park in addition to \$80,000 towards the realignment of the Metropolitan Branch Trail. In addition to funds allocated for the East Park, The Applicant has pledged up to \$350,000 to benefit the southern portion of NoMa Green (the South Park). This funding will be allocated to programming improvements such as food service kiosks, public art, and/or a performance amphitheater.

Overall, the Eckington Park development will further improve the pedestrian environment surrounding the site and increase connectivity of the neighborhood.

### TRANSPORTATION DEMAND MANAGEMENT (TDM)

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

The Transportation Demand Management (TDM) plan for the development is based on the DDOT expectations for TDM programs. The Applicant proposes the following TDM measures:

- The Applicant will identify TDM Leaders (for planning, construction, and operations). The TDM Leaders will work with goDCgo staff to create free customized marketing materials and a TDM outreach plan for residents and retail employees, including developing a site-specific transportation guide for residents and visitors.



- The building management will provide updated contact information for the TDM Leader and report TDM efforts and amenities to goDCgo staff once per year.
- The building management will stock Metrorail, Metrobus, DC Circulator, Capital Bikeshare, Guaranteed Ride Home, DC Commuter Benefits Law, and other brochures.
- The Applicant will unbundle all parking costs from the cost of the lease and set the cost at no less than the charges of the lowest fee garage located within a quarter-mile of the site.
- The Applicant will offer either a one-year membership to Capital Bikeshare or a one-year membership to a carsharing service to each new residential lease per unit for a total of three (3) years.
- The Applicant will install a bicycle maintenance facility within the long-term bicycle parking area.
- The Applicant will exceed Zoning requirements by providing approximately 174 long-term bicycle parking spaces in the garage and 30 short-term bicycle parking spaces in the form of 15 U-racks within and along the perimeter of the site.
- The Applicant will install Transportation Information Center Displays (kiosks or screens) within the lobby of the building, containing information related to local transportation alternatives.
- The Applicant will dedicate two spaces in the residential garage or on-street along the perimeter of the site for car sharing services to use with right of first refusal. These spaces will be convenient to the garage entrance, available to members of the car sharing service 24 hours a day, seven days a week, without restrictions (the garage may be gated – members of the service would have access to the spaces via a key pad combination to a pass code system or other similar device).

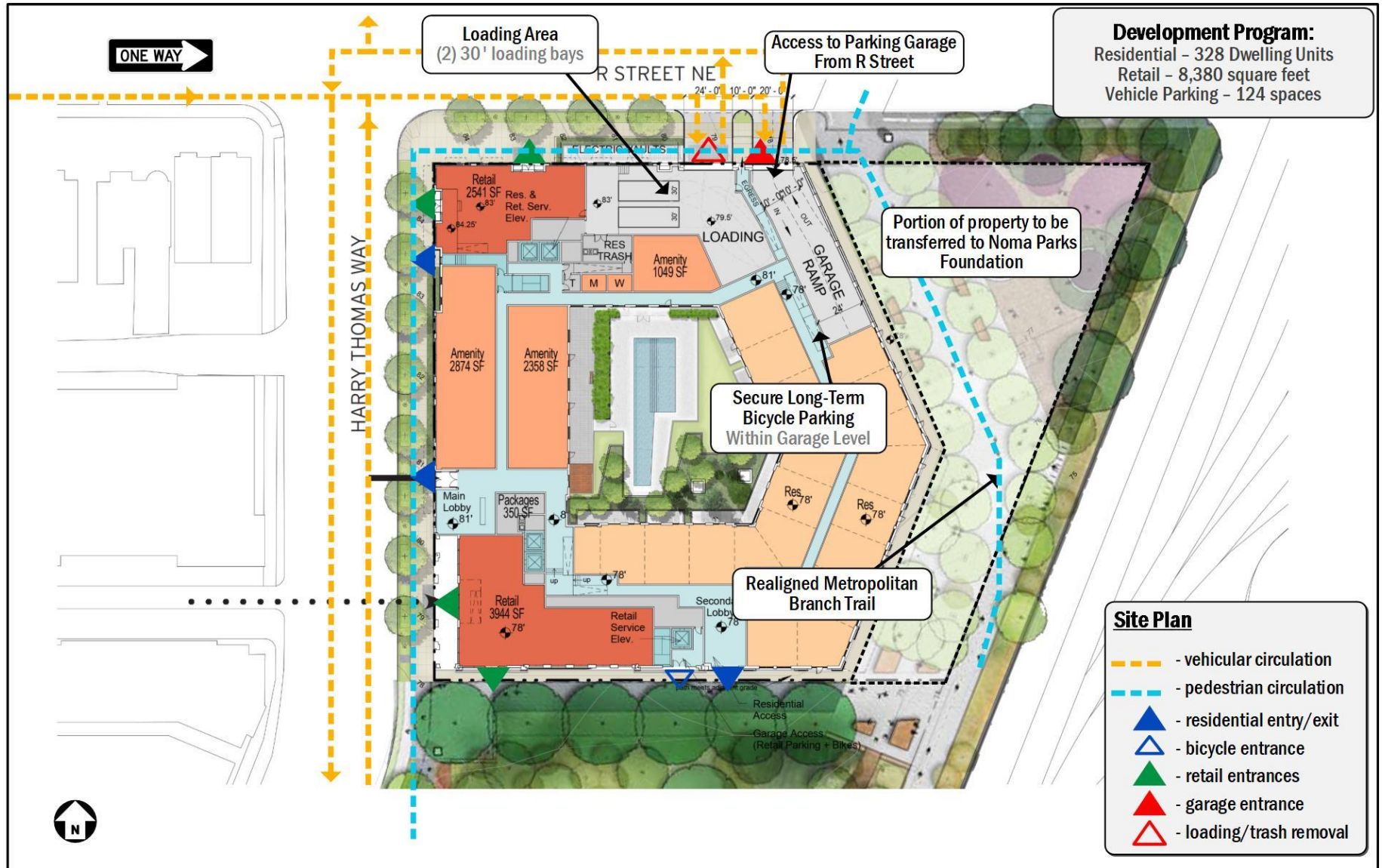


Figure 6: Ground Floor and Circulation Plan



## TRIP GENERATION

This section outlines the transportation demand of the proposed Eckington Park development. It summarizes the projected trip generation of the site by land use and by mode, which 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*, 9<sup>th</sup> Edition. This methodology was supplemented to account for the urban nature of the site (*Trip Generation* provides data for non-urban, low transit uses) to generate trips for multiple modes.

Residential trip generation was calculated based on ITE land use 220, Apartments, splitting trips into different modes using assumptions based on census data for the residents that currently live near the site. The vehicular mode split was then adjusted down from the census data to reflect the overall parking supply and other developments with similar proximity to Metrorail.

Retail trip generation was calculated based on ITE land use 820, Shopping Center. Mode split for the retail component was primarily based on data for retail sites from the *Ridership Survey*, influenced by census data for employees that travel to the site to take into account employees that will be arriving or departing during the peak hours. The vehicular mode split was then adjusted to reflect the retail parking supply.

The mode split assumptions for all land uses within the development is summarized in Table 3. A summary of the multimodal trip generation is shown on Table 4 for morning and afternoon peak hours. Detailed calculations are included in the Technical Appendix.

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

Land Use	Mode			
	Auto	Transit	Bike	Walk
Residential	45%	40%	5%	10%
Retail	45%	30%	1%	24%

**Table 4: Summary of Development Trip Generation**

Mode	Land Use	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto	Apartments	15 veh/hr	58 veh/hr	73 veh/hr	58 veh/hr	31 veh/hr	89 veh/hr
	Retail	2 veh/hr	1 veh/hr	3 veh/hr	7 veh/hr	7 veh/hr	14 veh/hr
	<b>Total</b>	<b>17 veh/hr</b>	<b>59 veh/hr</b>	<b>76 veh/hr</b>	<b>65 veh/hr</b>	<b>38 veh/hr</b>	<b>103 veh/hr</b>
Transit	Apartments	15 ppl/hr	59 ppl/hr	74 ppl/hr	58 ppl/hr	32 ppl/hr	90 ppl/hr
	Retail	3 ppl/hr	1 ppl/hr	4 ppl/hr	8 ppl/hr	9 ppl/hr	17 ppl/hr
	<b>Total</b>	<b>18 ppl/hr</b>	<b>60 ppl/hr</b>	<b>78 ppl/hr</b>	<b>66 ppl/hr</b>	<b>41 ppl/hr</b>	<b>107 ppl/hr</b>
Bike	Apartments	2 ppl/hr	7 ppl/hr	9 ppl/hr	7 ppl/hr	4 ppl/hr	11 ppl/hr
	Retail	0 ppl/hr	0 ppl/hr	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr
	<b>Total</b>	<b>2 ppl/hr</b>	<b>7 ppl/hr</b>	<b>9 ppl/hr</b>	<b>7 ppl/hr</b>	<b>5 ppl/hr</b>	<b>12 ppl/hr</b>
Walk	Apartments	4 ppl/hr	15 ppl/hr	19 ppl/hr	15 ppl/hr	7 ppl/hr	22 ppl/hr
	Retail	2 ppl/hr	1 ppl/hr	3 ppl/hr	6 ppl/hr	7 ppl/hr	13 ppl/hr
	<b>Total</b>	<b>6 ppl/hr</b>	<b>16 ppl/hr</b>	<b>22 ppl/hr</b>	<b>21 ppl/hr</b>	<b>14 ppl/hr</b>	<b>35 ppl/hr</b>



## 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 Eckington Park development 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 multiple scenarios. The following scenarios were analyzed in order to determine the impacts of each outcome:

1. Existing Conditions
2. 2019 Future Conditions without the development (2019 Background)
3. 2019 Future Conditions with the development (2019 Future)

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

The following conclusions are reached within this chapter:

- There are three (3) study intersections that operate at unacceptable levels of service during at least one study scenario; two of these intersections operate at unacceptable conditions under existing conditions and two intersections require the exploration of mitigation measures: 3<sup>rd</sup> Street, NE at Rhode Island Avenue and Harry Thomas Way, NE at Eckington Place. The third intersection, Eckington Place and Florida Avenue, NE, operates at unacceptable levels of service under existing and background conditions, and is minimally impacted by the proposed development. Therefore, no mitigation measures are required at this intersection. Additionally, this intersection will be further studied as part of DDOT

initiatives to improve the “virtual circle” encompassing First Street NE, New York Avenue NE, and Florida Avenue NE.

- The intersection of 3<sup>rd</sup> Street and Rhode Island Avenue warrants a traffic signal, which has been funded by the Eckington Yards and 680 Rhode Island Avenue PUDs as part of the ZC Orders for Case No. 15-15 and Case No. 15-16. The exact timing of the signal installation is not known at this time, but the traffic signal adequately mitigates capacity concerns at this intersection. As such, this report does not recommend additional mitigation measures at this location as part of the Eckington Park development.
- This report proposes that the Applicant fund the conversion of the intersection of Harry Thomas Way and Eckington Place from two-way stop-controlled to all-way stop-controlled. This report recommends that this mitigation be explored with DDOT, and coordinated with the recommendations from the Livability project.
- Overall, this report concludes that the project will not have a detrimental impact to the surrounding transportation network, assuming mitigations are implemented. This report proposes one vehicular mitigation as part of the Eckington Park development: the conversion of Eckington Place and Harry Thomas Way to an all-way stop-controlled intersection. Given the amount of development and District initiatives surrounding the Eckington Park site, other areas of concern are being addressed as part of other background developments and DDOT initiatives. As such, the Applicant proposes to address vehicular improvements where possible, but focuses on the development of a multi-modal project that caters to non-vehicular users through the inclusion of bicycle parking, high-quality pedestrian accommodations, and the realignment of the Metropolitan Branch Trail.

### 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, unless stated otherwise.

### Capacity Analysis Scenarios

The vehicular analyses are performed to determine if the proposed development 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 proposed development (referred to as the Background conditions) and (2) with the development approved and constructed (referred to as the Future conditions).

Specifically, the roadway capacity analysis examined the following scenarios:

1. Existing Conditions
2. 2019 Future Conditions without the development (2019 Background)
3. 2019 Future Conditions with the development (2019 Future)

### Study Area

The study area of the analysis is a set of intersections where detailed capacity analyses were performed for the scenarios listed above. The set of intersections decided upon during the scoping process with DDOT are those intersections most likely to have potential impacts or require changes to traffic operations to accommodate the proposed development. Although it is possible that impacts will occur outside of the study area, those impacts are not significant enough to be considered a detrimental impact.

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

1. Rhode Island Avenue & 2<sup>nd</sup> Street, NE
2. Rhode Island Avenue & 3<sup>rd</sup> Street, NE
3. R Street & 2<sup>nd</sup> Street, NE
4. R Street & 3<sup>rd</sup> Street, NE
5. Harry Thomas Way & Eckington Place, NE
6. Florida Avenue & Eckington Place, NE
7. North Capitol Street & R Street
8. North Capitol Street & Lincoln Road
9. R Street & Lincoln Road, NE
10. North Capitol Street & Q Street
11. R Street & Eckington Place, NE

12. Q Street & Eckington Place, NE
13. Q Street & Harry Thomas Way, NE
14. R Street & Site Driveway, NE

Figure 7 shows a map of the study area intersections.

### 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.

The lane configurations and traffic controls assumed for the Existing Conditions are presented in Figure 8.

#### *2019 Background Geometry and Operations Assumptions (without the project)*

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

- Be funded; and
- Have a construction completion date prior or close to the proposed development.

Based on these criteria, one background improvement was included in the analysis. Improvements associated with the North Capitol Street/Lincoln Road Tactical Urbanism project are planned to be complete by late summer 2017. Access from southbound Lincoln Road to southbound North Capitol Street will be closed, giving pedestrians a conflict-free walking environment and reducing the potential for vehicular conflicts between Lincoln Road and North Capitol Street. Trips which utilize this movement on the network will be rerouted to southbound North Capitol Street via R Street. Other improvements associated with the *Mid-City East Livability Study* and the *New York Avenue Corridor Study* were considered; however, the improvements were either not yet funded or did not have a known completion date prior to the proposed development. The lane configurations and traffic controls for the 2019 Background Conditions are presented in Figure 10.



*2019 Future Geometry and Operations Assumptions (with the project)*

Under the scenario in which Eckington Park is built, no significant changes to geometry and operations are assumed, with the only addition to the network being the site driveway connection to R Street NE.

**Traffic Volume Assumptions**

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

*Existing Traffic Volumes*

The existing traffic volumes are comprised of turning movement count data, which was collected on Wednesday, June 17, 2015, Tuesday, June 23, 2015, Wednesday, October 21, 2015, and Wednesday, May 10, 2017. The results of the traffic counts and the existing peak hour traffic volumes are presented in Figure 9. For all intersections the individual morning and afternoon peak hours were used.

*2019 Background Traffic Volumes (without the project)*

Traffic projections for the background conditions typically consist of the existing volumes with two additions:

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

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

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

As discussed previously, multiple background developments were considered for inclusion in the study, with two developments ultimately meeting all of the criteria. The developments includes the following:

- *50 Florida Avenue, NE*  
This development was approved under ZC Case No. 12-02. The mode split, trip generation, and trip distribution information assumed in the 50 Florida Avenue, NE CTR, performed by O. R. George & Associates in May of 2013, was used to determine the background site-generated trips along the network. Trip generation assumptions for 50 Florida Avenue, NE are shown in Table 5.
- *Eckington Yards*  
This development was approved under ZC Case No. 15-15. The mode split, trip generation, and trip distribution information assumed in the Eckington Yards CTR, performed by Gorove/Slade Associates in April of 2016, was used to determine the background

**Table 5: 50 Florida Avenue, NE Trip Generation**

Mode	Land Use	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto	Apartments	24 veh/hr	96 veh/hr	120 veh/hr	91 veh/hr	49 veh/hr	140 veh/hr
	Retail	16 veh/hr	10 veh/hr	26 veh/hr	48 veh/hr	52 veh/hr	100 veh/hr
	<b>Total</b>	<b>40 veh/hr</b>	<b>106 veh/hr</b>	<b>146 veh/hr</b>	<b>139 veh/hr</b>	<b>101 veh/hr</b>	<b>240 veh/hr</b>
Transit	Apartments	39 ppl/hr	156 ppl/hr	195 ppl/hr	147 ppl/hr	79 ppl/hr	226 ppl/hr
	Retail	33 ppl/hr	20 ppl/hr	53 ppl/hr	98 ppl/hr	106 ppl/hr	204 ppl/hr
	<b>Total</b>	<b>72 ppl/hr</b>	<b>176 ppl/hr</b>	<b>248 ppl/hr</b>	<b>245 ppl/hr</b>	<b>185 ppl/hr</b>	<b>430 ppl/hr</b>
Bike	Apartments	4 ppl/hr	15 ppl/hr	19 ppl/hr	15 ppl/hr	8 ppl/hr	23 ppl/hr
	Retail	1 ppl/hr	0 ppl/hr	1 ppl/hr	2 ppl/hr	3 ppl/hr	5 ppl/hr
	<b>Total</b>	<b>5 ppl/hr</b>	<b>15 ppl/hr</b>	<b>20 ppl/hr</b>	<b>17 ppl/hr</b>	<b>11 ppl/hr</b>	<b>28 ppl/hr</b>
Walk	Apartments	8 ppl/hr	31 ppl/hr	39 ppl/hr	29 ppl/hr	16 ppl/hr	45 ppl/hr
	Retail	20 ppl/hr	12 ppl/hr	32 ppl/hr	59 ppl/hr	63 ppl/hr	122 ppl/hr
	<b>Total</b>	<b>28 ppl/hr</b>	<b>43 ppl/hr</b>	<b>71 ppl/hr</b>	<b>88 ppl/hr</b>	<b>79 ppl/hr</b>	<b>167 ppl/hr</b>



site-generated trips along the network. Mode split and trip generation assumptions for Eckington Yards are shown in Table 6. Of note, the mode split applied to the Eckington Yards project assumed a lower vehicular mode split than Eckington Park. Therefore, the Eckington Park analysis is considered conservative.

