

Comprehensive Transportation Review

Bridge District Parcels 3 & 4

Washington, DC

September 17, 2021

GOROVE SLADE
Transportation Planners and Engineers

Prepared by:



1140 Connecticut Ave NW

Suite 600

Washington, DC 20036

T 202.296.8625

3914 Centreville Road

Suite 330

Chantilly, VA 20171

T 703.787.9595

15125 Washington Street

Suite 212

Haymarket, VA 20169

T 571.248.0992

225 Reinekers Lane

Suite 750

Alexandria, VA 22314

T 202.296.8625

www.goroveslade.com

This document, together with the concepts and designs presented herein, as an instrument of services, is intended for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization by Gorove Slade Associates, Inc., shall be without liability to Gorove Slade Associates, Inc.

CONTENTS

Executive Summary	1
Introduction.....	4
Purpose of Study.....	4
Project Summary.....	4
Contents of Study.....	4
Study Area Overview.....	8
Major Transportation Features	8
Future Projects.....	10
Project Design.....	16
Site Access and Circulation.....	16
Loading and Trash	16
Parking.....	17
Bicycle and Pedestrian Facilities	17
Transportation Demand Management.....	17
Travel Demand Assumptions	22
Proposed Trip Generation	22
Traffic Operations.....	23
Study Area, Scope, & Methodology.....	23
Vehicular Analysis Results	27
Mitigation Measures	28
Transit Facilities	54
Existing Transit Service.....	54
Planned Transit Service	54
Site-Generated Transit Impacts.....	54
Pedestrian Facilities	58
Pedestrian Study Area.....	58
Pedestrian Infrastructure	58
Site-Generated Pedestrian Impacts	58
Bicycle Facilities	63
Existing Bicycle Facilities.....	63
Planned Bicycle Improvements	63
Site-Generated Bicycle Impacts	64
Safety Analysis.....	66
Summary of Safety Analysis.....	66

Potential Impacts.....	66
Summary and Conclusions.....	68

LIST OF FIGURES

Figure 1: Project Location..... 6

Figure 2: Aerial 7

Figure 3: Summary of Site Walkscore and Bikescore 10

Figure 4: Project Location and Regional Transportation Facilities..... 13

Figure 5: Major Local Transportation Facilities..... 14

Figure 6: Background Developments 15

Figure 7: Site Plan and Access 19

Figure 8: Existing Curbside Management..... 20

Figure 9: Future Curbside Management..... 21

Figure 10: Study Area Intersections: Existing Scenario..... 30

Figure 11: Study Area Intersections: Future Scenario..... 31

Figure 12: Existing Lane Configuration and Traffic Control 32

Figure 13: Background Lane Configuration and Traffic Control (2025)..... 33

Figure 14: Future Lane Configuration and Traffic Control (2025)..... 34

Figure 15: Unadjusted Volumes (2016)..... 35

Figure 16: Growth Applied to Unadjusted Peak Hour Volumes to 2021 Conditions 36

Figure 17: Adjusted Existing (2021) Peak Hour Volumes..... 37

Figure 18: 2020 Baseline Volumes from South Capitol Street IMR..... 38

Figure 19: Background Developments Peak Hour Volumes..... 39

Figure 20: Background Growth (2020-2025) 40

Figure 21: Total Background (2025) Peak Hour Traffic Volumes 41

Figure 22: Inbound Distribution/Assignment..... 42

Figure 23: Outbound Distribution/Assignment..... 43

Figure 24: Inbound Site Trip Distribution/Assignment at Study Intersections 44

Figure 25: Outbound Trip Distribution/Assignment at Study Intersections 45

Figure 26: Site-Generated Trips 46

Figure 27: Total Future (2025) Peak Hour Traffic Volumes 47

Figure 28: Existing Transit Facilities..... 57

Figure 29: Pedestrian Pathways..... 60

Figure 30: Existing Pedestrian Facilities..... 61

Figure 31: Future Pedestrian Facilities 62

Figure 32: Existing and Future Bicycle Facilities 65

LIST OF TABLES

Table 1: Site Daily Loading Activity 16

Table 2: ITE Multi-Modal Trip Generation Summary 22

Table 3: Mode Split Assumptions 22

Table 4: Applied Annual Growth Rates..... 25

Table 5: Summary of Background Developments Trip Generation 26

Table 6: Applied Annual and Total Background Growth Rates..... 26

Table 7: LOS Results 48

Table 8: v/c Comparison..... 50

Table 9: 50th and 95th Percentile Queueing Results (in feet) 52

Table 10: Local Bus Route Information 55

Table 11: WMATA Recommended Bus Stop Amenities..... 55

Table 12: Bus Stop Inventory 56

Table 13: DDOT Sidewalk Width Requirements..... 59

Executive Summary

The following report is a Comprehensive Transportation Review (CTR) on behalf of The Douglass LLC (the “Applicant”) for Design Review by the Zoning Commission (Case Number ZC 21-13) for the property located at Square 5860 and Lot 0097 in Southeast, Washington, DC (and referred to herein as “Bridge District Parcels 3 & 4”). This project was formerly referred to as “Columbian Quarter Parcels 3 & 4”.

The purpose of this CTR is to evaluate whether the Bridge District Parcels 3 & 4 development will generate a detrimental impact to the transportation network surrounding the site. This evaluation is based on a technical comparison of the existing conditions, background conditions, and total future conditions.

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

Proposed Project

The site is located at 632 Howard Road SE and is bounded by Howard Road SE to the south, National Park Service property to the north, DDOT property to the west, and a vacant parcel to the east.

The development program includes up to 760 residential units, up to 51,000 square feet of retail space (including a 31,030 square foot grocer), and 355 garage parking spaces.

Vehicle access to the parking garage and loading facilities is proposed from a new public access easement connecting to Howard Road SE.

The loading facilities within the site consist of one (1) 75-foot loading berth, three (3) 30-foot loading berths, and two (2) service/delivery spaces. All truck turning maneuvers will occur within private space, allowing for head-in/head-out access to and from the public roadway network.

The Bridge District Parcels 3 & 4 development will satisfy the ZR16 zoning requirements for bicycle parking by providing 201 long-term bicycle parking spaces (157 required) and 99 short-term bicycle parking spaces (53 required). The Bridge District Parcels 3 & 4 development will supply secure long-term bicycle parking within the building and short-term bicycle parking along the perimeter of the site. The vehicular and bicycle parking will also meet the practical needs of the development’s residents, patrons, and employees.

Multi-Modal Overview

Trip Generation

The Bridge District Parcels 3 & 4 development is transit-, pedestrian-, and bicycle-oriented. The proposed project is expected to generate new trips on the surrounding transportation network across all modes during the morning and afternoon peak hours. However, the new trips generated by the project will not have a detrimental impact on the transportation network due to impact mitigation measures including a TDM plan that will be implemented as part of the redevelopment. The multi-modal trip generation for the proposed project is as follows:

- The AM peak hour trip generation is projected to include 166 vehicles/hour, 186 transit riders/hour, 53 bicycle trips/hour, and 35 walking trips/hour.
- The PM peak hour trip generation is projected to include 307 vehicles/hour, 296 transit riders/hour, 105 bicycle trips/hour, and 85 walking trips/hour.

Transit

The development site is well-served by transit. It is located 0.3 miles from the Anacostia Metrorail station and is served by several local bus routes.

Several planned or recently implemented transit projects will improve transit access to the site, including the peak-period bus- and bike-only lanes on Martin Luther King, Jr. Avenue SE as well as other improvements proposed in *MoveDC*, the District’s long-range transportation plan.

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

Pedestrian

Due to the undeveloped character of the site’s surroundings, there are few pedestrian destinations and street connections nearby. While adequate pedestrian facilities exist between the site and the Anacostia neighborhood to the east, the roadways to the north, south and west of the site are not suitable for pedestrians as they currently exist.

The South Capitol Street Corridor Project will reconfigure these roadways and improve them with wide sidewalks and multi-use paths. The site is expected to generate a manageable number of pedestrian trips, and the forthcoming pedestrian facilities will be able to accommodate these new trips.

Bicycle

The site has access to several on- and off-street bicycle facilities. Several planned and proposed bicycle projects will improve bicycle access to the site, including new protected bike lanes and multi-use paths as part of the South Capitol Street Improvements project, the 11th Street Bridge Reconstruction, and the Suitland Parkway Trail Extension as well as an expanded network of other cycle tracks and bicycle trails in the area. At a future phase of development, a bicycle and pedestrian promenade will be constructed linking the forthcoming South Capitol Street East Oval to the Anacostia Metrorail Station.

The site is expected to generate a manageable amount of bicycle trips, and the existing and forthcoming bicycle facilities will be able to accommodate these new trips.

The development will include long-term bicycle parking in the ground floor and lower levels facing the promenade, and short-term bicycle parking will be located along the perimeter of the site on both sides of Howard Road.

Vehicular

The site is accessible from two (2) major freeways, I-295 and Suitland Parkway. The site is also served by principal arterial South Capitol Street and collectors Howard Road and Firth Sterling Avenue SE. These roadways connect the site to I-395 and I-695, as well as Capital Beltway (I-495) which surrounds Washington, DC and its inner suburbs while also providing connectivity to the District core.

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

Based on DDOT's outlined capacity impact thresholds, this analysis concludes that two (2) intersections require mitigation as a result of impacts to delay and/or queues created by the additional vehicular volumes associated with the Bridge District Parcels 3 & 4 development.

Impacts and recommended mitigation measures associated with the project are described below. A detailed review of intersection

capacity and impacts that trigger mitigation based on DDOT's criteria is included in the Traffic Operations section of this report.

Howard Road SE & Suitland Parkway

During the morning peak hour, westbound delays increase by more than DDOT's five (5) percent delay increase mitigation threshold between Background and Total Future Conditions. Since this intersection will become unsignalized as part of the South Capitol Street Corridor Project and adding additional vehicular capacity is not feasible, additional TDM strategies are proposed to address the potential impacts at this intersection due to project-generated trips.

East Oval & Frederick Douglass Bridge SB

During the afternoon peak hour, southbound delays increase by more than DDOT's five (5) percent delay increase mitigation threshold between Background and Total Future Conditions. It is not possible to adjust the signal timings at this intersection to mitigate delays while still (1) maintaining actuated-coordinated control and (2) allowing enough time for pedestrians to cross the southbound leg of the intersection. Therefore, it is recommended that the signal at this intersection be set up as pre-timed rather than actuated-coordinated, with the timings adjusted to account for the projected traffic volumes. This modification only partially addresses the site-generated delays at this intersection, however, so additional TDM strategies are also proposed to make up this difference.

Safety

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

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

Howard Road & Firth Sterling Avenue SE

This intersection was ranked as the most hazardous intersection in the District in 2018 by crash rate and the 2nd most hazardous by crash composite index. Currently, this intersection carries a significant volume of traffic entering and exiting I-295 while at the same time lacking quality pedestrian and bicycle facilities. As part of the South Capitol Street Corridor Project, the highway on-ramp at this intersection and the off-ramp 400 feet to the west will both be removed, and a multi-use path, sidewalks, and crossing improvements will be installed at this intersection, all of which will mitigate the existing hazards.

Firth Sterling Avenue SE & Suitland Parkway

This intersection was ranked as the 18th most hazardous intersection by crash severity cost and the 26th most hazardous by crash composite index. As a limited-access road, Suitland Parkway primarily transports commuters from southeast DC and suburban Maryland through the District towards downtown DC. No pedestrian facilities exist on Suitland Parkway adjacent to this intersection, and the existing facilities on Firth Sterling Avenue do not meet DDOT or ADA standards. As part of the South Capitol Street Corridor Project, two (2) right turn slip lanes will be removed from this intersection, and new multi-use paths and crossing improvements will be added. These modifications will greatly improve safety at this intersection.

Transportation Demand Management (TDM) Plan

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

Summary and Recommendations

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

The Bridge District Parcels 3 & 4 project has several positive design elements that minimize potential transportation impacts, including:

- The site's close proximity to transit and existing bicycle infrastructure;
- A future bicycle and pedestrian promenade linking the site, the Frederick Douglass Memorial Bridge, and the Anacostia Metrorail Station;
- The inclusion of secure long-term bicycle parking that exceeds zoning requirements;
- The installation of short-term bicycle parking spaces along the frontage of the site that exceeds zoning requirements;
- A TDM plan that reduces the demand of single-occupancy, private vehicles during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.

Introduction

This report is a CTR reviewing the transportation aspects of the Bridge District Parcels 3 & 4 development. The site, shown in Figure 1 and Figure 2, is located at Square 5860 and Lot 0097 in southeast Washington, DC. The site is currently zoned NHR. The proposed project is undergoing Design Review by the Zoning Commission (Case Number 21-13).

Purpose of Study

The purpose of this report is to:

1. Review the transportation elements of the proposed project and demonstrate that it conforms to DDOT's general policies of promoting non-automobile modes of travel and sustainability.
2. Provide information to DDOT and other agencies on how the proposed project will influence the local transportation network. This report accomplishes this by identifying the potential trips generated by the proposed project on all major modes of travel and where these trips will be distributed on such network.
3. Determine whether the proposed project will lead to adverse impacts on the local transportation network.
4. Propose design elements and TDM measures that will mitigate any potential adverse impacts to the transportation network and minimize adverse effects.

Project Summary

The site is located in the southeast quadrant of Washington, DC and is bounded by Howard Road SE to the south, National Park Service property to the north, DDOT property to the west, and a vacant parcel to the east.

The Bridge District Parcels 3 & 4 project will redevelop the site into a mixed-use building with up to 760 residential units, up to 51,000 square feet of retail space (including a 31,030 square foot grocer), and 355 garage parking spaces. Vehicle access to the parking garage and loading facilities is proposed from a new public access easement connecting to Howard Road SE.

The loading facilities within the site consist of one (1) 75-foot loading berth, three (3) 30-foot loading berths, and two (2) service/delivery spaces. All truck turning maneuvers will occur within private space, allowing for head-in/head-out access to and from the public roadway network.

Pedestrian access to the site will consist of grocery, general retail, and residential entrances from both Howard Road and the bicycle/pedestrian promenade.

There are existing bicycle facilities near the site. These include signed routes along Howard Road SE and Martin Luther King, Jr. Avenue SE, a multi-use path along South Capitol Street, and the Anacostia Riverwalk Trail. The proposed project will meet zoning requirements by providing 201 long-term bicycle parking spaces (157 required) and 99 short-term bicycle parking spaces (53 required). Short-term bicycle parking spaces will be provided in highly visible and accessible areas along the perimeter of the site. The nearest existing Capital Bikeshare station is located at the Anacostia Metrorail Station's south entrance, less than half a mile from the site.

Contents of Study

This report contains nine (9) chapters as follows:

- Study Area Overview
This chapter reviews the area near and adjacent to the proposed project and includes an overview of the site.
- Project Design
This chapter reviews the transportation components of the proposed project, including the site plan and access. This chapter also contains the proposed Transportation Demand Management (TDM) plan for the Project.
- Travel Demand Assumptions
This chapter outlines the travel demand of the proposed project. It summarizes the proposed trip generation of the project.
- Traffic Operations
This chapter provides a summary of the existing roadway facilities and an analysis of the existing and future roadway capacity in the study area. This section also highlights the vehicular impacts of the project, including presenting mitigation measures for minimizing impacts as needed.
- Transit
This chapter summarizes the existing and future transit service adjacent to the site, reviews how the project's transit demand will be accommodated, outlines impacts, and presents recommendations as needed.
- Pedestrian Facilities
This chapter summarizes existing and future pedestrian access to the site, reviews walking routes to and from the

proposed project, outlines impacts, and presents recommendations as needed.

- Bicycle Facilities

This chapter summarizes existing and future bicycle access to the site, reviews the quality of cycling routes to and from the proposed project, outlines impacts, and presents recommendations as needed.

- Safety Analysis

This chapter summarizes the potential safety considerations around the project. This includes a qualitative review of existing and proposed safety features surrounding the site.

- Summary and Conclusions

This chapter presents overall findings and conclusions.

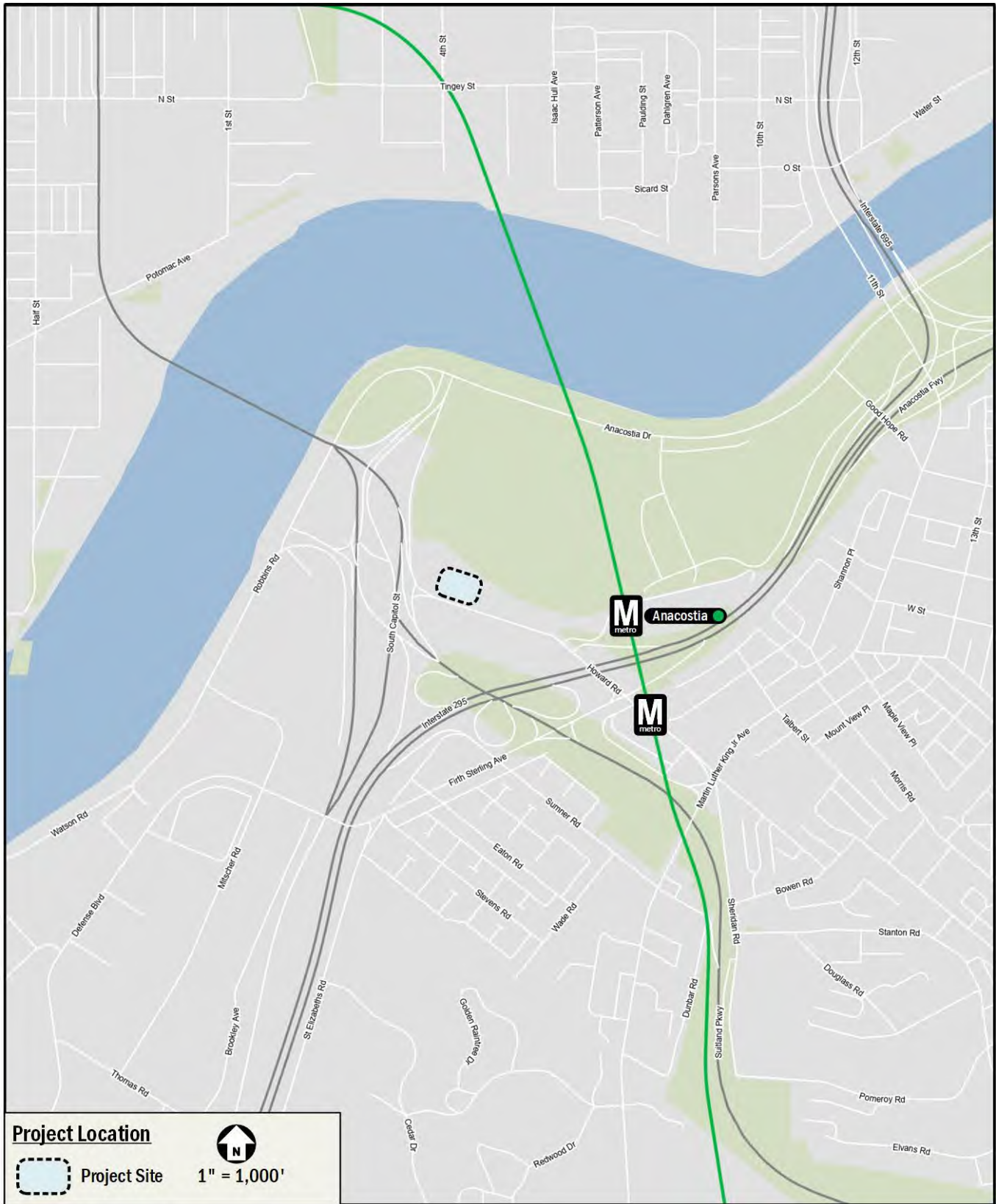


Figure 1: Project Location



Figure 2: Aerial

Study Area Overview

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

This chapter concludes:

- The site is surrounded by an extensive regional and local transportation system that will connect the proposed project's residents, patrons, and employees to the rest of the District and surrounding areas.
- The site is served by public transportation with access to several local Metrobus routes and Metrorail. These routes provide direct service to all areas of Washington, DC.
- There is bicycle infrastructure in the vicinity of the site, with connectivity to east-west and north-south bicycle facilities.
- Pedestrian facilities are generally lacking due to the isolated location of the site, but some facilities are present along anticipated walking routes to major destinations.

Major Transportation Features

Overview of Regional Access

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

The site is accessible from two major freeways and the principal arterial South Capitol Street which connect the site to I-395 and I-695, as well as Capital Beltway (I-495) which surrounds Washington, DC and its inner suburbs while also providing connectivity to the District core.

The site is located 0.3 miles from the Anacostia Metrorail Station, which is served by the Green Line. The Green Line travels south from Greenbelt, MD through Downtown DC to Suitland, MD while providing access to the District core. Connections can be made at the L'Enfant Plaza and Gallery Place-Chinatown Metrorail stations to access the other five (5) Metrorail lines, allowing additional access to points in Virginia and Maryland. Under current operating conditions, Green Line trains run approximately every 12 to 20 minutes on weekdays. They run approximately every 15 to 20 minutes on the weekends.

