

COMPREHENSIVE TRANSPORTATION REVIEW

501 EYE STREET SW CONSOLIDATED PUD

WASHINGTON, DC

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ZONING COMMISSION
District of Columbia
CASE NO.17-21
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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 212
Haymarket, VA 20169
Tel: 703.787.9595
Fax: 703.787.9905

www.goroveslade.com

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EXECUTIVE SUMMARY

The following report is a Comprehensive Transportation Review (CTR) for the 501 I (Eye) Street SW project. This report reviews the transportation aspects of the project's Consolidated Planned Unit Development (PUD) application. The Zoning Commission Case Number is 17-21.

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 total future conditions. This report concludes that **the project will not have a detrimental impact** to the surrounding transportation network assuming that all planned site design elements and mitigations measures are implemented.

Proposed Project

The 501 Eye Street SW site, located on the northeast corner of I Street and 6th Street, SW, is currently vacant and was the former home to Southeastern University. The site is generally bounded by 6th Street to the west, I Street to the south, existing residential buildings to the north, and Amidon-Bowen Elementary School to the east.

The proposed development includes a mixed-use building with 105 residential units and a new 31,498 square foot space for the Shakespeare Theatre Company (STC), including space for rehearsals, costume fabrication, non-profit offices and education studios. Of the 105 residential units, 36 will be used to house actors, 62 will be market rate units, and seven (7) will be IZ units. The site will include 38 below-grade parking spaces, two (2) at-grade parking spaces, and one (1) additional below-grade space that is reserved for the STC costume van. STC will also secure 15 off-site parking spaces in nearby garages for additional employee parking.

All vehicular access to the site, including parking and loading access, will be from 6th Street. Under existing conditions there is a curb cut along 6th Street, which is being shifted slightly to the south to conform with District design requirements. Additionally, an existing curb cut on I Street will be removed as part of the redevelopment.

Pedestrian facilities along the perimeter of the site will include sidewalk and buffer widths that meet DDOT requirements. The development will supply secure long-term bicycle parking

spaces that exceed the current zoning requirements as well as short-term bicycle parking around the perimeter of the site.

To accommodate pick-up/drop-off activity for the STC summer camps, it is proposed that part of the existing parking restrictions associated with Amidon Bowen Elementary School be extended to include summer weekdays. This creates a designated queuing space that can be used during the day for STC and can be used in the evenings and weekends as unrestricted parking for the surrounding community, similar to what occurs under existing conditions on school days.

Multi-Modal Impacts and Recommendations

Transit

The site is well-served by regional and local transit services such as Metrorail, Metrobus, and Circulator. The site is approximately 0.3 miles from the Waterfront Metrorail Station at M Street and 4th Street and many Metrobus stops are located within a block of the site along I Street, 6th Street, and 7th Street.

Although the 501 Eye Street SW development will be generating new transit trips on the network, the existing facilities have enough capacity to handle the new trips. The Waterfront Metrorail station and all nearby Metrobus and Circulator lines do not have existing capacity concerns are not expected to as a result of the proposed development.

Pedestrian

The site is surrounded by a well-connected pedestrian network. Most roadways within a quarter-mile radius provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes.

As a result of the planned development, pedestrian facilities along the perimeter of the site will be improved. The development includes sidewalks and tree zones adjacent to the site that meet or exceed DDOT requirements.

Bicycle

The site is well served by existing bicycle facilities. Many trails, bike lanes, and signed bike routes are near the site such as the Anacostia Riverwalk Trail to the south, a cycle track along Maine Avenue SW, north-south bike lanes along 4th Street SW and 6th Street SW, and east-west bike lanes along I Street SE/SW. The site is also served by the Capital Bikeshare program, dockless bikeshare programs, and dockless scooter programs, which provides an additional transportation options

for residents, employees, and visitors of the 501 Eye Street SW development.

On site, the planned development will provide short-term bicycle parking along the perimeter of the site and secure long-term bicycle parking in the parking garage.

Vehicular

The 501 Eye Street SW site is well-connected to regional roadways such as I-395, I-695, and I-295, primary and minor arterials such as South Capitol Street, M Street, and I Street, and an existing network of collector and local roadways.

To determine if the proposed development will have an impact on the surrounding transportation network, this report projects future conditions with and without the development of the site and performs analyses of intersection 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 vehicular capacity analysis results in the following conclusions:

- Under existing conditions, the study area intersections generally operate under acceptable conditions.

- Future areas of concern for roadway capacity, are primarily focused along commuter routes such as I Street and M Street SW.
- The intersection of G Street and 4th Street met the thresholds for requiring mitigations as a result of the proposed development. This intersection can be adequately mitigated through signal timing adjustments.
- Overall, the analysis concludes that the project will not have a detrimental impact to the surrounding transportation network, assuming the proposed mitigation measure is implemented.

Transportation Management Plan (TMP)

A Transportation Management Plan (TMP) has been developed for the site as it relates to pick-up/drop-off operations, parking management, loading management, and transportation demand management. The elements outlined within this TMP aim to minimize the off-site impacts of the Project, reduce the number of single-occupancy vehicle trips to and from the site, and improve the overall efficiency of the site. This TMP is comprised of four (4) components and detailed within this report:

- Pick-up/Drop-off Operations
- Parking Management Plan
- Loading Management Plan
- Transportation Demand Management Plan

INTRODUCTION

This report is a Comprehensive Transportation Review (CTR) of the Consolidated Planned Unit Development (PUD) for 501 Eye Street, SW. The report reviews the transportation elements of the project for the 501 Eye Street SW development (Zoning Commission Case Number 17-21)

The 501 Eye Street SW mixed-use development will contain a residential component with 105 residential units and facilities serving the Shakespeare Theatre Company (STC) including rehearsal space, costume fabrication space, non-profit offices and education studios. The site, shown in Figure 1, is located in the Southwest Waterfront neighborhood in the southwest quadrant of 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.

CONTENTS OF STUDY

This report contains nine sections as follows:

- Study Area Overview
This section reviews the area near and adjacent to the proposed project and includes an overview of the site location.

- Project Design
This section reviews the transportation components of the project, including the site access, loading, parking, and pick-up/drop-off operations. This chapter also contains the proposed Transportation Demand Management (TDM) plan for the site and an evaluation of on-street parking surrounding 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 potential 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.

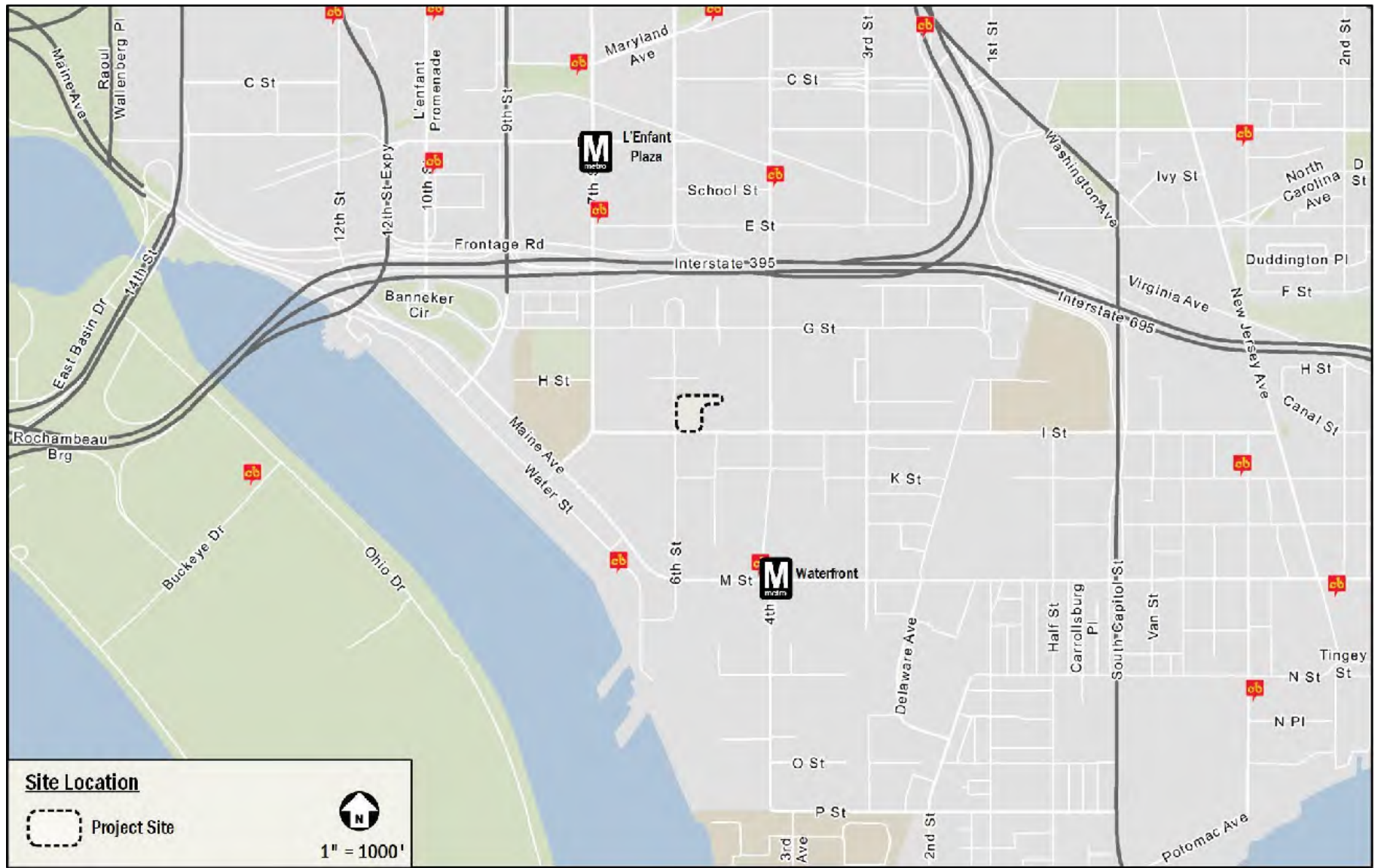


Figure 1: Site Location

STUDY AREA OVERVIEW

This section reviews the study area and includes an overview of the 501 Eye Street, SW site location, including a summary of the major transportation characteristics of the area and of future regional projects.

The following conclusions are reached within this chapter:

- The site is surrounded by an extensive regional and local transportation system that will connect the site to the rest of the District and surrounding areas.
- The site is primarily served by Metrorail and Metrobus along prominent corridors such as M Street, 4th Street, and 7th Street.
- There is bicycle infrastructure in the vicinity of the site, with direct connectivity to bike lanes on 4th Street and I (Eye) Street.
- Pedestrian conditions are generally sufficient, particularly along anticipated major walking routes.

MAJOR TRANSPORTATION FEATURES

Overview of Regional Access

The 501 Eye Street, SW site has ample access to regional vehicular- and transit-based transportation options, as shown in Figure 2, that connect the site to destinations within the District, Virginia, and Maryland.

The site is accessible from Interstate 395 and the 12th Street Expressway as well as Maine Avenue from the north which is classified as a principal arterial. These roadways create connectivity to the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs, as well as providing connectivity to the District core.

The site is located approximately 0.3 miles from the Waterfront Metrorail station, which is served by the Green Line and connects northern and southern Prince George's County, Maryland, while providing access to the District core. In addition, the Green Line provides connections to all additional Metrorail lines allowing for access to much of the DC Metropolitan area.

Overall, the 501 Eye Street, SW 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 a variety of local transportation options near the site that serve vehicular, transit, walking, and cycling trips, as shown on Figure 3. The site is served by a local vehicular network that includes several minor arterials such as Maine Avenue, I (Eye) Street, M Street, 4th Street, and 7th Street. In addition, there is an existing network of local roadways, such as, G Street, 3rd Street, and 6th Street, which 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 3 there are eight (8) full-time Metrobus and regional commuter bus routes that service the site. Additionally, the site is served by a circulator route that travels along M Street and the free Southwest shuttle that stops adjacent to the Wharf near the site. In the vicinity of the site, there are bus stops along I (Eye) Street, M Street, 3rd Street, 4th Street, and 6th Street. These bus routes connect the site to many areas of the District. A detailed review of transit stops within a quarter-mile walk of the site is provided in a later section of this report.

There are several existing bike facilities near the site that connect to areas within the District. The site has direct connectivity to the bicycle lanes on 4th Street, 6th Street, and I (Eye) Street, and to the signed routes on M Street, 3rd Street, and Water Street. A cycle track was installed along Maine Avenue as part of Phase 1 of the Wharf development. A detailed review of existing and proposed bicycle facilities and connectivity is provided in a later section of the report.

Anticipated pedestrian routes, such as those to public transportation stops, retail zones, and community amenities, provide excellent pedestrian facilities. A detailed review of existing and proposed pedestrian access and infrastructure is provided in a later section of this report.

Overall, the 501 Eye Street, SW site is surrounded by an excellent local transportation network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

Carsharing

Three (3) 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 three (3) car-share locations with a total of six (6) vehicles within a quarter-mile of the site, as shown in Table 1.

Carsharing is also provided by Car2Go, which provides point-to-point car-sharing. Car2Go currently has a fleet of vehicles located throughout the District and Arlington. Car2Go vehicles may park in any non-restricted metered curbside parking space or Residential Parking Permit (RPP) location in any zone throughout the defined “Home Area”. Members do not have to pay the meters or pay stations. Car2Go does not have permanent designated spaces for their vehicles; however, availability is tracked through their website and mobile phone application, which provides an additional option for car-sharing patrons.

Table 1: Summary of Carshare Locations

Carshare Location	Number of Vehicles
Zipcar	
I Street & Makemie Place, SW	1 vehicle
4th Street & I Street, SW	2 vehicles
Wesley Place & K Street, SW	3 vehicles
Total	6 vehicles

Bikeshare and Scooter Share

The Capital Bikeshare program provides an additional cycling option for residents, employees, and visitors throughout the District. The Bikeshare program has placed over 500 bicycle-share stations across Washington, DC, Arlington and Alexandria, VA, and most recently Montgomery County, MD with over 4,300 bicycles provided. Within a quarter-mile of the site there are two Capital Bikeshare stations that house a total of 40 docks. Figure 3 illustrates the existing bicycle facilities in the area.

In addition to Capital Bikeshare, DDOT has engaged in pilot programs with several dockless bikeshare and scooter share companies, allowing an additional option for point-to-point transportation. Bicycle and scooter availability is tracked through mobile phone applications for each company individually.

FUTURE PROJECTS

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

Local Initiatives

MoveDC: Multimodal Long-Range Transportation Plan

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

The MoveDC report outlines recommendations by mode with the goal of having them completed 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 pedestrian and bicycle improvements such as new sidewalks, and new bicycle trails and bicycle lanes. These recommendations would create additional multi-modal capacity and connectivity to the proposed development and are discussed later in the report.

SustainableDC: Sustainable DC Plan

SustainableDC is a planning effort initiated by the Department of Energy & Environment and the Office of Planning that provides the District with a framework of leading Washington DC to become the most sustainable city in the nation. The 2012 report proposes a 20-year timeframe to answer challenges in areas of: (1) Jobs & the economy; (2) Health & Wellness; (3) Equity & Diversity; (4) Climate & Environment; (5) Built Environment; (5) Energy; (6) Food; (7) Nature; (8) Transportation; (9) Waste; and (10) Water. With respect to transportation, the sustainability goals targeted in 20 years include:

- Improving connectivity and accessibility through efficient, integrated, and affordable transit systems
- Expanding provision of safe, secure infrastructure for cyclists and pedestrians
- Reducing traffic congestion to improve mobility
- Improving air quality along major transportation routes

A combination of increasing public transit and decreasing vehicular mode shares has been suggested to meet the transportation targets.

M Street SW/SW Transportation Study

The purpose of the M Street SE/SW Transportation Study is to prepare for the substantial new growth along the M Street/Maine Avenue corridor in the near Southeast and Southwest Waterfront area. The study area is projected to see in excess of 36 million square feet of development concentrated within a 0.78 square mile core area. The premise of the study is to better integrate the area of development with the surrounding neighborhoods and to improve multimodal travel and the public realm within the neighborhood. The study area encompasses an area of approximately 1.7 square miles along the M Street SE/SW corridor and the Southwest Waterfront from 12th Street SE to 14th Street SW. The study considers existing and future transportation conditions, reviews the planned future land uses in the study area, and develops solutions for the transportation network in order to promote livable communities and to encourage reinvestment within the study area. The study recommends improvements for three conditions: near term (2013-2016), mid-term (2015-2021), and long-term (2020 and beyond).

The Draft report recommends several potential near-term projects and policy updates. The policy updates include suggestions to improve travel demand management (TDM) strategies, parking systems and regulations, transit policies, motor coach and commuter bus staging/parking, freight loading and truck routes, bicycle and pedestrian policies, and sustainable design. Potential low-cost operational and system management projects include signing and pavement marking improvements, signal timing optimization along M Street, pedestrian and Anacostia Riverwalk Trail connectivity improvements, bicycle network improvements, transit service improvements, parking changes, and sustainability and low-impact development improvements.

For the mid-term, three multimodal projects are proposed and investigated: Alternative 1 – M Street “Main Street”, Alternative 2 – “Balanced Links” and Alternative 3 – M Street “Mobility Arterial”. Alternative 1 includes prioritizing non-automobile transportation and establishing M Street as a core premium transit corridor, which would reduce M Street to two vehicular lanes in each direction with an exclusive outer transit lane. Alternative 2 balances the transit network to provide wider coverage to the entire study area by allocating new transit services to parallel corridors while creating new bicycle facilities along the M Street corridor. Alternative 3 focuses on preserving M Street as a primarily vehicular corridor with less emphasis on alternative modes by implementing operational improvements to maximize vehicular throughput, maintaining three vehicular travel lanes in each direction, and providing a shared outer lane for streetcar and transit. The three alternatives from the Draft report will be used to develop and analyze potential “hybrid” alternatives to be implemented in the mid-term.

The long-term improvements focus on potential new connections to complete the street grid in the study area if future development (beyond 2035) were to occur in areas not currently available. The long-term options include roadway improvements in the Buzzard Point area, as well as improvements to east-west connectivity; Metrorail station capacity improvements, along with Yellow line improvements; commuter rail enhancements; and multimodal transfer centers. These options would all require further study and significant agency coordination and public involvement. The study projects that the options could possibly be implemented between 2020 and 2040.

Alternative transportation options, such as the Southwest Shuttle and the TDM plan proposed for 501 I Street, SW will help integrate the local neighborhood and increase multimodal travel.

Special Events Addendum to M Street SW/SW Transportation Study

This traffic study was initiated by DDOT in 2013 to assess the impact of multiple entertainment venues upon the transportation network in the Buzzard Point/Waterfront area. These new developments include a 20,000 seat Soccer Stadium on Buzzard Point, a 2,000+ seat movie theater east of Nationals Park, and a 6,000-seat concert hall at The Wharf. This Study was initiated as follow-on to the M Street Southeast/Southwest

Transportation Planning Study. The purpose of the Special Events Transportation Analysis is to consider current and future transportation conditions associated with special events and stadium traffic in the Study area, to review plans for the proposed new event facilities and estimate corresponding future traffic demands, (vehicular, pedestrian, bicycle, transit); to determine potential impacts to the transportation system; and to develop strategies and solutions for improving conditions on the transportation network, including modifications to existing traffic management plans, to mitigate the impacts of event traffic within the Study area.

Several strategies were proposed within the Study area to ease the movement of people during event occurrences. Many of the suggested improvements have already been proposed as part of the M Street Study. These improvements include additional north-south transit connectivity, additional east-west vehicular connectivity, signing and pavement marking improvements, transportation systems management, parking systems improvements, and pedestrian and bicycle improvements.

The proposed development will improve upon pedestrian facilities on I Street and 6th Street, allowing for better east-west connectivity to and from entertainment venues.

Southwest Neighborhood Plan

Launched in 2013 and approved in 2015, the Southwest Neighborhood Plan is an effort to guide the direction of future growth of the neighborhood over the next five to ten years. The scope of the plan extends from South Capitol Street, west to Maine Avenue SW, south to P Street SW, and north to the I-395. The main purpose of the plan is to enhance parks, pedestrian and street connections, bolster retail, integrate community amenities, and enhance transportation choices in the Southwest Waterfront neighborhood. The Plan aims to provide residents and property owners with assurances of what future development may look like, including recommendations to preserve and enhance existing assets and ensure that the neighborhood retains social and economic diversity.