While the background developments represent local traffic changes, regional traffic growth is typically accounted for using percentage growth rates. The growth rates used in this analysis are derived from the Metropolitan Washington Council of Government’s (MWCOC) 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 0.10 percent annual growth rate was applied to the roadway. The applied growth rates are shown in Table 7.

The traffic volumes generated by the background development and the inherent growth along the network were added to the

existing traffic volumes in order to establish the 2019 Background traffic volumes. The traffic volumes for the 2019 Background conditions are presented in Figure 11.

*2019 Future Traffic Volumes (with the project)*

The 2019 Total Future traffic volumes consist of the 2019 Background volumes with the addition of the traffic volumes generated by the proposed development (site-generated trips). Thus, the 2019 Total Future traffic volumes include traffic generated by: the existing volumes, the background development, the inherent growth on the study area roadways, and trips generated by the proposed 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 site’s parking access location on R Street.

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

**Table 7: Eckington Yards Mode Split and Trip Generation**

Mode	Mode Split	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto	35%	4 veh/hr	18 veh/hr	22 veh/hr	15 veh/hr	9 veh/hr	24 veh/hr
Transit	45%	5 ppl/hr	23 ppl/hr	28 ppl/hr	20 ppl/hr	12 ppl/hr	32 ppl/hr
Bike	5%	1 ppl/hr	3 ppl/hr	4 ppl/hr	2 ppl/hr	1 ppl/hr	3 ppl/hr
Walk	15%	2 ppl/hr	8 ppl/hr	10 ppl/hr	7 ppl/hr	4 ppl/hr	11 ppl/hr

**Table 6: Applied Annual and Total Growth Rates**

Road	Proposed Annual Growth Rate		Total Growth between 2015 and 2019	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Eckington Place NE – Northbound	0.10%	0.10%	0.30%	0.30%
Eckington Place NE – Southbound	0.10%	0.10%	0.30%	0.30%
R Street NE – Eastbound	0.10%	1.00%	0.30%	3.03%
R Street NE – Westbound	1.25%	0.75%	3.80%	2.27%
Florida Avenue – Northwestbound	0.50%	1.25%	1.51%	3.80%
Florida Avenue - Southeastbound	2.25%	0.25%	6.90%	0.75%
North Capitol Street – Northbound	0.10%	0.10%	0.30%	0.30%
North Capitol Street – Southbound	0.10%	0.10%	0.30%	0.30%
Rhode Island Avenue – Northeastbound	0.10%	0.10%	0.30%	0.30%
Rhode Island Avenue – Southeastbound	0.10%	0.10%	0.30%	0.30%



origin of outbound and destination of inbound residential vehicular trips is the garage access along R Street.

The retail trip distribution is based predominantly on residential zones situated around the development as these are the mostly likely driving customers of the retail space. CTPP TAZ flow data for drivers commuting to the site's TAZ was also used as a reference to account for the retail employees' commuting patterns. The origin of outbound and destination of inbound retail vehicular trips was also the garage access along R Street.

Based on traffic patterns and the site access along R Street, the site-generated trips were distributed through the study area intersections. A summary of trip distribution routing assumptions is shown on Figure 12 and Figure 13 for the inbound and outbound traffic, respectively.

The site-generated traffic volumes and the 2019 Future traffic volumes are presented in Figure 14 and Figure 15, respectively.

## 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 9.1 was used to analyze the study intersections based on the Highway Capacity Manual 2000 (HCM) 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 Highway Capacity Manual (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 Attachments.

Table 8 and Table 9 shows the results of the capacity analyses for the AM and PM peak hours, respectively, including LOS and average delay per vehicle (in seconds) for the Existing, 2019 Background, and 2019 Future scenarios. The capacity analysis results for the morning and afternoon peak hours are graphically presented in Figure 16 and Figure 17, respectively.

Three (3) study intersections operate at unacceptable conditions or have an approach that operates at unacceptable conditions during at least one of the study scenarios. These intersections are as follows:

- 3<sup>rd</sup> Street & Rhode Island Avenue, NE
- Eckington Place & Harry Thomas Way, NE
- Florida Avenue & Eckington Place, NE

Generally speaking, the proposed development is considered to have an impact at an intersection within the study area if the capacity analyses show an LOS E or F at an intersection or along an approach in the future conditions with the proposed development where one does not exist in the existing or background conditions. The development 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 seconds, when compared to the background condition. Following these guidelines there are impacts to two (2) intersections as a result of the development.

The only intersection operating unacceptably that was not impacted by the development is the intersection of Florida Avenue and Eckington Place. Although this intersection is shown to operate at unacceptable conditions during the existing, background, and total future conditions, the intersection itself does not degrade as a result of the site-generated trips, as total future delay increases by approximately 2 seconds in the morning and afternoon peak hours when compared to the background condition. Therefore, mitigation measures are not required at this intersection. Additionally, this intersection will be further studied as part of DDOT initiatives to improve the "virtual circle" encompassing First Street NE, New York Avenue NE, and Florida Avenue NE.



## 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 the *Synchro* software. The 50<sup>th</sup> percentile and 95<sup>th</sup> percentile maximum queue lengths are shown for each lane group at the study area signalized intersections. The 50<sup>th</sup> percentile maximum queue is the maximum back of queue on a typical cycle. The 95<sup>th</sup> percentile queue is the maximum back of queue with 95<sup>th</sup> percentile traffic volumes. For unsignalized intersections, 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 10 and Table 11 show the queuing results for the study area intersections during the AM and PM peak hours, respectively. The proposed development is considered to have an impact on queuing if the 95<sup>th</sup> percentile queue length increases by more than 150 when compared to the background scenario. The queuing analysis results generally align with the HCM capacity analysis results and generate the same overall conclusions. No additional mitigation measures are necessary as a result of the queuing analysis results.

## Mitigations

This section discusses the two intersections that trigger the need to explore mitigations and discusses the potential mitigation measures to improve those intersections. Based on the capacity analysis of the mitigation measures, the following conclusions were made:

- 3<sup>rd</sup> Street & Rhode Island Avenue, NE  
Under existing conditions, delay along the northbound and southbound approaches of 3<sup>rd</sup> Street at Rhode Island Avenue operate under unacceptable conditions during the morning and afternoon peak hours. These conditions are likely due to the two-way unsignalized nature of the intersection and the high volumes along Rhode Island Avenue that result in minimal crossing gaps. These conditions are worsened by the inclusion of background and site-generated volumes such that delay along the southbound approach increases by more than 5 seconds over the background conditions during the morning and afternoon peak hours.

This same conclusion was reached as part of the Eckington Yards PUD and the 680 Rhode Island Avenue PUD. It was

determined in the CTRs prepared for these developments that a signal is warranted at this location. Conditions of approval for both of these projects included monetary contributions to a signal at this location.

Specifically, Zoning Commission Order No. 15-15 for the Eckington Yards development required that the Applicant fund \$115,000 toward the signal, and Zoning Commission Order No. 15-16 for the 680 Rhode Island Avenue development required that the Applicant fund \$60,000 toward the signal. For ZC Case No. 15-16, DDOT indicated that if the remaining cost of the signal exceeds \$60,000, the Applicant shall work with DDOT to reallocated funds otherwise dedicated to TDM measures.

As such, this signal is expected to be fully funded; however, the exact timing of installation is not known. For this reason, the signal was not included as a background improvement, but is analyzed in the mitigations scenario to show that no additional mitigation measures are necessary as a result of the Eckington Park development.

As shown in Table 8 and Table 9, the signal results in acceptable levels of service along all approaches, consistent with results of the Eckington Yards and 680 Rhode Island Avenue CTRs. As such, this report does not propose any additional mitigation measures at this location as part of the Eckington Park development.

- Eckington Place & Harry Thomas Way, NE  
According to the capacity analysis results, this intersection requires mitigation under the 2019 Future Conditions, due to the increase in traffic along Harry Thomas Way as a result of the development. The westbound approach (exhibiting an LOS of F in background conditions) exhibits an increase in delay by 116 and 43 seconds in the morning and afternoon peak hour, respectively.

Two potential mitigations were studied at this intersection: (1) separating the left and right turn lanes along the westbound approach of Harry Thomas Way, and (2) converting the intersection to an all-way stop controlled intersection. It was found that the all-way stop control condition greatly improves LOS and delay at the intersection whereas the separate left and right-turn lanes only minimally improve delay. Based on methodology outlined in the Manual on Uniform Traffic Control Devices (MUTCD), an all-way stop is warranted at this location. The



warrant analysis is included in the Technical Attachments. The mitigated all-way stop results are shown in Table 8 and Table 9.

This same conclusion was reached as part of the Eckington Yards PUD. The CTR prepared for the Eckington Yards development proposed that the Applicant install the appropriate signage and striping associated with converting the intersection to an all-way stop; however, this mitigation was not ultimately included as a condition of approval.

Thus, this report proposes that the Applicant fund the conversion of Eckington Place and Harry Thomas Way to an all-way stop controlled intersection. This report recommends that this mitigation be explored with DDOT, and coordinated with the recommendations from the Livability project.

Overall, this report proposes one vehicular mitigation as part of the Eckington Park development: the conversion of Eckington Place and Harry Thomas Way to an all-way stop-controlled intersection. Given the amount of development and District initiatives surrounding the Eckington Park site, other areas of concern are being addressed as part of other projects. As such, the Applicant proposes to address vehicular improvements where possible, but focuses on the development of a multi-modal project that caters to non-vehicular users through the inclusion of bicycle parking, high-quality pedestrian accommodations, and the realignment of the Metropolitan Branch Trail.