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

Overview of Local Access

There are a variety of local transportation options near the site that serve vehicular, transit, walking, and cycling trips, as shown in Figure 5. The site is served by DC-295, Suitland Parkway, principal arterial South Capitol Street, and collectors Howard Road SE and Firth Sterling Avenue SE, which are supplemented by an existing network of connector and local roadways.

The Metrobus system provides extensive transit service in the vicinity of the site, including connections to several neighborhoods within the District and additional Metrorail stations. As shown in Figure 5, there are 14 Metrobus routes and one (1) DC Circulator bus line that service the site. Multiple bus stops servicing these 15 routes are located within walking distance of the site. These bus routes connect the site to many areas of DC, including several Metrorail stations where passengers can transfer to reach areas in the District, Virginia, and Maryland. A detailed review of bus routes and transit stops within a quarter mile walk of the site is provided in a later chapter of this report.

Existing bicycle facilities consist of signed routes along Howard Road SE and Martin Luther King, Jr. Avenue SE, a multi-use path along South Capitol Street, and the Anacostia Riverwalk Trail. Using the available connections along the on-street and off-street routes within the study area, bicyclists have access to a number of regional bicycle facilities. A detailed review of existing and proposed bicycle facilities and connectivity is provided in a later chapter of the report.

There are relatively few pedestrian facilities in the project's vicinity. Sidewalks on both sides of Howard Road SE connect the site to the Anacostia Metrorail station and commercial destinations along Martin Luther King, Jr. Avenue SE; however, the lack of street connections and the presence of several freeways and interchanges surrounding the site do not provide for an ideal pedestrian environment. Many streets are also missing sidewalks and/or curb ramps. A detailed review of existing and proposed pedestrian access and infrastructure is provided in a later chapter of this report.

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

Carsharing

Two (2) carsharing companies provide service in the District: Zipcar and Free2Move. Both services are private companies that provide registered users access to a variety of automobiles. Of these, only Zipcar has designated spaces for their vehicles. Currently, there is one (1) Zipcar location within a mile of the site, with three (3) vehicles located at Martin Luther King, Jr. Avenue and W Street SE.

Carsharing is also provided by Free2Move, which provides point-to-point carsharing. Free2Move currently has a fleet located within areas of the District and Arlington County. Free2Move 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. Free2Move 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.

Bikeshare and Scooter Share

The Capital Bikeshare program provides additional cycle options for residents, employees, and visitors of the proposed project. The program has placed over 500 bikeshare stations across the Washington, DC metropolitan area with over 4,500 bicycles in the fleet.

In addition to Capital Bikeshare, eight (8) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies provide Shared Mobility Device (SMD) service in the District: Bird, Helbiz, Jump, Lime, Lyft, Razor, Skip, and Spin. One (1) electric moped company, Revel, also operates in the District. These SMDs are provided by private companies that give registered users access to a variety of e-scooter, e-bike, and moped options. These devices are used through each company-specific mobile phone application. At this time, SMD pilot/demonstration programs are underway in Arlington County, the District, Fairfax County, the City of Alexandria, and Montgomery County.

Walkscore

Walkscore.com is a website that provides scores and rankings for the walking, biking, and transit conditions within neighborhoods of the District. Based on this website, the site is located adjacent to the Anacostia neighborhood. The site has a walk score of 28 (or "Car-Dependent"), a transit score of 72 (or "Excellent Transit"), and a bike score of 66 (or "Bikeable"). Figure

3 shows a heat map for walkability and bikeability in the vicinity of the site. The following conclusions can be made based on the data obtained from Walkscore.com:

- The site is situated in an area with low walkability as there are currently few amenities within walking distance and minimal pedestrian-friendly street connections;
- The site is situated in an area with high transit scores due to its proximity to a high number of bus routes and Metrorail; and
- The site is situated in an area with good bike scores due to its proximity to a number of bike facilities and flat topography.

Overall, the site and surrounding neighborhood have multimodal accessibility. The Bridge District Parcels 3 & 4 development will directly improve the neighborhood's and surrounding area's walkability and bikeability by enhancing the pedestrian and bicycle network with a grocery store, and new short-term bicycle parking facilities.

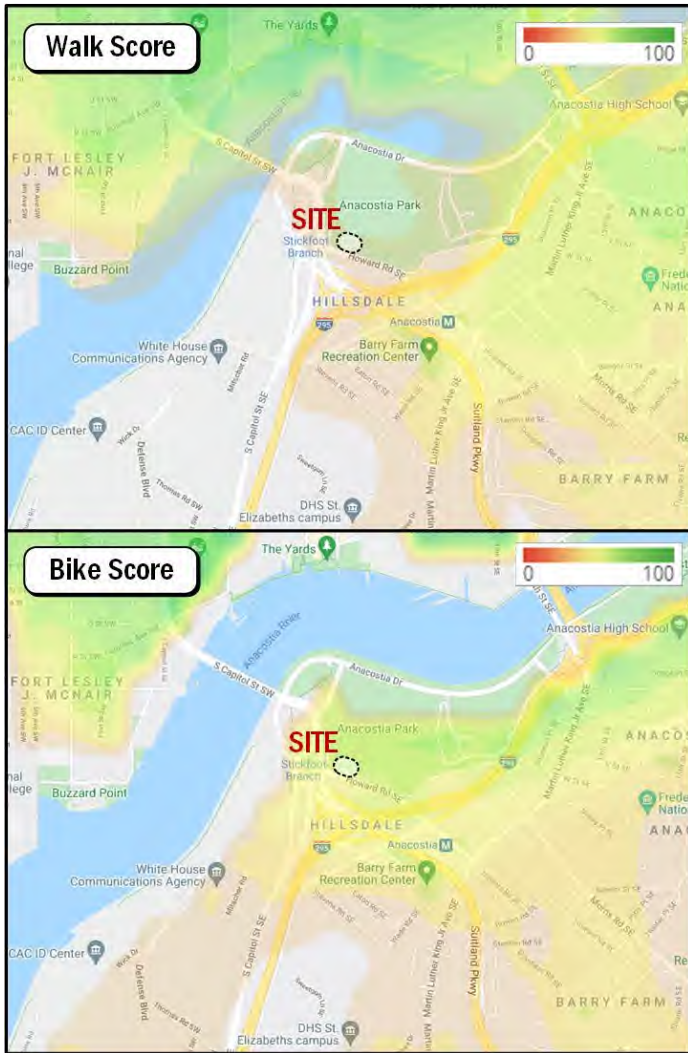


Figure 3: Summary of Site Walkscore and Bikescore

Future Projects

There are several District initiatives located in the vicinity of the site. These planned projects are summarized in the following sections.

MoveDC: Multimodal Long-Range Transportation Plan

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

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

- 70 miles of high-capacity transit (streetcar or bus);

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

In direct relation to the proposed project, the MoveDC plan outlines recommended transit and bicycle improvements including the following:

- High-capacity transit along Martin Luther King Jr. Avenue SE and greater frequency of express bus service in the Anacostia neighborhood;
- Streetcar service along Martin Luther King, Jr. Avenue, and Firth Sterling Avenue SE;
- Bicycle lanes along 13th Street from Good Hope Road to Pleasant Street SE; and
- Multi-use trails along the Anacostia Freeway (I-295) from South Capitol Street to East Capitol Street, through National Park Service land between Anacostia Drive and the Anacostia Metrorail station, and along Suitland Parkway north of Pomeroy Road SE.

Other MoveDC recommendations are already being implemented and are detailed in their respective sections of this report.

South Capitol Street Corridor Project

DDOT’s South Capitol Street Corridor Project will replace the Frederick Douglass Memorial Bridge with a new span featuring a design that improves bicycle, pedestrian, and vehicular safety. The project also includes two (2) new traffic ovals, one on each side of the bridge, as well as a reconstructed South Capitol Street north of the bridge, a reconstructed Suitland Parkway/Interstate 295 interchange, and improved drainage and stormwater management. The east oval, within a quarter-mile of the proposed project, will be constructed with a cycle track around its perimeter. In direct relation to the proposed project, the South Capitol Street Corridor Project will provide a safer, more attractive bicycle and pedestrian link from the project’s location in southeast DC to downtown and other areas west of the Anacostia River. The project is expected to be complete in Spring 2022.

DDOT Car Free Lanes for Buses and Bikes

DDOT included the segment of Martin Luther King, Jr. Avenue SE between W Street SE and St. Elizabeth's East Campus as one of its quick-build bus priority pilot projects as part of the District's COVID-19 response and recovery. These projects are being implemented along corridors DDOT has already identified for permanent transit improvements.

The Martin Luther King, Jr. Avenue SE car-free lanes are accessible only to buses and bikes during the morning (7:00am – 9:30am) and evening (4:00pm – 6:30pm) peak periods. The car-free restriction is only in place in the peak direction of travel (northbound in the morning and southbound in the evening).

Anacostia Waterfront Transportation Master Plan

As part of the Anacostia Waterfront Initiative (AWI), DDOT is pursuing a plan to reshape the area's transportation infrastructure into a network that improves access for residents, commuters, and visitors while also improving the area's environmental quality. The AWI Framework Plan concluded that the AWI area suffered from a transportation system that favored regional mobility over neighborhood accessibility. The highways that dominated the area were ill-suited to serve local neighborhoods and had the effect of cutting off communities from one another and from the waterfront. This plan puts forth strategies to redress the negative effects of the existing transportation system and to create a future system characterized by connectivity.

DDOT Bike Parking Guide

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

The project's bicycle amenities follow guidelines outlined in the DDOT Bike Parking Guide.

11th Street Bridge Park

As part of the reconstruction of the 11th Street SE bridge across the Anacostia River, a portion of the old bridge will be reconstructed as a new civic space devoted to outdoor recreation and the arts. The new bridge will include a bicycle/pedestrian connection across the river between the Anacostia neighborhood and the Washington Navy Yard, with

bicycle connections to downtown along 11th Street SE, and it will be easily accessible from the proposed recreation center.

Shepherd Branch Trail

The Shepherd Branch Trail was envisioned in 2004 as part of the DC Streetcar Project in order to address the lack of safe and comfortable bicycle and pedestrian facilities in the existing roadway network between C Street SE and South Capitol Street. The proposed trail will run along Anacostia Freeway approximately 0.3 miles from the site and will connect the site to the future South Capitol Street, Suitland Parkway, and 11th Street Bridge bicycle and pedestrian facilities.

Planned Developments

There are four (4) planned development projects in the vicinity of the site. For the purpose of this analysis and consistent with DDOT and industry standards, only approved developments expected to be completed prior to the planned development with an origin/destination within the study were included. The developments are described below.

MLK Gateway Phase 1

This development includes a mixed-use building with 14,600 square feet of retail and 20,000 square feet of office. This building is expected to be complete in 2021.

MLK Gateway Phase 2

This development includes a mixed-use building with 13,360 square feet of retail and 89,250 square feet of office. This building is expected to be complete in 2025.

The Clara

This development includes a mixed-use building with 11,000 square feet of retail and 81 residential units. This building is expected to be complete in 2025.

Reunion Square

This development includes several mixed-use buildings with a total of 132,000 square feet of retail, 340 residential units, 998,549 square feet of office, and 119 hotel rooms. This building is expected to be complete in 2021.

Nine (9) other background developments were included in this project's scoping materials but were not added to the background analysis. These developments are described below.

11th Street Bridge Park

This project includes the redevelopment of the aging 11th Street Bridge across the Anacostia River into an elevated park with an amphitheater, playground, environmental education center, and a café. While the park is set to open by 2024, square footages for its different elements were not publicly available as of September 2021, so precise trip generation calculations were not feasible.

Maple View Flats

This 114-unit affordable apartment building with 14,500 square feet of ground-floor retail space opened in 2018. When this CTR was scoped, the most recent counts available for the study area were collected in 2016 and therefore this development would have needed to be added as a background development. However, during the course of this study, traffic volume projections for 2020 were acquired from another study, and this development was assumed to have been captured in these projections. More detail on the traffic volume assumptions in this study are provided in the Traffic Operations chapter of this report.

Shannon Collective

This development contains only seven (7) residential units. According to trip generation calculations, it will only generate one (1) additional vehicular trip during the morning peak travel period and two (2) trips during the afternoon peak period. The traffic distribution assumptions used in this study resulted in these trips not being routed through any study intersections. Therefore, it was assumed that this development's impact on the study area will be negligible.

Barry Farm Redevelopment

While a first-stage planned-unit development (PUD) was approved in 2014, it was later discovered that it was withdrawn by the developer in 2018. Since there have been no subsequent approvals for this project since 2018, it was not taken into consideration. The original PUD contained 1,692 residential units and 55,500 square feet of retail space.

1004-1018 Howard Road

A total of 18 three-bedroom homes were planned for this by-right development. However, due to its small size and the fact that no information has been published on this development within the past two (2) years, it was assumed that its impact on the study area will be negligible if it is completed.

2001-2027 and 2255 Martin Luther King, Jr. Avenue

These buildings, with a combined total of 340 dwelling units and 64,000 square feet of retail, are included as part of the Reunion Square development.

2100 Martin Luther King, Jr. Avenue

This project is proposed to include a seven-story building with 31 affordable housing units built at 2100 Martin Luther King Jr. Avenue. The development has not been entitled or approved and was not included in the background analysis.

2204-2206 Martin Luther King, Jr. Avenue

This project is proposed to include three (3) residential units in addition to retail and office space. Square footages for the retail and office components were not publicly available as of September 2021, and the development has not been entitled or approved.