The proposed development will directly contribute to the goals of this Plan by providing the community access to the arts.

Background Developments

There are several potential development projects in the vicinity of the 501 Eye Street, SW site. Following national and DDOT

methodologies, a background development should meet the following criteria to be incorporated into the analysis:

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

Based on these criteria, and discussions with DDOT during the scoping process, 11 background developments were ultimately included and described below. Figure 4 shows the locations of these developments in relation to the proposed development.

The View at Waterfront

The View at Waterfront will consist of approximately 276 new residential dwelling units and 5,220 SF of retail. This development lies within the study area and is currently under construction.

1000 4th Street

1000 4th Street will consist of approximately 456 new residential dwelling units 11,000 square feet of ground floor retail, and 9,000 square feet of arts/cultural space. This development lies within the study area and is expected to be completed prior to the completion of 501 Eye Street.

375 M Street

375 M Street will consist of approximately 285 new residential dwelling units, 32,400 square feet of office, 18,800 square feet of retail, and a 6,000 SF community space. This development lies within the study area and is expected to be completed prior to the completion of 501 Eye Street, therefore, it will be included in the analysis.

425 M Street

425 M Street will consist of approximately 310 new residential dwelling units and 21,100 square feet of retail. This development lies within the study area and is expected to be completed prior to the completion of 501 Eye Street.

Town Center North

Town Center East will consist of approximately 190 new residential dwelling units and approximately 16,500 square feet of retail. This development lies within the study area and



is expected to be completed prior to the completion of 501 Eye Street.

301 M Waterfront

301 M Waterfront will consist of approximately 187 residential dwelling units, and 1,710 SF of retail. This development lies within the study area and construction was completed shortly before collecting traffic counts for 501 Eye Street.

St. Matthews Evangelical Lutheran Church Redevelopment

St. Matthews Evangelical Lutheran Church Redevelopment will consist of approximately 221 residential dwelling units and a replacement sanctuary. This development is located just outside the study area and currently under construction,

680 I (Eye) Street

680 I (Eye) Street SW will consist of approximately 167 residential dwelling units, a 11,400 SF church, 6,900 sf of retail, and a 7,700 SF daycare. This development lies within the study area and is currently under construction.

The Wharf (Phase 2)

The Wharf (Phase 2) is a large mixed-use development with retail, residential, office, and hotel uses. This development is located just outside the study area and expected to be complete along a similar timeline as 501 Eye Street.

Randall School

The Randall School redevelopment will consist of approximately 470 residential units, 18,600 square feet of office, and 31,800 square feet dedicated to museum space. This development is located just outside the study area and is expected to be completed prior to completion of 501 Eye Street.

Southwest Library

The Southwest Library will be renovated and will ultimately comprise of 20,800 square feet of library space. This development lies within the study area and is expected to be completed prior to the completion of 501 Eye Street.



Figure 2: Major Regional Transportation Facilities

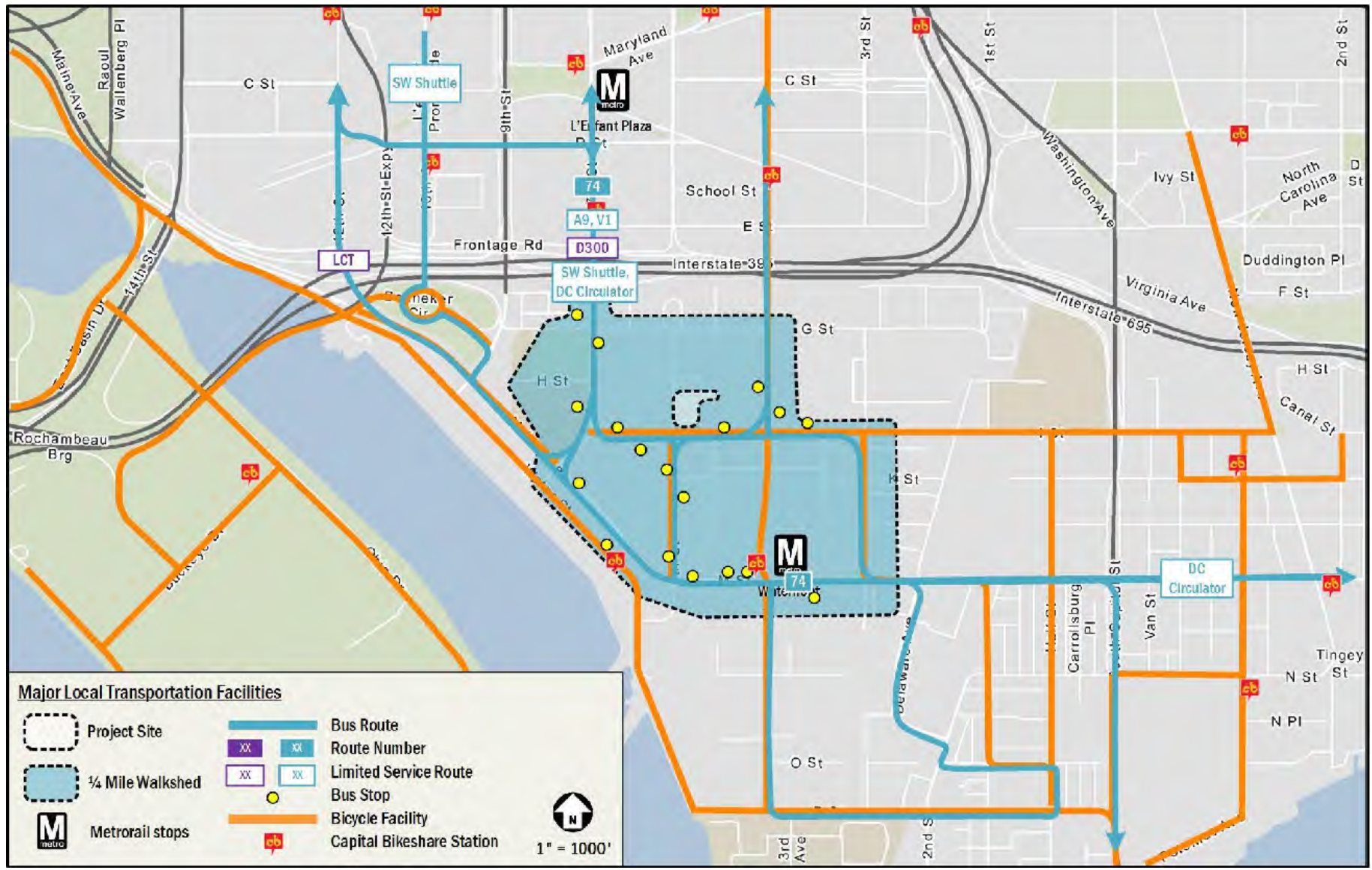


Figure 3: Major Local Transportation Facilities

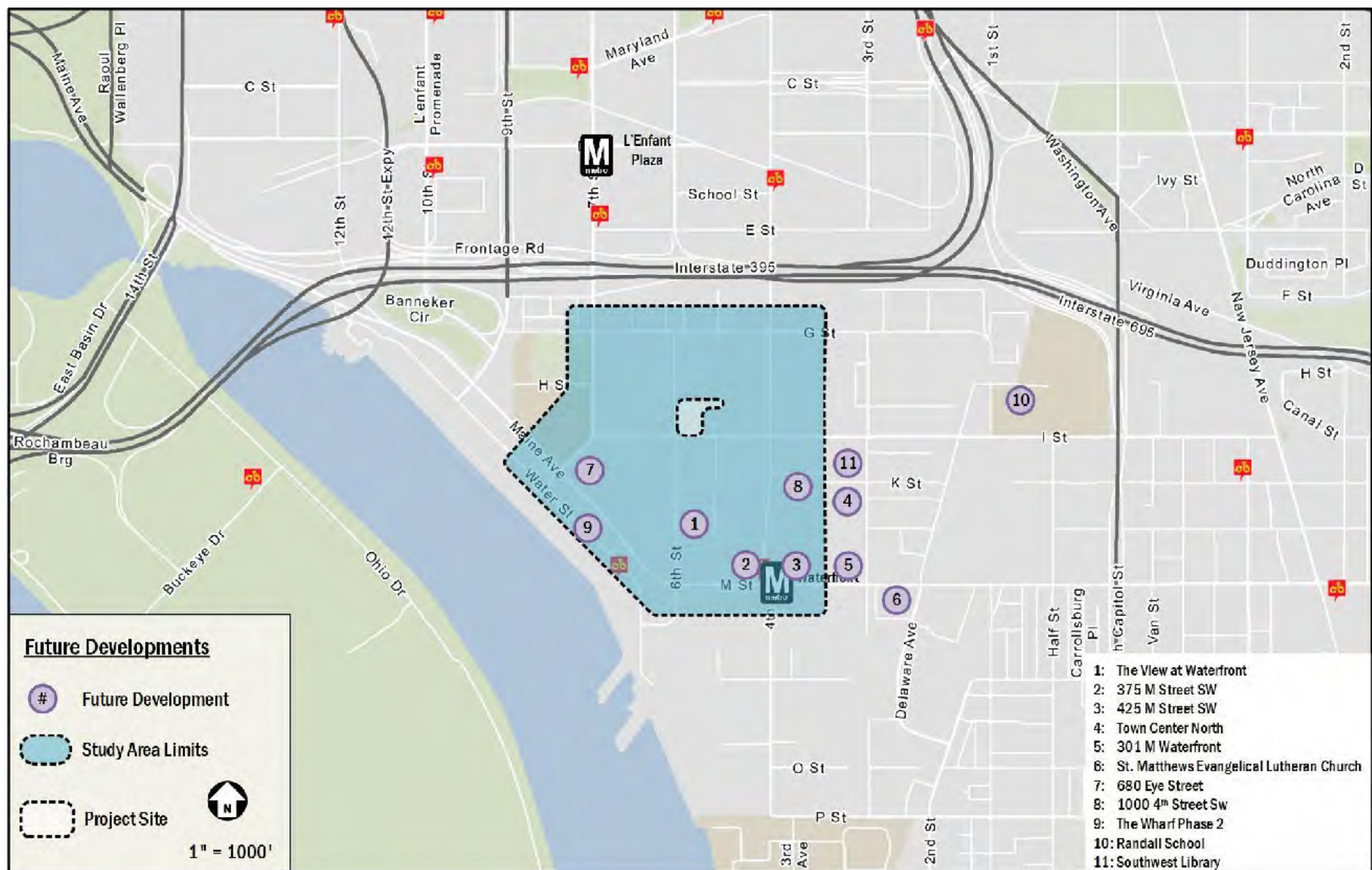


Figure 4: Planned Development Map

PROJECT DESIGN

This section reviews the transportation components of 501 Eye Street, including the proposed site plan and access points. It includes descriptions of the site's vehicular access, loading, parking, pick-up/drop-off activity, and Transportation Demand Management (TDM) plan. It supplements the information provided in the site plans package that accompanied the Zoning Application, which includes several illustrations of site circulation and layout.

The following conclusions are reached within this chapter:

- The site provides sufficient parking and loading facilities to accommodate demand, including securing 15 off-site parking spaces for STC employees.
- On-street parking is highly utilized surrounding the site and expected to be negligibly impacted by the proposed development.
- Adequate pick-up/drop-off space is proposed along I Street to serve STC's summer camp.
- The site is providing long-term and short-term bicycle parking that exceeds zoning requirements.
- Sidewalks surrounding the site will meet DDOT requirements.
- The Applicant is proposing to implement a robust Transportation Management Plan that address pick-up/drop-off operations, loading management, parking management, and TDM.

PROJECT SUMMARY

The 501 Eye Street SW project will redevelop the former Southeastern University site with a mixed-use development consisting of a residential component with 105 residential units and 31,498 square feet of facilities serving Shakespeare Theatre Company (STC). Of the 105 residential units, 36 will be used to house actors or fellows, 62 will be market rate units, and 7 will be IZ units. The residential units for actors and fellows will be located in the annex portion of the site which is located at the northeast corner of the building.

A below-grade parking garage will supply 38 parking spaces, one (1) parking space for the STC parking van, and long-term bicycle parking. Two (2) additional parking spaces will be located at-grade along the driveway. Figure 5 shows an overview of the proposed site including the development program and transportation-related site plan elements.

STC PROGRAMMING

The STC space is expected to be used for a variety of uses, with the STC space generally broken out between office space, education space, and rehearsal space.

The office space will primarily be used during typical weekday work hours and will include full-time staff, part-time staff, and volunteers. Table 4 shows a more detailed review of the expected daily activity including the number of daily employees and the anticipated modes of travel to and from the site.

The rehearsal space will primarily be used by STC actors, of which many will be housed on-site. The rehearsal space may also be used periodically by other groups, which currently include the Academy for Classical Acting (ACA) and Ford's Theater. The frequency of rehearsals, the number of actors anticipated for each, and the anticipated modes of travel to and from the site are shown on Table 5.

Educational activity will also occur in both the dedicated education space and in the rehearsal spaces. The site is expected to be programmed with several classes and courses throughout the year including a summer camp, after school classes, home school classes, workshops/training courses, and evening/weekend classes for adults. Table 5 shows a detailed review of the types of classes that can be expected on-site, the times at which they can be expected, and the anticipated modes of travel to and from the site. It should be noted that the majority of daytime classes are for younger students, meaning that vehicle travel is primarily comprised of pick-up/drop-off activity.

Although STC anticipates a variety of education and rehearsal activities at the site, they are dispersed over the course of the year. Additionally, STC's overall programming is constrained by the limited amount of space on site, which must balance these activities with the primary STC rehearsal activity. As such, the daily activity on site is compiled of much fewer activities than are included on Table 5.

In addition to office, education, and rehearsal space, limited performances may be held on-site; however, these performances will be limited in size and are only expected to take place during a short period of time in June.

SITE ACCESS

All vehicular access to the site, including parking and loading access, will be from 6th Street. Under existing conditions there is a curb cut along 6th Street, which is being shifted slightly to the south to conform with District design requirements.

Additionally, an existing curb cut on I Street will be removed as part of the redevelopment. Primary vehicular access along 6th Street is appropriate given that it is the lower trafficked roadway (including pedestrian and bicycle traffic) surrounding the site. Vehicular access along I Street could result in increased conflicts with pedestrians and bicycles, particularly given the presence of bike lanes along I Street.

Truck routing to and from the site will be focused on Maine Avenue and M Street, which are designated truck routes and have access to the surrounding interstate system. The site is designed to accommodate head-in/head-out maneuvers into the proposed loading area, which includes a 30' loading berth and a 20' service/delivery space. Truck turning diagrams are included in the Technical Attachments.

Primary pedestrian access to the residential and STC components of the development will occur along I Street. Additionally, pedestrian access to the annex portion of the building and pedestrian access to the ground-floor walk-out units will be from 6th Street. Pedestrian access points are outlined on the site plan in Figure 5.

LOADING

Based on the experience of residential building owners within the District, the for-sale residential units at this site are expected to have an average turnover of five (5) years, with two (2) trucks per turnover (one move-out and one move-in). Based on this information and the proposed development program of 69 for-sale units, there will be an average of one (1) residential moving activity every two weeks. Although the actor/fellow housing units will observe shorter turnovers, the units will be furnished resulting in minimal impact during move ins and move outs.

Based on discussions with STC, it is expected that STC will primarily generate loading activity associated with rehearsals and costume transport. Rehearsals are expected to occur five (5) to eight (8) times per year, with each rehearsal period lasting three (3) to five (5) weeks. During the rehearsal period it is expected that there will be one (1) delivery at the beginning of the rehearsal period to drop off props, one (1) delivery at the end of rehearsal period to pick up props, and potentially one

(1) additional delivery during the middle of the rehearsal period. This results in approximately 10 to 24 deliveries per year for rehearsals, or one (1) to two (2) deliveries per month. Costume transport may occur more frequently but will be accommodated within a delivery van, which will load and unload within a designated parking space within the garage, rather than in the loading berth.

In addition, it is expected that there will be two (2) daily truck deliveries covering parcel delivery and mail for the site as a whole and trash collection is expected to occur two times per week.

Based on this information, the development is expected to observe two (2) to four (4) deliveries per day, with the majority of these deliveries being accommodated in delivery vehicles no more than 20' in length. This amount of loading activity can easily be accommodated within the loading area which includes one (1) 30-foot loading dock and one (1) 20-foot loading dock.

PARKING

Off-Street Parking

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

- Residential
1 space per 3 dwelling units, amounting to 34 required spaces.¹
- Non-Profit Office
0.5 spaces per 1,000 square feet, amounting to 6 required spaces.
- Arts, Design and Creation
1 space per 1,000 square feet, amounting to 16 required spaces.

This amounts to a subtotal of 56 required parking spaces; however, the Project's proximity to Metrorail allows for a 50 percent reduction in parking required, resulting in a total parking requirement of 26 spaces.

¹¹ The proposed number of residential units is made up of 69 for-sale units, 18 actor housing units, and 18 Single Room Occupancy Units (SRO) for fellows. For purposes of the parking requirements SROs, as rooming units, do not technically require parking. However, we are including the units to be conservative, which yields a total of 105 units applied to parking requirements.

The Project will meet these requirements by supplying a total 55 parking spaces. Of these, 25 spaces will be dedicated residential uses and 30 spaces will be dedicated to STC uses, including 15 off-site spaces. An additional parking space in the below-grade garage will be provided for STC service and delivery.

The residential parking will be available to the 69 for-sale units, resulting in a parking ratio of 0.36 spaces per unit. It is not expected that the tenants of the 36 actor/fellow housing units will have vehicles on-site.

The total amount of parking allocated to STC (30 spaces, including the off-site parking) is expected to be sufficient to serve the day-to-day needs. Based on survey results of existing STC employees, and the anticipated needs of the proposed site, the maximum STC employee parking demand is expected to reach approximately 30 spaces midday. Thus, the amount of parking allocated to STC is expected to be sufficient.

On-Street Parking

In addition to evaluating the on-site parking supply and demand, a parking inventory and occupancy study was performed along the block faces surrounding the site. Parking inventory and occupancy data was collected from 6:00 AM to 10:00 PM on Thursday, August 16, 2018 (representing a typical summer day when parking along I Street is primarily

unrestricted) and again on Thursday, September 27, 2018 (a typical non-summer day when parking along Eye Street is restricted for school pick-up/drop-off activity during the day). Figure 6 shows the on-street parking study area and the classification of parking restriction types by block face. As shown, the majority of parking surrounding the site is designated as RPP or time-restricted (typically metered parking).

The overall peak parking occupancy for a summer day occurred at 9:30 PM with 90% occupancy for the overall study area. The overall peak parking occupancy for a non-summer day occurred at 1:00 PM with 88% occupancy for the overall study area. The occupancy by block face at 1:00 PM is shown on Figure 7 and Figure 8 for a summer and non-summer day, respectively. The occupancy by block face at 9:30 PM is shown on Figure 9 and Figure 10 for a summer and non-summer day, respectively. Table 2 and Table 3 show a breakdown of occupancy by parking restriction type for the 1:00 PM and 9:30 PM parking peaks, for the summer and non-summer days, respectively. As shown in the tables, parking is heavily occupied during the midday and evening peaks for both the summer and non-summer days. RPP parking is at least 88% occupied during all scenarios outlined in the tables; however, block faces directly surrounding the site have some availability during the day. Alternatively, many block faces that provide non-RPP, public parking are observed to

Table 2: Summer Peak Period Parking Occupancy by Restriction Type

Space Type	Midday Peak Period (1:00-1:30 PM)			Evening Peak Period (9:30-10:00 PM)		
	Spaces	Occupancy	Utilization	Spaces	Occupancy	Utilization
RPP	461	407	88%	461	441	96%
Metered	160	184	115%	160	157	98%
Time Restricted	20	23	115%	20	25	125%
Unrestricted	16	14	88%	16	16	100%
Private	165	81	49%	165	100	61%
All On-Street Spaces	822	709	86%	822	739	90%

Table 3: Non-Summer Peak Period Parking Occupancy by Restriction Type

Space Type	Midday Peak Period (1:00-1:30 PM)			Evening Peak Period (9:30-10:00 PM)		
	Spaces	Occupancy	Utilization	Spaces	Occupancy	Utilization
RPP	461	423	92%	461	417	90%
Metered	160	184	115%	160	143	89%
Time Restricted	20	24	120%	20	15	75%
Unrestricted	0	0	N/A	16	10	63%
Private	165	76	46%	165	102	62%
All On-Street Spaces	806	707	88%	822	687	84%

have an occupancy of over 100% - indicating that illegal parking may occur within the on-street parking study area.