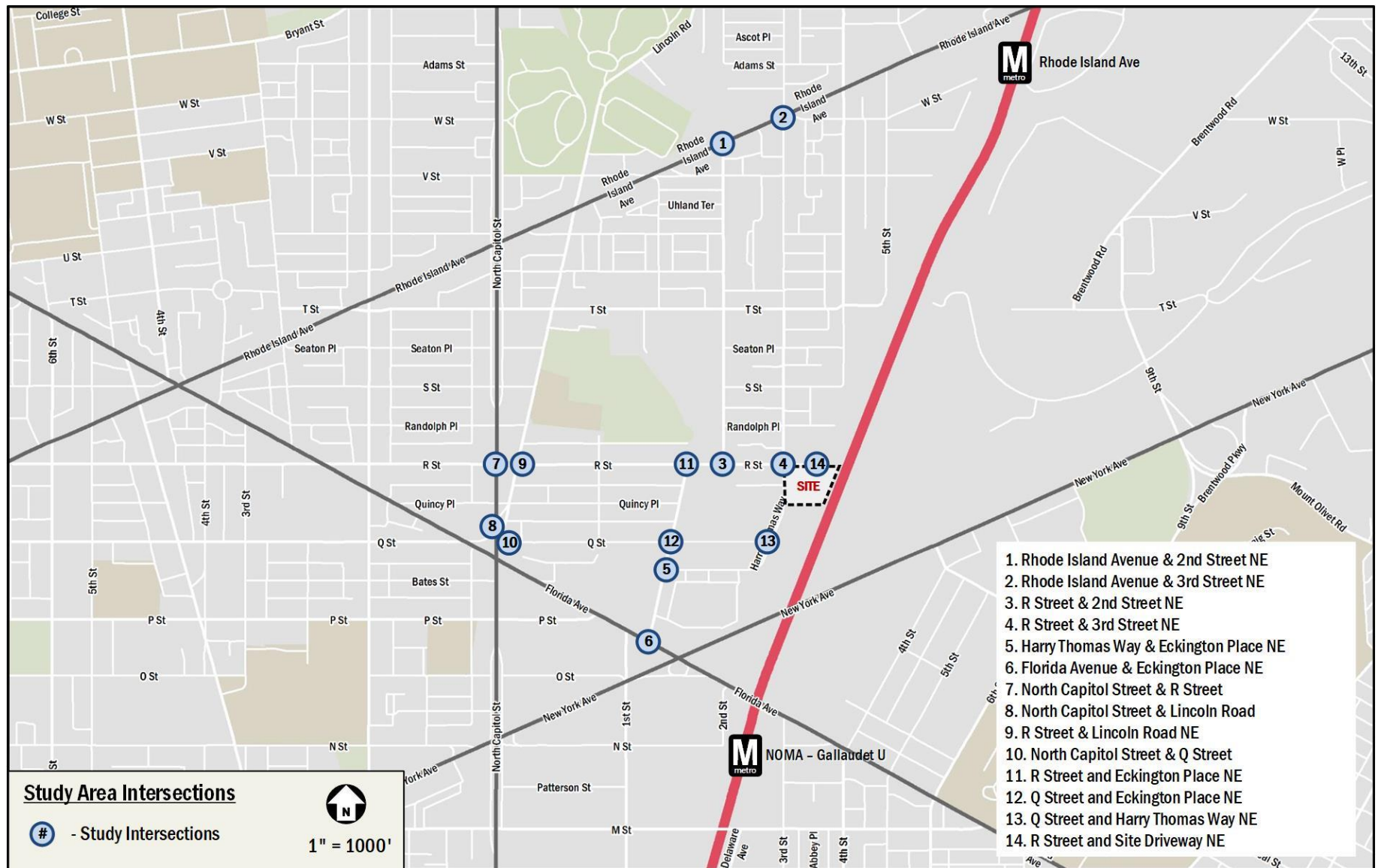


Figure 7: Study Area Intersections

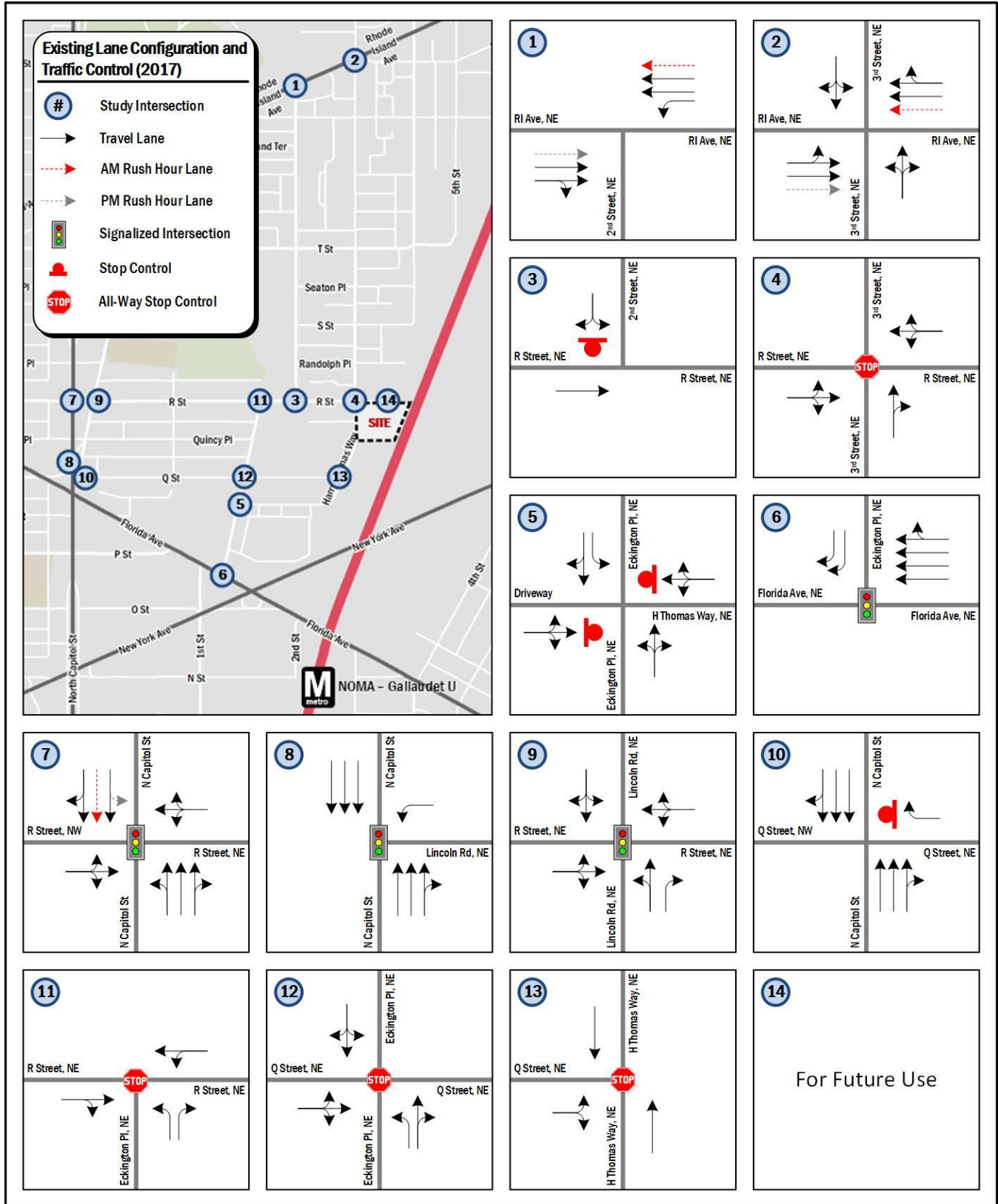


Figure 8: Existing (2017) Lane Configurations



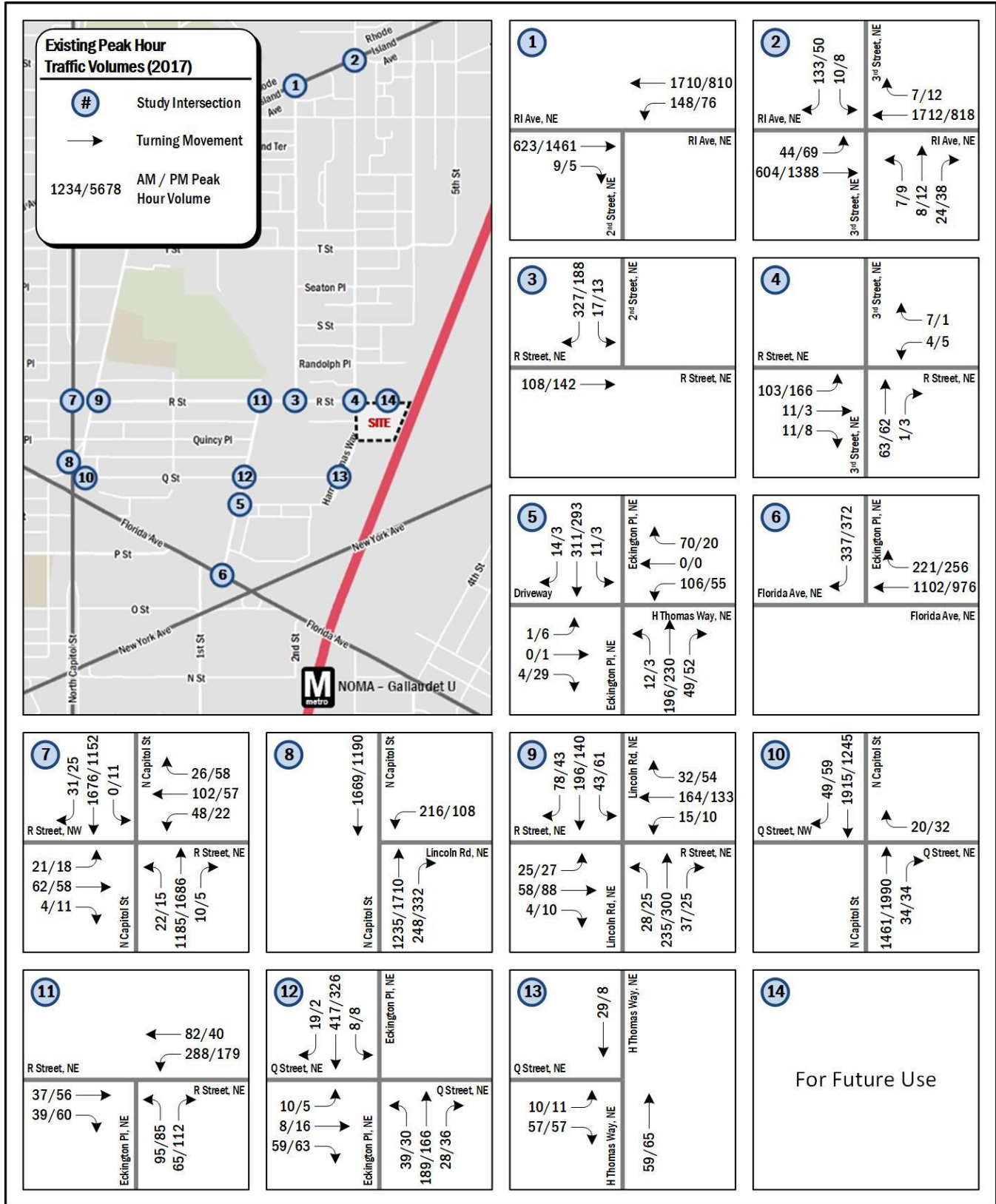


Figure 9: Existing (2017) Peak Hour Traffic Volumes

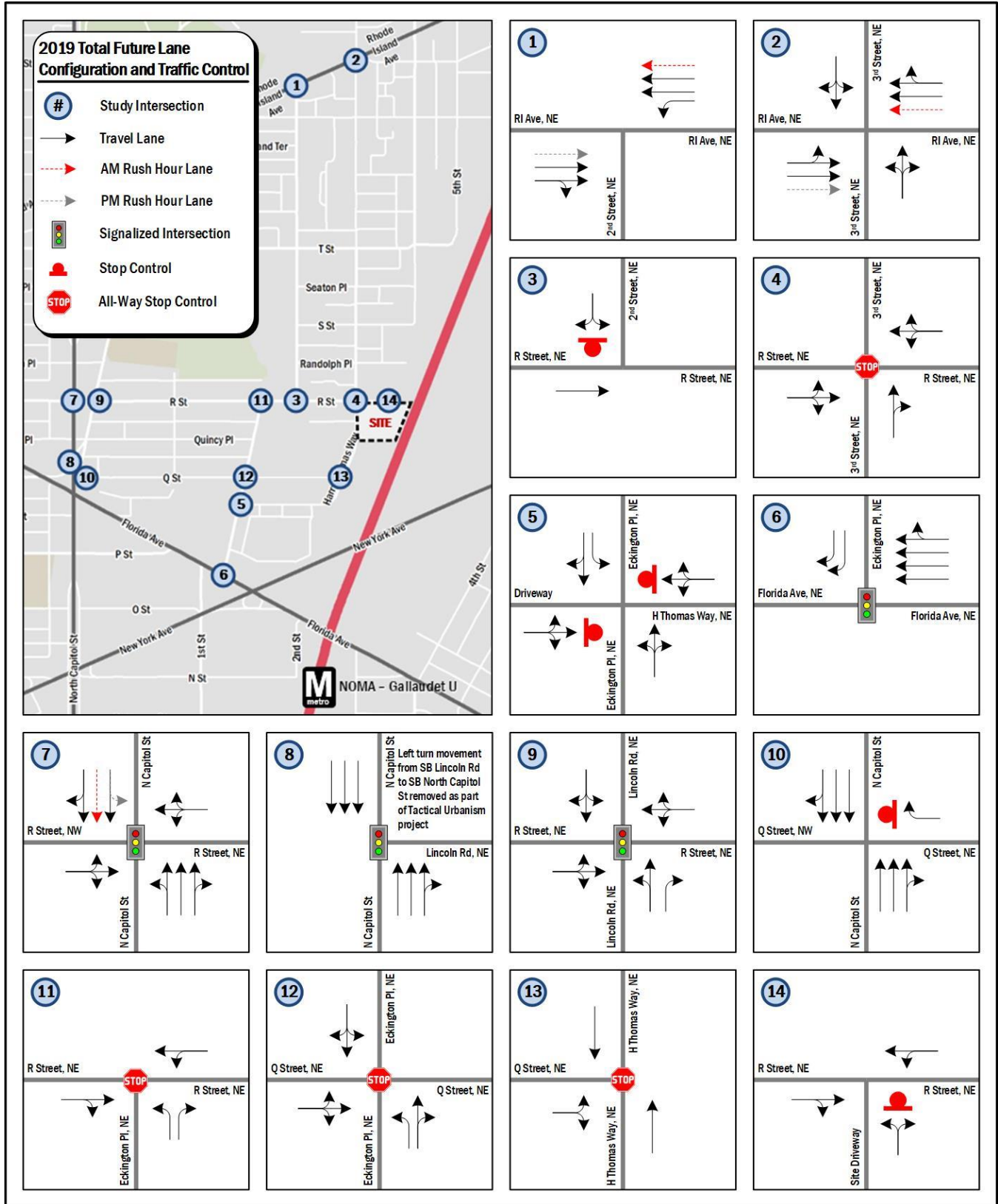


Figure 10: 2019 Lane Configurations

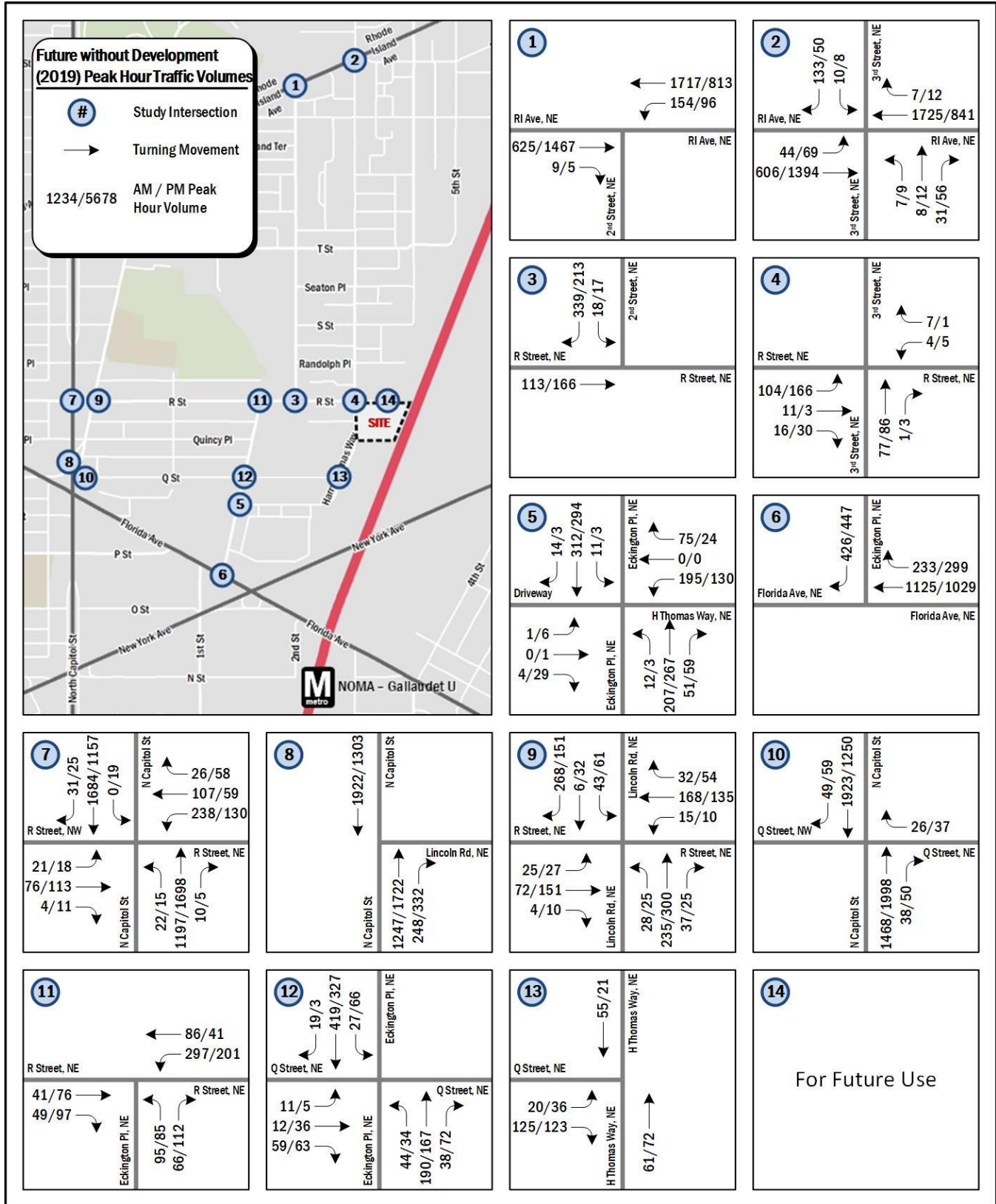


Figure 11: 2019 Background Peak Hour Traffic Volumes

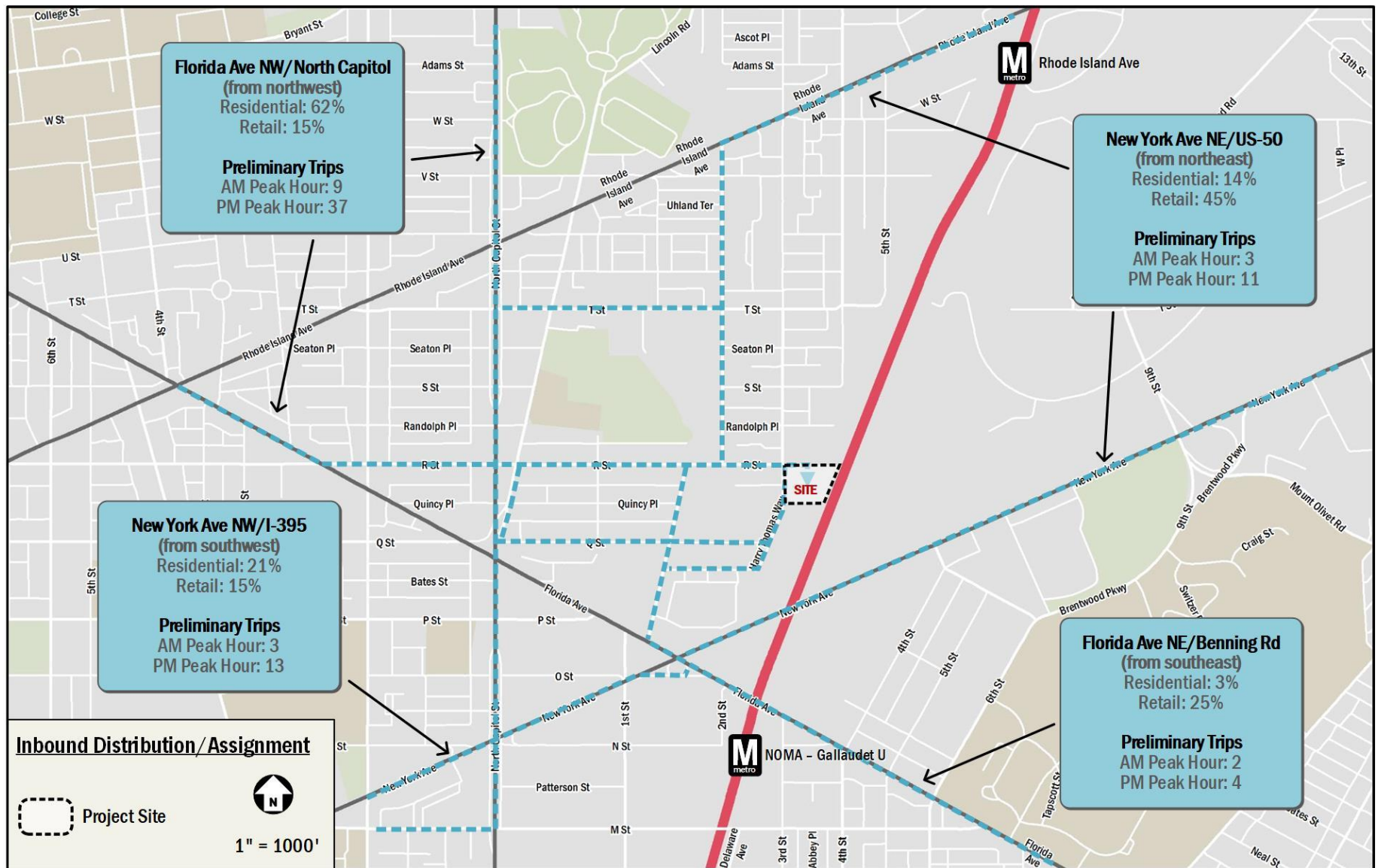


Figure 12: Inbound Distribution and Routing

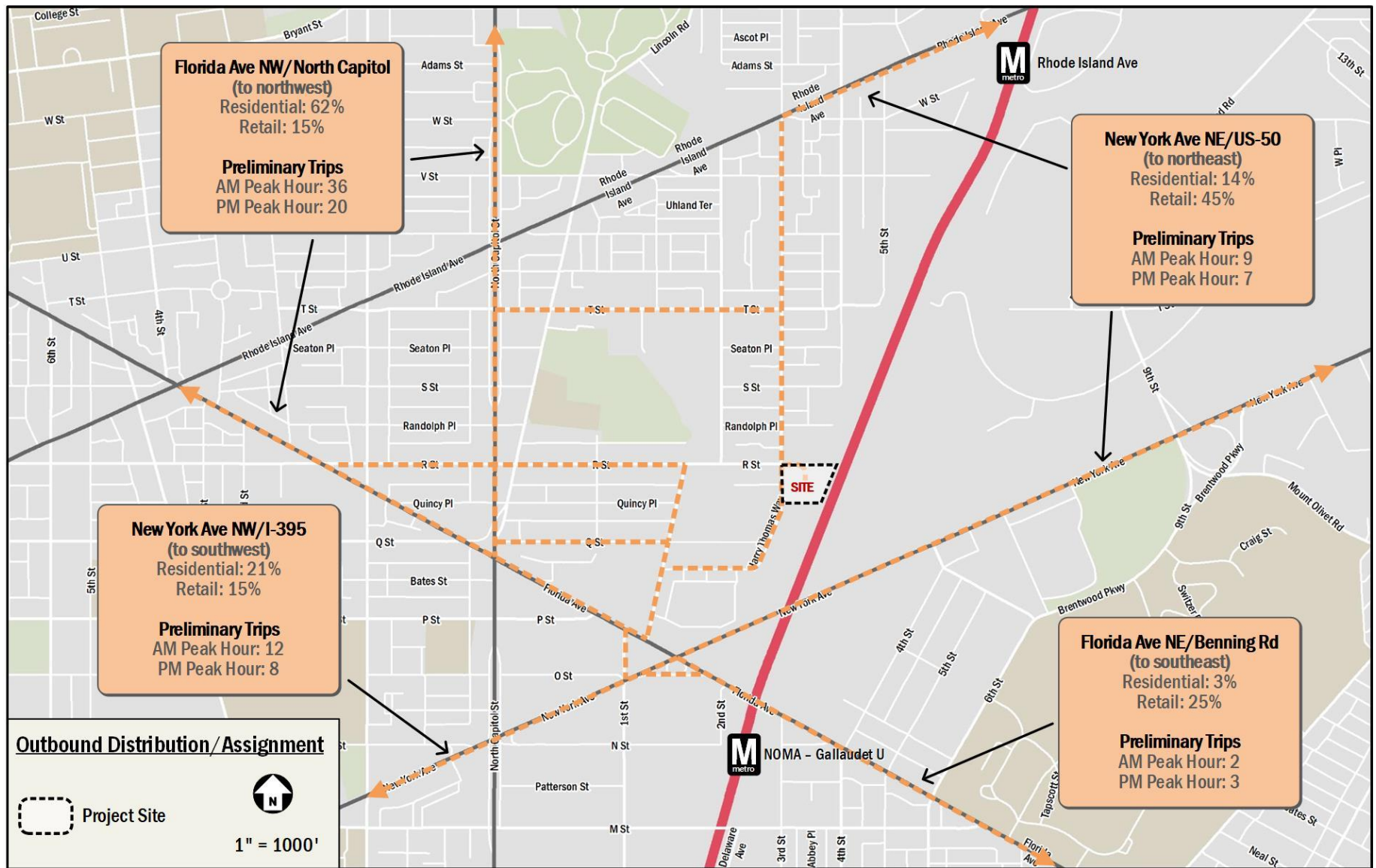


Figure 13: Outbound Distribution and Routing

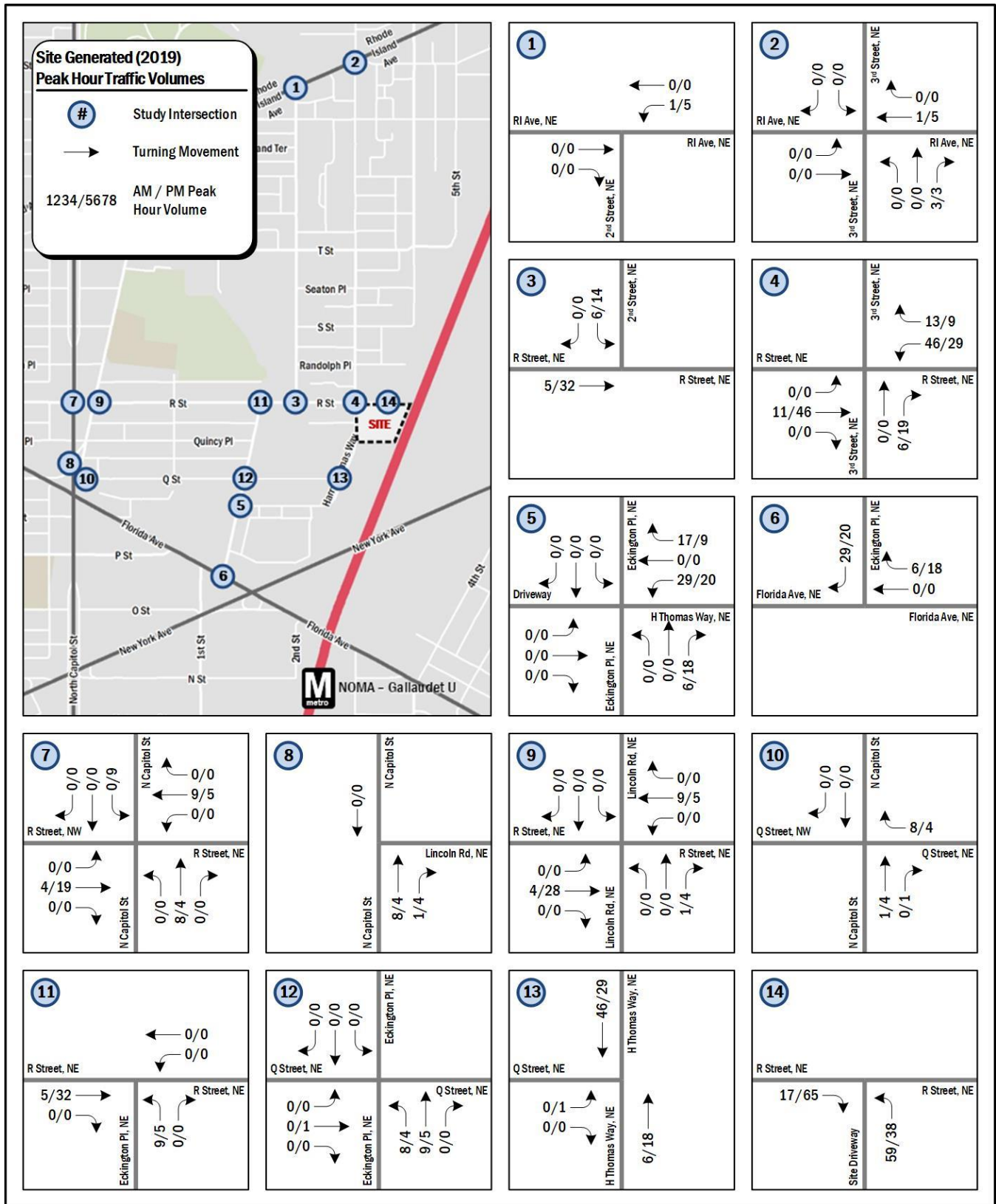


Figure 14: 2019 Site-Generated Peak Hour Traffic Volumes

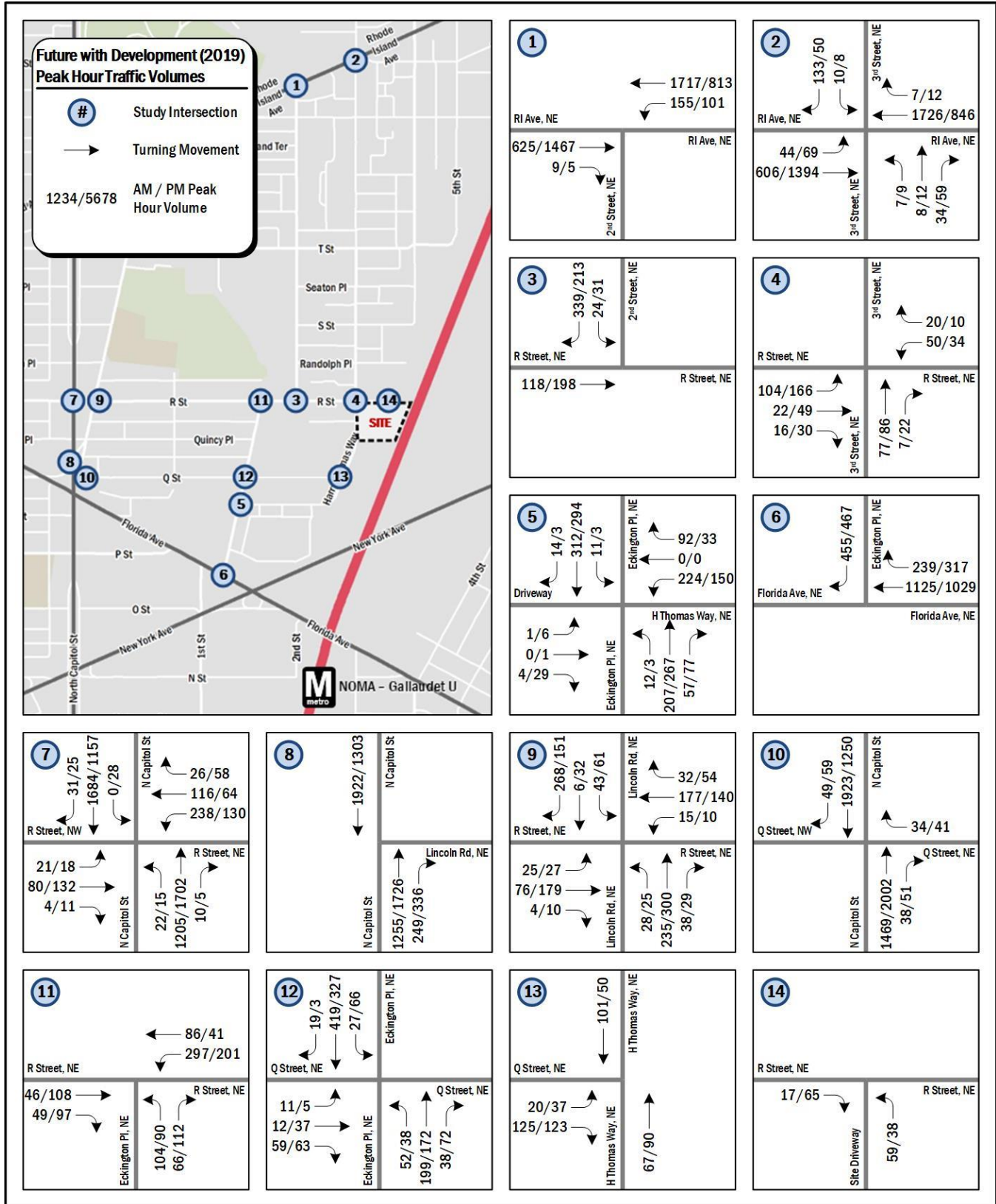


Figure 15: 2019 Total Future Peak Hour Traffic Volumes



**Table 8: AM Peak Hour Vehicular Capacity Analysis Results**

Intersection	Approach	Existing Conditions (2017)		Future Background Conditions (2019)		Total Future Conditions (2019)		Total Future Conditions (2019), with Mitigations	
		AM Peak Hour		AM Peak Hour		AM Peak Hour		AM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
<b>2nd Street &amp; Rhode Island Ave, NE</b>	Westbound Left	9.8	A	9.8	A	9.8	A	--	--
<b>3rd Street &amp; Rhode Island Ave, NE</b> (Mitigation: Conversion to Signalized)	<b>Overall</b>	--	--	--	--	--	--	<b>13.1</b>	<b>B</b>