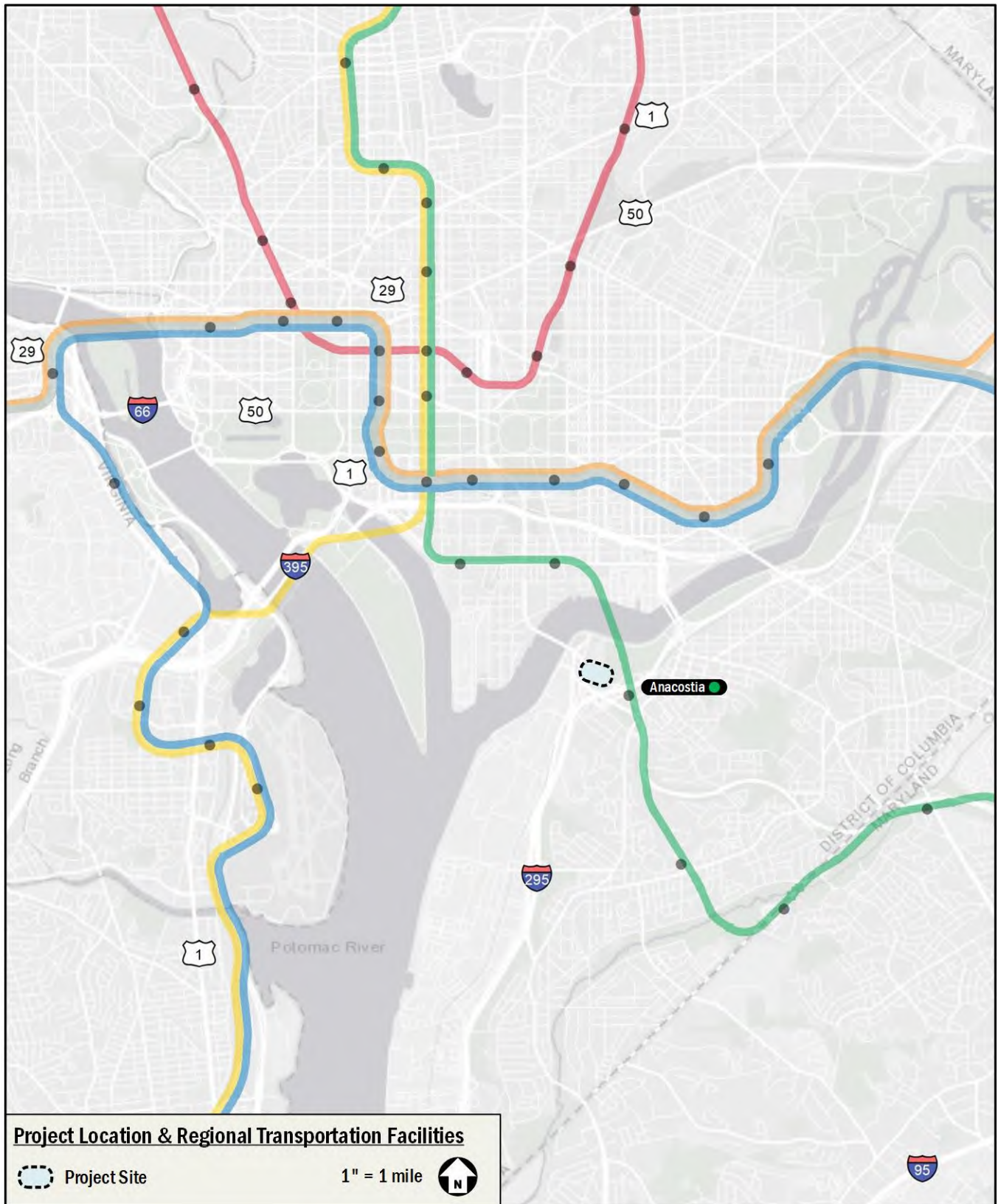


Figure 4: Project Location and Regional Transportation Facilities

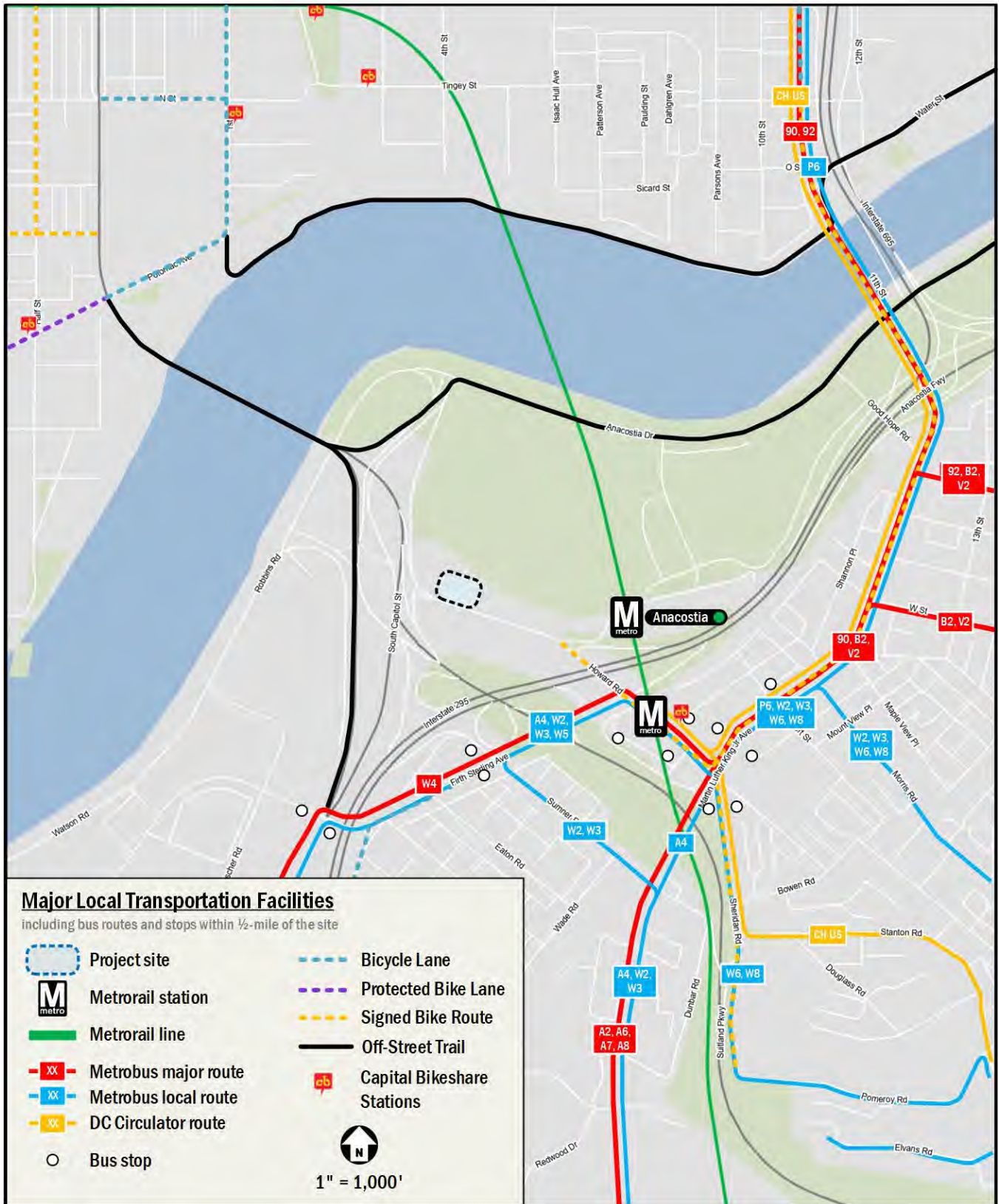


Figure 5: Major Local Transportation Facilities

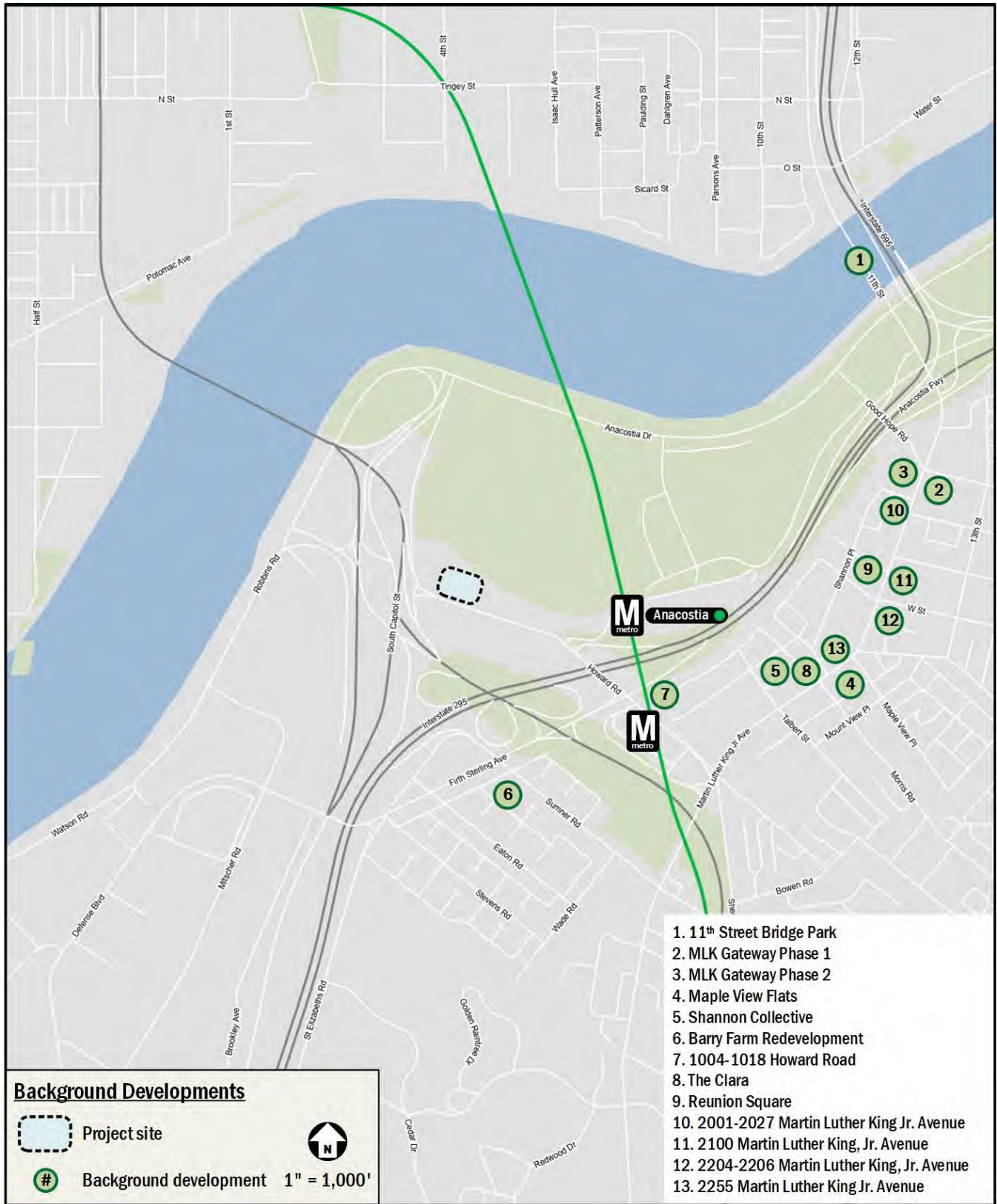


Figure 6: Background Developments

Project Design

This chapter reviews the transportation components of the Bridge District Parcels 3 & 4 development, including the proposed site plan and access points. It includes descriptions of the project’s vehicular access, loading facilities, parking, bicycle, and pedestrian facilities, and the proposed TDM plan.

The Bridge District Parcels 3 & 4 development is bounded by Howard Road SE to the south, National Park Service property to the north, DDOT property to the west, and a vacant parcel to the east. The development program includes up to 760 residential units, up to 51,000 square feet of retail space (including a 31,030 square foot grocer), and 355 garage parking spaces. The project is undergoing Design Review by the Zoning Commission.

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

Site Access and Circulation

Pedestrian Access

Pedestrian access is available from all sides of the site. Pedestrians will access the grocery store and retail spaces from Howard Road and the bike/pedestrian promenade. The east and west residential lobbies will be accessed from Howard Road SE, and the north residential lobby will be accessed from the north side of the building. Pedestrian access to the site is shown on Figure 7.

Vehicular and Loading Access

Vehicular and loading access to the site is proposed from a new private road connecting to Howard Road SE.

Figure 7 shows the location of the site access points for parking garage access and loading facilities.

Curbside Management

The existing curbside conditions around the site are shown on Figure 8. As part of the streetscape improvements in a later development phase, on-street parking will be added along both sides of Howard Road. Future curbside conditions are shown in Figure 9.

Loading and Trash

Loading

The proposed loading facilities will accommodate all loading activity and delivery demand for the proposed uses without any detrimental impact to the surrounding transportation network.

DDOT standards stipulate that truck movements for a development should be accommodated without back-in movements through public space. The Bridge District Parcels 3 & 4 development has been designed to accommodate all loading activity and associated backing maneuvers within the private road and the building’s interior loading area. Truck turning diagrams using AutoTurn are provided in the Technical Attachments.

The Bridge District Parcels 3 & 4 development will provide three (3) 12’x30’ loading berths, two (2) 10’x20’ service/delivery spaces, and one (1) 14’x75’ loading berth. These facilities meet the requirements set by 2016 Zoning Regulations.

The site is expected to generate up to 14 total loading trips per day. Table 1 summarizes the site’s anticipated loading activity based on similar projects analyzed by Gorove Slade and truck trip generation methodology outlined in the newly released supplement to the Institute of Transportation Engineers’ (ITE) *Trip Generation Manual*, 10th Edition.

Table 1: Site Daily Loading Activity

Land Use/Truck Generator	Loading Trips
Residential	3
Retail	4
Grocery	2
General	5
Total	14

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

- Residential: Three (3) residential loading trips, calculated based on an average unit turnover of 18 months
- Retail: One (1) delivery for each small retailer and two (2) for the corner retailer
- Grocery: Two (2) deliveries for the grocery store
- General: Five (5) general deliveries consisting of trash removal, mail, and parcel delivery for the entire site

Trash

Trash for the Bridge District Parcels 3 & 4 development will be accommodated using trash receptacles within the loading area. No trash will be stored in public space.

Truck routing to and from the site will be focused on designated primary truck routes, such as South Capitol Street and I-295. Loading access and circulation is shown in Figure 7.

Based on the expected truck deliveries, the loading facilities for the Bridge District Parcels 3 & 4 development are adequate, and vehicles accessing the loading facilities will not adversely affect the local roadway network.

Parking

The site is located within the NHR zone. In this zone, District zoning requirements mandate that 1.33 vehicle parking spaces must be provided per 1,000 square feet of retail space (in excess of 3,000 square feet) and that one (1) space must be provided for every three (3) dwelling units in excess of four (4) units.

Based on these requirements, the development is required to provide 316 vehicle parking spaces. The development will supply a total of 355 vehicle parking spaces. Of these, 85 will be electric vehicle spaces.

Bicycle and Pedestrian Facilities

Bicycle Facilities

The Bridge District Parcels 3 & 4 development will meet 2016 Zoning Regulations requirements for long-term and short-term bicycle parking.

Per the 2016 Zoning Regulations, the development is required to provide the following bicycle facilities:

- Long-Term Bicycle Parking Spaces (157 required)
 - Residential: One (1) space for every three (3) residential units, applied at 50% after the first 50 spaces; 152 spaces are required.
 - Retail: One (1) space for each 10,000 square feet; five (5) are required.
- Short-Term Bicycle Parking Spaces (53 required)
 - Residential: One (1) space for every 20 residential units; 38 spaces are required.
 - Retail: One (1) space for each 3,500 square feet; 15 spaces are required.

The Bridge District Parcels 3 & 4 development will meet requirements by providing at least 201 long-term bicycle parking spaces and 99 short-term bicycle parking spaces throughout the site in highly accessible areas. The long-term spaces will conform to 2016 Zoning Regulations requirements by making 50% or more of the spaces either horizontal or on the ground. The development will also provide three (3) lockers and two (2) showers available to retail staff.

Pedestrian Facilities

The Bridge District Parcels 3 & 4 development will provide pedestrian facilities around the perimeter of the site that meet DDOT and ADA standards. New sidewalks will be installed along the site's street frontage that will meet or exceed the width requirements, as well as curb ramps with detectable warnings and crosswalks at the new site entrances, as needed.

Transportation Demand Management

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

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

Site-Wide TDM Plan

- Unbundle the cost of vehicle parking from the lease or purchase agreement for each residential unit, and charge a minimum rate based on the average market rate within a quarter mile.
- Identify Transportation Coordinators for the planning, construction, and operations phases of development. There will be a Transportation Coordinator for each tenant and the entire site. The Transportation Coordinators will act as points of contact with DDOT, goDCgo, and Zoning Enforcement.
- Will provide Transportation Coordinators' contact information to goDCgo, conduct an annual commuter survey of employees on-site, and report TDM activities and data collection efforts to goDCgo once per year.
- Transportation Coordinators will develop, distribute, and market various transportation alternatives and options to the residents and customers, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on property website and in any internal building newsletters or communications.
- Transportation Coordinators will receive TDM training from goDCgo to learn about the TDM conditions for this project and available options for implementing the TDM Plan.

- Will post “getting here” information in a visible and prominent location on the website with a focus on non-automotive travel modes. Also, links will be provided to goDCgo.com, CommuterConnections.com, transit agencies around the metropolitan area, and instructions for customers discouraging parking on-street in Residential Permit Parking (RPP) zones.
- Provide employees and residents who wish to carpool with detailed carpooling information and will be referred to other carpool matching services sponsored by the Metropolitan Washington Council of Governments (MWCOG) or other comparable service if MWCOG does not offer this in the future.
- Transportation Coordinator will subscribe to goDCgo’s residential newsletter.
- Post all TDM commitments on website, publicize availability, and allow the public to see what commitments have been promised.
- Provide a free SmarTrip card to every new employee and resident and a complimentary Capital Bikeshare coupon good for one ride.
- Will exceed ZR16 short- and long-term bicycle parking requirements by providing 201 long-term spaces and 99 short-term spaces.
- Long-term bicycle storage rooms will accommodate non-traditional sized bikes including cargo, tandem, and kids bikes.
- Following the issuance of a certificate of occupancy for the Project, the Transportation Coordinator shall submit documentation from DCRA summarizing compliance with the transportation and TDM conditions of the Order (including, if made available, any written confirmation from the Office of the Zoning Administrator) to the Office of Zoning for inclusion in the IZIS case record of the case.
- Install a Transportation Information Center Display (electronic screen) within the lobby containing information related to local transportation alternatives. At a minimum the display should include information about nearby Metrorail stations and schedules, Metrobus stops and schedules, car-sharing locations (as allowed by private companies), and nearby Capital Bikeshare locations indicating the availability of bicycles.
- Additional short- and long-term bicycle parking spaces above ZR16 requirements, including 44 additional long-term spaces and 46 additional short-term spaces.

- Provide a bicycle repair station in an easily accessible location.

Residential TDM Plan

- Provide welcome packets to all new residents that at a minimum, will include the Metrorail pocket guide, brochures of local bus lines (Circulator and Metrobus), carpool and vanpool information, CaBi coupon or rack card, Guaranteed Ride Home (GRH) brochure, and the most recent DC Bike Map.
- Designate two (2) parking spaces for vans to be used by District residents who vanpool to work.

Retail TDM Plan

- Transportation Coordinator will demonstrate to goDCgo that tenants with 20 or more employees are in compliance with the DC Commuter Benefits Law and participate in one of the three transportation benefits outlined in the law (employee-paid pre-tax benefit, employer-paid direct benefit, or shuttle service), as well as any other commuter benefits related laws that may be implemented in the future.
- Will meet ZR16 requirements for showers and lockers for use by employees by providing at least two (2) showers and three (3) lockers.
- Coordinate a way finding plan along walking routes to the property from the Anacostia Metrorail station.

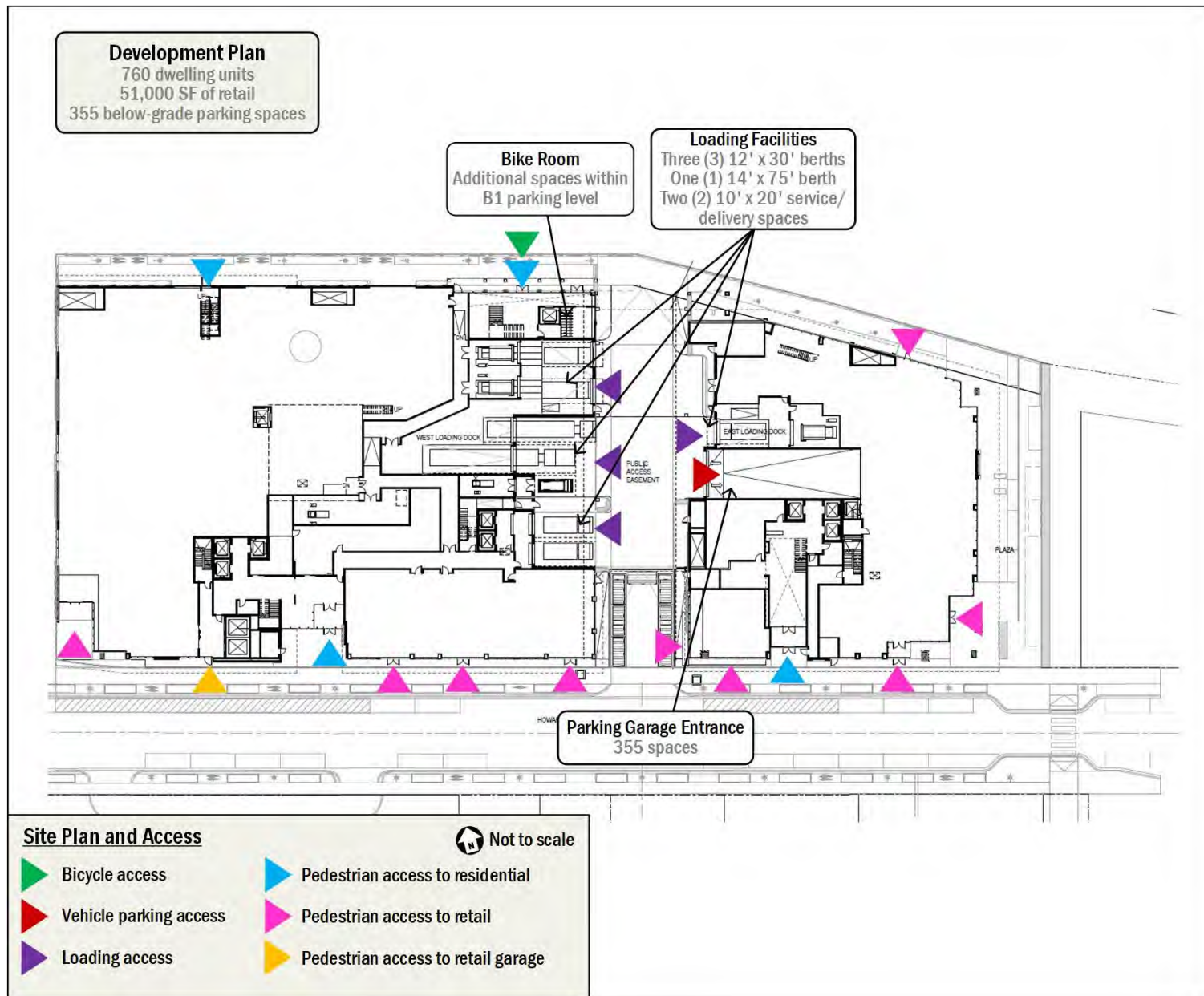


Figure 7: Site Plan and Access

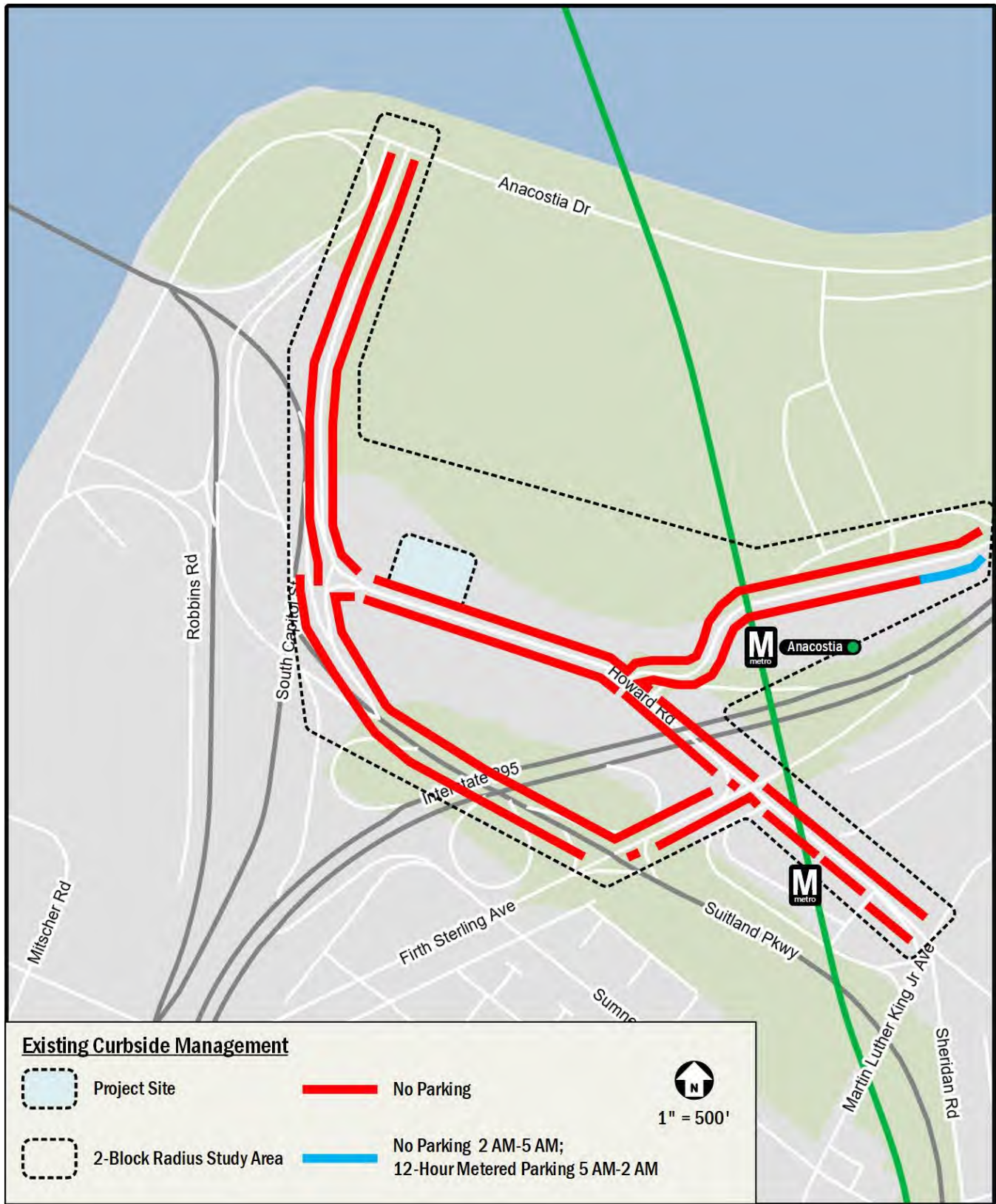


Figure 8: Existing Curbside Management

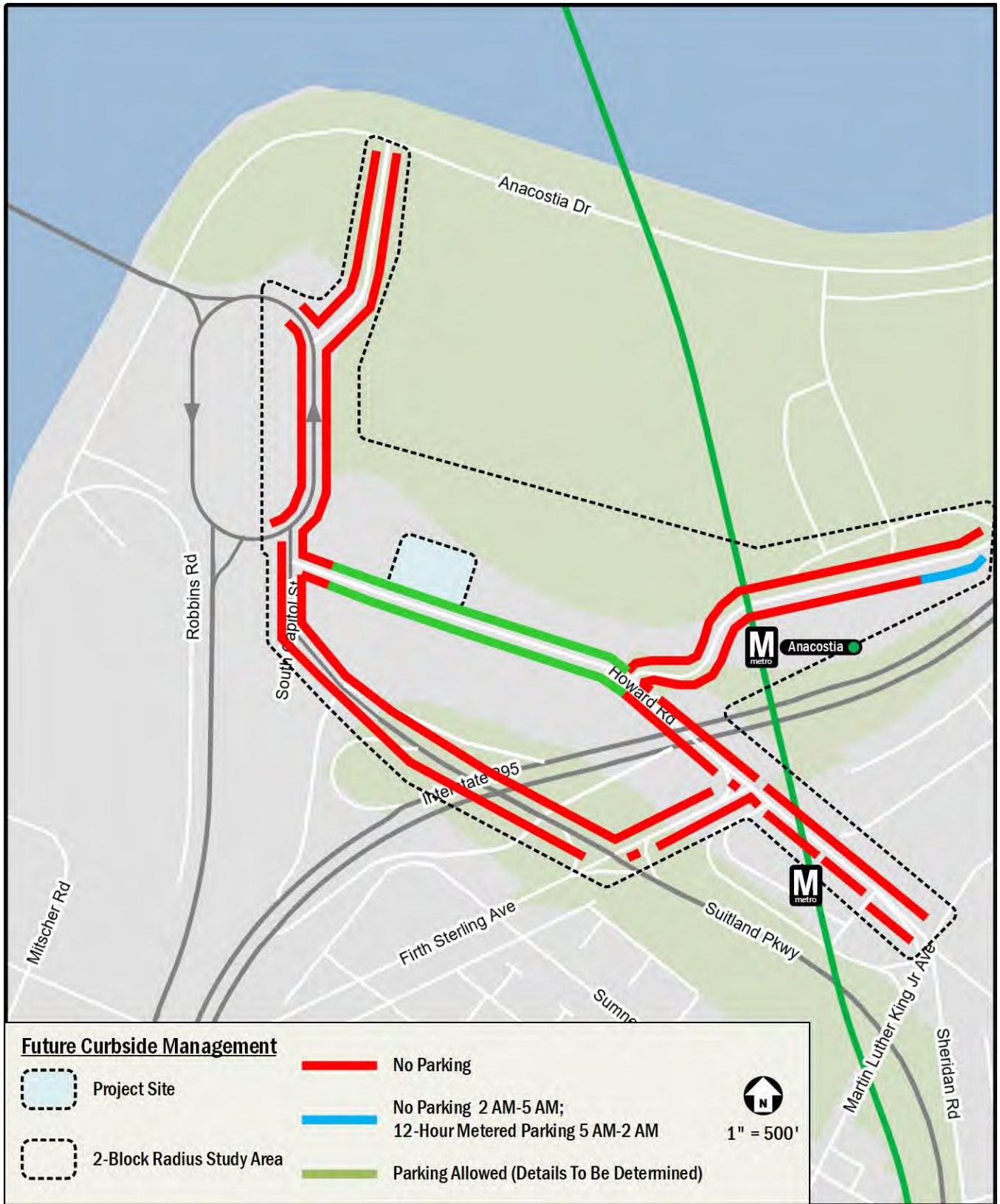


Figure 9: Future Curbside Management

Travel Demand Assumptions

This chapter outlines the Bridge District Parcels 3 & 4 development’s transportation demand. It summarizes the projected trip generation of the proposed project by mode, which forms the basis for the chapters that follow. These assumptions were vetted and approved by DDOT as a part of the scoping process for the study.