Overall, the parking occupancy study shows that on-street parking is heavily utilized surrounding the site. Therefore, the design of the project aims to minimize impacts to on-street parking while designing for the specific needs of the site.

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle Facilities

Based on ZR 2016 requirements, the development is required to meet the following long-term bicycle parking supplies:

- Residential Apartment: 1 space for each 3 dwelling units
- Office: 1 space for each 2,500 square feet
- Arts, Design, and Creation: 1 space for each 10,000 square feet

This results in a total requirement of 42 long-term bicycle spaces for the 501 Eye Street site. The 501 Eye Street project is proposing to include a total of approximately 67 secure long-term spaces for residents in a bicycle storage facility, thus exceeding zoning requirements.

Based on ZR 2016 requirements, the developments should provide the following short-term bicycle parking supplies:

- Residential Apartment: 1 space for each 20 dwelling units
- Office: 1 space for each 40,000 square feet
- Arts, Design, and Creation: 1 space for each 20,000 square feet

This results in a total requirement of eight (8) short-term bicycle spaces. Sixteen spaces will be provided around the perimeter of the site (in the form of eight bicycle racks) for 501 Eye Street. These short-term spaces will be provided in the form of inverted U-racks placed along the perimeter of the property along 6th Street and Eye Street. The Applicant will work with DDOT to select the exact location for the racks in public space.

Pedestrian Facilities

The 501 Eye Street SW project will include sidewalks along the perimeter of the site that meet DDOT design requirements. The development will also provide a sidewalk along the driveway accessing the annex portion of the building.

TRANSPORTATION MANAGEMENT PLAN

A Transportation Management Plan (TMP) has been developed for the site as it relates to pick-up/drop-off operations, parking management, loading management, and transportation demand management. The elements outlined within this TMP aim to minimize the off-site impacts of the Project, reduce the number of single-occupancy vehicle trips to and from the site, and improve the overall efficiency of the site. This TMP consists of four (4) components, as detailed below:

1. Pick-up/Drop-Off Operations Plan

Under existing conditions, the curbside directly surrounding the site is designated as RPP along 6th Street and Residential Only Parking (ROP) along I Street. To the east of the site, the curbside is primarily used as school day pick-up/drop-off for Amidon Bowen Elementary School and signed as “No Parking” from 7 or 8 AM to 5:30 PM on school days. The existing curbside management surrounding the site is shown on Figure 11.

As part of the STC use, the site is expected to generate pick-up/drop-off activity for summer classes and camps. To accommodate this need, a curbside management plan has been proposed that limits the impacts to the existing on-street parking supply - particularly as it relates to RPP parking directly surrounding the site, which is shown to be highly utilized.

As shown on Figure 12, a 30-foot entrance zone is proposed at the southeast corner of the site. The majority of this entrance zone is obtained through the closure of a curb cut along I Street. East of the entrance zone, it is proposed that approximately 110 feet of curbside currently signed as “No Parking 8 AM-5:30 PM School Days” be converted to “No Parking M-F 8 AM to 5:30 PM” to accommodate summer pick-up/drop-off needs. This proposed change still allows for unrestricted parking to be available to the surrounding community in the evenings and weekends.

The proposed curbside management plan allows for approximately 140 feet (or approximately 7 car lengths) to be designated as pick-up/drop-off space for STC’s summer camps. Based on information provided by STC, this amount of queuing space is expected to be sufficient for pick-up/drop-off activity.

2. Parking Management Plan

Given the multiple uses served by the Project, a Parking Management Plan (PMP) has been developed for the site as it relates to on-site and designated off-site parking, STC non-employee parking, and special events parking. The PMP elements are detailed as follows:

- Residents must purchase parking spaces in the garage. These spaces will be numbered such that residents have a designated space within the garage.
- The Applicant will include a provision for all residential unit purchases restricting the residents from obtaining Residential Parking Permits.
- Employees must purchase parking passes in the garage or within the designated off-site parking garage.
- Outside of STC employee parking, one (1) additional parking space will be designated in the garage for STC service and delivery.
- Adults attending classes and actors attending rehearsals will be encouraged to use non-auto modes of transportation and given information on the available options.
- For those that choose to drive, a list of nearby garages will be distributed, noting that on-street parking is limited and should not be used.
- Special events such as ACA performances will require off-site parking. For such events, STC will identify nearby parking lots and/or garages that may be used for event parking.
- STC will distribute information about special events parking to attendees of ACA performances and encourage non-auto modes of transportation.

3. Loading Management Plan

The Applicant proposes a loading management plan as follows:

- A loading facility manager will be designated by property management.
- The loading facility manager will schedule deliveries such that the loading facility's capacity is not exceeded. In the event that an unscheduled delivery vehicle arrives while the facility is full, that driver will be directed to return at a later time when the loading facility will be available.


- STC deliveries and residential condo owners will be provided with information regarding loading dock restrictions, rules, and suggested truck routes upon purchase.
- STC deliveries and residential condo owners will be required to use trucks 30' in length or shorter.
- All residential condo owners will be required to schedule move ins and move outs.
- Trucks using the loading facility will not be allowed to idle and must follow all District guidelines for heavy vehicle operation including but not limited to DCMR 20 – Chapter 9, Section 900 (Engine Idling), the regulations set forth in DDOT's Freight Management and Commercial Vehicle Operations document, and the primary access routes listed in the DDOT Truck and Bus Route System.
- The loading facility manager will be responsible for disseminating suggested truck routing maps to drivers from delivery services that frequently utilize the loading facility. The facility manager will also distribute materials such as DDOT's Freight Management and Commercial Vehicle Operations document to drivers as needed to encourage compliance with idling laws.

4. Transportation Demand Management (TDM) Plan

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 Applicant proposes the following TDM measures for the proposed project:

- The Applicant will identify a TDM Leader (for planning, construction, and operations). The TDM Leader will work with residents and tenants of the building to distribute and market various transportation alternatives and options. This includes providing TDM materials to new residents and tenants in a Welcome Package.
- The Applicant will provide TDM materials to new residents and employees in a Welcome Package
- The Applicant will meet or exceed Zoning requirements to provide bicycle parking/storage facilities at the proposed development. This includes



secure long-term bicycle parking located on-site and short-term bicycle parking around the perimeter of the site.

- The Applicant will provide showers and corresponding changing facilities within the building for employees.
- The Applicant will provide a bicycle repair station within each long-term bicycle storage room.
- The Applicant will unbundle all parking from the cost of the lease or purchase. Parking costs will be set at no less than the charges of the lowest fee garage located within a ¼ mile.
- The Applicant will install Transportation Information Center Displays (electronic screens) within the residential and STC lobbies.
- The Applicant will provide a ride-matching program for STC employees.



Figure 5: Proposed Site Plan



Table 4: Summary of STC Daily Activity

User Group	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	Mode Split
Daily Activity																
Full-time Staff (80 people)	Monday-Friday (Year Round)															30% Vehicle 45% Transit 4% Bicycle 4% Walk 17% Housed on-site
Part-time/ Overhire Staff (3-7 people)	Monday-Friday (Periodic/As Needed)															50% Vehicle 50% Transit
Volunteers (2-7 people)	Monday-Friday (One Day/Week)															60% Vehicle 40% Transit

Table 5: Summary of STC Education and Rehearsal Activity

User Group	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	Mode Split		
Education Activities																		
Home School (16 people)			Mondays (12-week courses)														80% Vehicle 20% Transit	
After School Class (12 people)								Monday-Friday (TBD)									100% Transit	
Workshops & Training (20 people)		(School Year – ~5 one-day sessions)																25% Vehicle 50% Transit 10% Walk 15% Bike
MAC (10-40 students, 1-4 instructors)												Monday-Thursday (sessions take place between Sept and May)					70% Vehicle 20% Transit 10% Walk	
Summer Camp (70 campers, 10 instructors)	Designated drop-off period		Monday-Friday (June to August – 4 two-week sessions)								Designated pick- up period						68% Vehicle 24% Transit 8% Walk	
Rehearsal Activities																		
STC Actors (20-50 people)			Tuesday-Sunday (August to May – 6 four-week sessions)													10% Vehicle 20% Transit 20% Bike 50% Housed on-site		
Ford Theater Rehearsals (25 people)			Tuesday-Sunday (Sept to May)													20% Vehicle 60% Transit 8% Walk 12% Bike		
ACA Rehearsals (20 people)			Monday-Sunday (May to June)													10% Vehicle 80% Transit 5% Walk 5% Bike		
<p>Note: Not all education/rehearsal activities take place simultaneously as some education activities are limited by the availability of rehearsal space. Additionally, some activities are limited to specific times of the year.</p>																		