	Eastbound Left	5.8	A	5.8	A	5.8	A	10.0	B
	Westbound	--	--	--	--	--	--	11.3	B
	Northbound	156.6	F	148.5	F	143.1	F	33.1	C
	Southbound	349.5	F	390.6	F	400.6	F	38.7	D
<b>R Street &amp; 2nd Street, NE</b>	Southbound	10.2	B	10.4	B	10.4	B	--	--
<b>3rd Street &amp; R Street, NE</b>	<b>Overall</b>	<b>7.9</b>	<b>A</b>	<b>8.0</b>	<b>A</b>	<b>8.2</b>	<b>A</b>	--	--
	Eastbound	8.1	A	8.2	A	8.4	A	--	--
	Westbound	7.0	A	7.1	A	7.8	A	--	--
	Northbound	7.7	A	7.8	A	8.1	A	--	--
<b>Eckington Place &amp; Harry Thomas Way, NE</b> (Mitigation: Conversion to All-Way Stop)	<b>Overall</b>	--	--	--	--	--	--	<b>16.4</b>	<b>C</b>
	Eastbound	13.9	B	14.1	B	14.5	B	9.4	A
	Westbound	91.8	F	344.5	F	460.2	F	17.4	C
	Northbound Left	0.5	A	0.5	A	0.5	A	14.3	B
	Southbound Left	9.3	A	9.4	A	9.4	A	17.4	C
<b>Florida Avenue &amp; Eckington Place, NE</b>	<b>Overall</b>	<b>16.2</b>	<b>B</b>	<b>18.9</b>	<b>B</b>	<b>19.9</b>	<b>B</b>	--	--
	Westbound	6.8	A	6.9	A	6.9	A	--	--
	Southbound	53.4	D	57.6	E	59.3	E	--	--
<b>North Capitol Street &amp; R Street</b>	<b>Overall</b>	<b>15.0</b>	<b>B</b>	<b>17.1</b>	<b>B</b>	<b>17.2</b>	<b>B</b>	--	--
	Eastbound	20.6	C	21.2	C	21.2	C	--	--
	Westbound	20.2	C	35.3	D	35.8	D	--	--
	Northbound	6.2	A	6.3	A	6.3	A	--	--
	Southbound	20.4	C	20.5	C	20.5	C	--	--