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

Proposed Trip Generation

Proposed residential, retail, and grocery trip generation were calculated based on ITE land use 222, *High-rise Multifamily Housing*, ITE land use 820, *Shopping Center*, and ITE land use 850, *Supermarket*, respectively. Trips were split into different modes using assumptions derived from census data for the residents that currently live near the site, census data for the commuters that currently work near the site, WMATA ridership survey data, and the proposed parking supply. A summary of the multimodal trip generation for the proposed development based on ITE is provided in Table 2, and a summary of the mode split assumptions is provided in Table 3.

Table 2: ITE Multi-Modal Trip Generation Summary

Mode	Land Use	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto (veh/hr)	Retail	7	3	10	20	22	42
	Residential	22	69	91	65	42	107
	Grocer	39	26	65	80	78	158
	Total	68	98	166	165	142	307
Transit (ppl/hr)	Retail	6	3	9	17	18	35
	Residential	32	102	134	96	61	157
	Grocer	26	17	43	53	51	104
	Total	64	122	186	166	130	296
Bike (ppl/hr)	Retail	3	2	5	10	11	21
	Residential	6	20	26	19	13	32
	Grocer	13	9	22	27	25	52
	Total	22	31	53	56	49	105
Walk (ppl/hr)	Retail	1	1	2	3	3	6
	Residential	0	0	0	0	0	0
	Grocer	19	14	33	40	39	79
	Total	20	15	35	43	42	85

Table 3: Mode Split Assumptions

Land Use	Mode			
	Drive	Transit	Bike	Walk
Residential	40%	50%	10%	0%
Retail	55%	25%	10%	10%
Grocer	55%	20%	10%	15%

As shown in Table 2, the Bridge District Parcels 3 & 4 development is expected to generate trips on the surrounding transportation network across all modes. The AM peak hour trip generation is projected to include 166 vehicles/hour, 186 transit riders/hour, 53 bicycle trips/hour, and 35 walking trips/hour. The PM peak hour trip generation is projected to include 307 vehicles/hour, 296 transit riders/hour, 105 bicycle trips/hour, and 85 walking trips/hour.

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

Traffic Operations

This chapter provides a summary of an analysis of the existing and future roadway capacity surrounding the site. Included is an analysis of potential vehicular impacts of the Bridge District Parcels 3 & 4 development and a discussion of potential improvements.

The purpose of the capacity analysis is to:

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

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

The capacity analysis focuses on the weekday morning and afternoon commuter peak hours.

This chapter concludes:

- Under Existing Conditions, two (2) study intersections operate at an unacceptable level of service and three (3) study intersections experience queues that exceed available storage.
- Under Background Conditions, six (6) study intersections operate at an unacceptable level of service and six (6) study intersections experience queues that exceed available storage.
- The addition of project-generated trips does not significantly affect the delays or queuing at most intersections.
- Two (2) intersections meet DDOT's threshold for mitigation measures as a result of impacts created by the project. The signal timings used for these intersections were preliminary timings provided by DDOT with the South Capitol Street Corridor Project improvements. Mitigation at these intersections in the form of TDM measures and roadway geometry changes were identified.
- The project will not have a detrimental impact to the surrounding vehicular network with the implementation of

all site design elements, TDM measures, and mitigation measures.

Study Area, Scope, & Methodology

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

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

Capacity Analysis Scenarios

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

Specifically, the roadway capacity analysis examined the following scenarios:

1. Existing Conditions (Existing Conditions);
2. 2025 Future Conditions without the Project (2025 Background Conditions); and
3. 2025 Future Conditions with the Project (2025 Total Future Conditions).

Study Area

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

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

1. Howard Road SE & Suitland Parkway
2. Howard Road SE & Anacostia Metrorail Access Road
3. Howard Road SE & I-295 SB Off-Ramp (Existing Conditions only; removed as part of South Capitol Street Improvements/Frederick Douglas Memorial Bridge Project)
4. Howard Road & Firth Sterling Ave SE & I-295 NB On-Ramp
5. Suitland Parkway & Firth Sterling Ave SE
6. Howard Road SE & Site Driveway (Future Intersection)
7. East Oval & Suitland Pkwy (Future Intersection)
8. East Oval & Anacostia Drive SE (Future Intersection)
9. East Oval & Frederick Douglass Bridge NB (Future Intersection)
10. Frederick Douglass Bridge & Pedestrian Crossing (Future Intersection)
11. East Oval & Frederick Douglass Bridge SB (Future Intersection)
12. East Oval & South Capitol Street (Future Intersection)
13. East Oval & South Capitol Street & Suitland Parkway (Future Intersection)

Figure 10 shows a map of the study area intersections in the Existing scenario (without the new South Capitol Street Oval), and Figure 11 shows a map of the study area intersections in the Background and Future scenarios (with completion of the new South Capitol Street Oval).

Geometry and Operations Assumptions

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

Existing Geometry and Operations Assumptions

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

The lane configurations and traffic controls for the Existing Conditions are shown on Figure 12.

2025 Background Geometry and Operations Assumptions

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

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

Based on these criteria, the following improvements were assumed:

- The South Capitol Street Corridor project proposes construction of a traffic oval that connects South Capitol Street, Suitland Parkway, and Anacostia Drive. As signal timings and phasing data are not available for these future intersections, the cycle length and offset settings were assumed optimized for the background volumes.
- The I-295 southbound off-ramp and northbound on-ramp that intersect Howard Road will be removed as a part of the South Capitol Street Corridor project.
- The Howard Road & Firth Sterling Avenue SE and Suitland Parkway & Firth Sterling Avenue SE intersections will be reconstructed with new lane use configurations, multi-use paths, and crossing improvements.

The lane configurations and traffic controls for the Background Conditions are shown in Figure 13.

2025 Total Future Geometry and Operations Assumptions

The configurations and traffic controls for the 2025 Total Future Conditions were based on those for the 2025 Background Conditions with the addition of the proposed project. As part of the proposed project, the following roadway or operational changes are included:

- The addition of the unsignalized Howard Road SE and Site Driveway intersection. This intersection is configured with one westbound through/right lane, one eastbound through/left lane, and one stop-controlled southbound left/right lane.
- The reduction of the portion of Howard Road adjacent to the project site from four (4) travel lanes to two (2) travel lanes.

As of September 2021, the southbound I-295 off-ramp onto Howard Road SE has been removed, and the northbound on-ramp is planned to be removed as part of the South Capitol

Street Corridor Project. Therefore, it is expected that fewer vehicles will use Howard Road SE for regional access, so fewer travel lanes will be necessary.

The lane configurations and traffic controls for the Future Conditions are shown in Figure 14.

Traffic Volume Assumptions

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

Existing Traffic Volumes

Data collection was not possible during Summer 2021 as traffic volumes were not representative of typical traffic conditions due to District-wide restrictions in response to the COVID-19 public health crisis. In order to establish baseline conditions, the study analyzed traffic volumes comprised of 2016 turning movement count data with the addition of the regional background growth on the roadway to represent 2021 existing conditions.

The applied growth rates between the date of data collection and 2021 are shown in Table 4.

The unadjusted volumes are shown in Figure 15, the regional growth traffic volumes added to establish 2021 volumes are shown in Figure 16, and the adjusted existing 2021 volumes are shown in Figure 17.

Table 4: Applied Annual Growth Rates

Roadway	Direction	Annual Growth Rate	
		AM Peak Hour	PM Peak Hour
Suitland Parkway	NB	0.10%	0.60%
	SB	1.50%	0.50%
Firth Sterling Avenue SE	EB	0.50%	1.00%
	WB	1.00%	0.50%
South Capitol Street	NB	0.50%	0.50%
	SB	0.10%	0.50%
Others		0.10%	0.10%

2025 Background Traffic Volumes (without the Project)

The traffic projections for the 2025 Background Conditions consist of the following:

- 2020 traffic volume projections from the South Capitol Street Corridor Project Intersection Modification Report (IMR);
- Background growth on the roadway (representing regional traffic growth); and
- Traffic generated by developments expected to be completed prior to the project (known as background developments).

Minor adjustments were made to the sum of these volumes in order to balance volumes among study intersections.

It is expected that the roadway changes due to the South Capitol Street Corridor Project will cause major changes to traffic distribution in the study area. Almost every study intersection in Existing Conditions will undergo geometry or lane use changes as a result of the project, and multiple highway ramps in the study area will be removed. Therefore, it was determined that the 2020 volume projections from the South Capitol Street Corridor Project IMR would capture the future travel demand more accurately than the 2016 volume counts that were used in Existing Conditions. The volumes from this IMR are shown in Figure 18.

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

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

Based on these criteria, and as discussed with and agreed upon by DDOT, four (4) developments were considered and determined to meet the above criteria. These developments include the following:

- MLK Gateway Phase 1
- MLK Gateway Phase 2
- The Clara
- Reunion Square

Nine (9) other background developments were included in the present project’s scoping materials; however, these developments all either were identified to be a segment of another background development, will no longer be built, or were

assumed to be captured by regional traffic growth. Therefore, these developments were removed from the 2025 Background Conditions scenario.

Trip generation for the background developments is based on available studies or ITE *Trip Generation*, 10th Edition. The trip generation for background developments with available transportation studies is included in the Technical Attachments.

Trip generation for the following projects was calculated using ITE *Trip Generation*, 10th Edition:

- MLK Gateway Phase 1
- MLK Gateway Phase 2
- The Clara

The mode splits and trip distribution assumptions for these developments were primarily based on those used in similar developments throughout the Anacostia area and the proposed Bridge District Parcels 3 & 4 development.

A summary of the trip generation for the background developments is shown in Table 5 and the combined background projects peak hour volumes are shown in Figure 19. While the background developments represent local traffic changes, regional traffic growth is typically accounted for using growth

Table 5: Summary of Background Developments Trip Generation

Background Development	Trip Generation Source	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)		
		In	Out	Total	In	Out	Total
MLK Gateway Phase 1	ITE Trip Gen. 10th Ed.	13	4	17	14	20	34
MLK Gateway Phase 2	ITE Trip Gen. 10th Ed.	48	10	58	18	54	72
The Clara	ITE Trip Gen. 10th Ed.	5	10	15	16	14	30
Reunion Square	Gorove Slade Study	182	56	238	78	194	272
Total		248	80	328	126	282	408

Table 6: Applied Annual and Total Background Growth Rates

Roadway	Direction	Proposed Annual Growth Rate		Proposed Total Five-Year Growth Rate	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Suitland Parkway	Northbound	0.10%	0.60%	0.50%	3.04%
	Southbound	1.50%	0.50%	7.73%	2.53%
Firth Sterling Avenue	Eastbound	0.50%	1.00%	2.53%	5.10%
	Westbound	1.00%	0.50%	5.10%	2.53%
South Capitol Street	Northbound	0.50%	0.50%	2.53%	2.53%
	Southbound	0.10%	0.50%	0.50%	2.53%
Other roadways		0.10%	0.10%	0.50%	0.50%

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 2020 and 2025 model scenarios as vetted and agreed to by DDOT. The growth rates observed in this model served as a basis for analysis assumptions, and where negative growth was observed, a conservative 0.10 percent annual growth rate was applied to the roadway.

In addition, a maximum growth rate of 2.0 percent was used based on DDOT recommendation. Regional growth was applied to all movements between any two freeways, arterials, or collector roads, as determined by DDOT's roadway function classifications. The applied growth rates are shown in Table 6. The traffic volumes generated by the background growth along the network are shown in Figure 20.

The IMR peak hour volumes, presented in Figure 18, were combined with the background projects' peak hour volumes shown in Figure 19, and the background growth peak hour volumes shown in Figure 20 in order to establish the 2025 Background traffic volumes. The traffic volumes for the 2025 Background conditions are shown in Figure 21.

2025 Total Future Traffic Volumes (with the Project)

The 2025 Total Future traffic volumes consist of the following:

- Background volumes, shown in Figure 21; and
- Site-generated volumes for the Bridge District Parcels 3 & 4 development, shown in Figure 26.

Trip distribution for the site-generated trips was determined based on: (1) Census Transportation Planning Products (CTPP) Traffic Analysis Zone (TAZ) data, (2) existing and future travel patterns in the study area, and (3) previously approved methodologies employed in approved studies in the vicinity of the site.

Based on this review and the site access locations, the site-generated trips were distributed through the study area intersections. Trip distribution assumptions and specific routing was analyzed by land use for inbound and outbound trips. Distribution assumptions for the project are provided in Figure 22 and Figure 23 for inbound and outbound trips, respectively. Detailed inbound distributions at each study intersection are shown in Figure 24, and outbound distributions are shown in Figure 25.

Site-generated volumes for the development program are presented in Figure 26. The 2025 Total Future traffic volumes with the Bridge District Parcels 3 & 4 development are presented in Figure 27.

Vehicular Analysis Results

Intersection Capacity Analysis

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

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

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

Table 7 shows the results of the capacity analyses, including LOS and average delay per vehicle (in seconds) for the Existing, 2025 Background, and 2025 Total Future scenarios. Table 8 shows a comparison of the volume to capacity (v/c) ratios for each scenario.

As shown in Table 7, two (2) of the study intersections operate at unacceptable conditions or have one or more approaches operating at unacceptable levels during the existing conditions:

- Howard Road & Firth Sterling Avenue SE & I-295 NB On-Ramp
 - Overall (AM)
 - Westbound (AM)
- Suitland Parkway & Firth Sterling Avenue SE
 - Overall (PM)
 - Eastbound (PM)
 - Northbound (AM/PM)
 - Southbound (PM)

The introduction of background regional growth, roadway geometry changes, and trips from background developments result in six (6) study intersections having one or more approaches operating at unacceptable levels during the background conditions. It is noted that each of these intersections were evaluated using preliminary signal timings provided by DDOT, and refined timings could be implemented to improve levels of service and reduce delays at these locations:

- Howard Road SE & Suitland Parkway
 - Westbound (AM)
- Suitland Parkway & Firth Sterling Avenue SE
 - Overall (AM/PM)
 - Eastbound (AM/PM)
 - Westbound (AM)
 - Northbound (AM/PM)
 - Southbound (AM/PM)
- East Oval & Suitland Parkway
 - Overall (AM)

- Northbound (AM)
- Frederick Douglass Bridge & Pedestrian Crossing
 - Overall (PM)
 - Southbound (PM)
- East Oval & Frederick Douglass Bridge SB
 - Overall (PM)
 - Westbound (AM/PM)
 - Southbound (PM)
- East Oval & South Capitol Street & Suitland Parkway
 - Overall (AM)
 - Eastbound (AM/PM)

- Suitland Parkway & Firth Sterling Avenue SE
 - Eastbound Through (PM)
 - Northbound Left/Through (AM/PM)
 - Southbound Left (PM)
 - Southbound Through/Right (PM)

The introduction of the site-generated trips from Bridge District Parcels 3 & 4 results in additional delays that would meet DDOT’s mitigation threshold at two (2) study intersections where an approach delay was increased to unacceptable levels (LOS E) or an unacceptable delay increased by over five (5) percent as compared to Background Conditions (based on the preliminary signal timings):

- Howard Road SE & Suitland Parkway
 - Westbound (AM)
- East Oval & Frederick Douglass Bridge SB
 - Overall (PM)
 - Southbound (PM)

Queuing Analysis

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

Table 9 Table 7 shows the queuing results for the study area intersections. Three (3) of the study intersections exhibit one or more lane group that exceeds the given storage length during the existing conditions:

- Howard Road SE & I-295 SB Off-Ramp
 - Southbound Left (PM)
- Howard Road & Firth Sterling Avenue SE & I-295 NB On-Ramp
 - Westbound Through (AM)
 - Northbound Left/Through/Right (AM)

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

- Howard Road & Firth Sterling Avenue SE & I-295 NB On-Ramp
 - Westbound Left (PM)
- Suitland Parkway & Firth Sterling Avenue SE
 - Eastbound Left (AM)
 - Eastbound Through (AM/PM)
 - Eastbound Right (AM)
 - Westbound Left (AM)
 - Northbound Left (PM)
 - Northbound Through/Right (PM)
 - Southbound Left (AM/PM)
 - Southbound Through (PM)
- East Oval & Suitland Parkway
 - Northbound Right (AM/PM)
- Frederick Douglass Bridge & Pedestrian Crossing
 - Northbound Through (AM)
- East Oval & Frederick Douglass Bridge NB
 - Southbound Through (AM/PM)
- East Oval & South Capitol Street & Suitland Parkway
 - Southbound Left (AM/PM)

The introduction of site-generated trips from Bridge District Parcels 3 & 4 does not result in any additional study intersections exhibiting a queue which exceeds the storage length or increases a queue exceeding storage in the background scenario by 150 feet.

Mitigation Measures

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

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

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

Based on these criteria, the project has an impact on the following intersections based on the peak hour traffic volumes generated by:

- Howard Road SE & Suitland Parkway (AM delays)
- East Oval & Frederick Douglass Bridge SB (PM delays)

Project Impact and Recommendations

Howard Road SE & Suitland Parkway

During the morning peak hour, delays in the westbound approach increase by approximately 54 seconds above already unacceptable Background Conditions as a result of the peak hour traffic volumes generated by the project, exceeding the five (5.0) percent acceptable increase.

This intersection will become unsignalized between Existing Conditions and Background Conditions, so signal timing adjustments and adding a second right turn lane are both not viable options for mitigation. Therefore, it is proposed that impacts at this intersection be mitigated through additional TDM measures.

East Oval & Frederick Douglass Bridge SB

During the afternoon peak hour, delays in the southbound approach increase by approximately 28 seconds above already unacceptable Background Conditions as a result of the peak hour traffic volumes generated by the project, exceeding the five (5.0) percent acceptable increase. The overall delay also increases by approximately 28 seconds as a result of project-generated volumes. It should be noted that this increase in delay due to project site trips is disproportionate to the volume of trips added. The site-generated trips at this intersection account for only a 1% increase in traffic.

As of September 2021, this intersection has not yet been built. The roadway capacity analysis was based on preliminary signal settings and design plans provided by DDOT for the new roadway network that includes this intersection.

In these preliminary settings, this intersection is set to actuated-coordinated control. The 12 site-generated westbound lefts at this intersection influence the actuated signal to provide

significantly more green time for this movement and less green time for the over 4,000 southbound through vehicles. Due to this heavy volume of existing southbound through traffic, the change in green time for this movement causes significant delays.

Mitigation at this intersection is recommended in the form of signal timing adjustments and switching the signal timing from actuated-coordinated control to pre-timed. This type of signal timing is seen throughout the District and continues to allow for enough time for pedestrians to cross the southbound leg of the intersection. This modification only partially addresses the site-generated delays at this intersection, however, so additional TDM strategies are also proposed to make up this difference.