Figure 6: Parking Inventory

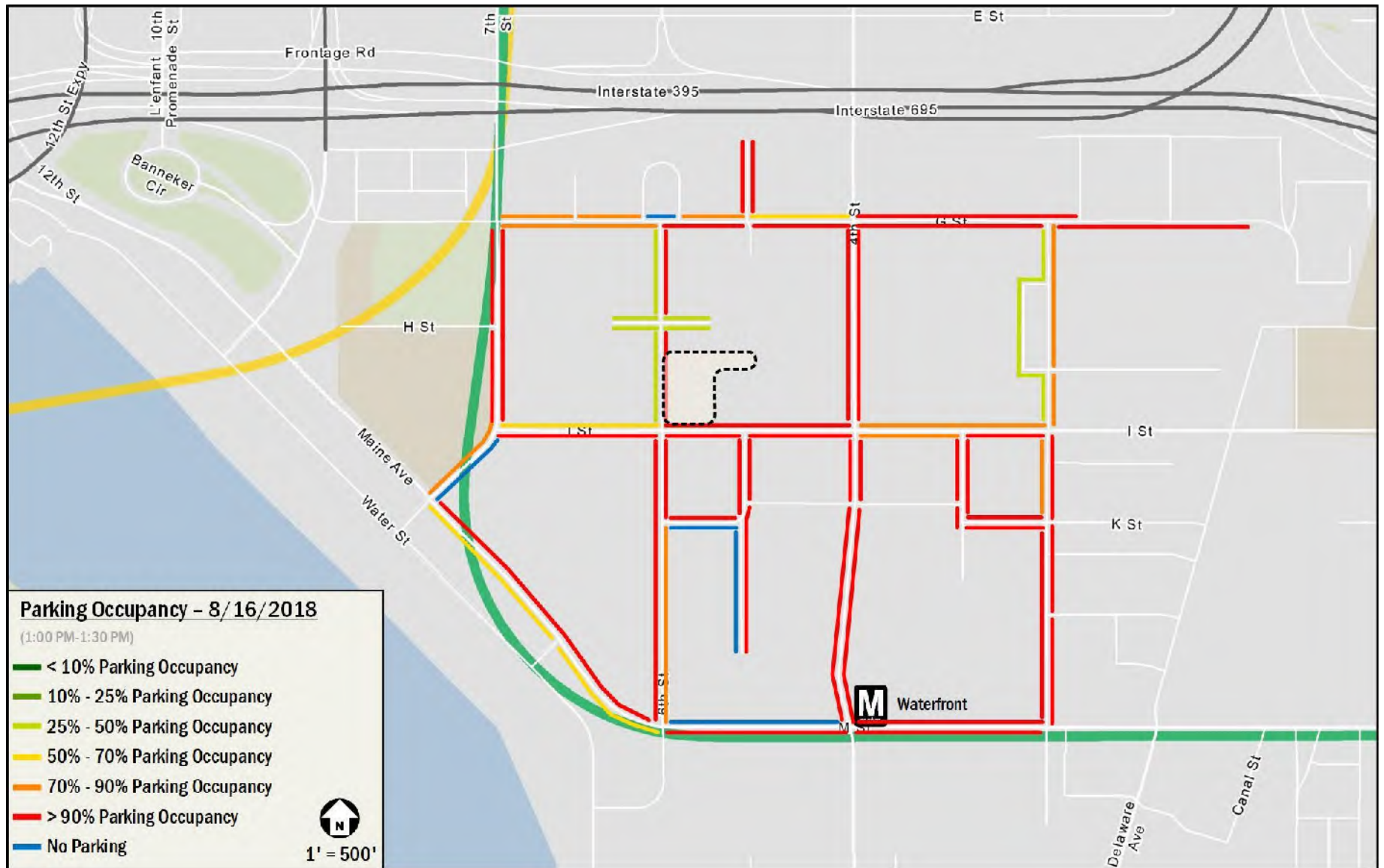


Figure 7: Summer Mid-Day Peak Parking Occupancy

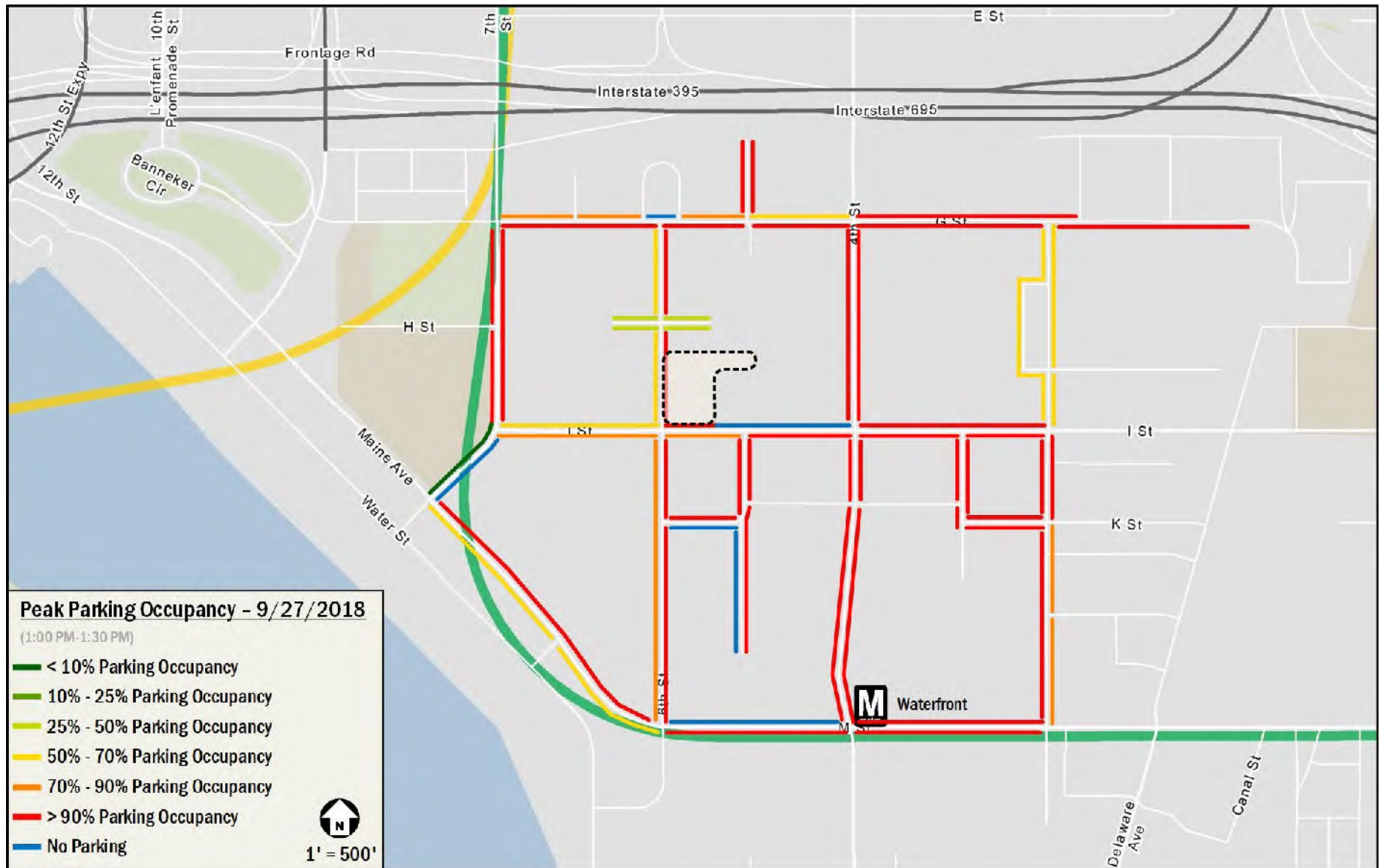


Figure 8: Non-Summer Mid-Day Peak Parking Occupancy

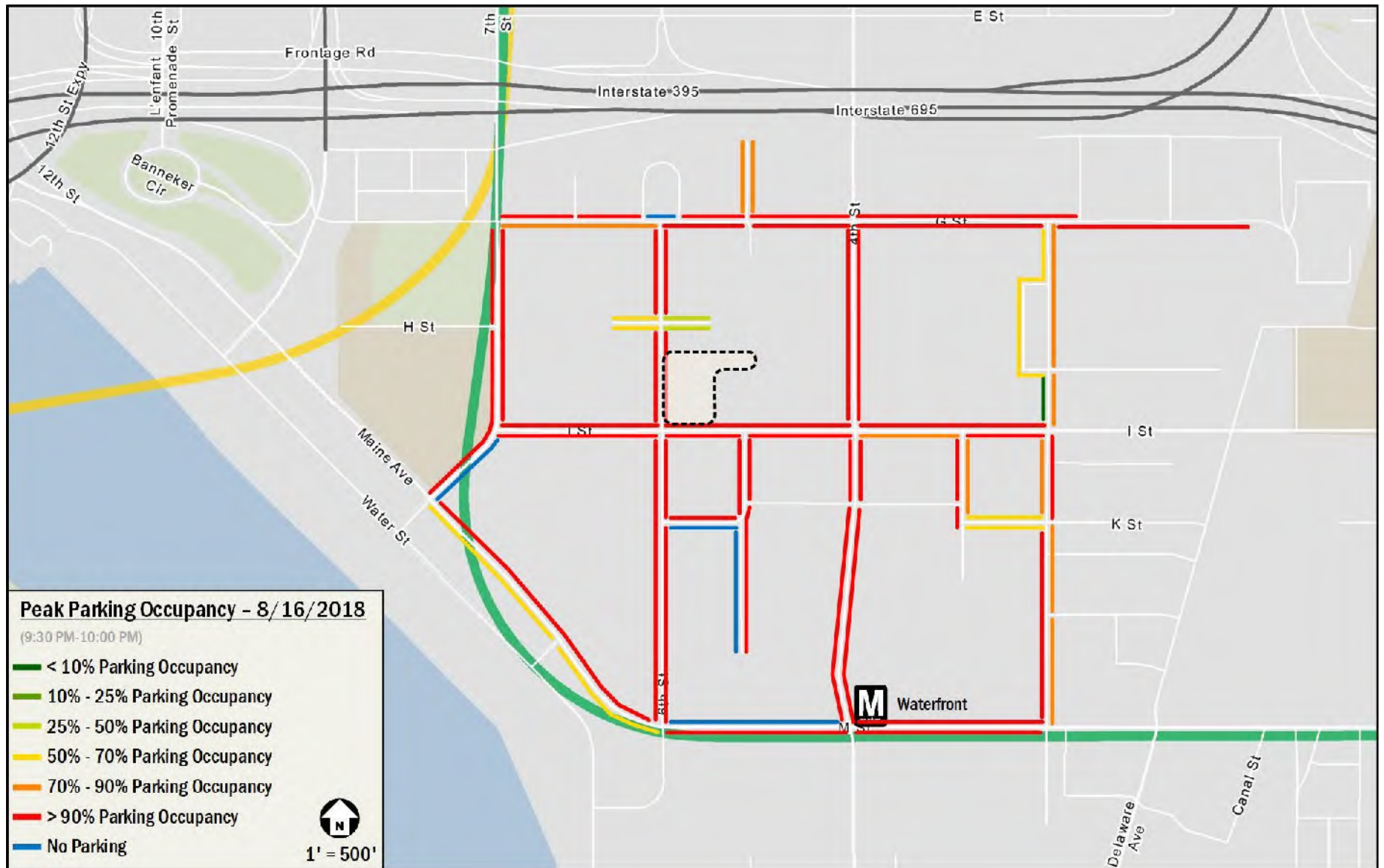


Figure 9: Summer Evening Peak Parking Occupancy

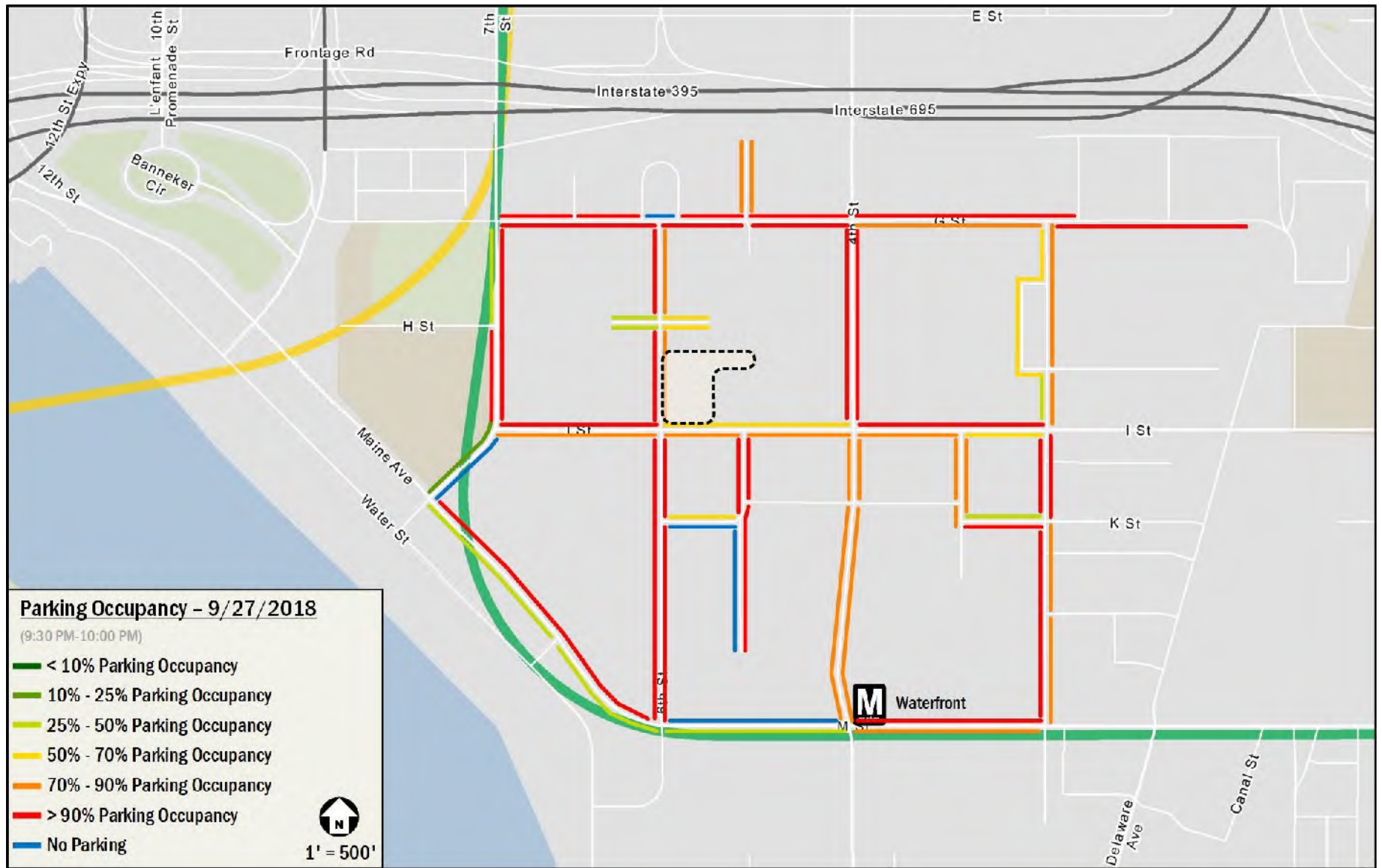


Figure 10: Non-Summer Evening Peak Parking Occupancy



Figure 11: Existing Curbside Management



Figure 12: Proposed Curbside Management

TRIP GENERATION

This section outlines the transportation demand of the proposed 501 Eye Street SW project. It summarizes the projected trip generation of the site by mode, which forms the basis for the chapters that follow.

Because there is no comparable ITE land use for the proposed STC use, trip generation projections for the STC use were based on survey results and discussions with STC, while residential trip generation was based on ITE methodology.

RESIDENTIAL TRIP GENERATION

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

Residential trip generation was calculated based on ITE land use 220, Apartment, splitting trips into different modes using assumptions derived from census data for the residents that currently live near the site. The residential mode split is shown on Table 6. The residential component of the site is expected to generate 17 vehicular trips (4 in, 13 out) during the morning peak hour, and 25 vehicular trips (16 in, 9 out) during the afternoon peak hour.

Of note, apartments allocated to STC actors/fellows are not expected to generate any vehicle trips as actors are not expected to have a car on site. Additionally, the majority of STC actors/fellows are expected to be on-site during weekday peak hours.

Table 6: Proposed Residential Mode Split

Land Use	Mode			
	Drive	Transit	Bike	Walk
Residential	45%	40%	5%	10%

STC TRIP GENERATION

The overall transportation demand for STC is a combination of multiple user groups. Each user group's demand was assembled using survey information compiled from existing employees and information provided by STC. The general schedule of employees and events, the number of people expected for each user group, and expected mode splits are

summarized previously in Table 4 and Table 5. A summary of mode splits by user group is shown on Table 7.

From the information provided in Table 4 and Table 5 and additional information from STC, the morning and afternoon peak hours were determined and used to determine the peak hour trip generation of STC. It should be noted that although all user groups were used to determine the transportation demand, not all user groups are expected to be traveling to and from the site during the weekday commuter peak hours. Nor is every user group expected to be on site at the same time of year or same time of day. As stated previously in the Project Design section, programming for STC is limited by the amount of space available, such that not all user groups are able to be on site at the same time. For example, some education activities are only possible when rehearsal space is not in use.

As scoped with DDOT, the STC trip generation was based on the highest activity non-summer day, which is expected to occur in May when the most rehearsal and education activities are anticipated. Based on the data provided, the morning peak hour for STC is expected to occur 9 to 10 AM and the afternoon peak hour is expected to occur from 6 to 7 PM. During these times, the STC component of the site is expected to generate 37 vehicular trips (31 in, 6 out) during the morning peak hour, and 38 vehicular trips (28 in, 10 out) during the afternoon peak hour.

Not all vehicular trips are expected to go directly to the garage. For example, some employees will be parking in designated off-site parking spaces and some visitors will be parking in other off-site parking garages. To effectively account for off-site parking, 30 percent of STC trips were routed to an off-site garage, while the remaining trips were routed to the on-site garage.

Futhermore, some on-site vehicular activity will be pick-up/drop-off only. As such, on-site STC trips shown in Table 8 include pick-up/drop-off activity. Pick-up/drop-off activity was conservatively routed to and from the garage, but is expected to remain along Eye Street within the designated pick-up/drop-off area.

TRIP GENERATION SUMMARY

A summary of the multimodal trip generation for the overall site is provided in Table 8. The 501 Eye Street SW project is expected to generate 54 vehicular trips (35 in, 19 out) during the morning peak hour, and 63 vehicular trips (44 in, 19 out)

during the afternoon peak hour. Again, please note that 30 percent of the STC trips will be to off-site garages and not the site. Furthermore, of the remaining STC trips, some of those trips will be pick-up/drop-off only. Detailed calculations are included in the Technical Appendix.

Table 7: STC Mode Split - Survey Results

User Group	Mode Split				
	Auto	Transit	Walk	Bike	Housed On-Site
Office User Groups					
Full-Time Staff	30%	45%	4%	4%	17%
Part-time staff	50%	50%	0%	0%	0%
Volunteers	60%	40%	0%	0%	0%
Education User Groups					
Summer Camp	67%	25%	8%	0%	0%
MAC	70%	20%	10%	0%	0%
Home School	80%	20%	0%	0%	0%
After School Class	0%	100%	0%	0%	0%
Workshops & Training	25%	50%	10%	15%	0%
Rehearsal User Groups					
STC Actors	10%	20%	0%	20%	50%
ACA Rehearsals	10%	80%	5%	5%	0%
Ford Theater Rehearsals	20%	60%	8%	12%	0%

Table 8: Trip Generation Summary

Mode	Land Use	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto	Residential	4 veh/hr	13 veh/hr	17 veh/hr	16 veh/hr	9 veh/hr	25 veh/hr
	STC (on-site)	22 veh/hr	4 veh/hr	26 veh/hr	20 veh/hr	7 veh/hr	27 veh/hr
	STC (off-site)	9 veh/hr	2 veh/hr	11 veh/hr	8 veh/hr	3 veh/hr	11 veh/hr
	Total	35 veh/hr	19 veh/hr	54 veh/hr	44 veh/hr	19 veh/hr	63 veh/hr
Transit	Residential	4 ppl/hr	13 ppl/hr	17 ppl/hr	16 ppl/hr	9 ppl/hr	25 ppl/hr
	STC	43 ppl/hr	2 ppl/hr	45 ppl/hr	8 ppl/hr	13 ppl/hr	21 ppl/hr
	Total	47 ppl/hr	15 ppl/hr	62 ppl/hr	24 ppl/hr	22 ppl/hr	46 ppl/hr
Bike	Residential	0 ppl/hr	2 ppl/hr	2 ppl/hr	2 ppl/hr	1 ppl/hr	3 ppl/hr
	STC	3 ppl/hr	0 ppl/hr	3 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr
	Total	3 ppl/hr	2 ppl/hr	5 ppl/hr	2 ppl/hr	2 ppl/hr	4 ppl/hr
Walk	Residential	1 ppl/hr	3 ppl/hr	4 ppl/hr	4 ppl/hr	2 ppl/hr	6 ppl/hr
	STC	3 ppl/hr	0 ppl/hr	3 ppl/hr	4 ppl/hr	1 ppl/hr	5 ppl/hr
	Total	4 ppl/hr	3 ppl/hr	7 ppl/hr	8 ppl/hr	3 ppl/hr	11 ppl/hr

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 501 Eye Street SW project and a discussion of potential improvements.

The purpose of the capacity analysis is to:

- Determine the existing capacity of the study area roadways;
- Determine the overall impact of the 501 Eye Street SW 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 existing conditions, background conditions, and total future conditions.

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:

- Under existing conditions, the study area intersections generally operate under acceptable conditions.
- Future areas of concern for roadway capacity, are primarily focused along commuter routes such as I Street and M Street SW.
- The intersection of G Street and 4th Street met the thresholds for requiring mitigations as a result of the proposed development. This intersection can be adequately mitigated through signal timing adjustments.
- Overall, this report concludes that the project will not have a detrimental impact to the surrounding transportation network, assuming the proposed mitigation measure is implemented.

STUDY AREA, SCOPE, & METHODOLOGY

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

The scope of the analysis contained within this report was discussed with and agreed to with DDOT. The general methodology of the analysis follows national and DDOT

guidelines on the preparation of transportation impact evaluations of site development.

Capacity Analysis Scenarios

The vehicular analyses are performed to determine 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 condition) and (2) with the development approved and constructed (referred to as the Total Future condition).

Specifically, the roadway capacity analysis examined the following scenarios:

1. 2018 Existing Conditions
2. 2021 Background Conditions without the development (2021 Background)
3. 2021 Future Conditions with the development (2021 Total Future)

Study Area

The study area of the analysis is a set of intersections where detailed capacity analyses are performed for the scenarios listed above. The set of intersections decided upon during the scoping process with DDOT are those intersections most likely to have potential impacts or require changes to traffic operations to accommodate the proposed development. Although it is possible that impacts will occur outside of the study area, those impacts are not significant enough to be considered a detrimental impact nor worthy of mitigation measures.

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

1. 7th Street SW/G Street SW
2. 6th Street SW/G Street SW
3. 4th Street SW/G Street SW
4. 7th Street SW/I Street SW
5. 6th Street SW/I Street SW
6. 4th Street SW/I Street SW
7. 7th Street SW/Maine Ave SW
8. 6th Street SW/M Street SW
9. 4th Street SW/M Street SW
10. 6th Street SW/Site Driveway

Figure 13 shows a map of the study area intersections.

Traffic Volume Assumptions

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

Existing Traffic Volumes

The existing traffic volumes are comprised of turning movement count data, which was collected on Thursday September 27, 2018. The results of the traffic counts are included in the Technical Attachments. The existing peak hour traffic volumes are shown on Figure 14. For all intersections the individual morning and afternoon peak hours were used.

2021 Background Traffic Volumes (without the project)

The traffic projections for the 2021 Background conditions consist of the existing volumes with two additions:

- Traffic generated by developments within the vicinity of the site and expected to be completed prior, or close to the project (known as background developments); and
- Inherent growth on the roadway (representing regional traffic growth).

Following national and DDOT methodologies, background developments should meet the following criteria to be incorporated into the analysis:

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

Based on these criteria, and as discussed with and agreed to with DDOT, the following developments were included in the 2019 Background scenario:

1. The View at Waterfront
2. 1000 4th Street
3. 375 M Street
4. 425 M Street
5. Town Center North
6. 301 M Waterfront
7. St. Matthews Evangelical Lutheran Church Redevelopment
8. 680 I (Eye) Street SW
9. The Wharf (Phase 2)
10. Randall School

11. Southwest Library

Available background development traffic studies were used to determine the number of trips added for the background developments. These documents were used to determine the number of trips generated, the mode split percentages, and trip routing, as available. For developments that have updated development programs since being approved, the trip generation was recalculated accordingly.

Based on the available background studies and the trips estimated following the methodology outlined above, Table 9 shows the total number of trips generated by the background developments. Detailed trip generation tables are included in the Technical Attachments.

These trips were then distributed and assigned to the network based on the direction of approach included in the background study.

While the background developments represent local traffic changes, regional traffic growth is typically accounted for using growth rates. The growth rates used in this analysis are derived using the Metropolitan Washington Council of Government's (MWCOC) currently adopted regional transportation model, comparing the difference between the year 2017 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. Annual growth rates were also capped at 0.5% in the peak direction and 0.8% in the non-peak direction. These background growth rates, summarized in Table 10, were applied to thru movements at study area intersections.

The traffic volumes generated by the background developments and the inherent growth along the network were added to the existing traffic volumes to establish the 2021 Background traffic volumes. The traffic volumes for the 2021 Background conditions are shown on Figure 15.

2021 Total Future Traffic Volumes (with the project)

The 2021 Total Future traffic volumes consist of the 2021 Background volumes with the addition of the traffic volumes generated by the proposed development (site-generated trips). Thus, the 2021 Total Future traffic volumes include traffic generated by: the existing volumes, background developments,

the inherent growth on the study area roadways, and the proposed project.

Trip distribution to and from the new STC site was determined based on employee survey results. For all employees who plan on driving to the new location, zip code data for their place of residence was compiled to determine the expected routes to and from the new STC site.

Based on this review and the site access locations, the site-generated trips were distributed through the study area intersections. Because STC intends to secure 15 off-site parking spaces for employees, 30% of STC trips were routed to an off-site parking location. At this time, it is expected that the off-site parking location will be the Arena Stage garage. A summary of outbound trip distribution assumptions is provided on Figure 16 and a summary of inbound trip distribution assumptions is provided on Figure 17.

The traffic volumes for the 2021 Total Future conditions were calculated by adding the development-generated traffic volumes to the 2021 Background traffic volumes. Thus, the future condition with the proposed development scenario includes traffic generated by: existing volumes, background developments through the year 2021, inherent growth on the network, and the proposed development. The site-generated traffic volumes are shown on Figure 18 and the 2021 Total Future traffic volumes are shown on Figure 19.

Peak Hour Factors

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

For the Existing Conditions analysis, PHF were calculated from the turning movement data that was collected in the field, using a minimum PHF of 0.85.

To account for the significant increase in peak hour traffic generated by local development on side streets, and regional growth along major corridors, a default PHF minimum of 0.92 was assumed in the Background Conditions and Total Future Conditions analyses.

Geometry and Operations Assumptions

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

Existing Geometry and Operations Assumptions

The geometry and operations assumed in the existing conditions scenario are those present when the main data collection occurred. Gorove/Slade made observations and confirmed the existing lane configurations and traffic controls at the intersections within the study area. Existing signal timings and offsets were obtained from DDOT and confirmed during field reconnaissance.

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

Background and Total Future Geometry and Operations Assumptions

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

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

Based on these criteria, three (3) background improvements were included in the Background and Total Future conditions.

- The intersection of 7th Street & I Street SW will be improved as part of the 680 Eye Street development. The channelized northbound right turn lane will be removed, resulting in a northbound approach of one thru lane and one thru-right lane.
- The channelized southbound right turn lane at Maine Avenue/M Street & 6th Street will be removed, resulting in a southbound approach of one left/through lane and one right lane.
- Improvements made to surrounding intersections and roadways as part of Phase 2 of The Wharf development.

The lane configurations and traffic controls for the 2022 Background and 2022 Total Future conditions are shown on Figure 21.

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 *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 11 shows the results of the capacity analyses, including LOS and average delay per vehicle (in seconds) for the Existing, 2021 Background, and 2021 Total Future scenarios. The capacity analysis results are shown graphically on Figure 22 for the morning peak hour and Figure 23 for the afternoon peak hour.

Most study intersections operate at acceptable conditions during the morning and afternoon peak hours for the Existing, 2021 Background, and the 2021 Future scenarios. However, the following intersections operate under unacceptable conditions during one or more peak hour:

- G Street & 4th Street, SW
 - Eastbound approach: AM (EX, BG, TF)
- I Street & 7th Street, SW
 - Overall intersection: PM (BG, TF)
 - Eastbound approach: AM (EX, BG, TF)
 - Southbound approach: PM (BG, TF)
- I Street & 4th Street, SW
 - Overall intersection: PM (BG, TF)
 - Eastbound approach: PM (BG, TF)
- Maine & 7th Street, SW
 - Southbound: AM/PM (BG, TF)
- M Street & 4th Street, SW
 - Overall intersection: AM (BG, TF)
 - Westbound approach: AM/PM (EX, BG, TF)

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 50th percentile and 95th percentile maximum queue lengths are shown for each lane group at the study area signalized intersections. The 50th percentile maximum queue is the maximum back of queue on a typical cycle. The 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes. For unsignalized intersections, the 95th percentile queue is reported for each lane group (including free-flowing left turns and stop-controlled movements) based on the HCM calculations. The HCM does not give guidelines for calculating queues for an all-way stop-controlled intersection, so this information is not reported.

Table 12 shows the queuing results for the study area intersections. The following intersections have one or more lane group that exceeds the given storage length during at least one peak hour in at least one of the study scenarios:

- G Street & 7th Street, SW
 - Westbound Right: AM (BG, TF)
 - Southbound Left: PM (BG, TF)
- I Street & 4th Street, SW
 - Eastbound Left/Through/Right: PM (EX, BG, TG)
- Maine Avenue & 7th Street, SW
 - Eastbound Left: PM (BG, TF)
 - Eastbound Through/Right: PM (EX, BG, TF); AM (BG, TF)
 - Southbound Left: AM/PM (BG, TF)

- Maine Avenue/M Street & 6th Street, SW
 - Eastbound Left/Through/Right: PM (EX, BG, TF)
- M Street & 4th Street, SW
 - Southbound Through: PM (EX, BG, TF)

Mitigations and Improvements

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

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

Following these guidelines, there are impacts to one (1) intersection as a result of the development. Mitigation measures were tested at these intersections, with results

shown on Table 13 and detailed Synchro reports included in the Technical Attachments. The following conclusions were made.