<b>North Capitol Street &amp; Lincoln Road</b>	<b>Overall</b>	<b>7.9</b>	<b>A</b>	<b>8.8</b>	<b>A</b>	<b>8.8</b>	<b>A</b>	--	--
	Westbound	8.1	A	--	--	--	--	--	--
	Northbound	15.2	B	15.3	B	15.4	B	--	--
	Southbound	1.3	A	3.7	A	3.7	A	--	--
<b>Lincoln Road &amp; R Street, NE</b>	<b>Overall</b>	<b>24.2</b>	<b>C</b>	<b>23.3</b>	<b>C</b>	<b>23.5</b>	<b>C</b>	--	--
	Eastbound	13.1	B	12.9	B	12.8	B	--	--
	Westbound	36.2	D	36.4	D	36.9	D	--	--
	Northbound	20.6	C	20.6	C	20.6	C	--	--
	Southbound	22.7	C	20.0	B	20.0	B	--	--
<b>North Capitol Street &amp; Q Street</b>	Westbound Right	9.3	A	9.4	A	9.4	A	--	--
<b>Eckington Place &amp; R Street, NE</b>	<b>Overall</b>	<b>11.8</b>	<b>B</b>	<b>12.2</b>	<b>B</b>	<b>12.4</b>	<b>B</b>	--	--
	Eastbound	8.3	A	8.4	A	8.6	A	--	--
	Westbound	13.8	B	14.5	B	14.7	B	--	--
	Northbound	8.8	A	8.9	A	9.1	A	--	--
<b>Eckington Place &amp; Q Street, NE</b>	<b>Overall</b>	<b>11.7</b>	<b>B</b>	<b>12.4</b>	<b>B</b>	<b>12.5</b>	<b>B</b>	--	--
	Eastbound	8.9	A	9.1	A	9.2	A	--	--
	Northbound	9.1	A	9.2	A	9.4	A	--	--
	Southbound	13.9	B	15.0	B	15.1	C	--	--
<b>Harry Thomas Way &amp; Q Street, NE</b>	<b>Overall</b>	<b>7.2</b>	<b>A</b>	<b>7.6</b>	<b>A</b>	<b>7.9</b>	<b>A</b>	--	--
	Eastbound	7.0	A	7.5	A	7.7	A	--	--
	Northbound	7.5	A	7.7	A	7.9	A	--	--
	Southbound	7.3	A	7.7	A	8.1	A	--	--
<b>R Street &amp; Site Driveway, NE</b>	Eastbound	--	--	--	--	--	--	--	--
	Westbound	--	--	--	--	--	--	--	--
	Northbound LR	--	--	--	--	8.8	A	--	--



**Table 9: PM Peak Hour Vehicular Capacity Analysis Results**

Intersection	Approach	Existing Conditions (2017)		Future Background Conditions (2019)		Total Future Conditions (2019)		Total Future Conditions (2019), with Mitigations	
		PM Peak Hour		PM Peak Hour		PM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
<b>2nd Street &amp; Rhode Island Ave, NE</b>	Westbound Left	15.4	C	16.1	C	16.3	C	--	--
<b>3rd Street &amp; Rhode Island Ave, NE</b>	<b>Overall</b>	--	--	--	--	--	--	<b>9.3</b>	<b>A</b>
(Mitigation: Conversion to Signalized)	Eastbound Left	3.1	A	3.2	A	3.2	A	7.8	A
	Westbound	--	--	--	--	--	--	6.6	A
	Northbound	334.6	F	342.6	F	345.9	F	39.5	D
	Southbound	43.6	E	54.6	F	57.1	F	38.6	D
<b>R Street &amp; 2nd Street, NE</b>	Southbound	9.4	A	9.7	A	10.0	A	--	--
<b>3rd Street &amp; R Street, NE</b>	<b>Overall</b>	<b>8.4</b>	<b>A</b>	<b>8.6</b>	<b>A</b>	<b>9.2</b>	<b>A</b>	--	--
(Mitigation: Conversion to All-Way Stop)	Eastbound	8.7	A	8.9	A	9.7	A	--	--
	Westbound	7.5	A	7.6	A	7.9	A	--	--
	Northbound	7.8	A	8.1	A	8.5	A	--	--
<b>Eckington Place &amp; Harry Thomas Way, NE</b>	<b>Overall</b>	--	--	--	--	--	--	<b>14.2</b>	<b>B</b>
	Eastbound	13.3	B	13.6	B	13.8	D	9.5	A
	Westbound	29.5	D	89.0	F	132.1	F	12.4	B
	Northbound Left	0.1	A	0.1	A	0.1	A	15.0	C
	Southbound Left	8.9	A	9.0	A	9.1	A	14.9	B
<b>Florida Avenue &amp; Eckington Place, NE</b>	<b>Overall</b>	<b>19.9</b>	<b>B</b>	<b>22.0</b>	<b>C</b>	<b>22.6</b>	<b>C</b>	--	--
	Westbound	9.5	A	9.7	A	9.8	A	--	--
	Southbound	51.4	D	55.4	E	56.6	E	--	--
<b>North Capitol Street &amp; R Street</b>	<b>Overall</b>	<b>12.3</b>	<b>B</b>	<b>14.7</b>	<b>B</b>	<b>15.7</b>	<b>B</b>	--	--
	Eastbound	21.2	C	24.5	C	25.3	C	--	--
	Westbound	18.5	B	35.4	D	36.3	D	--	--
	Northbound	6.0	A	6.2	A	6.3	A	--	--
	Southbound	19.9	B	21.0	C	23.1	C	--	--



<b>North Capitol Street &amp; Lincoln Road</b>	<b>Overall</b>	<b>16.1</b>	<b>B</b>	<b>16.2</b>	<b>B</b>	<b>16.3</b>	<b>B</b>	--	--
	Westbound	8.3	A	--	--	--	--	--	--
	Northbound	25.6	C	25.7	C	25.8	C	--	--
	Southbound	0.3	A	1.1	A	1.1	A	--	--
<b>Lincoln Road &amp; R Street, NE</b>	<b>Overall</b>	<b>24.8</b>	<b>C</b>	<b>24.3</b>	<b>C</b>	<b>24.3</b>	<b>C</b>	--	--
	Eastbound	18.1	B	17.4	B	18.1	B	--	--
	Westbound	39.1	D	39.3	D	39.7	D	--	--
	Northbound	22.9	C	22.9	C	22.8	C	--	--
	Southbound	19.1	B	19.0	B	19.0	B	--	--
<b>North Capitol Street &amp; Q Street</b>	Westbound Right	10.0	B	10.1	B	10.1	B	--	--
<b>Eckington Place &amp; R Street, NE</b>	<b>Overall</b>	<b>9.1</b>	<b>A</b>	<b>9.6</b>	<b>A</b>	<b>9.9</b>	<b>A</b>	--	--
	Eastbound	8.4	A	9.0	A	9.6	A	--	--
	Westbound	10.3	B	11.0	B	11.2	B	--	--
	Northbound	8.1	A	8.4	A	8.6	A	--	--
<b>Eckington Place &amp; Q Street, NE</b>	<b>Overall</b>	<b>10.5</b>	<b>B</b>	<b>12.4</b>	<b>B</b>	<b>12.5</b>	<b>B</b>	--	--
	Eastbound	8.8	A	9.5	A	9.6	A	--	--
	Northbound	9.0	A	9.9	A	10.0	B	--	--
	Southbound	12.1	B	14.9	B	15.0	C	--	--
<b>Harry Thomas Way &amp; Q Street, NE</b>	<b>Overall</b>	<b>7.2</b>	<b>A</b>	<b>7.7</b>	<b>A</b>	<b>7.9</b>	<b>A</b>	--	--
	Eastbound	7.0	A	7.7	A	7.9	A	--	--
	Northbound	7.5	A	7.8	A	8.0	A	--	--
	Southbound	7.2	A	7.5	A	7.8	A	--	--
<b>R Street &amp; Site Driveway, NE</b>	Eastbound	--	--	--	--	--	--	--	--
	Westbound	--	--	--	--	--	--	--	--
	Northbound LR	--	--	--	--	8.8	B	--	--



**Table 10: AM Peak Hour Queuing Results**

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2017)		Future Background Conditions (2019)		Total Future Conditions (2019)		Total Future Conditions (2019), with Mitigations	
			AM Peak		AM Peak		AM Peak		AM Peak	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
<b>2nd Street &amp; Rhode Island Ave, NE</b>	Eastbound Thru	315	--	0	--	0	--	0	--	--
	Eastbound TR	300	--	0	--	0	--	0	--	--
	Westbound Left	70	--	15	--	16	--	16	--	--
	Westbound Thru	375	--	0	--	0	--	0	--	--
<b>3rd Street &amp; Rhode Island Ave, NE</b> (Mitigation: Conversion to Signalized)	Eastbound LT	375	--	13	--	13	--	13	117	155
	Eastbound Thru	375	--	0	--	0	--	0	117	155
	Westbound Thru	350	--	0	--	0	--	0	258	297
	Westbound TR	60	--	0	--	0	--	0	258	297
	Northbound LTR	310	--	81	--	89	--	92	10	39
	Southbound LTR	250	--	309	--	323	--	326	91	147
<b>R Street &amp; 2nd Street, NE</b>	Eastbound Thru	175	--	0	--	0	--	0	--	--
	Southbound LR	200	--	39	--	41	--	43	--	--
<b>3rd Street &amp; R Street, NE*</b>	Eastbound LTR	340	--	--	--	--	--	--	--	--
	Westbound LTR	210	--	--	--	--	--	--	--	--
	Northbound TR	515	--	--	--	--	--	--	--	--
<b>Eckington Place &amp; Harry Thomas Way, NE*</b> (Mitigation: Conversion to All-Way Stop)	Eastbound LTR	50	--	1	--	1	--	1	--	--
	Westbound LTR	685	--	200	--	522	--	677	--	--
	Northbound LTR	450	--	1	--	1	--	1	--	--
	Southbound Left	50	--	1	--	1	--	1	--	--
	Southbound TR	130	--	0	--	0	--	0	--	--
<b>Florida Avenue &amp; Eckington Place, NE</b>	Westbound Thru	115	115	130	119	134	119	135	--	--
	Westbound TR	120	115	130	119	134	119	135	--	--
	Southbound Right	425	90	148	148	218	167	239	--	--



<b>North Capitol Street &amp; R Street</b>	Eastbound LTR	800	39	68	47	80	49	84	--	--
	Westbound LTR	65	51	80	263	389	272	#398	--	--
	Northbound LT	190	39	51	40	54	41	57	--	--
	Northbound Thru	190	39	51	40	54	41	57	--	--
	Northbound TR	190	39	51	40	54	41	57	--	--
	Southbound LT	195	--	--	--	--	--	--	--	--
	Southbound Thru	195	325	378	--	--	--	--	--	--
	Southbound TR	195	325	378	328	382	328	382	--	--
<b>North Capitol Street &amp; Lincoln Road</b>	Westbound Left	30	18	21	--	--	--	--	--	--
	Northbound Thru	185	323	389	326	393	328	395	--	--
	Northbound TR	225	323	389	326	393	328	395	--	--
	Southbound Thru	80	10	10	42	44	42	44	--	--
<b>Lincoln Road &amp; R Street, NE</b>	Eastbound LTR	55	68	114	80	132	83	135	--	--
	Westbound LTR	460	131	204	134	208	141	217	--	--
	Northbound LT	200	204	289	204	289	203	288	--	--
	Northbound Right	80	7	m23	7	m23	7	m25	--	--
	Southbound LTR	210	150	231	20	80	20	80	--	--
<b>North Capitol Street &amp; Q Street</b>	Westbound Right	615	--	2	--	3	--	4	--	--
	Northbound Thru	70	--	0	--	0	--	0	--	--
	Northbound TR	70	--	0	--	0	--	0	--	--
	Southbound Thru	100	--	0	--	0	--	0	--	--
	Southbound TR	100	--	0	--	0	--	0	--	--
<b>Eckington Place &amp; R Street, NE*</b>	Eastbound TR	515	--	--	--	--	--	--	--	--
	Westbound LT	150	--	--	--	--	--	--	--	--
	Northbound Left	50	--	--	--	--	--	--	--	--
	Northbound Right	210	--	--	--	--	--	--	--	--
<b>Eckington Place &amp; Q Street, NE*</b>	Eastbound LTR	410	--	--	--	--	--	--	--	--
	Northbound Left	50	--	--	--	--	--	--	--	--
	Northbound TR	100	--	--	--	--	--	--	--	--
	Southbound LTR	200	--	--	--	--	--	--	--	--



<b>Harry Thomas Way &amp; Q Street, NE*</b>	Eastbound LR	575	--	--	--	--	--	--	--	--
	Northbound Thru	700	--	--	--	--	--	--	--	--
	Southbound Thru	415	--	--	--	--	--	--	--	--
<b>R Street &amp; Site Driveway, NE</b>	Eastbound TR	150	--	--	--	--	--	--	--	--
	Westbound LT	25	--	--	--	--	--	--	--	--
	Northbound LR	50	--	--	--	--	--	5	--	--

*\*HCM does not analyze queuing for All-Way stop-controlled intersections*



**Table 11: PM Peak Hour Queuing Results**

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2017)		Future Background Conditions (2019)		Total Future Conditions (2019)		Total Future Conditions (2019), with Mitigations	
			PM Peak		PM Peak		PM Peak		PM Peak	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
<b>2nd Street &amp; Rhode Island Ave, NE</b>	Eastbound Thru	315	--	0	--	0	--	0	--	--
	Eastbound TR	300	--	0	--	0	--	0	--	--
	Westbound Left	70	--	17	--	23	--	25	--	--
	Westbound Thru	375	--	0	--	0	--	0	--	--
<b>3rd Street &amp; Rhode Island Ave, NE</b> (Mitigation: Conversion to Signalized)	Eastbound LT	375	--	8	--	8	--	8	164	195
	Eastbound Thru	375	--	0	--	0	--	0	164	195
	Westbound Thru	350	--	0	--	0	--	0	124	154
	Westbound TR	60	--	0	--	0	--	0	124	154
	Northbound LTR	310	--	154	--	189	--	195	19	59
	Southbound LTR	250	--	48	--	58	--	60	5	40
<b>R Street &amp; 2nd Street, NE</b>	Eastbound Thru	175	--	0	--	0	--	0	--	--
	Southbound LR	200	--	22	--	26	--	29	--	--
<b>3rd Street &amp; R Street, NE*</b>	Eastbound LTR	340	--	--	--	--	--	--	--	--
	Westbound LTR	210	--	--	--	--	--	--	--	--
	Northbound TR	515	--	--	--	--	--	--	--	--
<b>Eckington Place &amp; Harry Thomas Way, NE*</b> (Mitigation: Conversion to All-Way Stop)	Eastbound LTR	50	--	7	--	7	--	8	--	--
	Westbound LTR	685	--	42	--	178	--	247	--	--
	Northbound LTR	450	--	0	--	0	--	0	--	--
	Southbound Left	50	--	0	--	0	--	0	--	--
	Southbound TR	130	--	0	--	0	--	0	--	--
<b>Florida Avenue &amp; Eckington Place, NE</b>	Westbound Thru	115	124	142	137	156	139	159	--	--
	Westbound TR	120	124	142	137	156	139	159	--	--
	Southbound Right	425	115	168	177	235	191	251	--	--



<b>North Capitol Street &amp; R Street</b>	Eastbound LTR	800	33	60	71	114	84	130	--	--
	Westbound LTR	65	36	76	186	282	192	289	--	--
	Northbound LT	190	--	--	43	101	43	103	--	--
	Northbound Thru	190	41	97	43	101	43	103	--	--
	Northbound TR	190	41	97	43	101	43	103	--	--
	Southbound LT	195	307	385	321	404	341	434	--	--
	Southbound Thru	195	307	385	321	404	341	434	--	--
	Southbound TR	195	307	385	321	404	341	434	--	--
<b>North Capitol Street &amp; Lincoln Road</b>	Westbound Left	30	2	m25	--	--	--	--	--	--
	Northbound Thru	185	510	572	513	576	514	578	--	--
	Northbound TR	225	510	572	513	576	514	578	--	--
	Southbound Thru	80	33	31	10	11	10	11	--	--
<b>Lincoln Road &amp; R Street, NE</b>	Eastbound LTR	55	102	m#177	~176	#305	~224	m#358	--	--
	Westbound LTR	460	126	192	127	193	132	199	--	--
	Northbound LT	200	283	m303	283	m304	281	m302	--	--
	Northbound Right	80	0	m1	0	m1	1	m4	--	--
	Southbound LTR	210	108	174	67	133	67	133	--	--
<b>North Capitol Street &amp; Q Street</b>	Westbound Right	615	--	4	--	5	--	5	--	--
	Northbound Thru	70	--	0	--	0	--	0	--	--
	Northbound TR	70	--	0	--	0	--	0	--	--
	Southbound Thru	100	--	0	--	0	--	0	--	--
	Southbound TR	100	--	0	--	0	--	0	--	--
<b>Eckington Place &amp; R Street, NE*</b>	Eastbound TR	515	--	--	--	--	--	--	--	--
	Westbound LT	150	--	--	--	--	--	--	--	--
	Northbound Left	50	--	--	--	--	--	--	--	--
	Northbound Right	210	--	--	--	--	--	--	--	--
<b>Eckington Place &amp; Q Street, NE*</b>	Eastbound LTR	410	--	--	--	--	--	--	--	--
	Northbound Left	50	--	--	--	--	--	--	--	--
	Northbound TR	100	--	--	--	--	--	--	--	--
	Southbound LTR	200	--	--	--	--	--	--	--	--