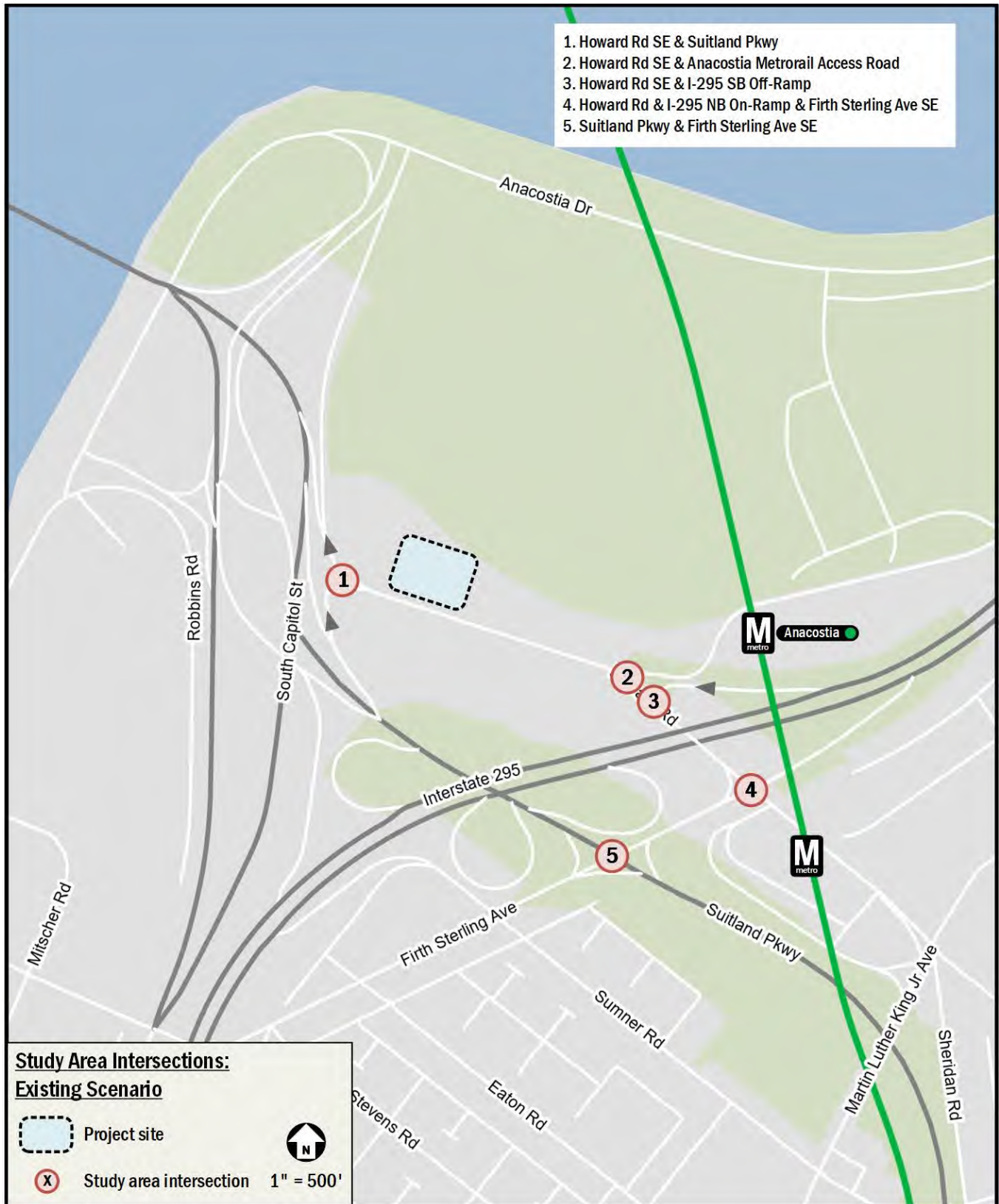


Figure 10: Study Area Intersections: Existing Scenario

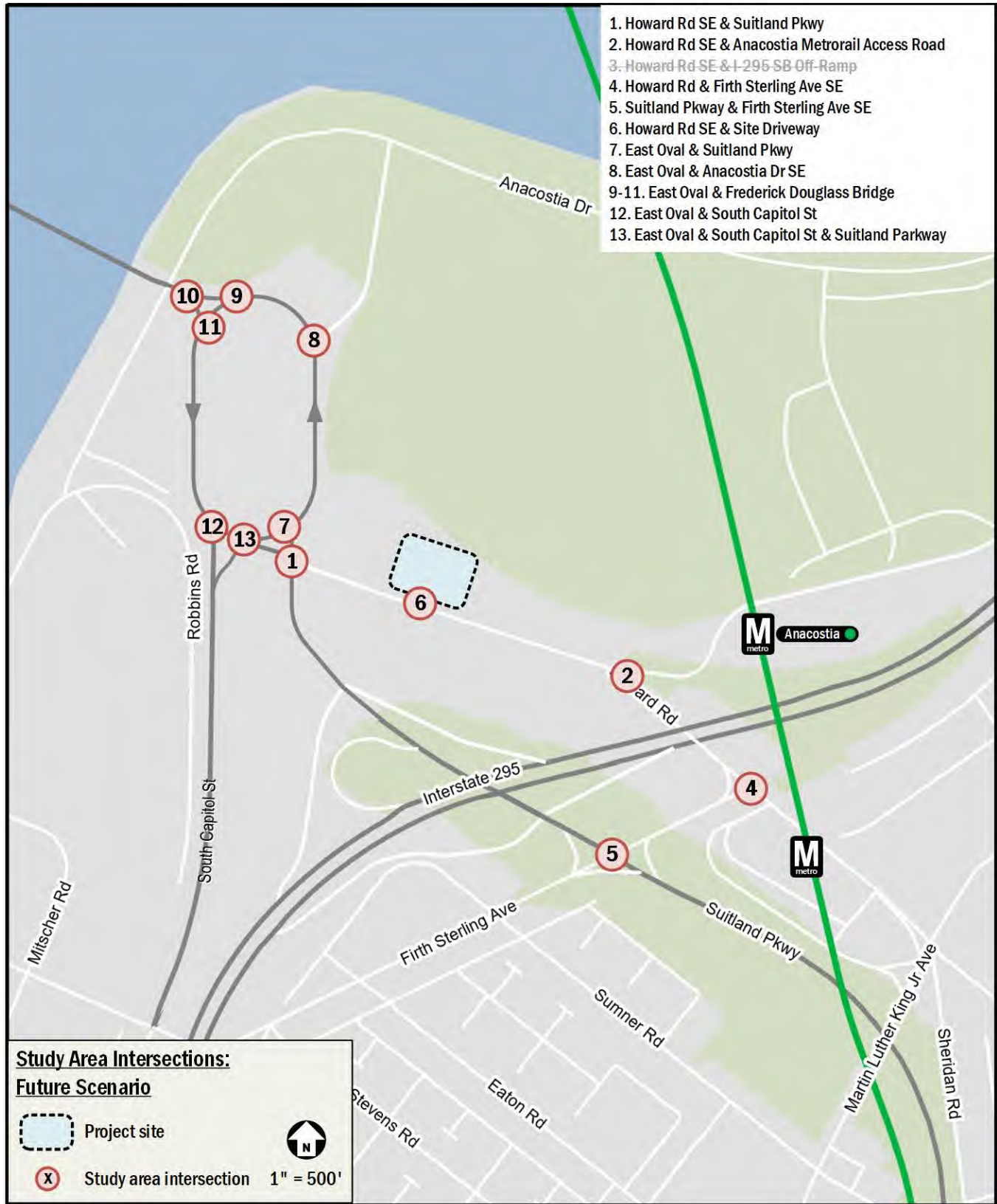


Figure 11: Study Area Intersections: Future Scenario

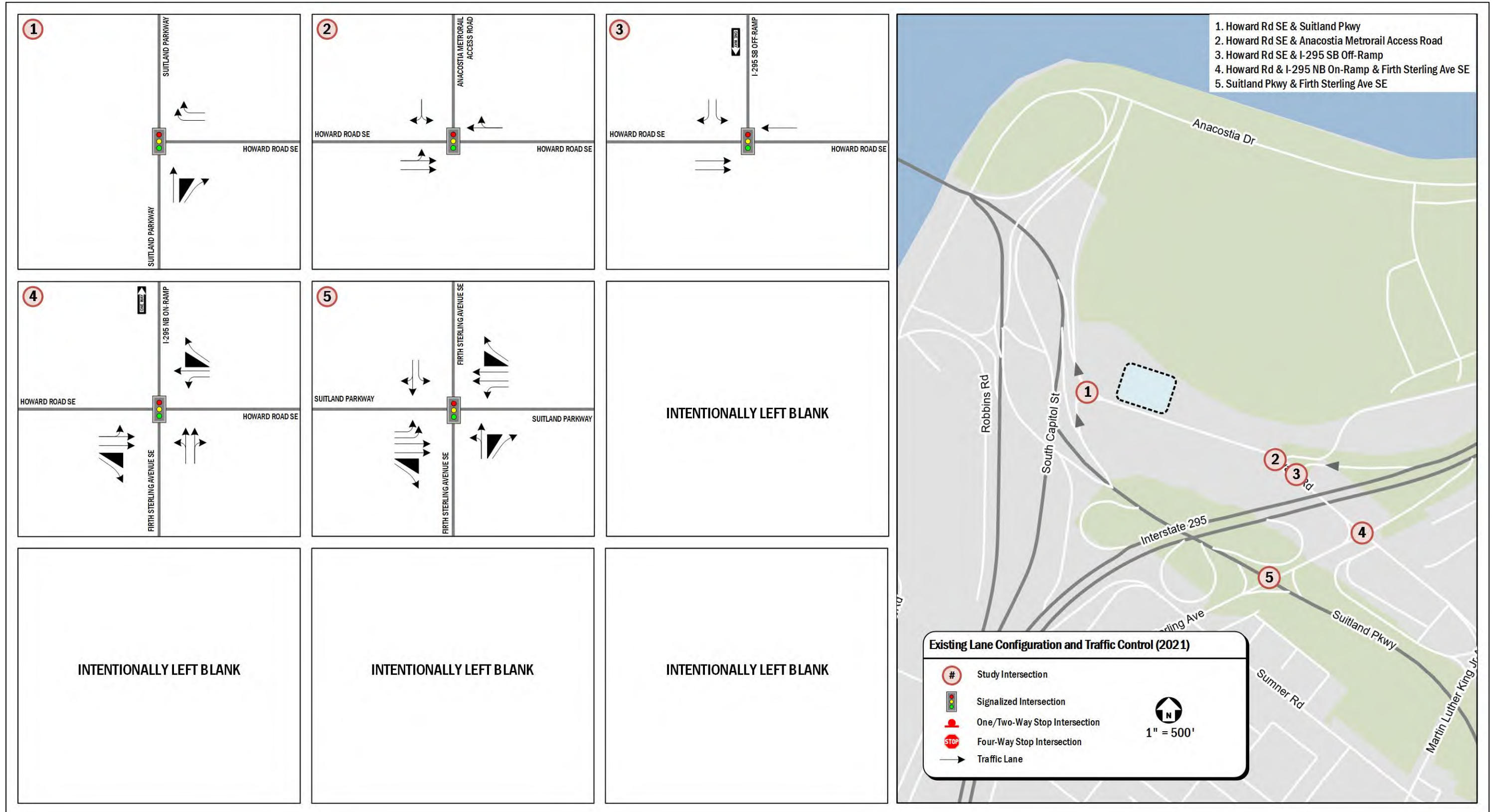


Figure 12: Existing Lane Configuration and Traffic Control

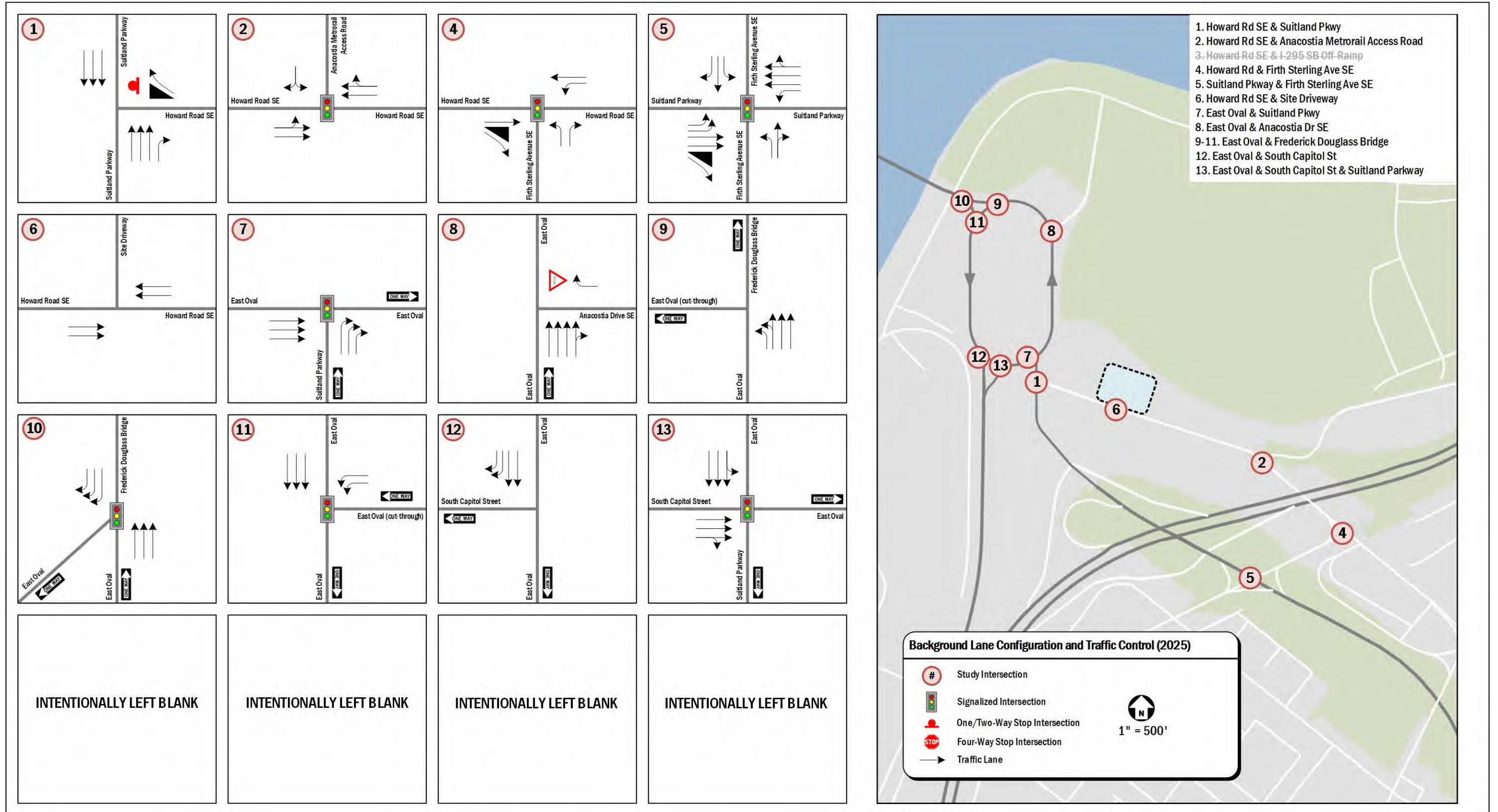


Figure 13: Background Lane Configuration and Traffic Control (2025)

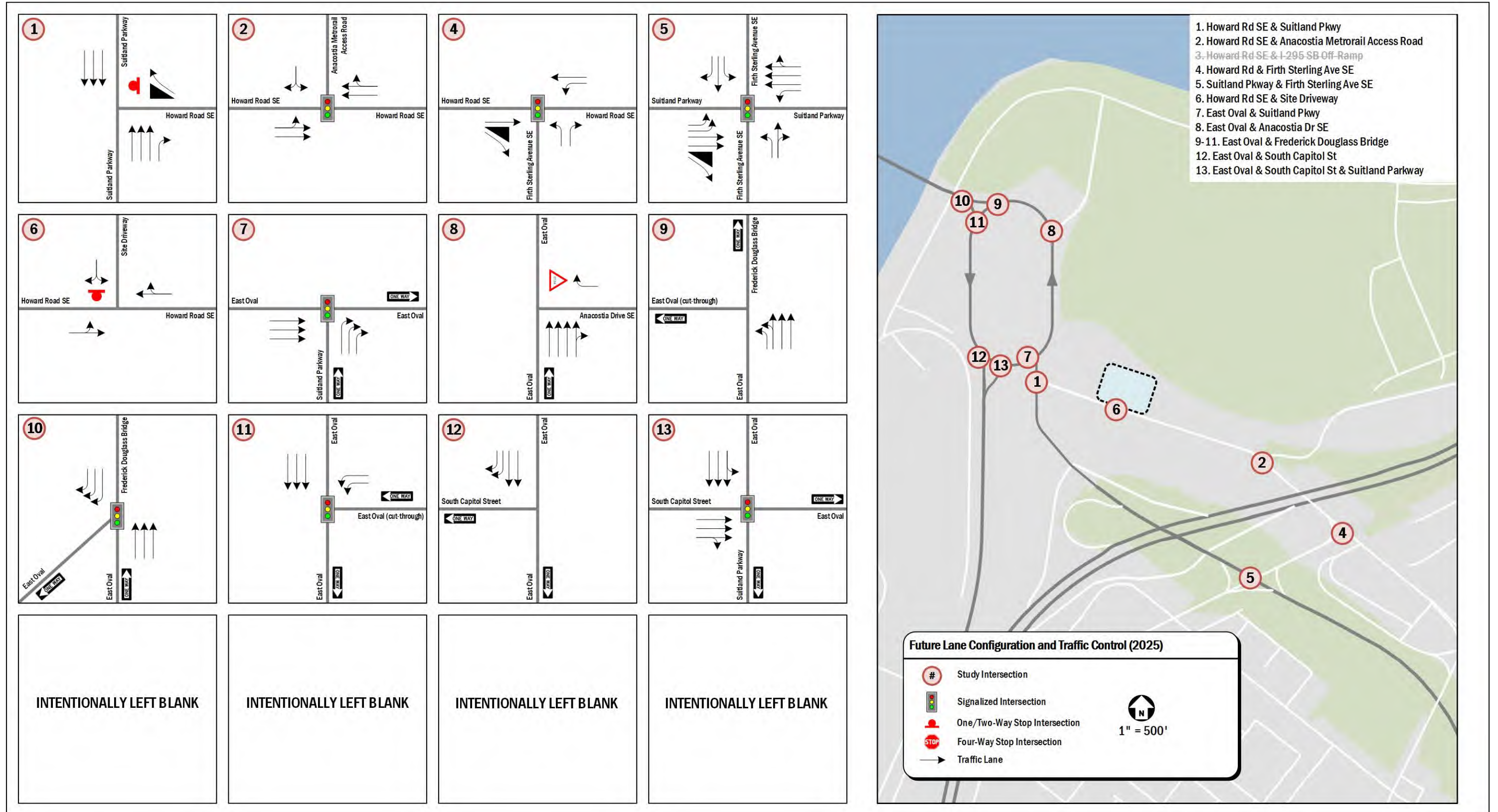


Figure 14: Future Lane Configuration and Traffic Control (2025)

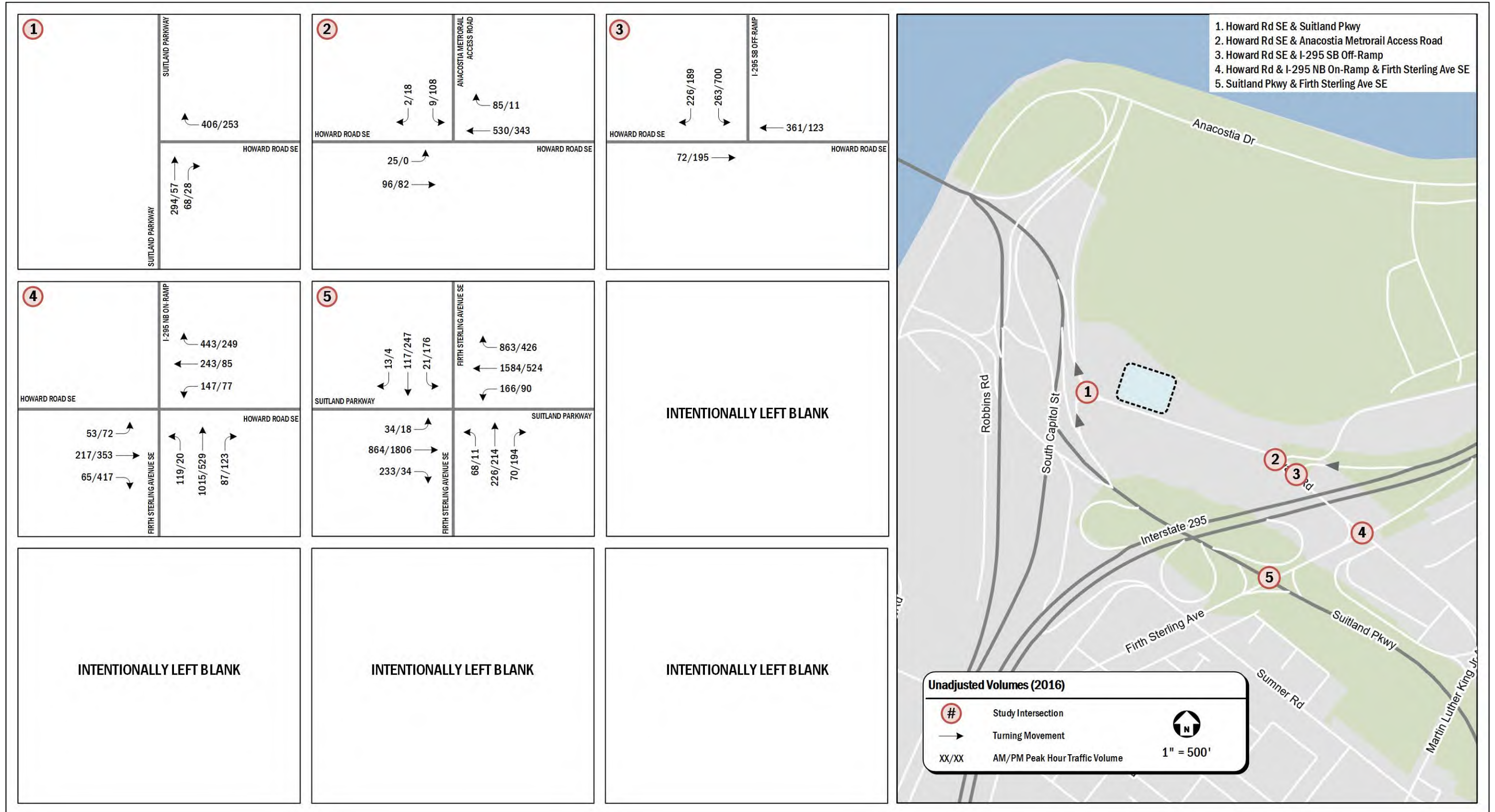


Figure 15: Unadjusted Volumes (2016)