▪ G Street & 4th Street, SW

During the morning peak period, the eastbound approach operates at unacceptable levels in all study scenarios. This can be attributed to the high amount of eastbound left turns present, with all eastbound turning movements being made from a single travel lane. The intersection is signalized without a dedicated eastbound-only protected phase, resulting in vehicles waiting for a suitable gap in westbound thru traffic in order to make the turn. Site trips routed through this intersection make an eastbound right turn, slightly exasperating delays observed in the Background scenario.

A slight increase in green time to the eastbound/westbound approaches was found to adequately mitigate this intersection. These changes to the signal timings will give the concurrent eastbound/westbound phase of G Street more green time and allow for more vehicles to pass through the signal per cycle. This mitigation will reduce delays to levels observed in Background conditions.

Table 9: Summary of Background Development Trip Generation

Background Development	Trip Generation Source	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
The View at Waterfront	Approved TIS	11 veh/hr	57 veh/hr	68 veh/hr	75 veh/hr	41 veh/hr	116 veh/hr
375 M Street	Approved CTR	31 veh/hr	60 veh/hr	91 veh/hr	70 veh/hr	52 veh/hr	122 veh/hr
425 M Street	Approved CTR	29 veh/hr	59 veh/hr	88 veh/hr	66 veh/hr	52 veh/hr	118 veh/hr
301 M Waterfront/Town Center	Approved TIS	8 veh/hr	36 veh/hr	44 veh/hr	31 veh/hr	22 veh/hr	53 veh/hr
St. Matthews	Approved TIS	10 veh/hr	35 veh/hr	45 veh/hr	35 veh/hr	19 veh/hr	54 veh/hr
680 Eye Street SW	Approved TIS	42 veh/hr	69 veh/hr	111 veh/hr	70 veh/hr	54 veh/hr	124 veh/hr
1000 4th Street SW	Draft Scoping Document	58 veh/hr	116 veh/hr	174 veh/hr	124 veh/hr	85 veh/hr	209 veh/hr
The Wharf Phase 2	Approved CTR	384 veh/hr	122 veh/hr	506 veh/hr	196 veh/hr	408 veh/hr	602 veh/hr
Randall School	Approved CTR	45 veh/hr	104 veh/hr	149 veh/hr	102 veh/hr	67 veh/hr	169 veh/hr
Southwest Library	Approved Transportation Study	8 veh/hr	1 veh/hr	9 veh/hr	0 veh/hr	6 veh/hr	6 veh/hr
Net Background Site Trips		626 veh/hr	659 veh/hr	1285 veh/hr	769 veh/hr	806 veh/hr	1573 veh/hr

Table 10: Applied Annual and Total Growth Rates

Road & Direction of Travel	Proposed Annual Growth Rate		Total Growth between 2018 and 2021	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
7th Street, SW – Northbound	0.20%	0.80%	0.60%	2.42%
7th Street, SW – Southbound	0.80%	0.50%	2.24%	1.51%
I Street, SW - Eastbound	0.10%	0.50%	0.30%	1.51%
I Street, SW - Westbound	0.50%	0.80%	1.51%	2.42%
Maine Avenue, SW - Eastbound	0.80%	0.50%	2.42%	1.51%
Maine Avenue, SW - Westbound	0.50%	0.80%	1.51%	2.42%
M Street SW - Eastbound	0.80%	0.10%	2.42%	0.30%
M Street SW - Westbound	0.10%	0.80%	0.30%	2.42%
6th Street, SW – Northbound	0.50%	0.10%	1.51%	0.30%
6th Street, SW – Southbound	0.10%	0.50%	0.30%	1.51%
4th Street, SW – Northbound	0.50%	0.10%	1.51%	0.30%
4th Street, SW – Southbound	0.80%	0.50%	2.42%	1.51%