<b>Harry Thomas Way &amp; Q Street, NE*</b>	Eastbound LR	575	--	--	--	--	--	--	--	--
	Northbound Thru	700	--	--	--	--	--	--	--	--
	Southbound Thru	415	--	--	--	--	--	--	--	--
<b>R Street &amp; Site Driveway, NE</b>	Eastbound TR	150	--	--	--	--	--	--	--	--
	Westbound LT	25	--	--	--	--	--	--	--	--
	Northbound LR	50	--	--	--	--	--	3	--	--

*\*HCM does not analyze queuing for All-Way stop-controlled intersections*

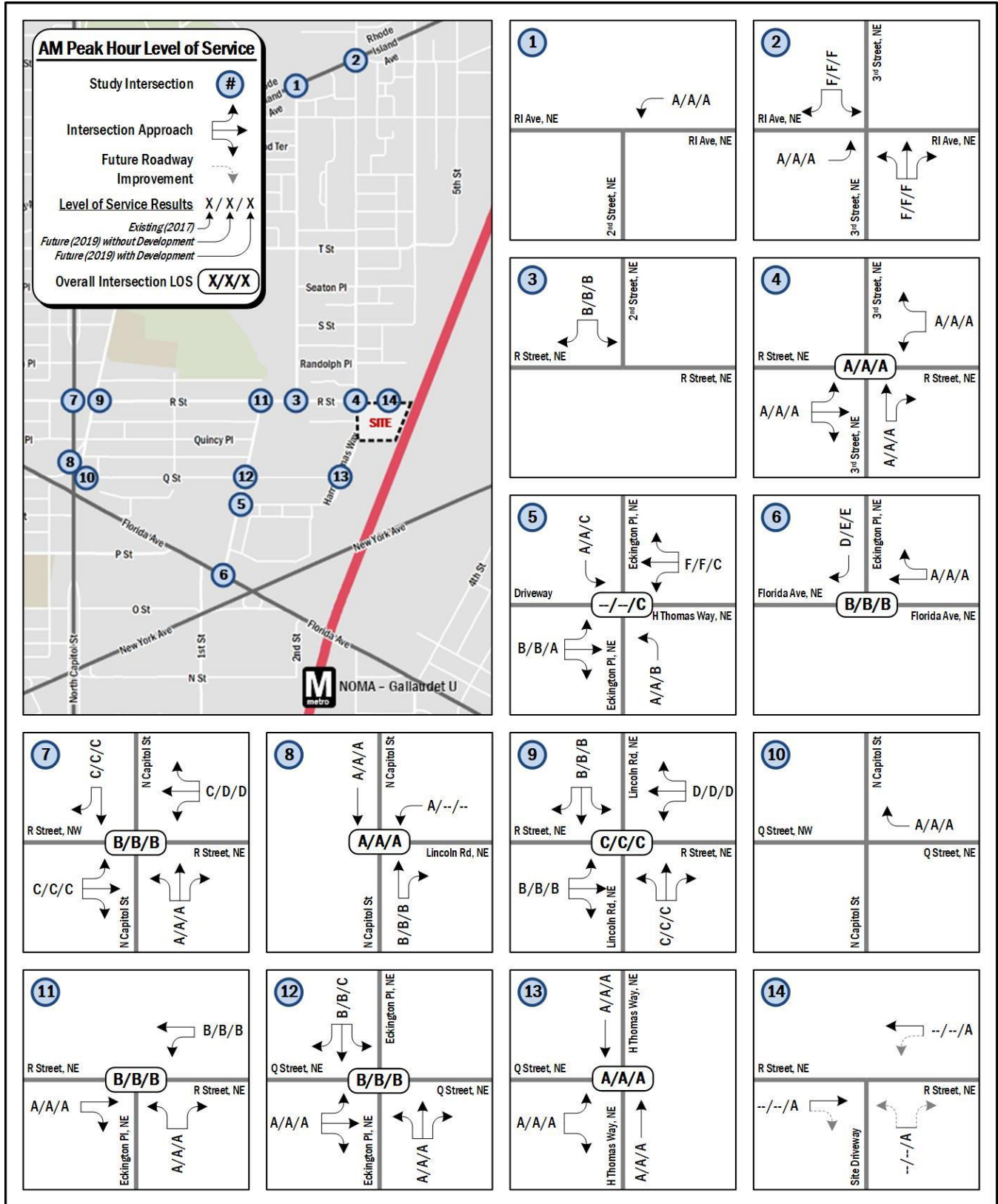


Figure 16: Morning Peak Hour Level of Service

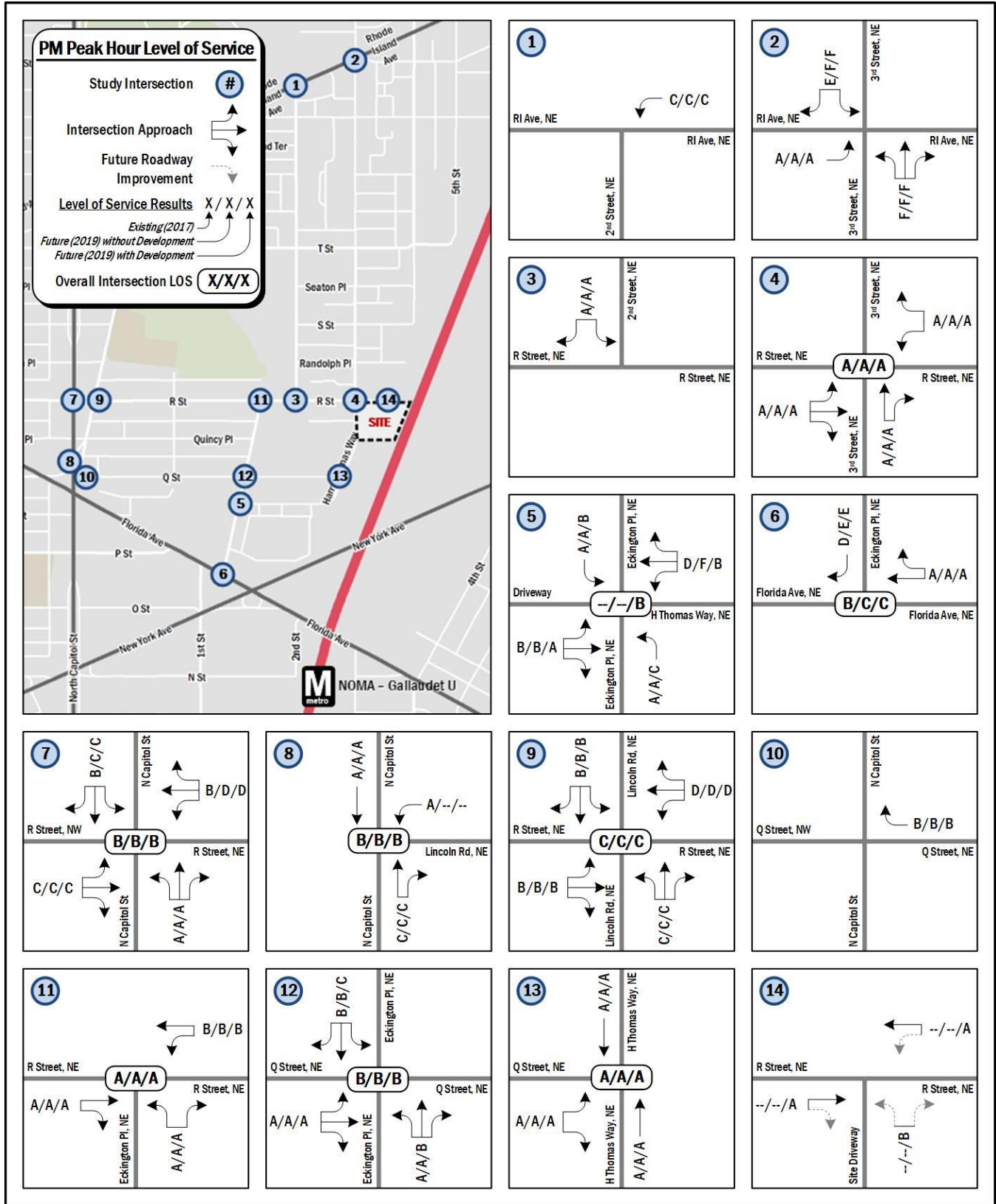


Figure 17: Afternoon Peak Hour Level of Service



# 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 Eckington Park project.

The following conclusions are reached within this chapter:

- The development site is approximately 0.4 miles from the NoMa-Gallaudet U Metrorail station and is surrounded by several Metrobus routes that travel along multiple primary corridors.
- 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 both Metrorail and Metrobus. Combined, these transit services provide local, city wide, and regional transit connections and link the site with major cultural, residential, employment, and commercial destinations throughout the region. Figure 18 identifies the major transit routes, stations, and stops in the study area.

The NoMa-Gallaudet U Metrorail station is located approximately 0.4 miles from the development site and is served by the Red Line. The Red Line travels south from Shady Grove, travels through downtown DC, and continues north to Glenmont. Trains run approximately every four to eight minutes during the morning and afternoon peak periods between 5:00 AM to 9:30 AM and 3:00 PM to 7:00 PM. They run approximately every 12 minutes during weekday non-peak

periods from 9:30 AM to 3:00 PM, every 15 to 18 minutes on weekday evenings after 7 pm and every 12 to 15 minutes on the weekends.

The site is also serviced by Metrobus along multiple primary corridors. These bus lines connect the site to many areas of the District, including several Metrorail stations serving all of the six lines. Table 12 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. Of note, the 90 and 92 lines which provide service to Adams Morgan and Congress Heights, operate 24 hours a day.

## PROPOSED TRANSIT SERVICE

Due to growth of population, jobs, and retail in several neighborhoods in the District and the potential for growth in other neighborhoods, the District’s infrastructure is challenged with the need for transportation investments to support the recent growth and to further strengthen neighborhoods.

In regards to transit serving the site, WMATA and DDOT have published one Metrobus study: the *Metrobus North Capitol Street Line Study: Route 80* in October 2013. The *North Capitol Street Line Study* evaluated an additional express route considered for the 80 Line. This route would likely have 15 minute headways, which would add four new buses per hour to the North Capitol Street Corridor. Currently it is only expected to operate during peak periods on weekdays, but there is potential for adding mid-day, late night, and weekend service in the future.

**Table 12: Metrobus Route Information**

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
80	North Capitol Street Line	Weekdays: 4:38 AM-2:00 AM Weekend: 4:50 AM-2:05 AM	7-40 min	0.4 miles, 8 minutes
90, 92	U Street-Garfield Line	Weekdays: 24 Hour Service Weekend: 24 Hour Service	5-39 min	0.4 miles, 8 minutes
P6	Anacostia-Eckington Line	Weekdays: 5:08 AM-1:58 AM Weekend: 5:30 AM-1:58 AM	8-35 min	< 0.1 miles, 1 minute
X3	Benning Road Line	Weekdays: Eastbound 4:10 PM-6:12 PM Westbound 6:16 AM-8:58 AM	23-36 min	0.4 miles, 8 minutes



## TRANSIT SITE IMPACTS

### Site-Generated Transit Trips

The proposed development is projected to generate 78 transit trips (18 inbound, 60 outbound) during the morning peak hour and 107 transit trips (66 inbound, 41 outbound) during the afternoon peak hour.

US Census data from 2006 to 2010 was used as a basis for determining the distribution of those taking Metrorail and those taking Metrobus. The site lies within TAZ 10213 which shows that approximately 75 percent of transit riders used Metrorail and the remaining 25 percent use Metrobus. Given the transit trip generation of the development, approximately 59 people will use Metrorail and 16 will use Metrobus during the morning peak hour while approximately 80 people will use Metrorail and 27 will use Metrobus during the afternoon peak hour.

WMATA studied capacity of Metrorail stations in its *Station Access & Capacity Study*. The study analyzed the capacity of Metrorail stations for their vertical transportation, for example the capacity of the station at elevators, stairs, and escalators to shuttle patrons between the street, mezzanine, and platforms. The study also analyzed stations capacity to process riders at fare card gates. For both analyses, vertical transportation and

fare card gates, volume-to-capacity ratios were calculated for existing data (from 2005) and projections for the year 2030. According to the study, high volume-to-capacity ratios were not observed at the NoMa-Gallaudet U Station in 2005 nor are they expected by 2030. However, this station had only been open for approximately one year when data was collected.

WMATA also 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, two of the Metrobus routes that travel near the site, the 90/92 line and the X3 line, exceed acceptable load factors. The remaining three lines do not experience any existing capacity concerns. Since the *Transit Future System Plan* was completed, Metro expanded the Benning Road-H Street Line service (X1/X2/X3) to include the Express X9 service and have completed a study of the 90s Metrobus routes. Based on this information, the number of Metrobus trips expected, and the peak period headways of the surrounding Metrobus routes, it is not expected that site-generated transit trips will cause detrimental impacts to Metrobus service.

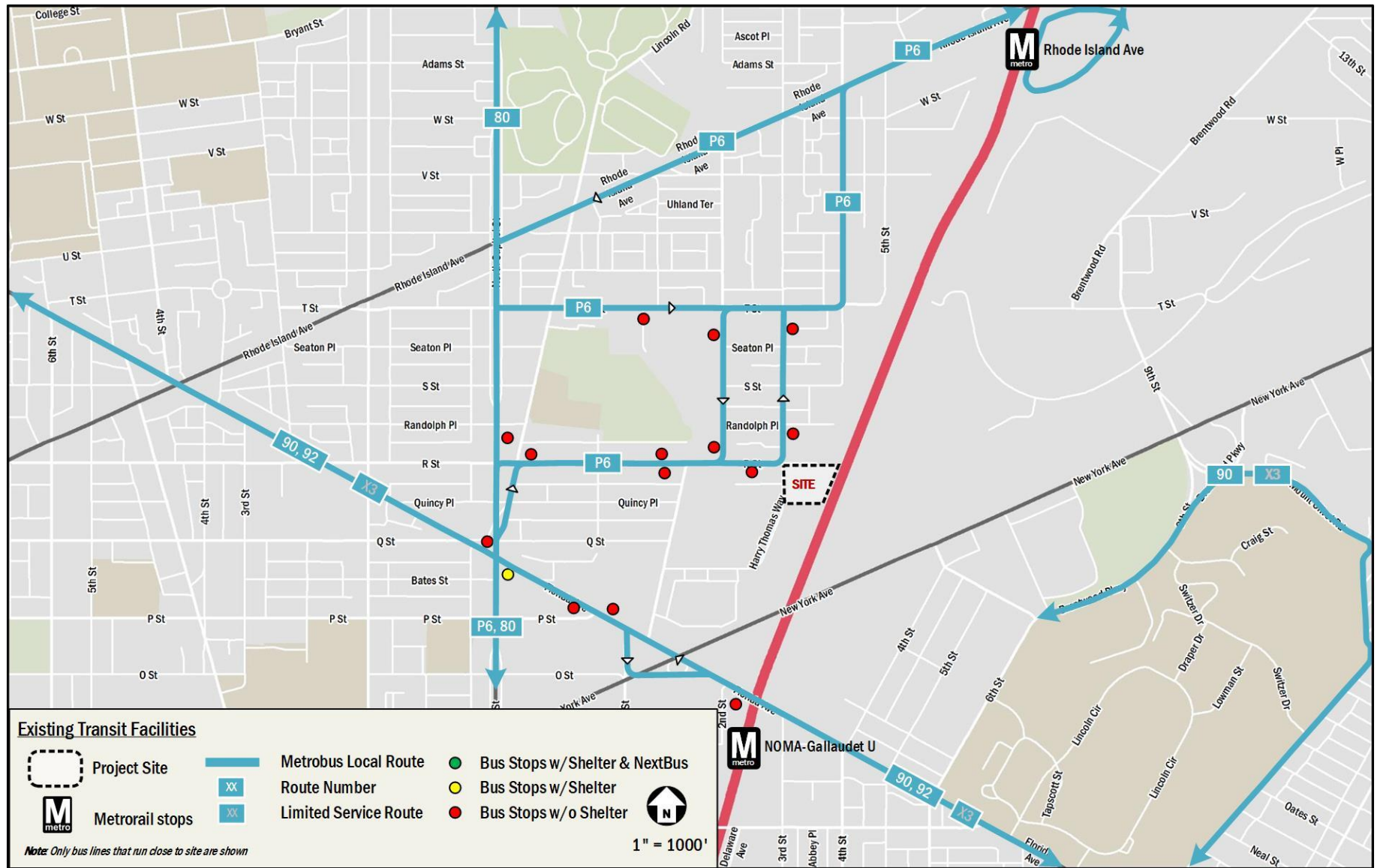


Figure 18: Existing Transit Service



## PEDESTRIAN FACILITIES

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

The following conclusions are reached within this chapter:

- The existing pedestrian infrastructure surrounding the site provides an excellent walking environment. There are some barriers east of the site due to the rail tracks and railyard, but overall there is a well-connected pedestrian network.
- Future pedestrian improvements are expected in the vicinity of the site, particularly along Eckington Place as part of the *Mid-City East Livability Study* and in conjunction with the planned NoMa Green Park.
- The site will improve the overall pedestrian environment on site by providing improved sidewalks along the interior and perimeter of the site, in conjunction with the realignment of the Metropolitan Branch Trail passing along the eastern edge of the site.

### PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the site were evaluated as well as routes to the NoMa-Gallaudet U Metrorail station portal at 2<sup>nd</sup> Street and N Street, NE and Gallaudet University. The site is accessible to Metrorail along Eckington Place and Florida Avenue as well as several Metrobus stops along R Street T Street, North Capitol Street, and Florida Avenue. There are some barriers within the study area that negatively impact the quality of and attractiveness of the walking environment. This primarily includes the Red Line Metrorail tracks which create some limitations to the number of pedestrian connections available to the east. Figure 19 shows suggested pedestrian pathways, walking time and distances, and barriers.

### 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 planned development shows that many facilities meet DDOT standards and provide a quality walking environment. Figure 20 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 *Design and Engineering Manual* in addition to ADA standards. Sidewalk widths and requirements for the District are shown below in Table 13.

Within the area shown, the majority of roadways are surrounded by low to moderate density residential. Most of the sidewalks surrounding the site comply with DDOT standards; however there are some areas that do not have adequate sidewalks, such as sections of 2<sup>nd</sup> Street, T Street, and Florida Avenue. Some of these sidewalks, such as those along Florida Avenue will likely be remedied as part of background developments.

ADA standards require that all curb ramps be provided wherever an accessible route crosses a curb and must have a detectable warning. Additionally, curb ramps shared between two crosswalks is not desired. As shown in the figure, under existing conditions there are minimal issues with crosswalks and curb ramps near the site.

#### Future Conditions

Although timelines are uncertain, several pedestrian improvements are proposed in the areas surrounding the Eckington Park site. These improvements are shown on Figure 21.

#### *Mid-City East Livability Study*

The *Mid-City East Livability Study* will result in major pedestrian improvements along nearby Eckington Place. These improvements include curb extensions at Harry Thomas Way, Q Street, and Quincy Place as well as crosswalks at all Eckington

**Table 13: 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 (Includes Downtown Central Business District)	10 ft	6 ft



Place crossings within the corridor. Currently crosswalks only exist at Q Street. Some of these crosswalks will also include pedestrian refuge areas (likely in the form of raised concrete medians) to further improve pedestrian safety and act as a traffic calming measure.

The intersection of Eckington Place and Q Street is also proposed to be converted from an all-way stop to a roundabout. Roundabouts are considered safer for pedestrians because they need only cross one direction of traffic at a time at each approach, as compared to most traditional intersections.

The improvements associated with the *Mid-City East Livability Study* do not have a specific timeline and thus were not included in the vehicular analysis of this report. They should however be more heavily considered in regards to the streetscape design of the project.

#### *NoMa Green*

The NoMa Parks Foundation has purchased a 2-acre plot of land directly south of the Eckington Park development between Harry Thomas Way and the Metropolitan Branch Trail. In conjunction with the NoMa Green, a Q Street trail connection may be implemented on the south side of the park to increase the connectivity of the Metropolitan Branch Trail and provide additional access to areas of the District that are growing in density. The park will brighten the environment directly surrounding the site and the Q Street connection will result in an improved connection between the site and the Metropolitan Branch Trail.

The Applicant has pledged up to \$350,000 to improve the southern portion of NoMa Green (the South Park). This funding will be allocated to programming improvements such as food service kiosks, public art, and/or a performance amphitheater.

### **SITE IMPACTS**

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

#### **Pedestrian Trip Generation**

The planned development is expected to generate 22 walking trips (6 inbound, 16 outbound) during the morning peak hour and 35 walking trips (21 inbound, 14 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 in the vicinity of the site
- Retail locations within the Eckington Park development
- Nearby neighborhood destinations, such as schools, community gathering areas, or the planned NoMa Green park

In addition to these trips, the transit trips generated by the site will also generate pedestrian demand between the site and nearby transit stops. About 75 percent of these will be walking to the NoMa-Gallaudet U Metrorail station located approximately 0.4 miles from the site and the rest will be walking to Metrobus stops, which are primarily located along R Street, Florida Avenue, and North Capitol Street.

#### **On-Site Pedestrian Infrastructure**

Although the sidewalks along the perimeter of the site meet DDOT requirements, the development will further improve the pedestrian environment along Harry Thomas Way and R Street by adding street trees and plantings.

Additionally, the project includes the creation of an approximately 20,500 square foot park on the eastern portion of the site that will be deeded to the NoMa Parks Foundation (NPF) for ownership and maintenance. The East Park will include a realignment of the metropolitan branch trail, a neighborhood dog park, and open space. The Applicant will fund up to \$165,000 for costs and expenses of the East Park.



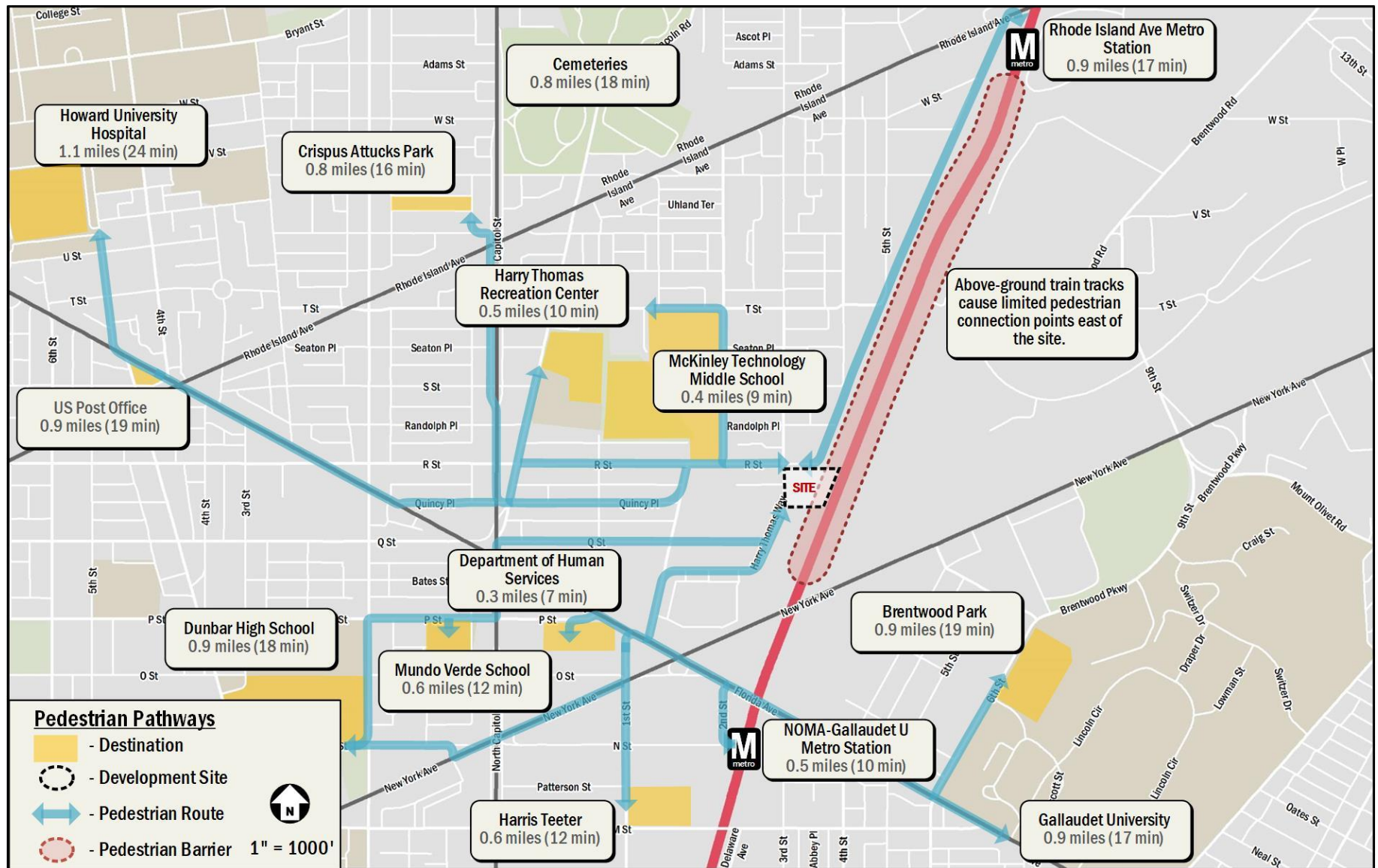


Figure 19: Pedestrian Pathways

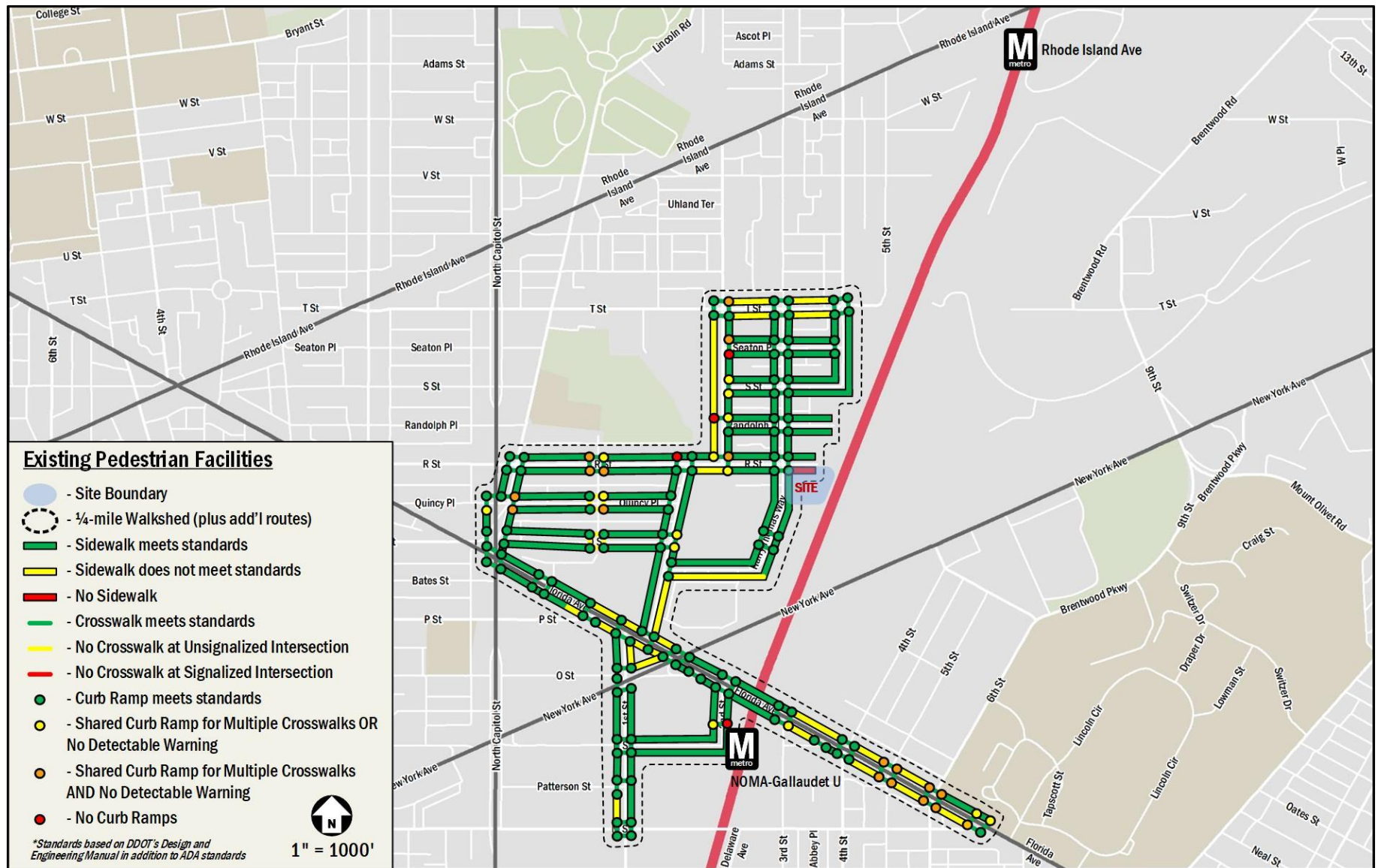


Figure 20: Existing Pedestrian Infrastructure

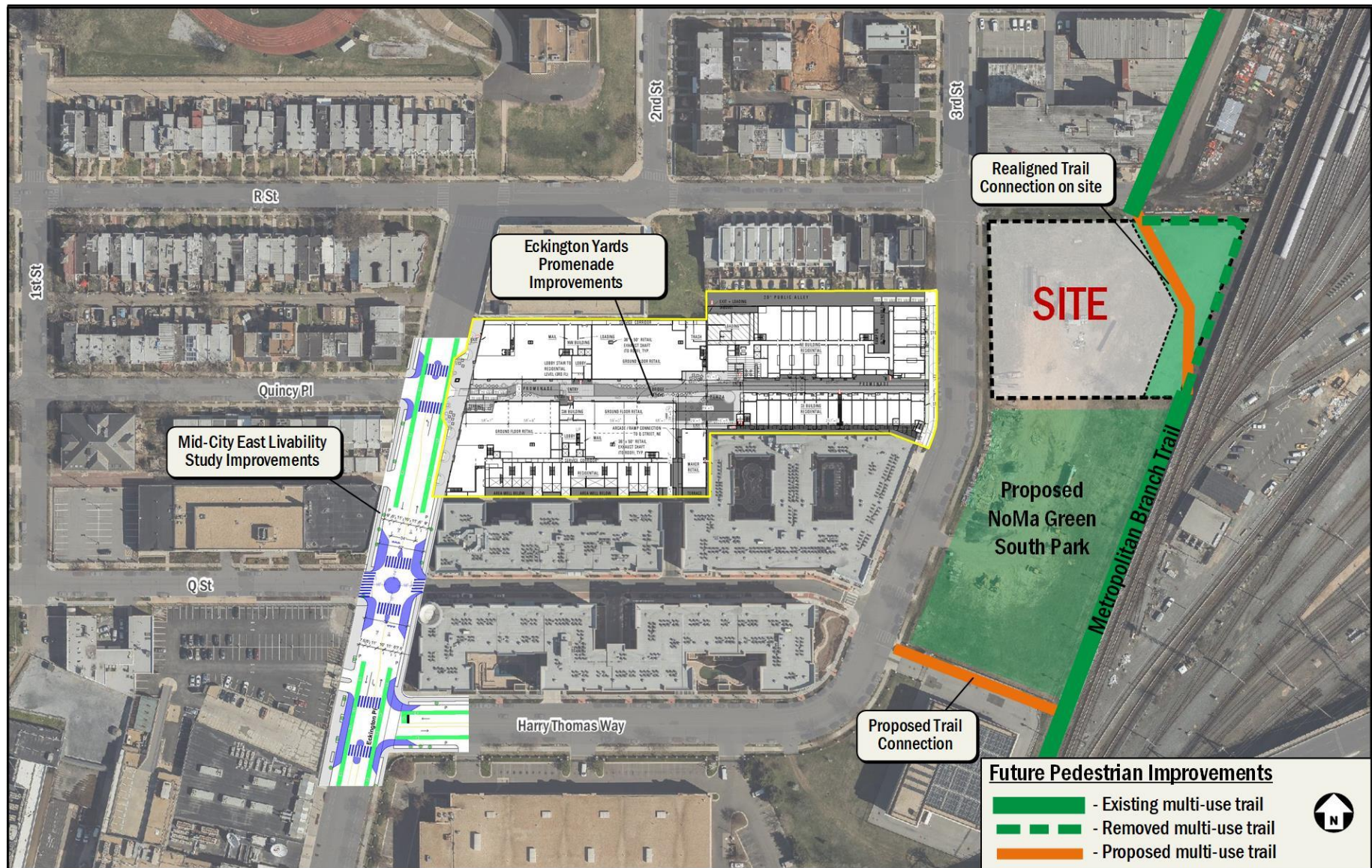


Figure 21: Future Pedestrian Improvements



## BICYCLE FACILITIES

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

The following conclusions are reached within this chapter:

- The site has access to several on- and off-street bicycle facilities including the Metropolitan Branch Trail and bike lanes on Eckington Place and Harry Thomas Way.
- 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 development site will include long-term bicycle parking within the parking garages and short-term bicycle parking within the site and along the perimeter of the site.