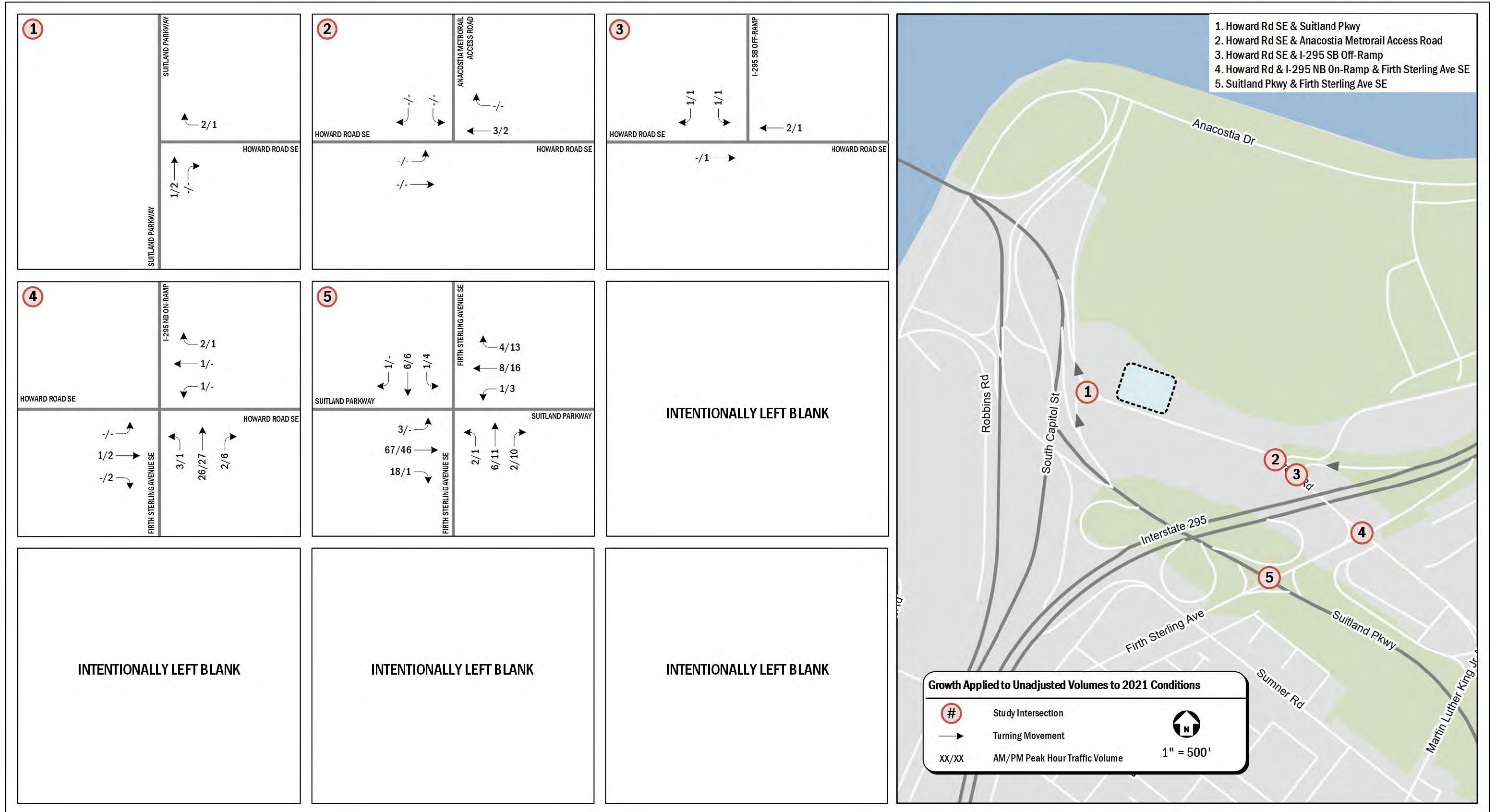


Figure 16: Growth Applied to Unadjusted Peak Hour Volumes to 2021 Conditions

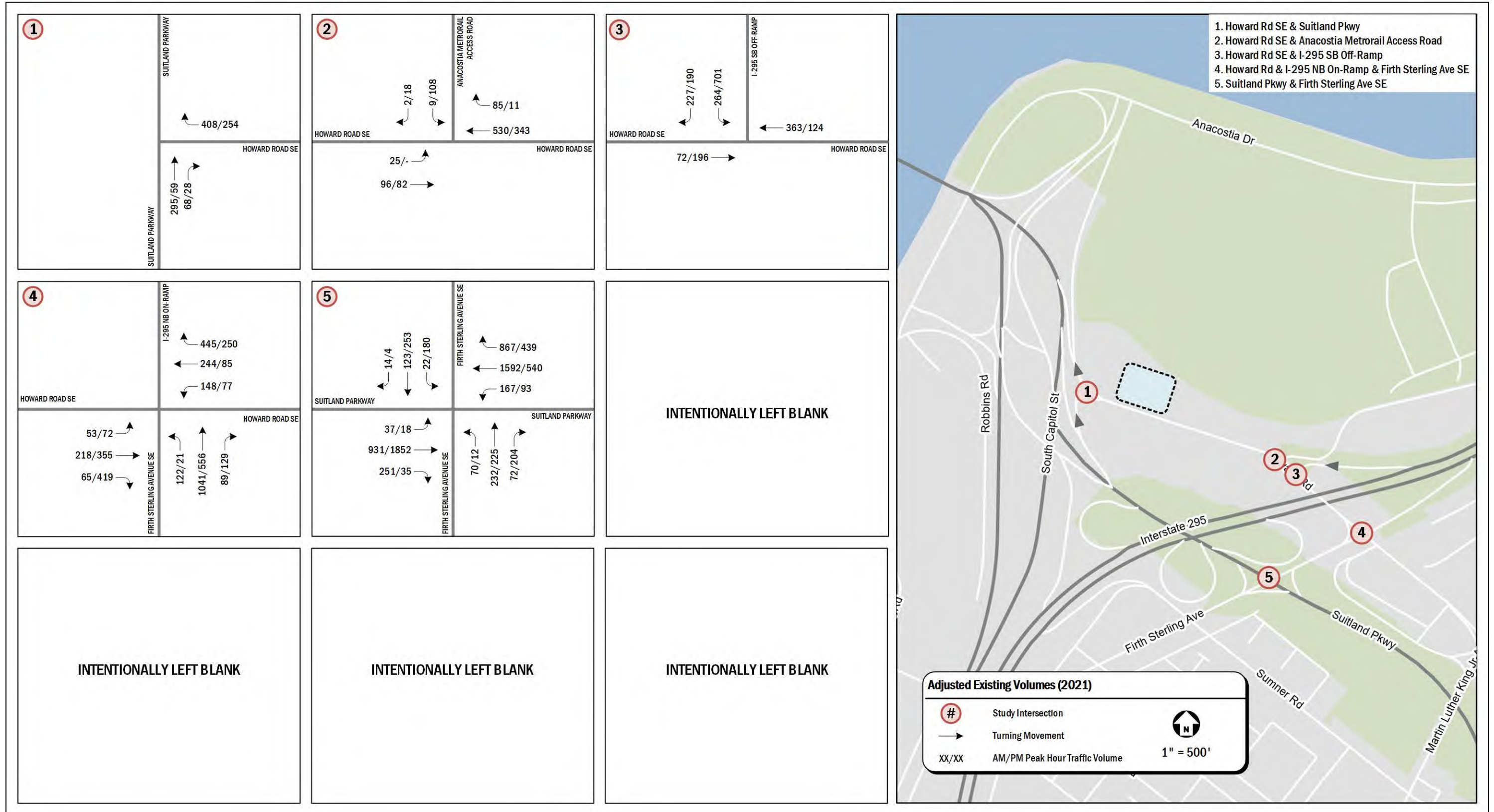


Figure 17: Adjusted Existing (2021) Peak Hour Volumes

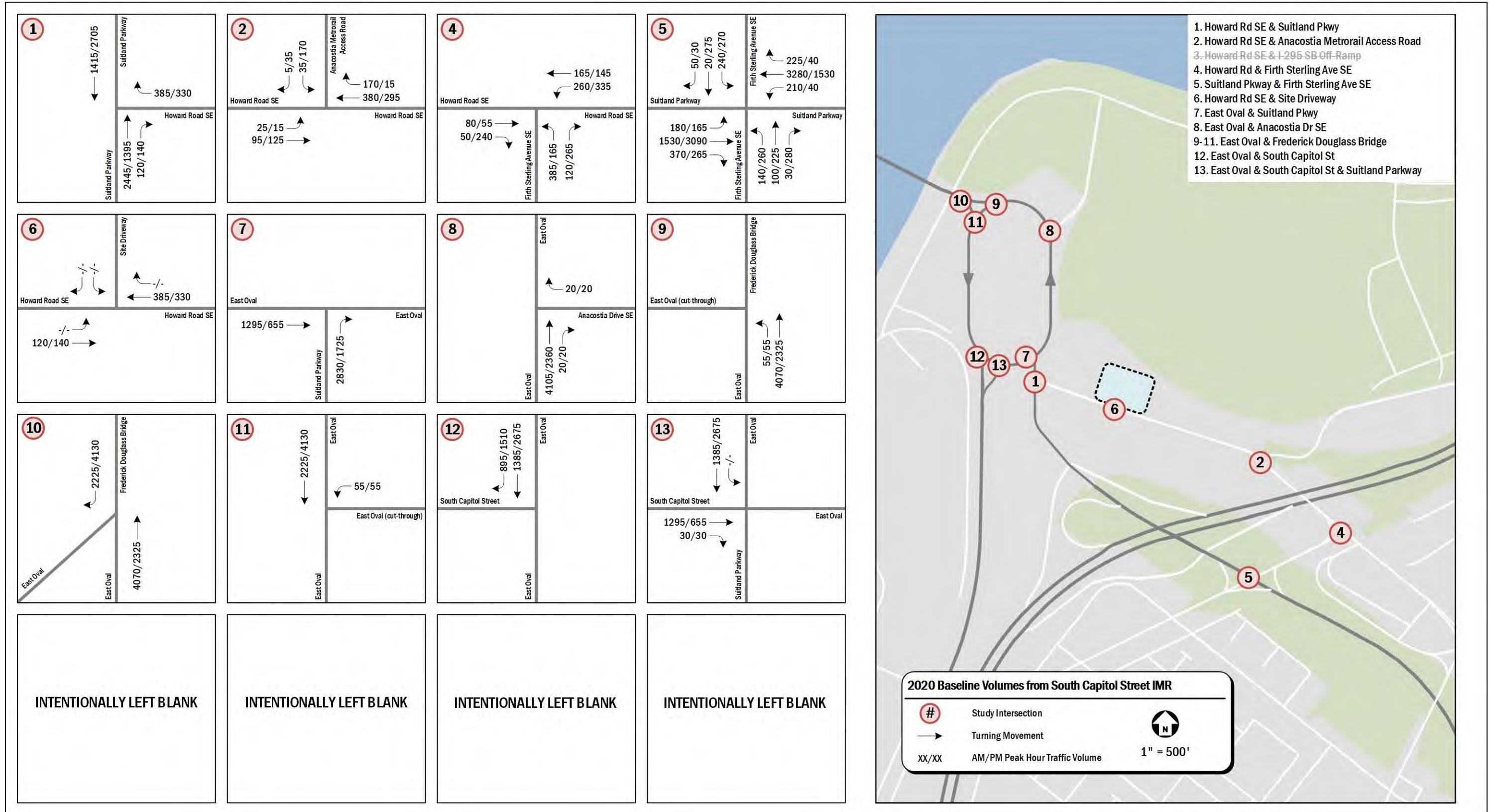


Figure 18: 2020 Baseline Volumes from South Capitol Street IMR

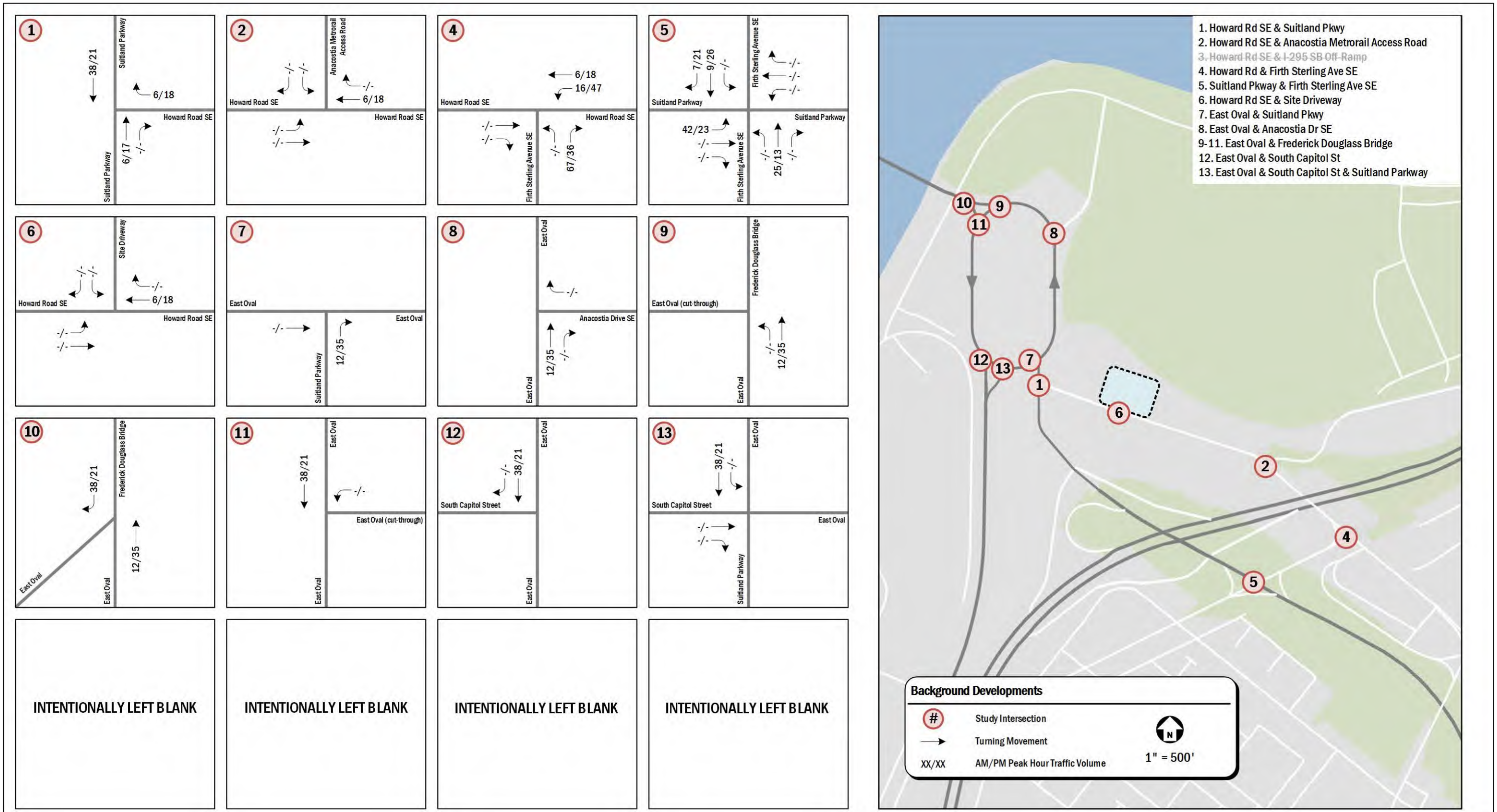


Figure 19: Background Developments Peak Hour Volumes

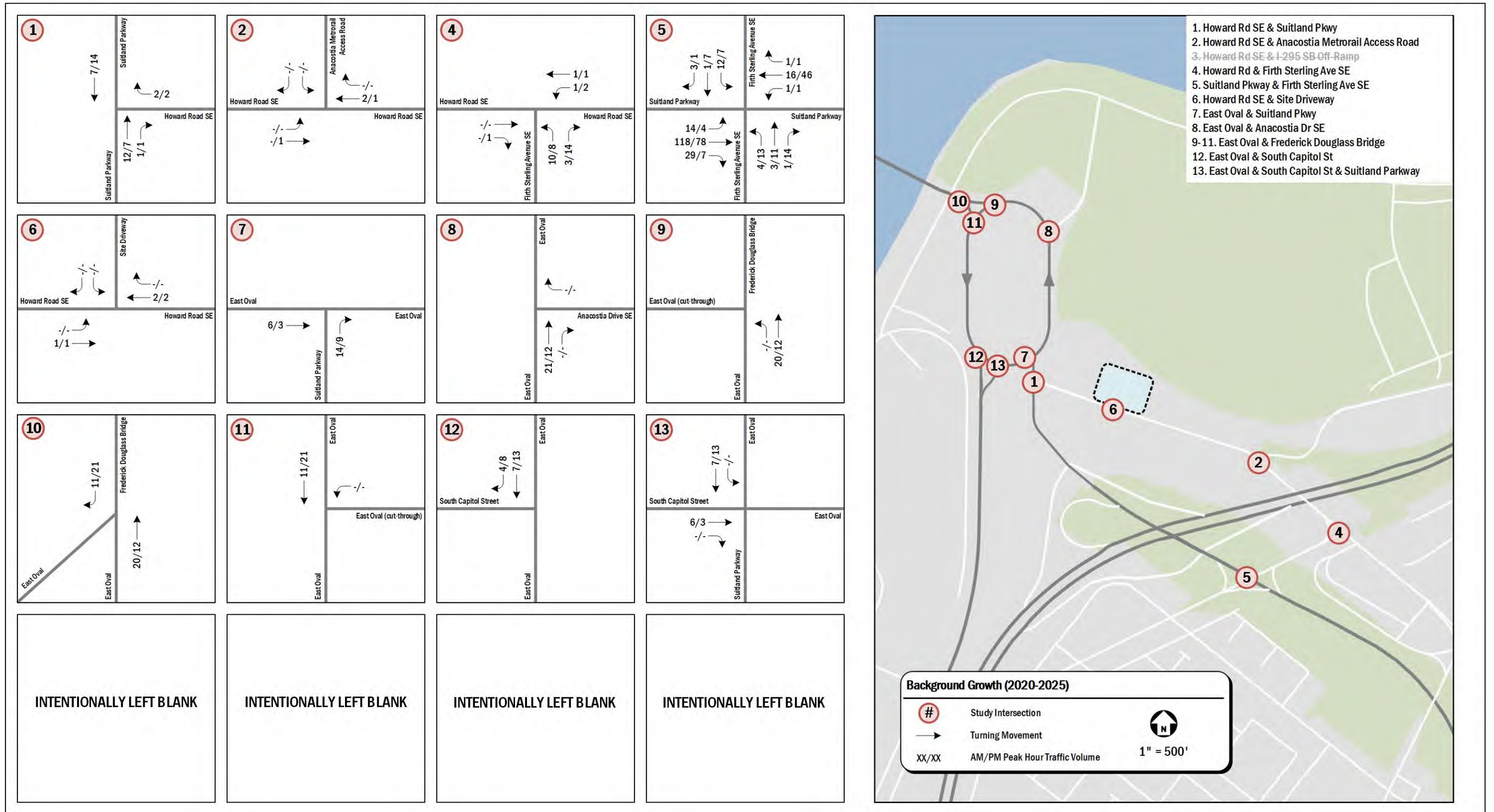


Figure 20: Background Growth (2020-2025)