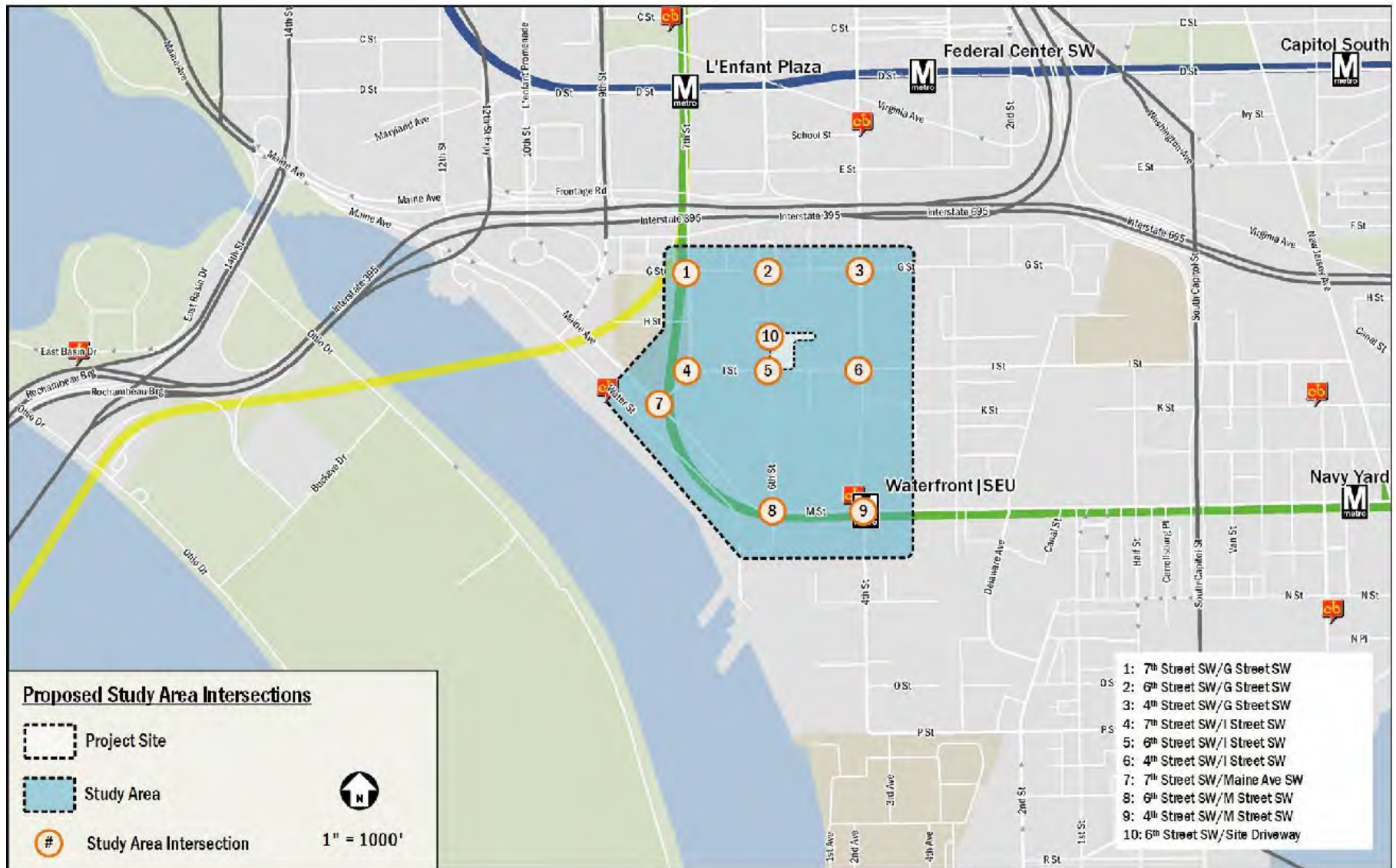


Figure 13: Study Area

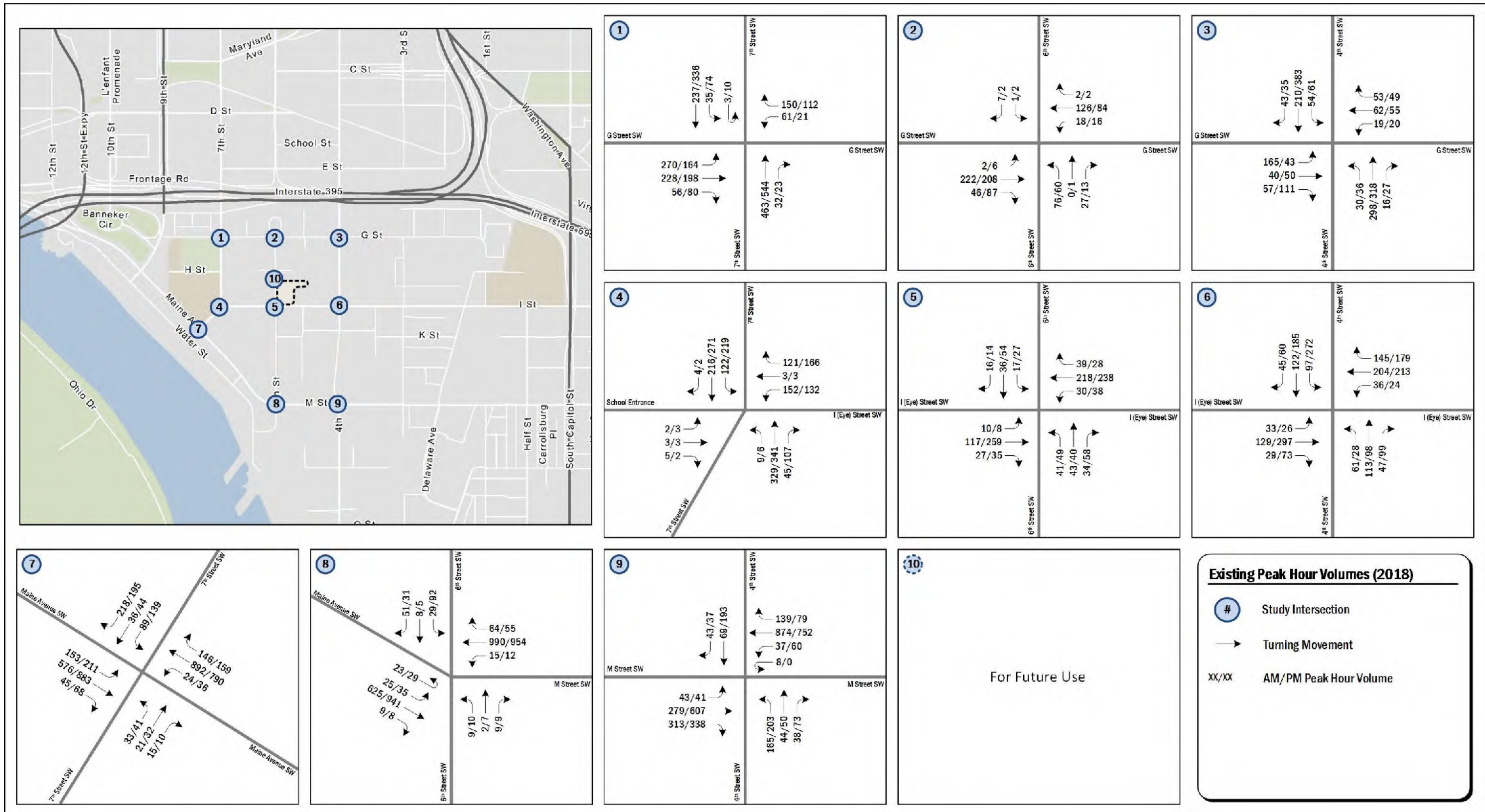


Figure 14: Existing Peak Hour Traffic Volumes

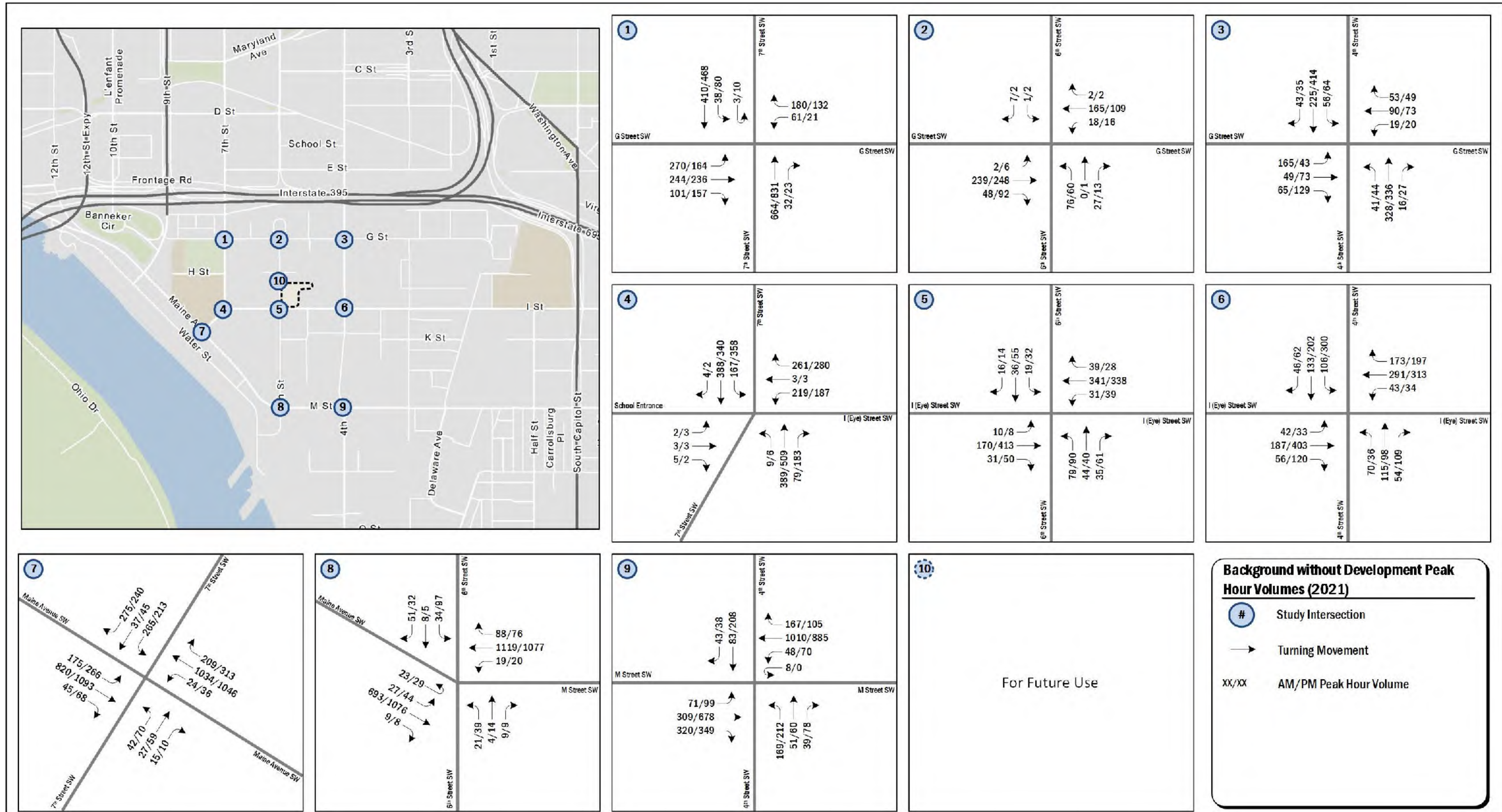


Figure 15: Background Peak Hour Traffic Volumes



Figure 16: 501 Eye Street SW Outbound Trip Distribution and Routing



Figure 17: 501 Eye Street SW Inbound Trip Distribution and Routing

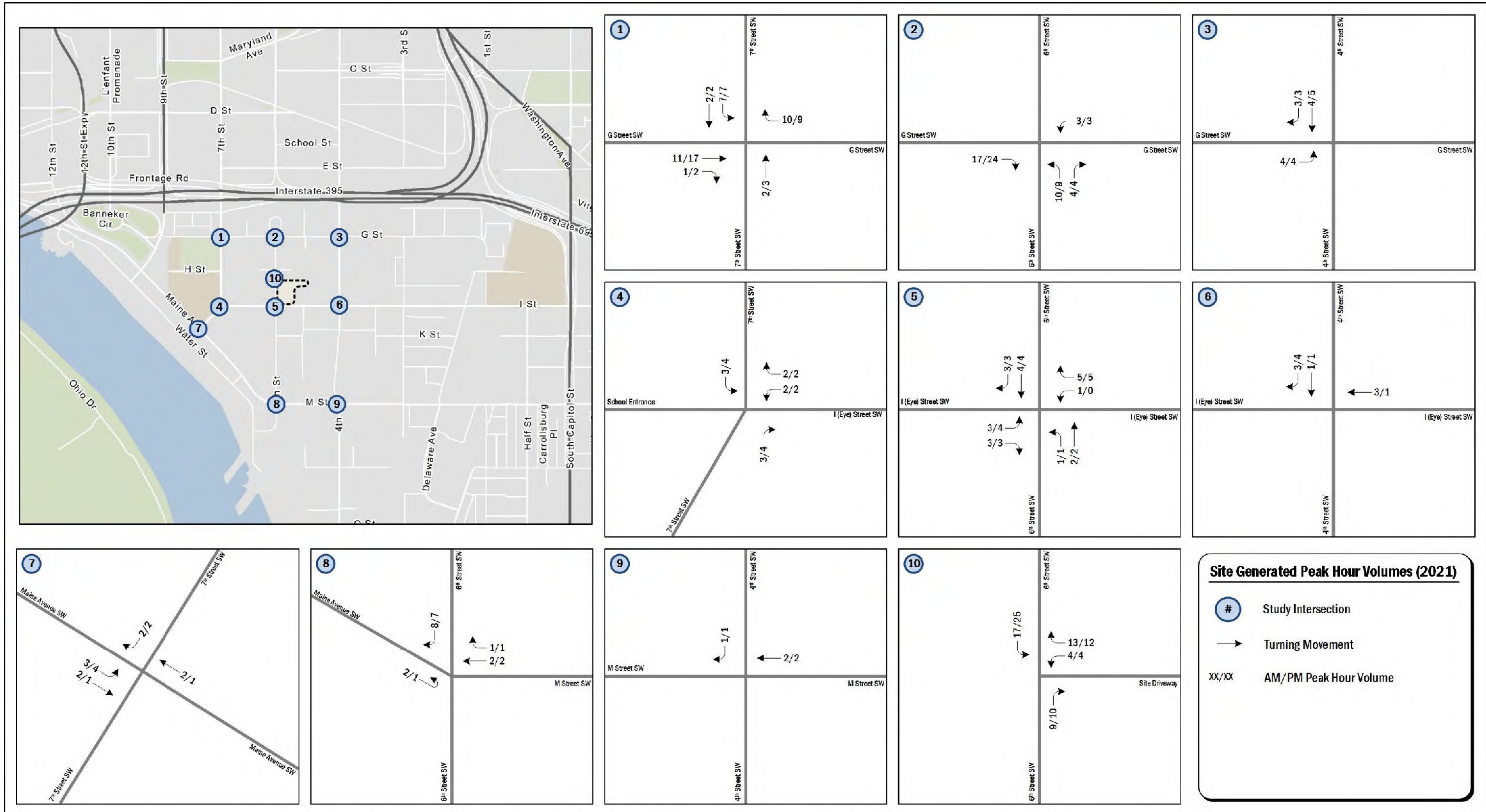


Figure 18: Site-Generated Peak Hour Traffic Volumes

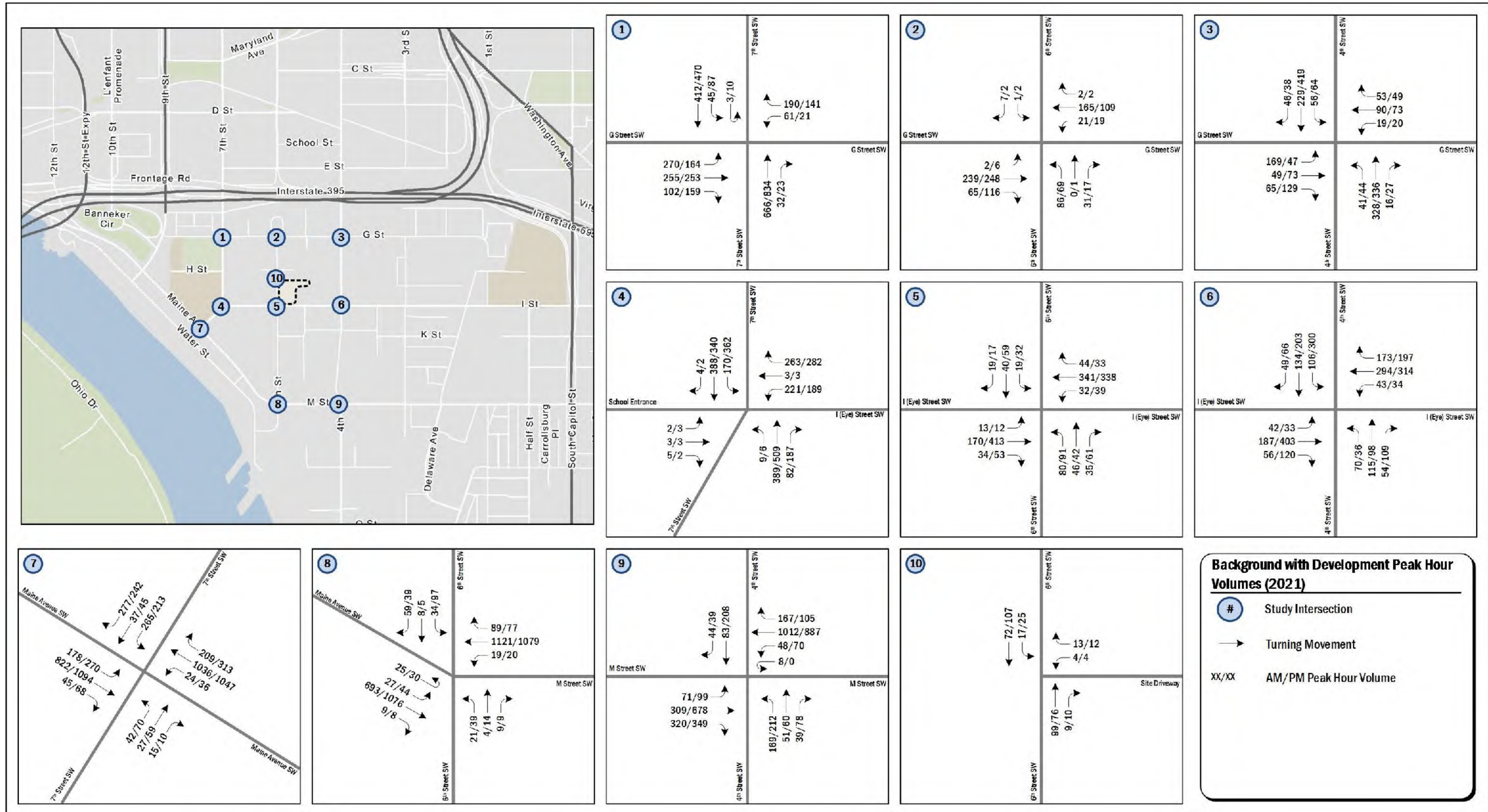


Figure 19: Total Future Peak Hour Traffic Volumes

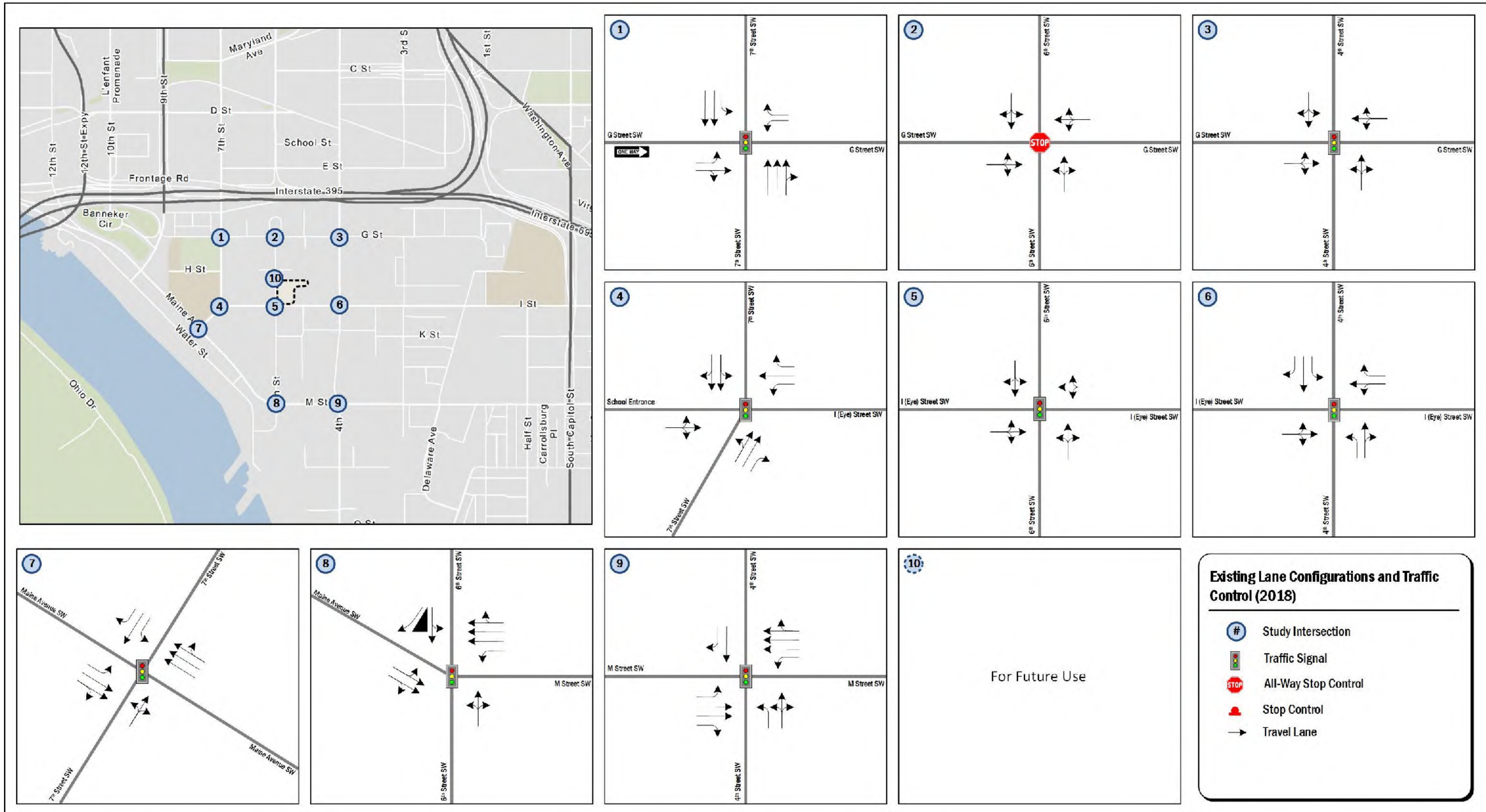


Figure 20: Current Lane Configuration and Traffic Control

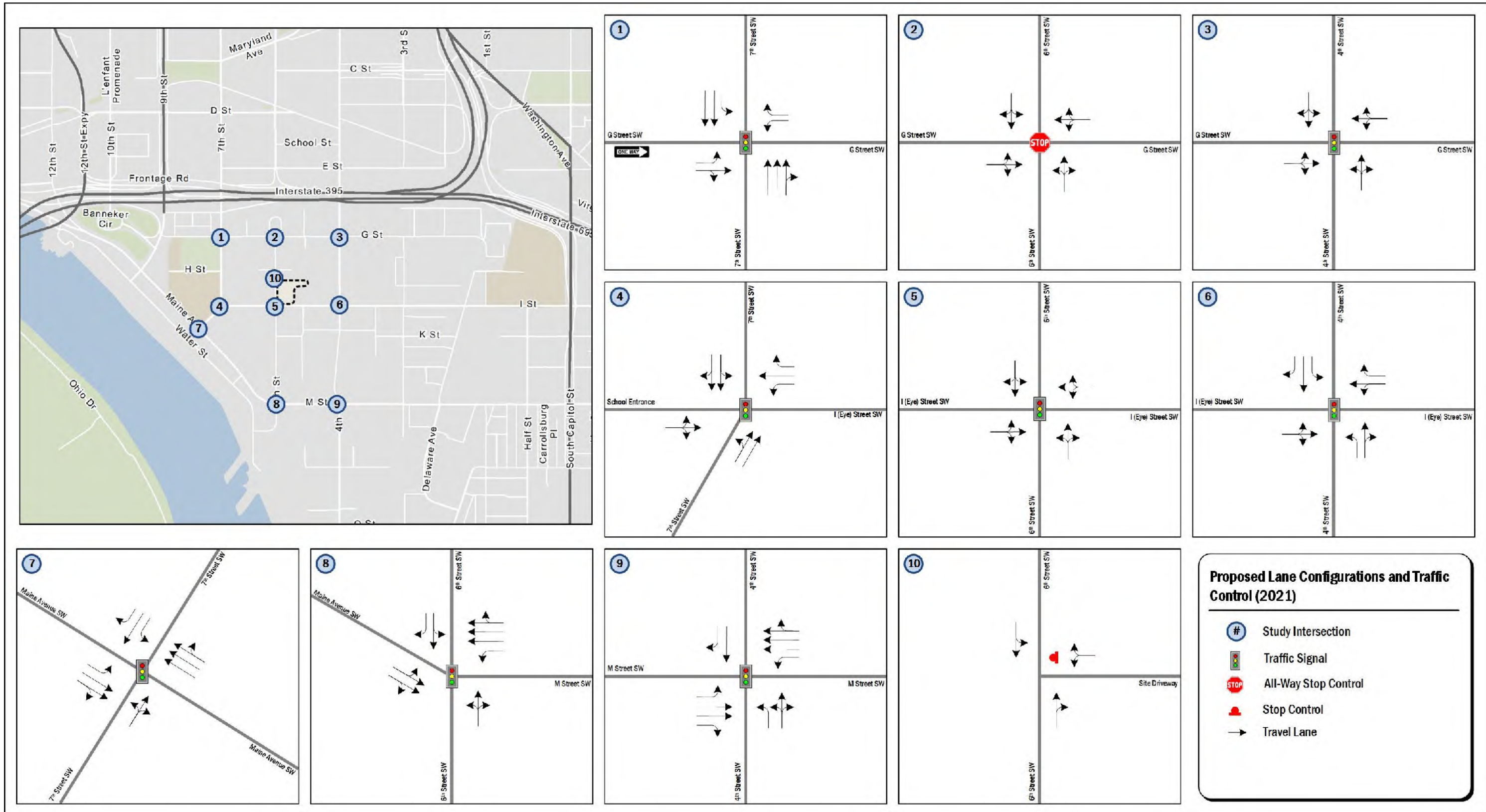


Figure 21: Proposed Lane Configuration and Traffic Control

Table 11: LOS Results

Intersection	Approach	Existing Conditions				Future without Development Conditions (2021)				Future with Development Conditions (2021)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. G Street & 7th Street, SW	Overall	20.7	C	19.1	B	21.8	C	20.9	C	21.9	C	21.4	C
	Eastbound	23.1	C	29.7	C	23.9	C	33.9	C	24.1	C	35.0	C
	Westbound	19.6	B	25.0	C	20.5	C	25.8	C	20.8	C	26.1	C
	Northbound	19.9	B	14.4	B	22.0	C	16.3	B	22.1	C	16.3	B
	Southbound	17.7	B	13.1	B	19.1	B	14.3	B	19.2	B	14.6	B
2. G Street & 6th Street, SW	Eastbound	9.8	A	9.7	A	10.1	B	10.3	B	10.4	B	10.8	B
	Westbound	8.9	A	8.3	A	9.2	A	8.5	A	9.4	A	8.7	A
	Northbound	9.0	A	8.6	A	9.1	A	8.8	A	9.3	A	9.0	A
	Southbound	7.7	A	7.9	A	7.8	A	8.0	A	7.9	A	8.1	A
3. G Street & 4th Street, SW	Overall	31.4	C	16.8	B	33.4	C	17.4	B	35.2	D	17.7	B
	Eastbound	83.3	F	30.6	C	92.8	F	32.6	C	99.3	F	33.5	C
	Westbound	26.2	C	25.9	C	27.5	C	26.4	C	27.5	C	26.4	C
	Northbound	10.0	A	7.7	A	11.0	B	7.1	A	11.0	B	7.1	A
	Southbound	12.3	B	15.6	B	12.1	B	15.8	B	12.2	B	16.0	B
4. I Street & 7th Street, SW	Overall	22.3	C	22.2	C	25.1	C	66.4	E	25.2	C	67.5	E
	Eastbound	65.4	E	53.5	D	94.1	F	49.1	D	94.1	F	49.1	D
	Westbound	35.9	D	6.7	A	38.3	D	10.3	B	38.3	D	10.8	B
	Northbound	14.8	B	20.3	C	13.6	B	27.2	C	13.5	B	27.3	C
	Southbound	18.5	B	32.8	C	22.5	C	143.3	F	22.6	C	146.0	F
5. I Street & 6th Street, SW	Overall	11.8	B	13.9	B	11.9	B	14.0	B	12.1	B	14.3	B
	Eastbound	7.0	A	5.0	A	7.3	A	5.8	A	7.4	A	6.0	A
	Westbound	4.4	A	11.4	B	4.2	A	12.0	B	4.3	A	12.1	B
	Northbound	27.5	C	29.1	C	32.3	C	32.9	C	32.3	C	33.4	C
	Southbound	23.9	C	24.8	C	23.9	C	24.7	C	24.2	C	25.0	C

Intersection	Approach	Existing Conditions				Future without Development Conditions (2021)				Future with Development Conditions (2021)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
6. I Street & 4th Street, SW	Overall	24.9	C	30.6	C	30.9	C	83.2	F	31.0	C	83.4	F
	Eastbound	32.0	C	45.2	D	46.2	D	215.4	F	46.3	D	216.6	F
	Westbound	24.1	C	31.8	C	31.1	C	38.9	D	31.4	C	39.1	D
	Northbound	21.4	C	23.1	C	21.2	C	22.7	C	21.2	C	22.7	C
	Southbound	23.7	C	22.7	C	23.5	C	23.1	C	23.6	C	23.1	C
7. Maine Avenue & 7th Street, SW	Overall	18.7	B	22.5	B	28.6	C	34.3	C	28.6	C	34.5	C
	Eastbound	19.9	B	19.3	B	23.0	C	29.3	C	23.1	C	29.9	C
	Westbound	8.6	A	17.6	B	12.1	B	29.4	C	12.2	B	29.4	C
	Northbound	39.8	D	41.1	D	40.7	D	46.0	D	40.7	D	46.0	D
	Southbound	41.4	D	38.6	D	72.9	E	58.0	E	72.9	E	57.9	E
8. Maine Avenue/M Street & 6th Street, SW	Overall	11.9	B	15.8	B	10.8	B	17.0	B	10.8	B	17.0	B
	Eastbound	20.4	C	24.4	C	18.8	B	27.0	C	18.9	B	27.2	C
	Westbound	5.4	A	4.6	A	4.8	A	4.4	A	4.8	A	4.4	A
	Northbound	34.7	C	35.7	D	35.3	D	37.8	D	35.3	D	37.8	D
	Southbound	15.1	B	31.8	C	16.5	B	31.4	C	15.2	B	30.0	C
9. M Street & 4th Street, SW	Overall	53.6	D	51.9	D	56.4	E	53.3	D	56.5	E	53.3	D
	Eastbound	44.1	D	47.0	D	47.0	D	48.9	D	47.2	D	48.9	D
	Westbound	60.8	E	55.2	E	63.8	E	57.0	E	63.9	E	57.0	E
	Northbound	54.3	D	54.9	D	53.5	D	54.7	D	53.5	D	54.7	D
	Southbound	40.9	D	55.0	D	41.1	D	54.9	D	41.1	D	54.9	D
10. 6th Street & Proposed Driveway	Westbound	--	--	--	--	--	--	--	--	9.1	A	9.2	A
	Northbound	--	--	--	--	--	--	--	--	0.0	A	0.0	A
	Southbound	--	--	--	--	--	--	--	--	1.5	A	1.5	A

Table 12: Queuing Results

Intersection	Lane Group	Storage Length (ft)	Existing Conditions				Future without Development Conditions (2021)				Future with Development Conditions (2021)			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
1. G Street & 7th Street, SW	Eastbound Left	500	143	217	87	143	139	211	87	143	139	211	87	143
	Eastbound Thru	500	143	217	146	227	174	261	223	335	183	273	240	358
	Westbound Left	460	31	59	12	30	28	60	11	31	28	61	11	32
	Westbound Right	80	9	43	0	35	49	100	18	64	54	107	24	71
	Northbound Thru	625	119	161	131	158	184	238	202	256	184	239	203	257
	Southbound Left	80	16	39	32	66	18	44	37	83	21	50	41	93
	Southbound Thru	185	52	78	63	88	97	133	92	124	97	134	93	124
2. G Street & 6th Street, SW	Eastbound LTR	460	<i>HCM does not analyze all-way stop intersections for queuing</i>											
	Westbound LTR	235												
	Northbound LTR	253												
	Southbound LTR	115												
3. G Street & 4th Street, SW	Eastbound LTR	565	~137	#274	67	127	~147	#297	81	160	~153	#304	85	#167
	Westbound LTR	540	43	91	41	83	57	114	47	98	57	114	47	98
	Northbound LTR	620	113	168	44	m78	140	m197	39	m73	140	m197	39	m73
	Southbound LTR	620	90	140	164	251	87	149	167	272	89	152	170	278
4. I Street & 7th Street, SW	Eastbound LTR	50	5	24	4	17	4	23	3	16	4	23	3	16
	Westbound Left	460	115	171	29	48	158	241	37	88	159	243	39	90
	Westbound Right	140	0	42	3	11	0	78	9	20	0	78	10	23
	Northbound LT	250	114	118	75	107	127	m140	148	212	126	m139	149	213
	Northbound Right	250	0	m5	0	14	--	--	--	--	--	--	--	--
	Northbound LTR	250	--	--	--	--	--	--	--	--	--	--	--	--
	Southbound Thru	630	92	124	128	#178	165	223	~234	#342	166	225	~236	#344

Intersection	Lane Group	Storage Length (ft)	Existing Conditions				Future without Development Conditions (2021)				Future with Development Conditions (2021)			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
5. I Street & 6th Street, SW	Eastbound LTR	460	34	57	36	m67	44	76	3	m2	45	78	3	m3
	Westbound LTR	245	24	50	135	207	34	58	190	m236	35	59	192	m239
	Northbound LTR	225	54	98	69	119	70	133	86	155	71	135	87	158
	Southbound LTR	275	30	61	42	79	29	63	42	84	32	68	44	88
6. I Street & 4th Street, SW	Eastbound LTR	290	84	154	208	#346	146	#262	~386	#585	147	#263	~387	#586
	Westbound LT	565	103	174	123	179	142	#256	165	#316	144	#259	166	#318
	Westbound Right	370	61	117	93	143	69	131	83	151	69	131	83	151
	Northbound Left	110	18	38	8	21	19	42	10	26	19	42	10	26
	Northbound TR	140	58	104	59	112	55	109	54	116	55	109	54	116
	Southbound Left	165	20	m46	57	#106	21	m47	60	#115	21	m48	60	#116
	Southbound Thru	625	51	m89	56	110	56	m94	58	m116	56	m95	60	m115
	Southbound Right	120	0	m3	0	m1	0	m3	0	m0	0	m4	0	m0
7. Maine Avenue & 7th Street, SW	Eastbound Left	170	64	104	83	128	75	135	152	#320	76	139	156	#328
	Eastbound TR	245	152	195	240	297	237	294	324	395	237	295	324	396
	Westbound Left	205	2	m4	10	m23	2	m5	10	m24	2	m5	10	m23
	Westbound TR	1015	146	161	411	478	194	216	585	661	196	213	586	661
	Northbound LTR	240	43	84	57	107	54	103	101	170	54	103	101	170
	Southbound Left	235	78	127	115	178	~254	#433	178	#338	~253	#434	178	#338
	Southbound Thru	235	30	62	33	64	28	m48	31	65	28	m48	31	65
	Southbound Right	235	131	196	58	109	106	184	95	167	107	184	96	168