### EXISTING BICYCLE FACILITIES

The site has access to several existing on- and off-street bicycle facilities. The Eckington Park development is located adjacent to the Metropolitan Branch Trail that runs along the Metrorail Red Line and surrounded by on-street bicycle lanes and shared lanes along Eckington Place, Harry Thomas Way, and R Street. Figure 22 illustrates the existing bicycle facilities in the area and the anticipated access routes to and from the site.

No bike parking is provided along the perimeter of the site under existing conditions. This results in many cyclists using street signs, parking meters, or similar objects to secure their bicycles. This indicated that there is a demand for additional short-term bicycle parking in the vicinity of the site.

### 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.

- Tier 2  
Investments within this tier are not high priorities in the early years of MoveDC implementation. They could begin moving through the Project Development Process if there are compelling reasons for their advancement.
- Tier 3  
Investments within this tier are not priorities for DDOT-led advancement in the early years of MoveDC’s implementation. They could move forward earlier under circumstances such as real estate development initiatives and non-DDOT partnerships providing the opportunity for non-District-led completion of specific funding.
- Tier 4  
Generally, investments within this tier are not priorities for DDOT-led advancement and are lower priority for project development in the early years of implementation.

Due to the timeline of the Eckington Park development, this report focuses on the Tier 1 and Tier 2 recommendations within the vicinity of the site. There is one Tier 1 recommendation near the site which proposes a 4.6 mile trail along New York Avenue. No Tier 2 recommendations are located 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 development on the overall bicycle operations surrounding the site and develops recommendations for connectivity improvements.

#### Bicycle Trip Generation

The project is expected to generate 9 bicycle trips 2 inbound, 7 outbound) during the morning peak hour and 12 bicycle trip (7 inbound, 5 outbound) during the afternoon peak hour. Although bicycling will be an important mode for getting to and from the site, with facilities located on site and routes to and from the site, the impacts from bicycling will be relatively less than impacts to other modes.



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

The project will provide amenities that cater to cyclists including long-term and short-term bicycle racks. The garage will supply 174 secure long-term bicycle spaces, with four spaces allocated to retail and 170 spaces to residential. Additionally, the long-term bicycle room will include a bicycle repair station for use by residents and employees of the development.

Exact locations of short-term bicycle racks have not yet been determined; however, the Applicant will provide a minimum of 30 short-term bicycle spaces (10 retail, 20 residential), accommodated by the installation of 15 bicycle inverted u-racks that can house two bikes each, which meet and exceed the Zoning requirements for short-term bicycle parking. It is expected that these bicycle racks will be located along the promenade and along the perimeter of the site, where primary pedestrian entrances are planned. The Applicant is willing to work with DDOT to determine the locations of bicycle racks within public space.

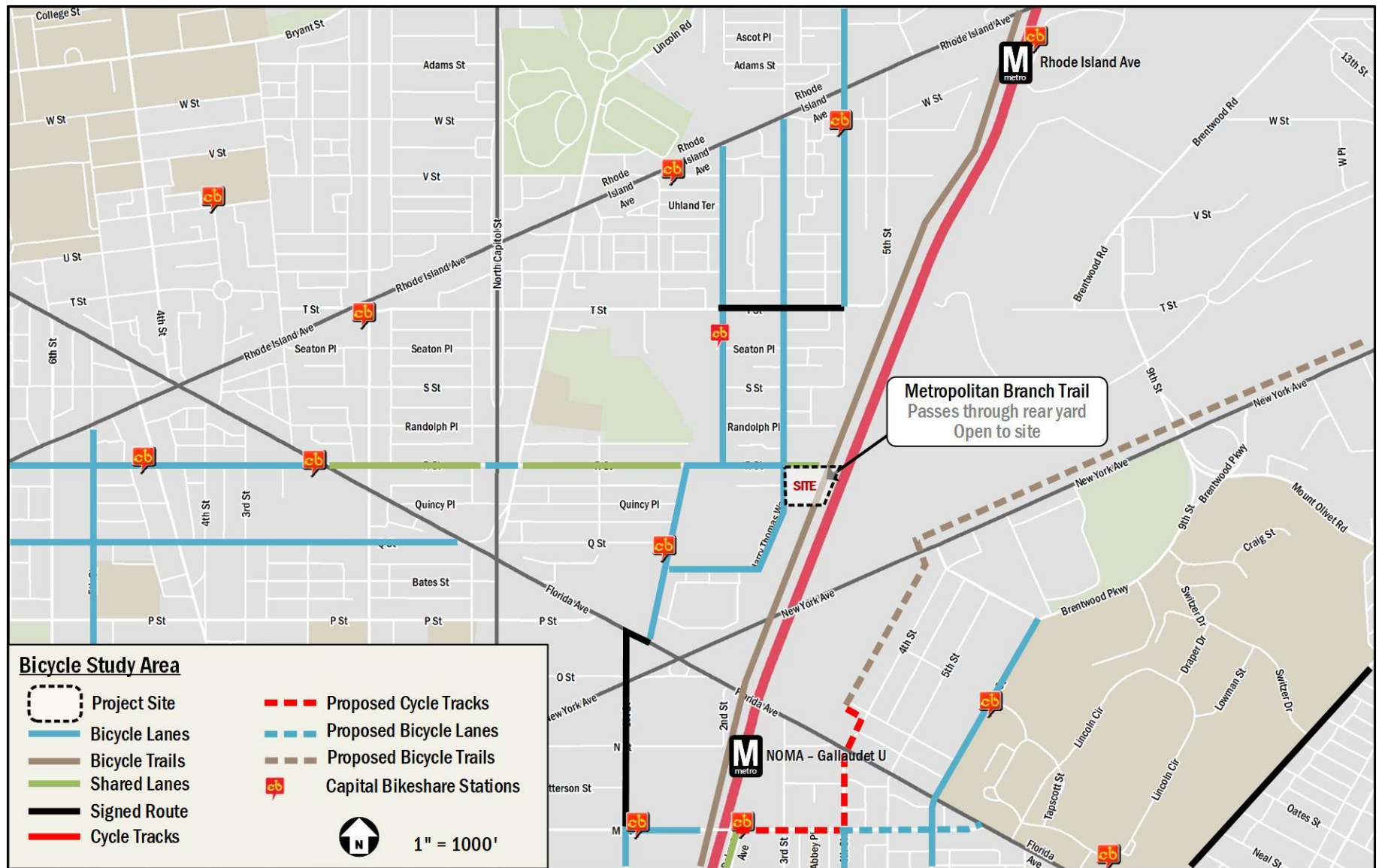


Figure 22: Existing Bicycle Facilities



## CRASH DATA ANALYSIS

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

### SUMMARY OF AVAILABLE CRASH DATA

A crash analysis was performed to determine if there was an abnormally high crash rate at study area intersections. DDOT provided the last three years of intersection crash data, from 2013 to 2015 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 14.

According to the Institute of Transportation Engineer’s *Comprehensive Transportation Review for Site Development*, a crash rate of 1.0 or higher is an indication that further study is required. While none of the intersections in this study area meet this criterion (as seen in Table 14), the Florida Avenue and Eckington Place intersection exhibits a rate just below the threshold at 0.99. The Eckington Park development should be developed in a manner to help alleviate, or at minimum not add to, the conflicts at these intersections.

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. In some cases, the crashes were located near the intersection and not necessarily within the intersection.

**Table 14: Intersection Crash Rates (2013 to 2015)**

Intersection	Total Crashes	Ped Crashes	Bike Crashes	Rate per MEV*
1. Rhode Island Avenue and 2nd Street, NE	11	0	1	0.32
2. Rhode Island Avenue and 3rd Street, NE	20	2	1	0.57
3. R Street and 2nd Street, NE	3	0	1	0.53
4. R Street and 3rd Street, NE	3	0	1	0.94
5. Eckington Place and Harry Thomas Way, NE	1	0	0	0.10
6. Florida Avenue and Eckington Place, NE	23	3	0	0.99
7. N Capitol Street and R Street	43	1	1	0.96
8. N Capitol Street and Lincoln Road	12	2	0	0.13
9. R Street and Lincoln Road	8	0	0	0.61
10. N Capitol Street and Q Street	12	2	0	0.25
11. R Street and Eckington Place, NE	1	0	0	0.12
12. Q Street and Eckington Place, NE	5	0	0	0.49
13. Q Street and Harry Thomas Way, NE^	--	--	--	--
14. R Street and Site Driveway^	--	--	--	--

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

^ - Crash Data Unavailable



## SUMMARY AND CONCLUSIONS

This report presents a review of the transportation aspects of a Planned Unit Development (PUD) application for the Eckington Park 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 three 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 and mitigations are implemented.

### Proposed Project

The project will redevelop the existing vacant lot into a residentially-focused mixed-use development with a thriving, pedestrian-friendly environment surrounded by parks. The development will be comprised of a mixed-use building with 328 residential units and up to 8,400 square feet of ground-floor retail space. The project includes the creation of an approximately 20,500 square foot park on the eastern portion of the site that will be deeded to the NoMa Parks Foundation (NPF) for ownership and maintenance. The East Park will include a realignment of the metropolitan branch trail, a neighborhood dog park, and open space. The Applicant will fund up to \$165,000 for costs and expenses of the East Park in addition to \$80,000 towards the realignment of the Metropolitan Branch Trail.

The building will be served by a below-grade parking garage accessible from R Street containing 124 spaces, with 110 devoted to residential uses and 14 to retail uses, accommodating the anticipated parking demand generated by the project.

Shared loading operations comprised of two (2) 30' loading berths and two (2) 100 square foot loading platforms will take place on the ground floor, with the entrance adjacent to the garage ramp on R Street. The proposed loading berths will supply the appropriate facilities to accommodate the practical needs of the site.

The development will meet or exceed the minimum amount of bicycle facilities required. The development will also include improvements to the pedestrian facilities adjacent to the site, including seamless connections to the future NoMa Green park located immediately east and south, and the Metropolitan

Branch Trail located immediately east. These improvements will include sidewalk and landscape improvements to integrate the site with the future parkland.

In addition to funds allocated for the East Park, the Applicant has pledged up to \$350,000 to benefit the southern portion of NoMa Green (the South Park). This funding will be allocated to programming improvements such as food service kiosks, public art, and/or a performance amphitheater.

### Multi-Modal Impacts and Recommendations

#### *Transit*

The site is well-served by regional and local transit services such as Metrorail and Metrobus. Although the development will be generating new transit trips on the network, the existing facilities have enough capacity to handle the new trips.

#### *Pedestrian*

The site is surrounded by a well-connected pedestrian network. The existing pedestrian infrastructure surrounding the site provides an excellent walking environment. There are some barriers east of the site due to the WMATA/Amtrak rail tracks and railyard, but overall there is a well-connected pedestrian network.

The site will improve the overall pedestrian environment by providing new sidewalks along the interior and perimeter of the site, most notably by integrating with the future NoMa Green park to the south and east and the realigned Metropolitan Branch Trail that will run on the eastern perimeter.

#### *Bicycle*

The site has access to several on- and off-street bicycle facilities including the Metropolitan Branch Trail and bike lanes on Eckington Place and Harry Thomas Way. The site is exceptionally well-placed to take advantage of key bike infrastructure, particularly in conjunction with the realignment of the Metropolitan Branch Trail. Although bicycling will be an important mode for getting to and from the site, with facilities located on site and routes to and from the site, the impacts from bicycling will be relatively less than impacts to other modes.

The development site will exceed zoning requirements by including approximately 174 long-term bicycle parking spaces within the parking garage and 30 short-term bicycle parking spaces in the form of 15 U-racks along the public space





adjacent to the site. Additionally, the Applicant is proposing to locate a bicycle repair station within the long-term bicycle parking room.

#### *Vehicular*

The site is accessible from several principal arterials such as North Capitol Street, New York Avenue, Florida Avenue, and Rhode Island Avenue. The arterials create connections to I-395, I-695, I-295, and ultimately the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs as well as regional access to I-95. All of these roadways bring vehicular traffic within a half-mile of the site, at which point minor arterials, collectors, and local roads can be used to access the site directly.

In order to determine if the proposed development 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.

The analysis concluded that two intersections triggered further review for mitigations:

- *3<sup>rd</sup> Street & Rhode Island Avenue, NE*  
Under existing conditions, delay along the northbound and southbound approaches of 3<sup>rd</sup> Street at Rhode Island Avenue operate under unacceptable conditions during the morning and afternoon peak hours. These conditions are likely due to the two-way unsignalized nature of the intersection and the high volumes along Rhode Island Avenue that result in minimal crossing gaps. These conditions are worsened by the inclusion of background and site-generated volumes such that delay along the southbound approach increases by more than 5 seconds over the background conditions during the morning and afternoon peak hours.

This same conclusion was reached as part of the Eckington Yards PUD and the 680 Rhode Island Avenue PUD. It was determined in the CTRs prepared for these developments that a signal is warranted at this location. Conditions of approval for both of these projects included monetary contributions to a signal at this location.

Specifically, Zoning Commission Order No. 15-15 for the Eckington Yards development required that the Applicant fund \$115,000 toward the signal, and Zoning Commission Order No. 15-16 for the 680 Rhode Island Avenue

development required that the Applicant fund \$60,000 toward the signal. For ZC Case No. 15-16, DDOT indicated that if the remaining cost of the signal exceeds \$60,000, the Applicant shall work with DDOT to reallocated funds otherwise dedicated to TDM measures.

As such, this signal is expected to be fully funded; however, the exact timing of installation is not known. For this reason, the signal was not included as a background improvement, but is analyzed in the mitigations scenario to show that no additional mitigation measures are necessary as a result of the Eckington Park development.

As shown in Table 8 and Table 9, the signal results in acceptable levels of service along all approaches, consistent with results of the Eckington Yards and 680 Rhode Island Avenue CTRs.

- *Eckington Place & Harry Thomas Way, NE*  
According to the capacity analysis results, this intersection requires mitigation under the 2019 Future Conditions, due to the increase in traffic along Harry Thomas Way as a result of the development. The westbound approach (exhibiting an LOS of F in background conditions) exhibits an increase in delay by 116 and 43 seconds in the morning and afternoon peak hour, respectively.

Two potential mitigations were studied at this intersection: (1) separating the left and right turn lanes along the westbound approach of Harry Thomas Way, and (2) converting the intersection to an all-way stop controlled intersection. It was found that the all-way stop control condition greatly improves LOS and delay at the intersection whereas the separate left and right-turn lanes only minimally improve delay. Based on methodology outlined in the Manual on Uniform Traffic Control Devices (MUTCD), an all-way stop is warranted at this location. The warrant analysis is included in the Technical Attachments. The mitigated all-way stop results are shown in Table 8 and Table 9.

This same conclusion was reached as part of the Eckington Yards PUD. The CTR prepared for the Eckington Yards development proposed that the Applicant install the appropriate signage and striping associated with converting the intersection to an all-way stop; however, this mitigation was not ultimately included as a condition of approval.



Thus, this report proposes that the Applicant fund the conversion of Eckington Place and Harry Thomas Way to an all-way stop controlled intersection. This report recommends that this mitigation be explored with DDOT, and coordinated with the recommendations from the Livability project.

#### *Summary and Recommendations*

This report analyzed the potential impacts of the PUD, and concluded that the PUD will not have a detrimental impact to the surrounding transportation network, assuming all planned site design elements and mitigations are implemented including the following:

- Implementation of the TDM plan detailed in the body of the report, which includes establishing TDM leaders, providing transit information and an electronic message screen in each residential lobby, unbundling the parking from leasing costs, car-sharing parking spaces, long- and short-term bicycle parking, and a bicycle repair station.
- The Applicant agrees to fund the conversion of Eckington Place and Harry Thomas Way to an all-way stop-controlled intersection. Given the amount of development and District initiatives surrounding the Eckington Park site, other areas of concern are being addressed as part of other projects.
- Focus on the development of a multi-modal project that caters to non-vehicular users through the inclusion of bicycle parking, high-quality pedestrian accommodations, and the realignment of the Metropolitan Branch Trail.