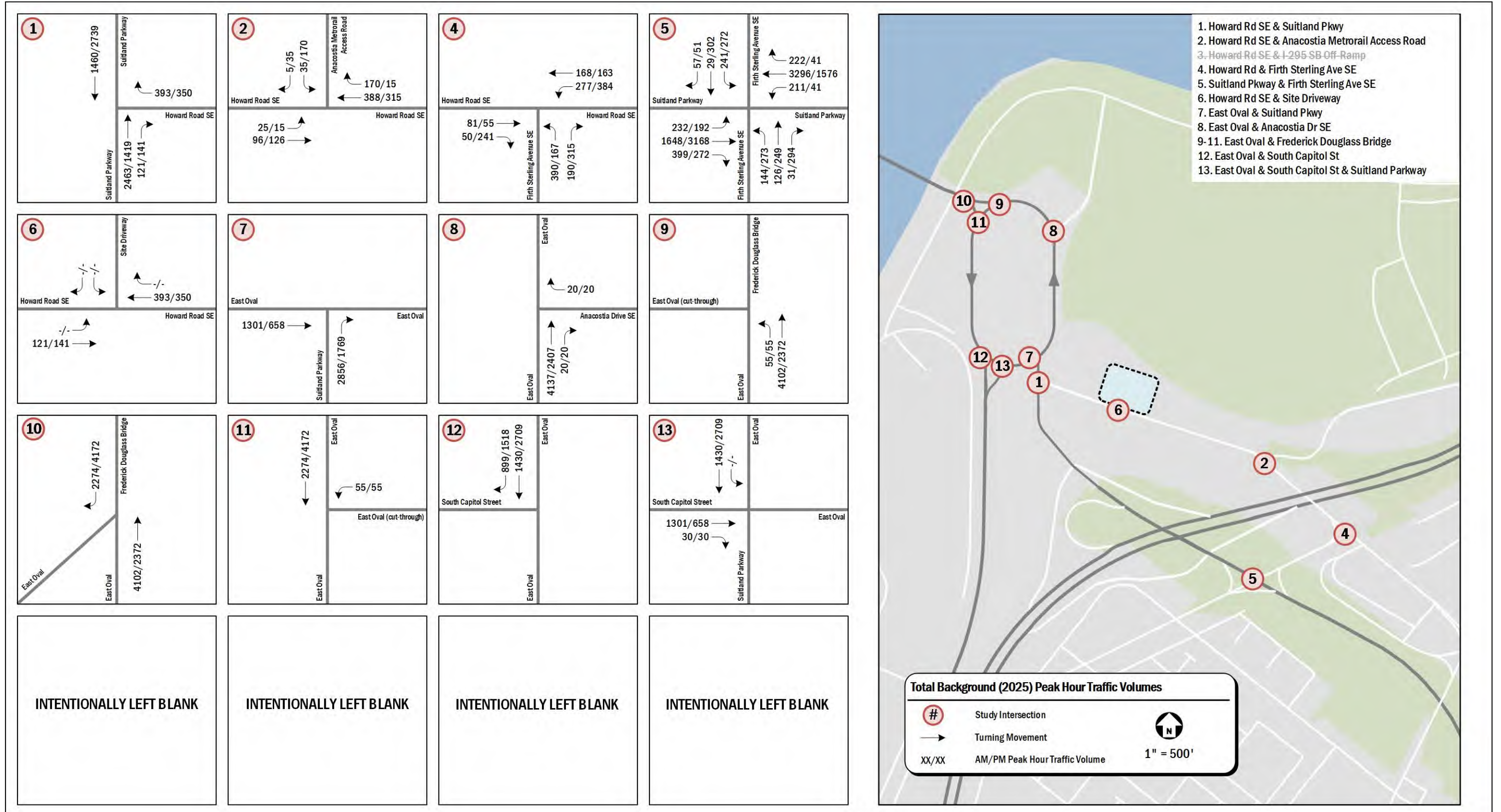


Figure 21: Total Background (2025) Peak Hour Traffic Volumes

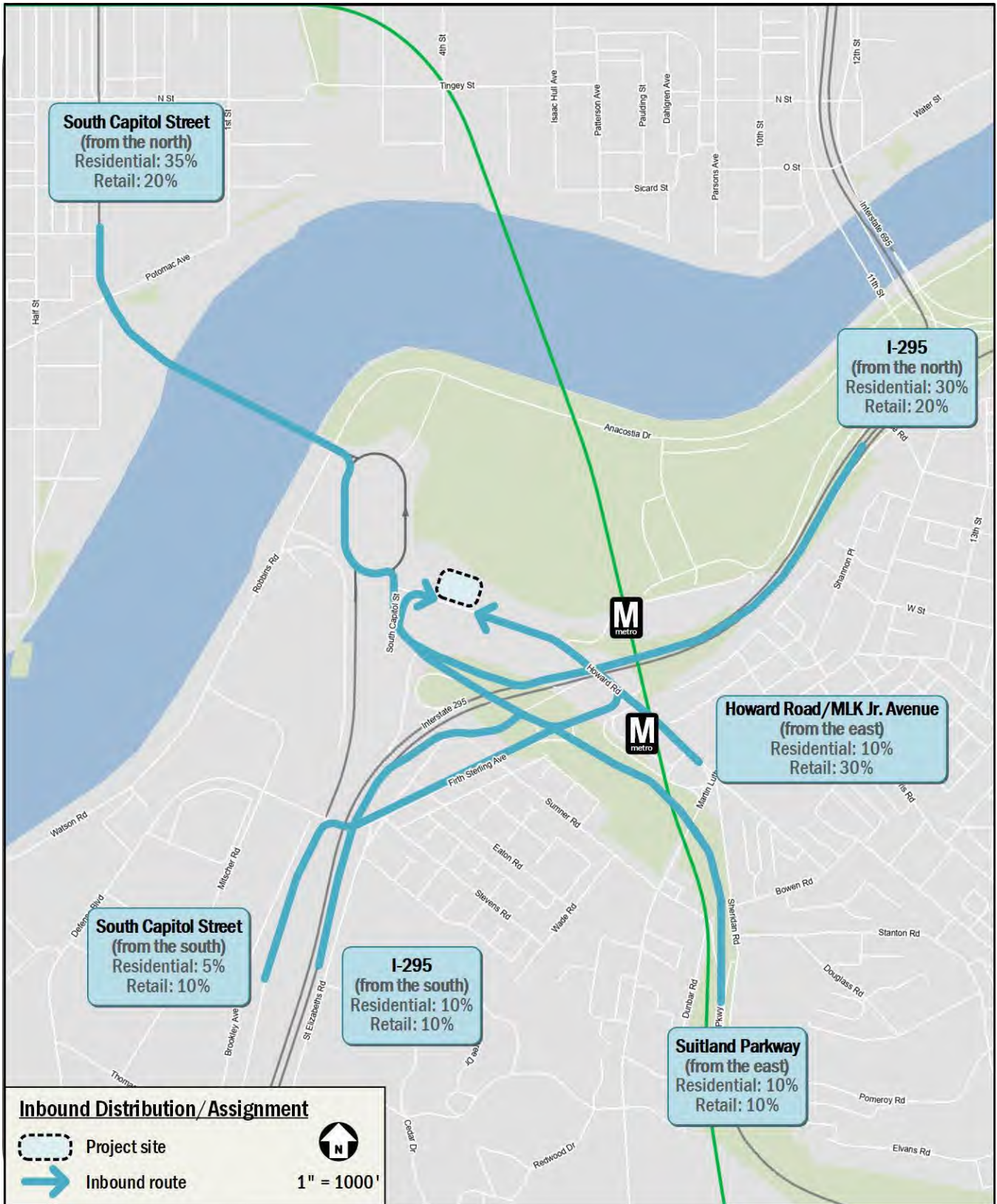


Figure 22: Inbound Distribution/Assignment

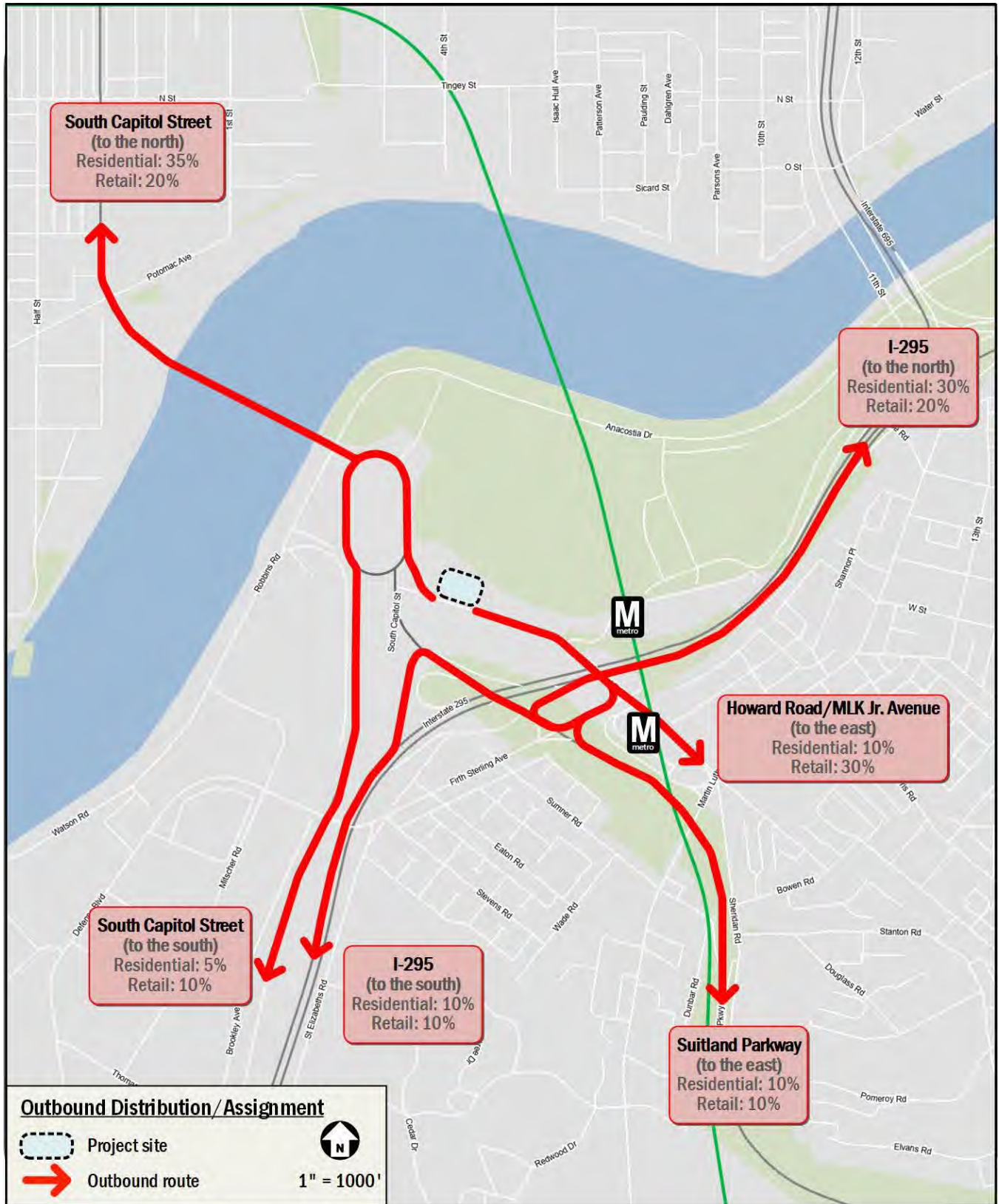


Figure 23: Outbound Distribution/Assignment

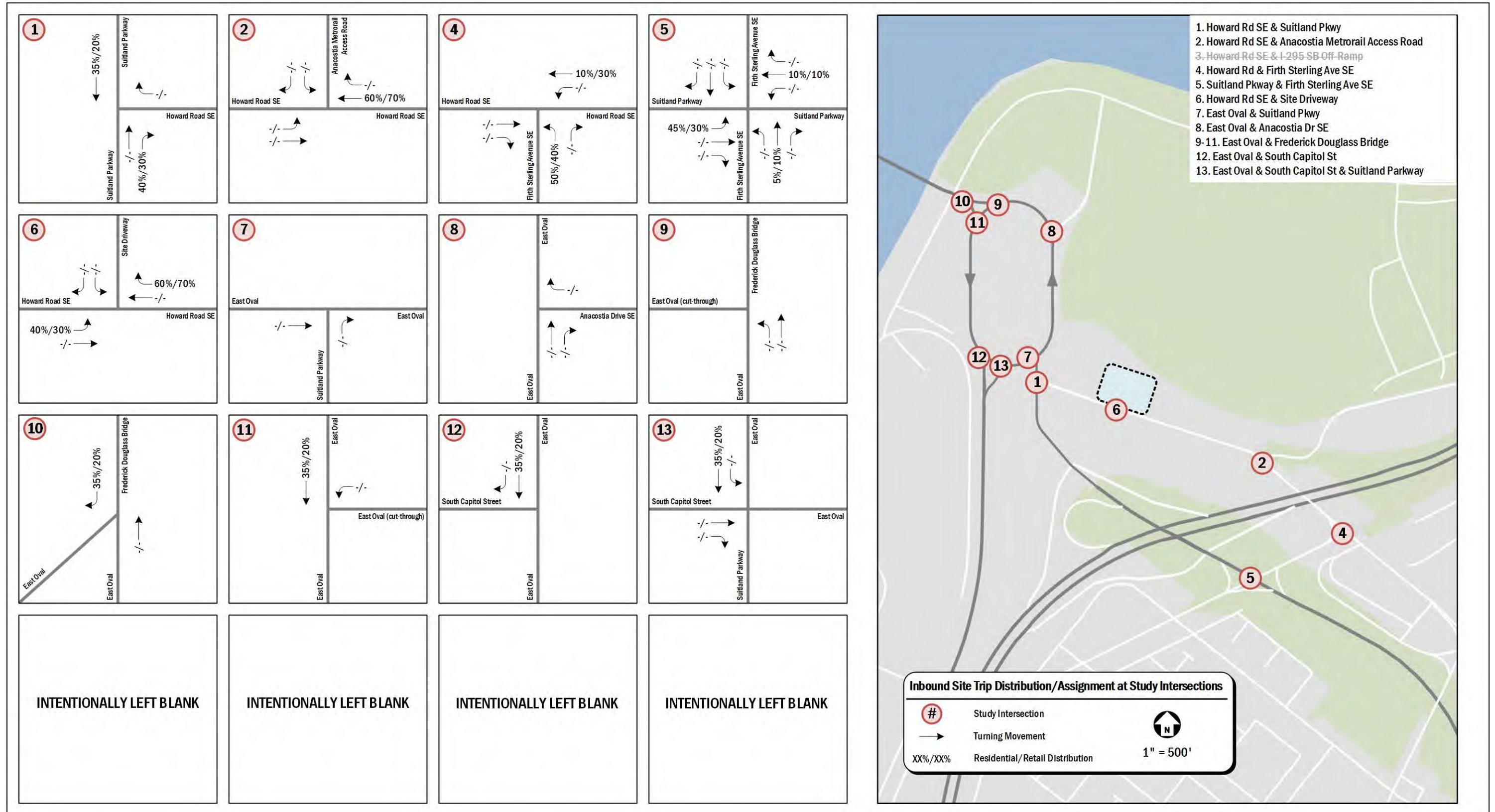


Figure 24: Inbound Site Trip Distribution/Assignment at Study Intersections

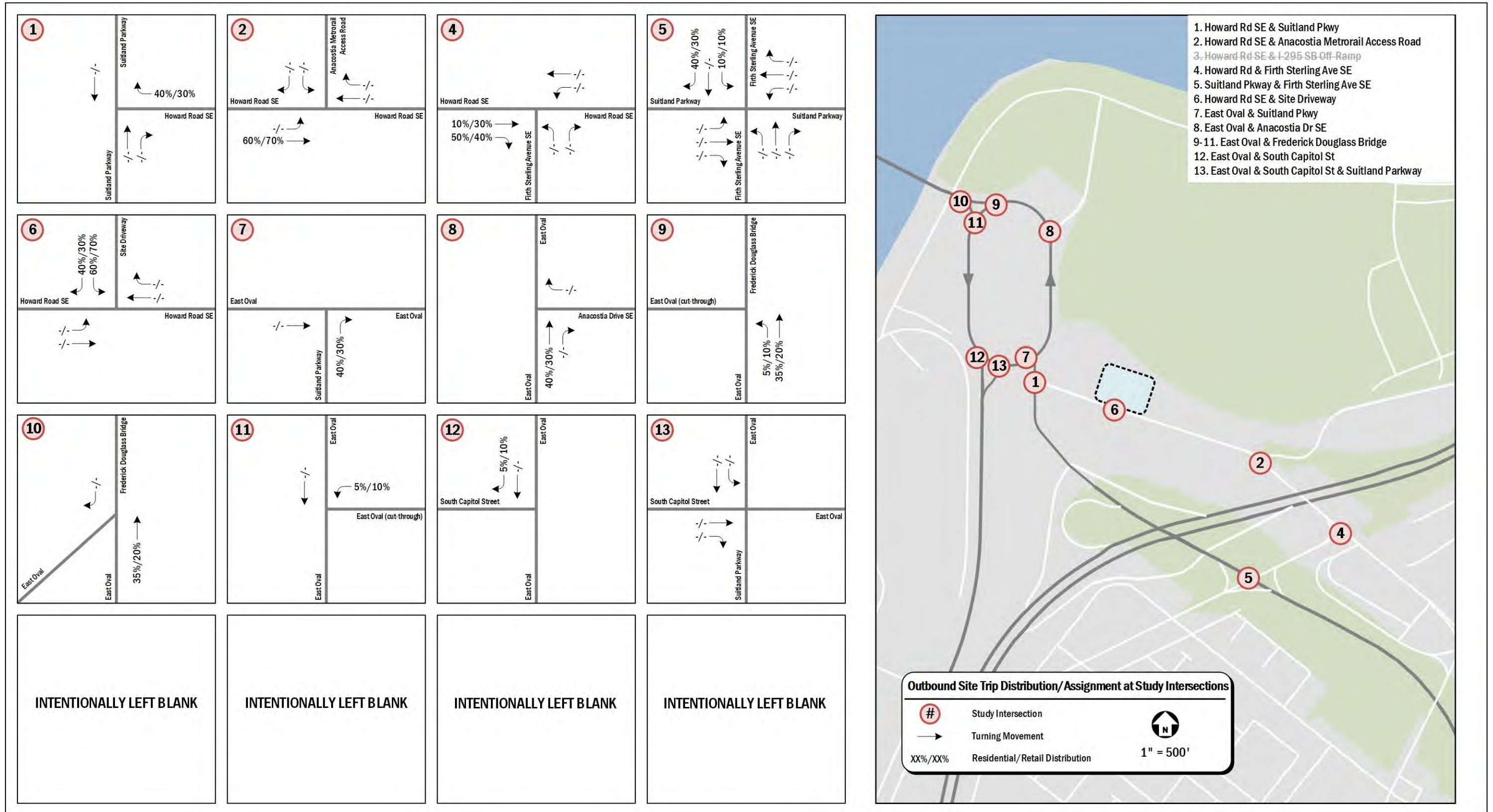


Figure 25: Outbound Trip Distribution/Assignment at Study Intersections

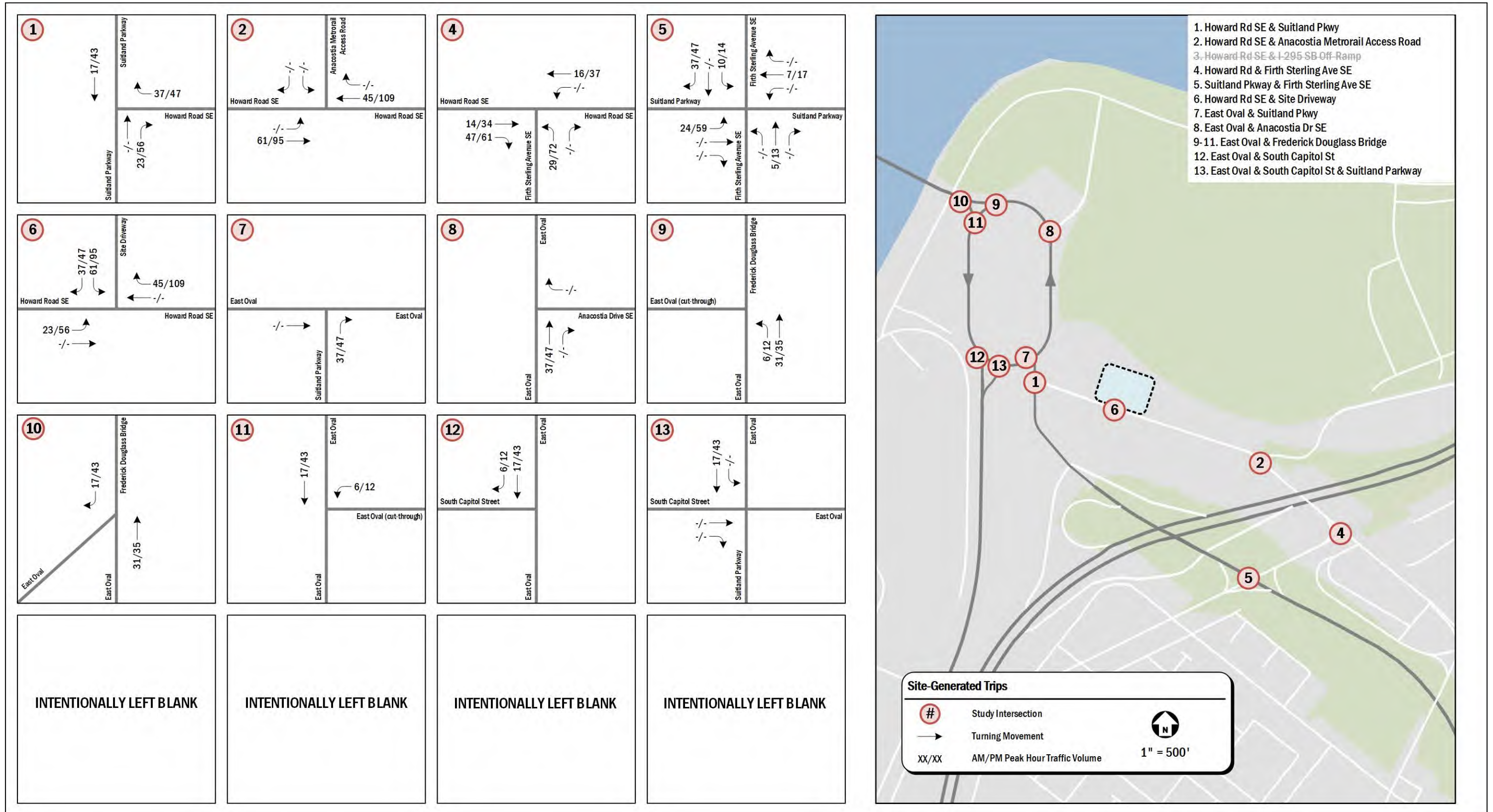


Figure 26: Site-Generated Trips

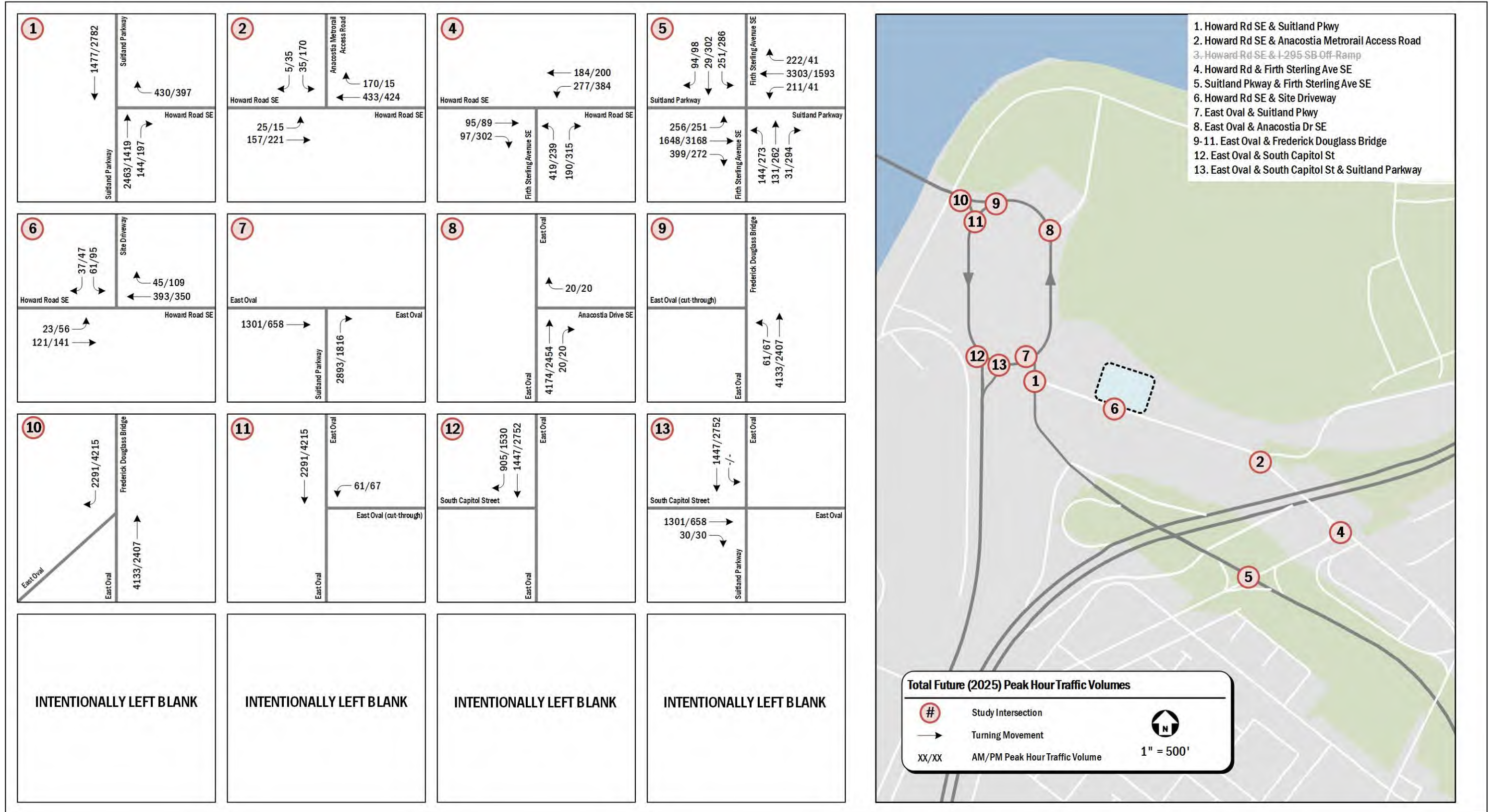


Figure 27: Total Future (2025) Peak Hour Traffic Volumes

Table 7: LOS Results

Intersection and Approach	Existing (2021)				Background (2025)				Future (2025)				Future (2025) with Mitigations					
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak			
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS		
1. Howard Road SE & Suitland Parkway																		
Overall	12.8	B	12.1	B	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Westbound	9.9	A	9.4	A	229.5	F	27.2	D	283.9	F	35.0	D	--	--	--	--	--	--
Northbound	15.9	B	19.8	B	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--	--	--
Southbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--	--	--
2. Howard Road SE & Anacostia Metrorail Access Road																		
Overall	3.8	A	11.9	B	3.0	A	14.5	B	2.9	A	12.2	B	--	--	--	--	--	--
Eastbound	15.4	B	22.0	C	1.3	A	2.6	A	1.4	A	2.9	A	--	--	--	--	--	--
Westbound	1.1	A	0.6	A	1.8	A	5.3	A	1.8	A	5.3	A	--	--	--	--	--	--
Southbound	24.6	C	36.8	D	26.4	C	37.4	D	26.4	C	37.4	D	--	--	--	--	--	--
3. Howard Road SE & I-295 SB Off-Ramp																		
Overall	17.0	B	38.8	D	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastbound	0.2	A	2.0	A	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Westbound	15.8	B	25.1	C	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Southbound	20.4	C	48.9	D	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4. Howard Road & Firth Sterling Avenue SE & I-295 NB On-Ramp																		
Overall	80.1	F	16.3	B	25.1	C	36.3	D	25.9	C	33.6	C	--	--	--	--	--	--
Eastbound	38.2	D	18.9	B	11.5	B	47.1	D	12.0	B	34.7	C	--	--	--	--	--	--
Westbound	171.1	F	25.1	C	25.1	C	18.5	B	24.9	C	18.0	B	--	--	--	--	--	--
Northbound	30.5	C	8.1	A	28.2	C	49.9	D	31.0	C	49.3	D	--	--	--	--	--	--
5. Suitland Parkway & Firth Sterling Avenue SE																		
Overall	37.0	D	63.0	E	245.3	F	335.8	F	245.9	F	334.4	F	--	--	--	--	--	--
Eastbound	27.3	C	61.4	E	86.5	F	415.8	F	86.7	F	406.7	F	--	--	--	--	--	--
Westbound	39.1	D	13.5	B	360.5	F	43.1	D	362.1	F	43.5	D	--	--	--	--	--	--
Northbound	61.6	E	110.8	F	64.8	E	506.6	F	65.3	E	522.9	F	--	--	--	--	--	--
Southbound	19.6	B	143.1	F	203.8	F	425.4	F	213.5	F	427.9	F	--	--	--	--	--	--
6. Howard Road SE & Site Driveway																		
Eastbound	--	--	--	--	0.0	A	0.0	A	1.5	A	2.8	A	--	--	--	--	--	--
Westbound	--	--	--	--	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--	--	--
Southbound	--	--	--	--	0.0	A	0.0	A	14.0	B	16.9	C	--	--	--	--	--	--
7. East Oval & Suitland Parkway																		
Overall	--	--	--	--	185.3	F	29.6	C	191.9	F	36.2	D	--	--	--	--	--	--
Eastbound	--	--	--	--	18.7	B	8.2	A	18.7	B	8.2	A	--	--	--	--	--	--
Northbound	--	--	--	--	261.2	F	37.6	D	269.8	F	46.3	D	--	--	--	--	--	--
8. East Oval & Anacostia Drive SE																		
Westbound	--	--	--	--	9.7	A	8.8	A	9.7	A	8.8	A	--	--	--	--	--	--
Northbound	--	--	--	--	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--	--	--
9. East Oval & Frederick Douglass Bridge NB																		
Northbound	--	--	--	--	0.2	A	0.2	A	0.2	A	0.3	A	--	--	--	--	--	--
10. Frederick Douglass Bridge & Pedestrian Crossing																		
Overall	--	--	--	--	15.6	B	159.9	F	18.0	B	163.6	F	--	--	--	--	--	--
Northbound	--	--	--	--	23.4	C	0.7	A	27.2	C	0.7	A	--	--	--	--	--	--
Southbound	--	--	--	--	1.5	A	250.4	F	1.6	A	256.6	F	--	--	--	--	--	--
11. East Oval & Frederick Douglass Bridge SB																		
Overall	--	--	--	--	7.0	A	80.3	F	9.2	A	107.8	F	--	--	100.5	F	--	--
Westbound	--	--	--	--	70.1	E	70.6	E	65.1	E	65.6	E	--	--	67.6	E	--	--
Southbound	--	--	--	--	5.5	A	80.4	F	7.7	A	108.5	F	--	--	101.1	F	--	--
12. East Oval & South Capitol Street																		
Southbound	--	--	--	--	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--	--	--
13. East Oval & South Capitol Street & Suitland Parkway																		
Overall	--	--	--	--	55.3	E	29.0	C	54.6	D	27.9	C	--	--	--	--	--	--

Intersection and Approach	Existing (2021)				Background (2025)				Future (2025)				Future (2025) with Mitigations			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Eastbound	--	--	--	--	97.1	F	71.2	E	97.1	F	71.2	E	--	--	--	--
Southbound	--	--	--	--	16.3	B	18.2	B	15.6	B	17.1	B	--	--	--	--

Table 8: v/c Comparison

Intersection and Movement	Existing (2021)		Background (2025)		Future (2025)		Future (2025) with Mitigations	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
	v/c	v/c	v/c	v/c	v/c	v/c	v/c	v/c
1. Howard Road SE & Suitland Parkway								
Westbound Right	0.29	0.14	1.39	0.71	1.52	0.81	--	--
Northbound TR	0.55	0.16	--	--	--	--	--	--
Northbound Thru	--	--	0.51	0.29	0.51	0.29	--	--
Northbound Right	--	--	0.07	0.09	0.09	0.12	--	--
Southbound Thru	--	--	0.30	0.57	0.30	0.57	--	--
2. Howard Road SE & Anacostia Metrorail Access Road								
Eastbound LT	0.17	0.12	0.06	0.07	0.08	0.12	--	--
Westbound TR	0.55	0.31	0.24	0.16	0.26	0.22	--	--
Southbound LR	0.06	0.54	0.17	0.68	0.17	0.68	--	--
3. Howard Road SE & I-295 SB Off-Ramp								
Eastbound Thru	0.04	0.15	--	--	--	--	--	--
Westbound Thru	0.60	0.33	--	--	--	--	--	--
Southbound Left	0.65	1.01	--	--	--	--	--	--
Southbound Right	0.63	0.31	--	--	--	--	--	--
4. Howard Road & Firth Sterling Avenue SE & I-295 NB On-Ramp								
Eastbound LT	1.16dl	0.53	--	--	--	--	--	--
Eastbound Thru	--	--	0.10	0.05	0.12	0.09	--	--
Eastbound Right	0.17	0.59	0.12	0.40	0.22	0.49	--	--
Westbound Left	0.61	0.35	0.78	0.81	0.78	0.82	--	--
Westbound TR	--	--	0.21	0.16	0.23	0.19	--	--
Westbound Thru	1.31	0.58	--	--	--	--	--	--
Northbound LTR	0.84	0.47	--	--	--	--	--	--
Northbound Left	--	--	0.75	0.52	0.81	0.74	--	--