Intersection	Lane Group	Storage Length (ft)	Existing Conditions				Future without Development Conditions (2021)				Future with Development Conditions (2021)			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
8. Maine Aveune/M Street & 6th Street, SW	Eastbound LTR	415	200	244	403	468	197	m236	461	m554	198	m237	463	m558
	Westbound Left	195	2	m3	2	m4	2	m3	4	m6	2	m3	4	m6
	Westbound TR	535	54	63	69	79	53	60	72	82	53	60	72	82
	Northbound LTR	420	8	28	12	36	16	45	37	78	16	45	37	78
	Southbound LT	590	26	55	74	124	28	61	72	128	28	61	72	128
	Southbound Right	110	0	0	0	0	0	0	0	0	0	0	0	0
9. M Street & 4th Street, SW	Eastbound Left	170	19	47	20	m37	33	71	55	m79	33	72	55	m79
	Eastbound Thru	545	113	156	232	290	122	171	260	325	122	171	261	325
	Eastbound Right	325	162	311	216	295	174	314	229	m314	175	315	229	m312
	Westbound Left	190	18	46	53	m96	26	57	57	m106	26	57	57	m106
	Westbound TR	565	280	332	284	316	332	387	317	366	334	389	317	367
	Northbound Left	410	110	172	146	216	106	177	144	228	106	177	144	228
	Northbound TR	540	109	172	144	216	105	178	143	#242	105	178	143	#242
	Southbound Thru	160	53	93	166	239	59	107	166	253	59	107	166	253
Southbound Right	100	33	66	29	60	30	66	27	61	31	66	28	62	
10. 6th Street & Site Driveway	Westbound LR	50	--	--	--	--	--	--	--	--	--	2	--	2
	Northbound TR	200	--	--	--	--	--	--	--	--	--	0	--	0
	Southbound LT	400	--	--	--	--	--	--	--	--	--	1	--	1



Figure 22: Morning Peak Hour Capacity Analysis Results



Figure 23: Afternoon Peak Hour Capacity Analysis Results

Table 13: LOS Results with Mitigations

Intersection	Approach	Existing Conditions				Future without Development Conditions (2021)				Future with Development Conditions (2021)				Future with Development Conditions (2021) Mitigated			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3. G Street & 4th Street, SW	Overall	31.4	C	16.8	B	33.4	C	17.4	B	35.2	D	17.7	B	30.2	D	--	--
	Eastbound	83.3	F	30.6	C	92.8	F	32.6	C	99.3	F	33.5	C	78.6	E	--	--
	Westbound	26.2	C	25.9	C	27.5	C	26.4	C	27.5	C	26.4	C	26.3	C	--	--
	Northbound	10.0	A	7.7	A	11.0	B	7.1	A	11.0	B	7.1	A	11.3	B	--	--
	Southbound	12.3	B	15.6	B	12.1	B	15.8	B	12.2	B	16.0	B	12.9	B	--	--

TRANSIT

This section discusses the existing and proposed transit facilities near the site, accessibility to transit, and evaluates the overall transit impacts due to the 501 Eye Street SW project.

The following conclusions are reached within this chapter:

- The development has adequate access to local and regional transit
- The development site is within a half mile of two (2) Metrorail stations serving five (5) lines and surrounded by several Metrobus, Circulator, and commuter bus 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 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 24 identifies the major transit routes, stations, and stops in the study area.

The site is located approximately 0.3 miles from the Waterfront Metrorail Station, located at the intersection of 4th Street and M Street SW, and is served by the Green Line, providing direct connections to areas in the District, Maryland, and Virginia.

The Green Line connects the site to Greenbelt, MD to the north, extending through downtown Washington via Gallery Place-Chinatown and L'Enfant Plaza, before ending in Suitland, MD (Branch Avenue) to the south. Metrorail trains run frequently during the weekday morning and afternoon peak hours between 5:00 AM to 9:30 AM and 3:00 PM to 7:00 PM and approximately every 12 minutes during the weekday midday hours from 9:30 AM to 3:00 PM and every 8 to 20 minutes during the weekday off-peak periods and on weekends.

The site is also serviced by Metrobus, Circulator, the Wharf shuttle, and additional regional bus service along multiple primary corridors. These bus lines connect the site to many areas of the District, Maryland and Virginia, including several Metrorail stations serving five of the six Lines. Table 14 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.

Figure 24 shows a detailed inventory of the existing Metrobus stops within a quarter-mile walkshed of the site. Each stop is evaluated based on the guidelines set forth by WMATA's *Guidelines for the Design and Placement of Transit Stops*, as shown in Table 15. A detailed breakdown of individual bus stop amenities and conditions is included in the Technical Appendix.

PROPOSED TRANSIT SERVICE

MoveDC

Due to growth of population, jobs, and retail in several neighborhoods in the District and the potential for growth in other neighborhoods, the District's infrastructure is challenged with the need for transportation investments to support the recent growth and to further strengthen neighborhoods. In order to meet these challenges and capitalize on future opportunities, DDOT has developed a plan to identify transit challenges and opportunities and to recommend investments. *MoveDC* is a long-range plan that provides a vision for the future of DC's 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

Outlined in the MoveDC plan in the vicinity of the site, the North-South Corridor Streetcar line connecting Buzzard Point and Takoma/Silver Spring, MD is proposed along Georgia Avenue/7th Street, two blocks west of the site. Currently there are no plans to advance the recommendations from this study.

WMATA and DDOT Transit Studies

WMATA studied capacity of Metrorail stations in its *Station Access & Capacity Study (2008)*. The study analyzed the capacity of Metrorail stations for their vertical transportation, for example the capacity of the station at elevators, stairs, and escalators to shuttle patrons between the street, mezzanine, and platforms. The study also analyzed 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, the Waterfront station can currently accommodate future growth at all access points.

SITE-GENERATED TRANSIT IMPACTS

The 501 Eye Street, SW project is projected to generate 62 transit trips (47 inbound, 15 outbound) during the morning peak hour and 46 transit trips (24 inbound, 22 outbound) during the afternoon peak hour.

Given the existing capacity of the surrounding transit facilities, site-generated transit trips will not cause a detrimental impact to the Metrobus or Metrorail service.

Table 14: Metrobus Route Information

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
74	Convention Center-Southwest Waterfront Line	Weekdays: 4:45 AM-12:14 AM Weekend: 4:50 AM-12:21 AM	12-26 min	0.1 miles, 2 minute
A9	Martin Luther King Jr. Avenue Limited Line	Weekdays: Northbound 5:50 AM-9:45 AM Southbound 3:30 PM-7:40 PM	10-21 min	0.2 miles, 3 minute
P6	Anacostia-Eckington Line	Weekdays: 4:10 AM-3:35 AM Weekend: 4:08 AM-3:12 AM	6-45 min	0.1 miles, 2 minutes
V1	Benning Heights-M Street Line	Weekdays: Eastbound 2:55 PM-7:44 PM Westbound 5:04 AM-9:33 AM	16-29 min	0.1 miles, 2 minutes
735	Charlotte Hall/Waldorf to Washington, D.C. MTA Line	Weekdays: Northbound 4:20 AM-8:51 AM Southbound 12:15 PM-7:14 PM	15-30 min	0.2 miles, 3 minutes
850	Prince Frederick/Dunkirk to Suitland/Washington, D.C. MTA Line	Weekdays: Northbound 2:48 PM-6:59 PM Southbound 4:50 AM-9:17 AM	30-31 min	0.2 miles, 3 minutes
PRTC D-300	Dale City-Washington Navy Yard Omni-Ride Line	Weekdays: Eastbound 4:38 AM-8:28 AM Westbound 12:13 PM-9:03 PM	16-102 min	0.2 miles, 3 minutes
LCT	Loudoun County Transit	Weekdays: Eastbound 5:20 AM-9:35 AM Westbound 12:45 PM-7:39 PM	1-38 min	0.2 miles, 3 minutes
DC Circulator	Eastern Market-L'Enfant Plaza Line	Weekdays: 6:00 AM-9:00 AM Weekend: 7:00 AM-9:00 AM	10 min	0.2 miles, 3 minutes
N/A	Southwest Neighborhood Shuttle	Weekdays: 6:30 AM-1:00 AM Weekend: 9:00 AM-1:00 AM	10 min	0.4 miles, 9 minutes

Table 15: Transit Stop Requirements

Feature	Basic Stop	Enhanced Service Bus Stop	Transit Center
Bus Stop Sign	Yes	Yes	Yes
ADA 5'x8' Landing Pad - at a minimum, a clear, unobstructed, paved boarding area that is 8 feet deep (perpendicular to the curb) by 5 feet wide (parallel to the curb) and compliant with the ADA Accessibility Guidelines (ADAAG)	Yes	Yes	Yes
Sidewalk - connected by a paved sidewalk that is at least 4 feet wide	Yes	Yes	Yes
Lighting - adequate lighting either from street lights, lights from an adjacent business, or shelter lighting (particularly stops that are served in the evenings)	Evening Service	Yes	Yes
Seating	Trip Generator Based	Yes	Yes
Information Case - detailed schedule information on services	Yes	Yes	Yes
Trash Receptacle - trash receptacle (particularly at locations that are close to fast food establishments and convenient stores)	Site Specific	Yes	Yes
Shelter(s) - shelter with interior seating if there are 50 or more boardings per day (including transfers)	1 (50+ boardings/day)	1	2+
System Map	Contingent on Shelter	Yes	Yes
Real-time Display (LED + Audio)	Optional	Yes	Yes
Interactive Phone System On-Site - real time bus arrival information through an interactive phone and push button audio system	No	No	Yes
Expanded Boarding & Alighting Area (Rear-door Access)	No	Site Specific	Yes
Bus Bay (Pull Off)	No	Site Specific	Yes

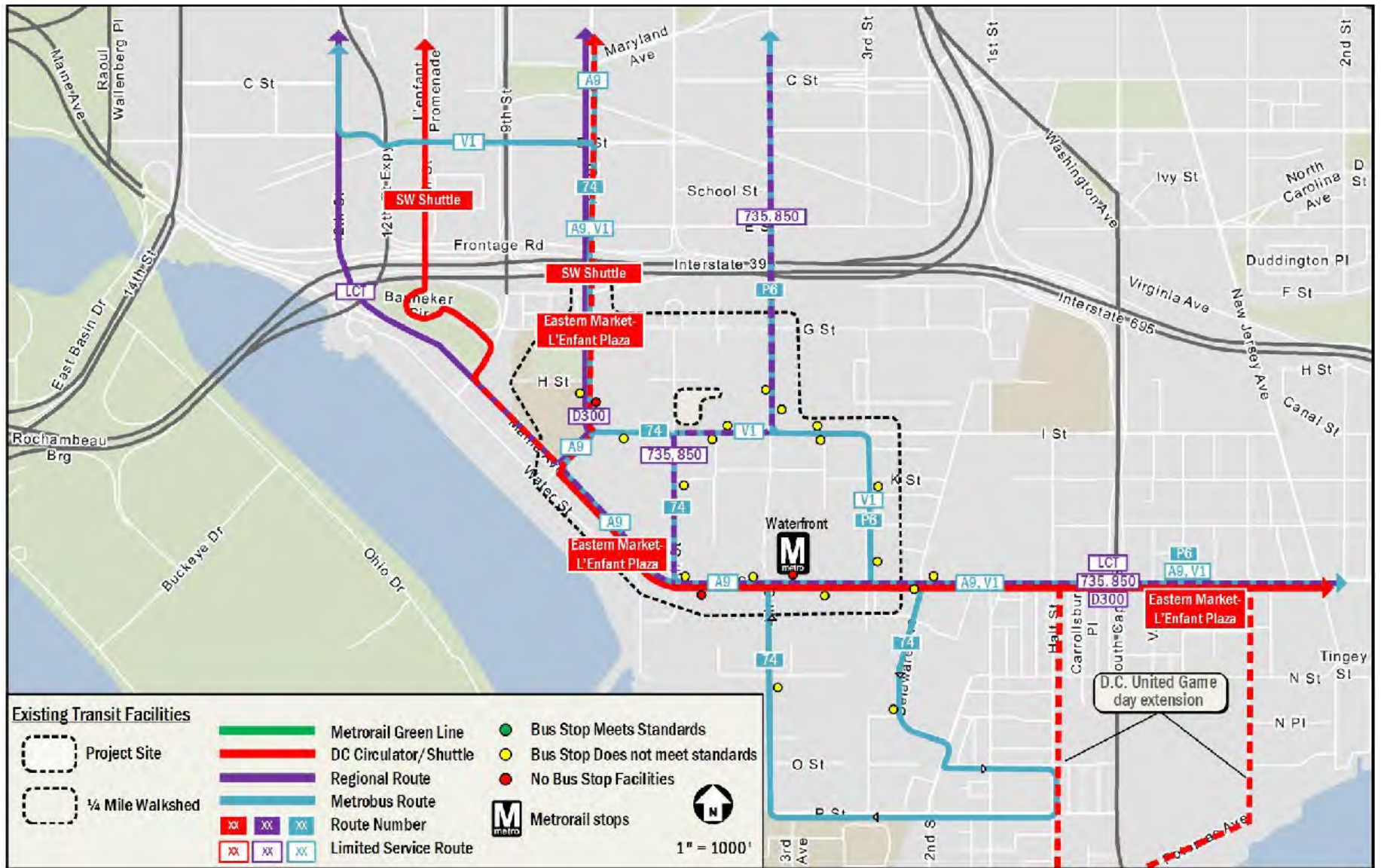


Figure 24: Existing Transit Service

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 a quality walking environment. There are some gaps in the system, but there are sidewalks along all primary routes to pedestrian destinations.
- The site is not expected to generate a significant number of pedestrian trips; however, the pedestrian trips generated by walking to and from transit stops will be more substantial, particularly along I Street, 7th Street, and 4th Street.
- Sidewalks within the pedestrian study area will be improved in conjunction with developments under construction or with proposed project.

PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the site were evaluated as well as routes to nearby transit facilities and prominent retail and neighborhood destinations. The site is easily accessible to transit options such as bus stops along 7th Street, I Street and the Waterfront Metrorail Station. The site is also within walking distance of many destinations such as Fort McNair, Nationals Ballpark, Audi Field and The Wharf. There are some barriers and areas of concern within the study area that negatively impact the quality of and attractiveness of the walking environment. This includes roadway conditions that reduce the quality of walking conditions, narrow or nonexistent sidewalks, incomplete or insufficient crossings at busy intersections, and the Interstate that limits connectivity to the north. Figure 25 shows suggested pedestrian pathways, walking time and distances, and barriers and areas of concern.

Table 16: Sidewalk Requirements

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

PEDESTRIAN INFRASTRUCTURE

A review of pedestrian facilities surrounding the planned development shows that many facilities meet DDOT standards and provide a quality walking environment. Figure 26 shows a detailed inventory of the existing pedestrian infrastructure surrounding the site. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by DDOT's *Public Realm Design Manual* in addition to ADA standards. Sidewalk widths and requirements for the District are shown below in Table 16.

Within the area shown, most roadways are considered residential with a low to moderate density. Some areas along 4th Street SE and M Street are considered commercial and thus require wider sidewalks. Most of the sidewalks surrounding the site comply with DDOT standards; however, there are some areas which have inadequate sidewalks or no sidewalks at all.

All primary pedestrian destinations are accessible via routes with sidewalks, most of which meeting DDOT standards. The sidewalks that do not meet DDOT standards have either unacceptable sidewalk width or unacceptable buffer width. Some of these issues will be remedied as part of this project or other 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 some issues with crosswalks and curb ramps near the site.

SITE IMPACTS

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

Pedestrian Trip Generation

The planned development is expected to generate 7 walking trips (4 inbound, 3 outbound) during the morning peak hour and 11 walking trips (8 inbound, 3 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 or walk to transit locations
- Retail locations outside of the site, such as the Safeway or Harris Teeter
- Neighborhood destinations such as Nationals Park, the Anacostia Riverwalk Trail, The Wharf etc.

In addition to these trips, the transit trips generated by the site will also generate pedestrian demand between the 501 Eye Street SW site and nearby transit stops. About 60 percent of these will be walking to the Waterfront Metrorail Station located less than 0.3 miles from the site and the rest will be walking to Metrobus stops, which are primarily located along M Street within a quarter mile of the site.

On-Site Pedestrian Infrastructure

The 501 Eye Street SW project will include sidewalks along the perimeter of the site that meet DDOT design requirements. The development will also provide a sidewalk along the driveway accessing the annex portion of the building.

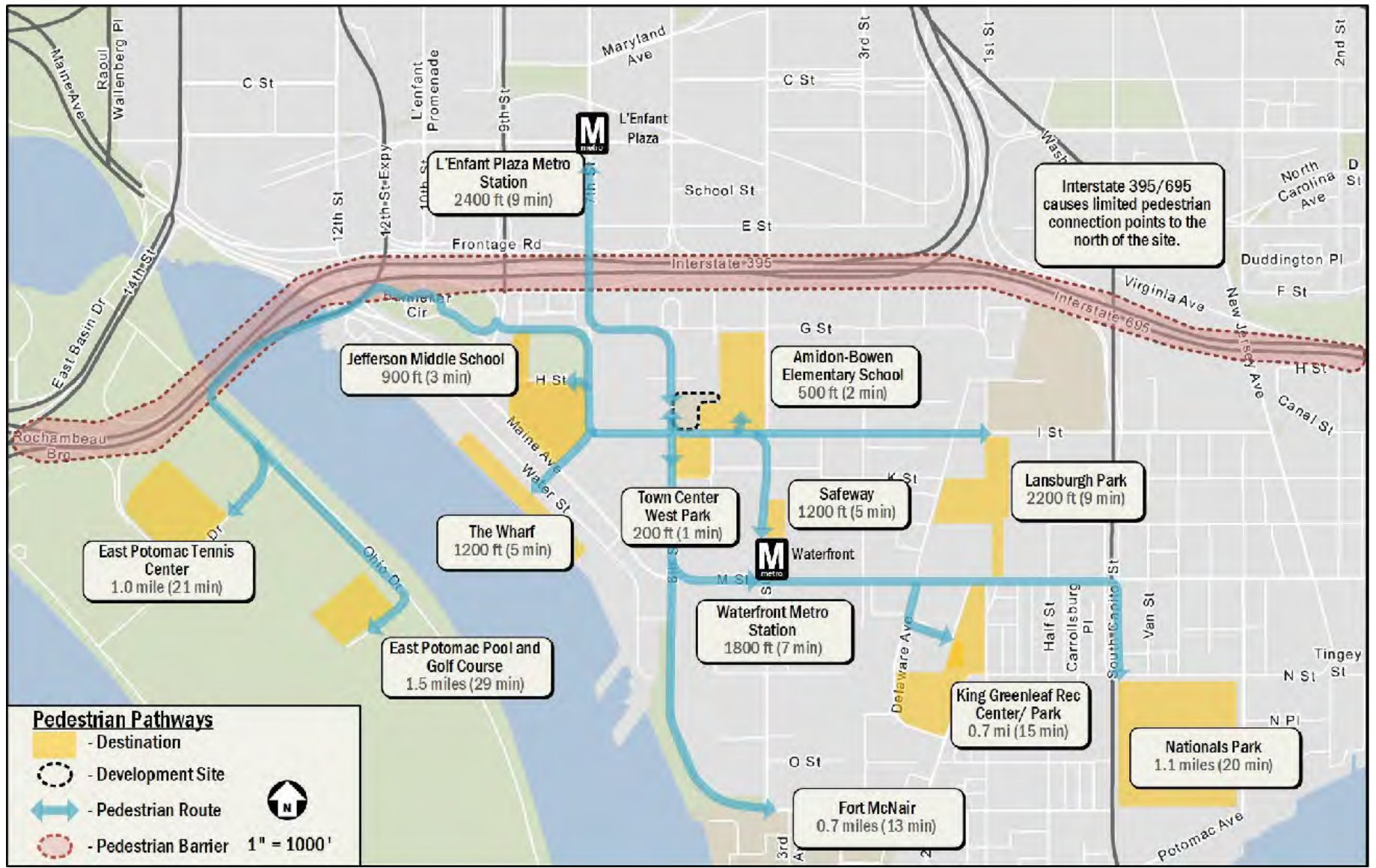


Figure 25: Pedestrian Pathways

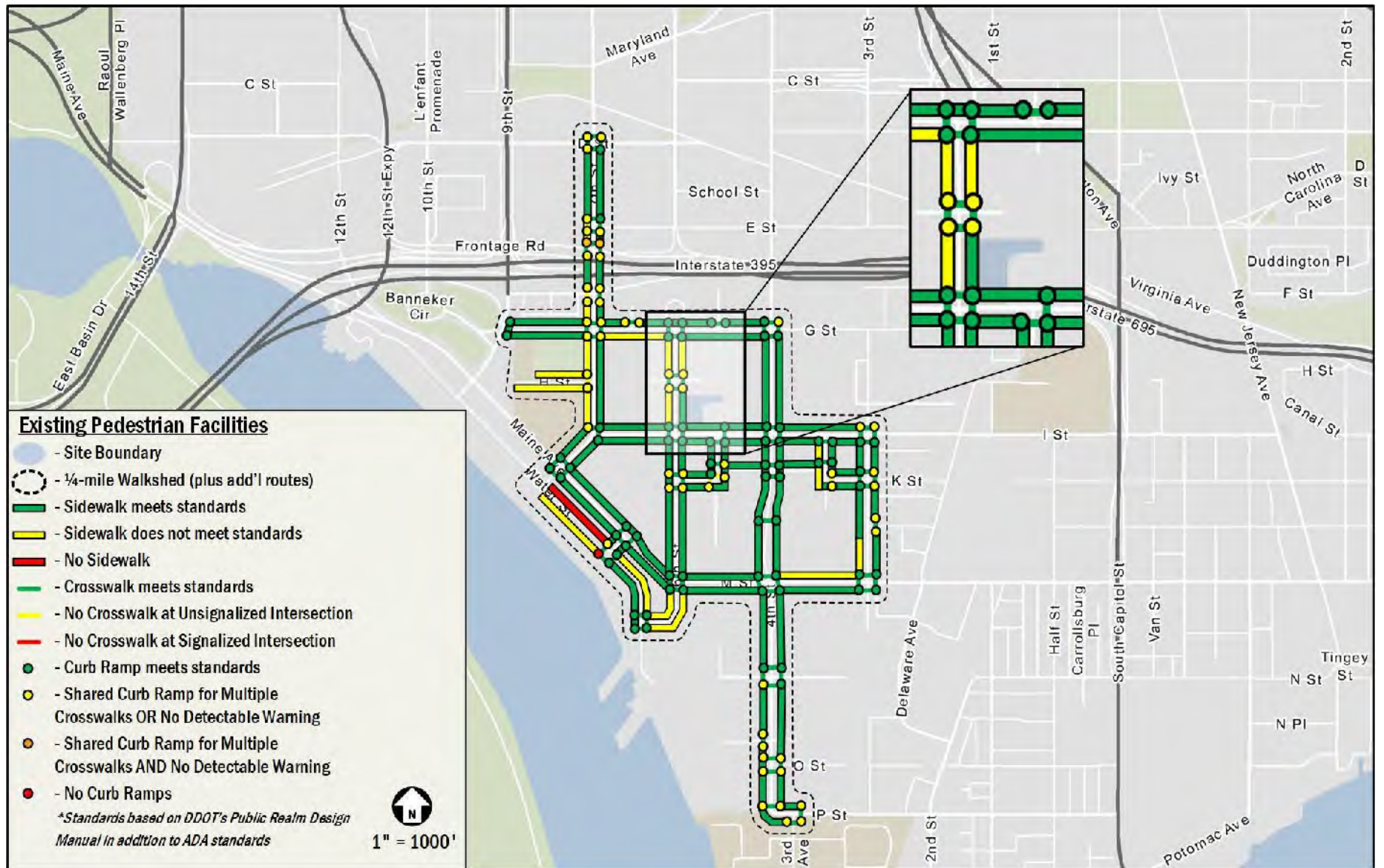


Figure 26: Existing Pedestrian Infrastructure

BICYCLE FACILITIES

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

The following conclusions are reached within this chapter:

- The site has access to several bike trails, cycle tracks, bike lanes, and signed bike routes in addition to multiple nearby Capital Bikeshare stations.
- 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 secure bicycle parking in the garage and short-term bicycle racks along the perimeter of the site.

EXISTING BICYCLE FACILITIES

The site is well-connected to existing on- and off-street bicycle facilities. North-south connectivity is provided by the bike lanes on 4th Street SE, 1st Street SE, 4th Street SW, and 6th Street SW. East-west connectivity is provided along Maine Avenue via a cycle track, the Anacostia Riverwalk Trail, and I Street SE/SW. Figure 27 illustrates the existing bicycle facilities in the area.

Some short-term bicycle parking exists near the site, particularly surrounding recently developed structures such as the Wharf and Waterfront Metro Station. However, no bike parking is provided along the perimeter of the site under existing conditions.

In addition to personal bicycles, the Capital Bikeshare program provides an additional cycling option for residents, employees, and patrons of the planned development. The Bikeshare program has placed over 500 bicycle-share stations across Washington, DC, Arlington and Alexandria, VA, and most recently Montgomery County, MD with over 4,300 bicycles provided. Within a quarter-mile of the site there are two Capital Bikeshare stations that house a total of 40 docks. Figure 27 illustrates the existing bicycle facilities in the area.

DDOT has also engaged in pilot programs with several dockless bikeshare and scooter share companies, allowing an additional option for point-to-point transportation. Bicycle and scooter availability is tracked through mobile phone applications for each company individually.

PROPOSED BICYCLE FACILITIES

The MoveDC plan outlines several bicycle improvements near 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.

A cycle track extending from M Street SW to South Capitol Street along 4th Street SW/P Street SW will be in the tier 1 additions.
- Tier 2
Investments within this tier are not high priorities in the early years of MoveDC implementation. They could begin moving through the Project Development Process if there are compelling reasons for their advancement.

There are a few tier 2 additions that will positively affect bicycle connectivity to and from the 501 Eye Street SW site. A cycle track from I Street SW to Pennsylvania Avenue NW along 4th Street, and the Hains Point Bridge from Water Street SW to Ohio Drive SW are planned. These facilities would greatly improve the bicycle connectivity near the site.
- Tier 3
Investments within this tier are not priorities for DDOT-led advancement in the early years of MoveDC's implementation. They could move forward earlier under circumstances such as real estate development initiatives and non-DDOT partnerships providing the opportunity for non-District-led completion of specific funding.
- 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 proposed development, this report will focus on the Tier 1 and Tier 2 recommendations within the vicinity of the site.

There are two (2) Tier 1 additions that will positively affect bicycle connectivity to and from the site. Improvements to 4th Street and P Street, SW south of M Street are planned, which will create a bicycle link from the site to Audi Field and other destinations. These facilities will greatly improve the bicycle connectivity near the site.

There are two (2) Tier 2 additions that will positively affect bicycle connectivity to and from the site. A bicycle trail/bridge extending from Water Street to Ohio Drive SW at Hains Point spanning the Washington Channel, and improvements to 4th Street, SW/NW between I Street, SW and Pennsylvania Avenue, NW are planned. This facility will greatly improve the bicycle connectivity near the site.

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 planned development is expected to generate 5 bicycle trips (3 inbound, 2 outbound) during the morning peak hour

and 4 bicycle trips (2 inbound, 2 outbound) during the afternoon peak hour. Although bicycling will be an important mode for getting to and from the site, with significant facilities located on site and quality routes to and from the site, the impacts from bicycling will be relatively less than impacts to other modes.

On-Site Bicycle Elements

The project will provide amenities that cater to cyclists including secure long-term bicycle parking and short-term bicycle racks.

The development will provide 67 secure, long-term, bicycle parking spaces within its parking garage for residents and STC employees. Based on current zoning regulations, the site is required to provide 42 long-term bicycle parking spaces. As such, the proposed development is greatly exceeding zoning requirements.

16 short-term bicycle racks will be provided around the perimeter of the site on 6th Street and Eye Street. The Applicant is willing to work with DDOT to determine the locations of bicycle racks within public space.

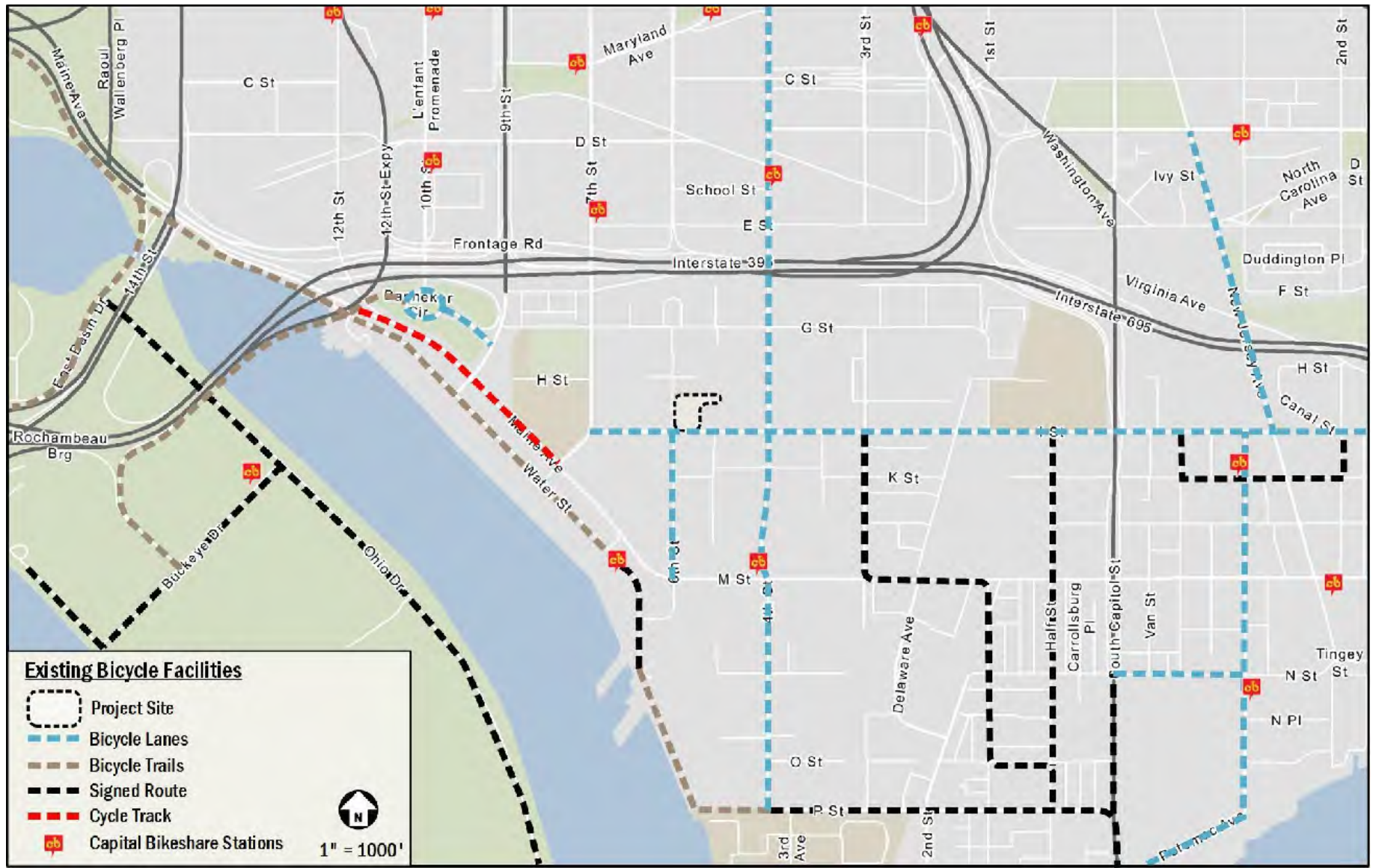


Figure 27: Existing Bicycle Facilities

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 2015 to 2017 for the study area. This data was reviewed and analyzed to determine the crash rate at each location. For intersections, the crash rate is measured in crashes per million-entering vehicles (MEV). The crash rates per intersections are shown in Table 17.

According to the Institute of Transportation Engineer's *Transportation Impact Analysis for Site Development*, a crash rate of 1.0 or higher is an indication that further study is required. One intersection in this study area met this criterion (as shown in red in Table 17 and detailed in Table 18). The 501 I (Eye) Street SW project should be developed in a manner to

help alleviate, or at minimum not add to, the conflicts at this intersection.

A rate over 1.0 does not necessarily mean there is a significant problem at an intersection, but rather it is a threshold used to identify which intersections may have higher crash rates due to operational, geometric, or other issues. Additionally, the crash data does not provide detailed location information. In some cases, the crashes were located near the intersections and not necessarily within the intersection.

For the one (1) intersection with elevated crash rates, the crash type information from the DDOT crash data was reviewed to see if there is a high percentage of certain crash types. Generally, the reasons for why an intersection has a high crash rate cannot be derived from crash data, as the exact details of each crash are not represented. However, some summaries of crash data can be used to develop general trends or eliminate possible causes. Table 18 contains a breakdown of crash types reported for the intersection with a crash rate over 1.0 per MEV.

Table 17: Intersection Crash Rates (2015 to 2017)

Intersection	Total Crashes	Ped Crashes	Bike Crashes	Rate per MEV*
1. G Street & 7th Street, SW	11	1	0	0.50
2. G Street & 6th Street, SW	1	0	0	0.14
3. G Street & 4th Street, SW	4	1	0	0.25
4. I Street & 7th Street, SW	8	0	1	0.50
5. I Street & 6th Street, SW	6	1	0	0.57
6. I Street & 4th Street, SW	17	5	1	0.91
7. Maine Avenue & 7th Street, SW	20	2	1	0.58
8. M Street/Maine Avenue & 6th Street, SW	12	0	0	0.43
9. M Street & 4th Street, SW	44	5	2	1.39
10. 6th Street & Site Driveway	-	-	-	-

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

Table 18: Crash Type Breakdown

Intersection	Rate per MEV	Right Angle	Left Turn	Right Turn	Rear End	Side Swiped	Head On	Parked	Fixed Object	Ran Off Road	Ped. Involved	Backing	Non-Collision	Under/Over Ride	Unspecified	Total
M Street & 4th Street, SW	1.39	0	0	1	3	16	0	3	1	0	1	3	0	0	16	44
		0%	0%	2%	7%	36%	0%	7%	2%	0%	2%	7%	0%	0%	36%	



POTENTIAL IMPACTS

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

- *M Street & 4th Street, SW*

This intersection is over the threshold of 1.0 crashes per MEV, with a rate of approximately 1.39 crashes per MEV over the course of the 3-year study period. The majority of specified crashes at this intersection were sideswipes. Sideswipe crashes can often occur when a vehicle makes a last-second lane change or in a location with a significant presence of on-street parking.

The safety concerns at this intersection are primarily due to the existing lane configurations and operations. The site-generated traffic at this intersection is minimal and not expected to degrade the safety; thus, no improvements are recommended as part of the proposed development. Additionally, DDOT is planning to complete a safety study at this intersection to further evaluate potential improvements at this location.

SUMMARY AND CONCLUSIONS

This report presents the findings of the Comprehensive Transportation Review (CTR) conducted for the 501 I (Eye) Street SW project. This report reviews the transportation aspects of the projects Consolidate Planned Unit Development (PUD) application. The Zoning Commission Case Number is 17-21. This report concludes that **the project will not have a detrimental impact** to the surrounding transportation network assuming that all planned site design elements are implemented.

Proposed Project

The 501 Eye Street SW site, located on the northeast corner of I Street and 6th Street, SW, is currently vacant and was the former home to Southeastern University. The site is generally bounded by 6th Street to the west, I Street to the south, existing residential buildings to the north, and Amidon-Bowen Elementary School to the east.

The proposed development includes a mixed-use building with 105 residential units and a new 31,498 square foot space for the Shakespeare Theatre Company (STC), including space for rehearsals, costume fabrication, non-profit offices and education studios. Of the 105 residential units, 36 will be used to house actors, 62 will be market rate units, and seven (7) will be IZ units. The site will include 38 below-grade parking spaces, two (2) at-grade parking spaces, and one (1) additional below-grade space that is reserved for the STC costume van. STC will also secure 15 off-site parking spaces in nearby garages for additional employee parking.

All vehicular access to the site, including parking and loading access, will be from 6th Street. Under existing conditions there is a curb cut along 6th Street, which is being shifted slightly to the south to conform with District design requirements. Additionally, an existing curb cut on I Street will be removed as part of the redevelopment.

Pedestrian facilities along the perimeter of the site will include sidewalk and buffer widths that meet DDOT requirements. The development will supply secure long-term bicycle parking spaces that exceed the current zoning requirements as well as short-term bicycle parking around the perimeter of the site.

To accommodate pick-up/drop-off activity for the STC summer camps, it is proposed that part of the existing parking

restrictions associated with Amidon Bowen Elementary School be extended to include summer weekdays. This creates a designated queuing space that can be used during the day for STC and can be used in the evenings and weekends as unrestricted parking for the surrounding community, similar to what occurs under existing conditions on school days.

Multi-Modal Impacts and Recommendations

Transit

The site is well-served by regional and local transit services such as Metrorail, Metrobus, and Circulator. The site is approximately 0.3 miles from the Waterfront Metrorail Station at M Street and 4th Street and many Metrobus stops are located within a block of the site along I Street, 6th Street, and 7th Street.

Although the 501 Eye Street SW development will be generating new transit trips on the network, the existing facilities have enough capacity to handle the new trips. The Waterfront Metrorail station and all nearby Metrobus and Circulator lines do not have existing capacity concerns are not expected to as a result of the proposed development.

Pedestrian

The site is surrounded by a well-connected pedestrian network. Most roadways within a quarter-mile radius provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes.

As a result of the planned development, pedestrian facilities along the perimeter of the site will be improved. The development includes sidewalks and tree zones adjacent to the site that meet or exceed DDOT requirements.

Bicycle

The site is well served by existing bicycle facilities. Many trails, bike lanes, and signed bike routes are near the site such as the Anacostia Riverwalk Trail to the south, a cycle track along Maine Avenue SW, north-south bike lanes along 4th Street SW and 6th Street SW, and east-west bike lanes along I Street SE/SW. The site is also served by the Capital Bikeshare program, dockless bikeshare programs, and dockless scooter programs, which provides an additional transportation options for residents, employees, and visitors of the 501 Eye Street SW development.

On site, the planned development will provide short-term bicycle parking along the perimeter of the site and secure long-term bicycle parking in the parking garage.

Vehicular

The 501 Eye Street SW site is well-connected to regional roadways such as I-395, I-695, and I-295, primary and minor arterials such as South Capitol Street, M Street, and I Street, and an existing network of collector and local roadways.

To determine if the proposed development will have an impact on the surrounding transportation network, this report projects future conditions with and without the development of the site and performs analyses of intersection 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 vehicular capacity analysis results in the following conclusions:

- Under existing conditions, the study area intersections generally operate under acceptable conditions.
- Future areas of concern for roadway capacity, are primarily focused along commuter routes such as I Street and M Street SW.

- The intersection of G Street and 4th Street met the thresholds for requiring mitigations as a result of the proposed development. This intersection can be adequately mitigated through signal timing adjustments.
- Overall, the analysis concludes that the project will not have a detrimental impact to the surrounding transportation network, assuming the proposed mitigation measure is implemented.

Transportation Management Plan (TMP)

A Transportation Management Plan (TMP) has been developed for the site as it relates to pick-up/drop-off operations, parking management, loading management, and transportation demand management. The elements outlined within this TMP aim to minimize the off-site impacts of the Project, reduce the number of single-occupancy vehicle trips to and from the site, and improve the overall efficiency of the site. This TMP is comprised of four (4) components and detailed within this report:

- Pick-up/Drop-off Operations
- Parking Management Plan
- Loading Management Plan
- Transportation Demand Management Plan