Northbound Right	--	--	0.38	0.78	0.38	0.80	--	--
5. Suitland Parkway & Firth Sterling Avenue SE								
Eastbound Left	0.25	0.04	0.79	0.64	0.87	0.84	--	--
Eastbound Thru	0.67	1.02	1.16	2.00	1.16	2.00	--	--
Eastbound Right	0.33	0.04	0.46	0.28	0.46	0.28	--	--
Westbound Left	0.65	0.70	1.19	0.52	1.19	0.52	--	--
Westbound TR	--	--	1.72	0.80	1.72	0.81	--	--
Westbound Thru	0.97	0.28	--	--	--	--	--	--
Westbound Right	0.65	0.34	--	--	--	--	--	--
Northbound LT	0.91	1.03	--	--	--	--	--	--
Northbound Left	--	--	0.55	1.46	0.55	1.46	--	--
Northbound Thru/TR	--	--	0.63	2.08	0.64	2.12	--	--
Northbound Right	0.19	0.76	--	--	--	--	--	--
Southbound Left	0.13	1.36	1.33	2.41	1.41	2.53	--	--
Southbound Thru/TR	0.34	0.71	0.10	1.24	0.10	1.24	--	--
Southbound Right	--	--	0.29	0.22	0.47	0.27	--	--
6. Howard Road SE & Site Driveway								
Eastbound LT	--	--	0.05	0.06	0.02	0.06	--	--
Westbound TR	--	--	0.16	0.14	0.27	0.28	--	--
Southbound LR	--	--	0.00	0.00	0.21	0.33	--	--
7. East Oval & Suitland Parkway								
Eastbound Thru	--	--	1.06	0.62	1.06	0.62	--	--
Northbound Right	--	--	1.49	0.86	1.51	0.88	--	--
8. East Oval & Anacostia Drive SE								
Westbound Right	--	--	0.03	0.02	0.03	0.02	--	--
Northbound TR	--	--	0.73	0.43	0.74	0.43	--	--

Intersection and Movement	Existing (2021)		Background (2025)		Future (2025)		Future (2025) with Mitigations	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
	v/c	v/c	v/c	v/c	v/c	v/c	v/c	v/c
9. East Oval & Frederick Douglass Bridge NB								
Northbound Left	--	--	0.04	0.04	0.04	0.04	--	--
Northbound LT	--	--	1.02	0.59	1.02	0.60	--	--
10. Frederick Douglass Bridge & Pedestrian Crossing								
Northbound Thru	--	--	1.00	0.58	1.01	0.59	--	--
Southbound Right	--	--	0.74	1.35	0.74	1.37	--	--
11. East Oval & Frederick Douglass Bridge SB								
Westbound Left	--	--	0.16	0.17	0.16	0.19	--	0.19
Southbound Thru	--	--	0.61	1.12	0.65	1.19	--	1.19
12. East Oval & South Capitol Street								
Southbound Thru	--	--	0.44	0.84	0.45	0.85	--	--
Southbound Right	--	--	0.28	0.47	0.28	0.47	--	--
13. East Oval & South Capitol Street & Suitland Parkway								
Eastbound Thru	--	--	1.08	0.77	1.08	0.77	--	--
Southbound Left	--	--	0.53	0.94	0.53	0.96	--	--

Table 9: 50th and 95th Percentile Queueing Results (in feet)

Intersection and Lane Group	Storage Length (ft)	Existing (2021)				Background (2025)				Future (2025)				Future (2025) with Mitigations			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
1. Howard Road SE & Suitland Parkway																	
Westbound Right	1125	1	0	0	0	--	543	--	141	--	650	--	194	--	--	--	--
Northbound TR	915	93	166	25	59	--	--	--	--	--	--	--	--	--	--	--	--
Northbound Thru	1085	--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
Northbound Right	1085	--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
Southbound Thru	365	--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
2. Howard Road SE & Anacostia Metrorail Access Road																	
Eastbound LT	1125	24	45	16	30	0	10	10	m19	0	14	15	m29	--	--	--	--
Westbound TR	500	9	0	5	8	0	33	62	80	0	38	66	110	--	--	--	--
Southbound LR	265	3	15	66	119	12	36	107	164	12	36	107	164	--	--	--	--
3. Howard Road SE & I-295 SB Off-Ramp																	
Eastbound Thru	95	0	0	3	4	--	--	--	--	--	--	--	--	--	--	--	--
Westbound Thru	400	169	m149	57	79	--	--	--	--	--	--	--	--	--	--	--	--
Southbound Left	580	87	148	~427	#703	--	--	--	--	--	--	--	--	--	--	--	--
Southbound Right	580	74	131	67	125	--	--	--	--	--	--	--	--	--	--	--	--
4. Howard Road & Firth Sterling Avenue SE & I-295 NB On-Ramp																	
Eastbound LT	400	111	160	83	m84	--	--	--	--	--	--	--	--	--	--	--	--
Eastbound Thru	400	--	--	--	--	24	48	16	21	28	55	25	30	--	--	--	--
Eastbound Right	400	7	m30	24	m26	0	18	66	64	0	25	55	70	--	--	--	--
Westbound Left	320	99	182	33	75	130	#284	146	#365	130	#285	146	#366	--	--	--	--
Westbound TR	320	--	--	--	--	53	91	31	54	59	100	39	66	--	--	--	--
Westbound Thru	320	~715	#956	69	159	--	--	--	--	--	--	--	--	--	--	--	--
Northbound LTR	340	486	m587	68	m77	--	--	--	--	--	--	--	--	--	--	--	--
Northbound Left	450	--	--	--	--	352	m296	106	m95	389	m329	158	m137	--	--	--	--
Northbound Right	340	--	--	--	--	101	m104	150	m126	106	m104	174	m147	--	--	--	--
5. Suitland Parkway & Firth Sterling Avenue SE																	
Eastbound Left	195	6	13	3	7	149	m#199	117	m101	166	m#235	157	m120	--	--	--	--
Eastbound Thru	620	315	393	~1325	#1449	~1285	#1418	~3265	m#2542	~1285	#1419	~3256	m#2264	--	--	--	--
Eastbound Right	165	0	47	0	0	254	359	7	m5	256	362	7	m5	--	--	--	--
Westbound Left	420	62	#107	71	#152	~317	#505	52	101	~317	#505	52	101	--	--	--	--
Westbound TR	2700	--	--	--	--	~2390	#2418	619	681	~2397	#2425	629	693	--	--	--	--
Westbound Thru	2700	~767	#907	154	191	--	--	--	--	--	--	--	--	--	--	--	--
Westbound Right	330	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
Northbound LT	430	248	#434	~320	#515	--	--	--	--	--	--	--	--	--	--	--	--
Northbound Left	430	--	--	--	--	149	227	~423	#631	149	227	~423	#631	--	--	--	--
Northbound Thru/TR	430	--	--	--	--	176	268	~1052	#1304	182	275	~1086	#1338	--	--	--	--
Northbound Right	430	0	5	124	#248	--	--	--	--	--	--	--	--	--	--	--	--
Southbound Left	340	5	m13	~238	#410	~396	m#584	~522	m#703	~424	m#624	~561	m#746	--	--	--	--
Southbound Thru/TR	340	33	74	330	441	36	m51	~459	m#656	36	m53	~461	m#656	--	--	--	--
Southbound Right	340	--	--	--	--	0	m0	0	m0	0	m12	2	m5	--	--	--	--
6. Howard Road SE & Site Driveway																	
Eastbound LT	370	--	--	--	--	--	0	--	0	--	2	--	4	--	--	--	--
Westbound TR	180	--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
Southbound LR	80	--	--	--	--	--	0	--	0	--	19	--	36	--	--	--	--
7. East Oval & Suitland Parkway																	
Eastbound Thru	190	--	--	--	--	~611	m47	8	47	~611	m47	8	47	--	--	--	--
Northbound Right	270	--	--	--	--	~2141	m#1290	862	m1004	~2184	m#1287	971	m1049	--	--	--	--
8. East Oval & Anacostia Drive SE																	
Westbound Right	240	--	--	--	--	--	2	--	2	--	2	--	2	--	--	--	--
Northbound TR	300	--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
9. East Oval & Frederick Douglass Bridge NB																	

Intersection and Lane Group	Storage Length (ft)	Existing (2021)				Background (2025)				Future (2025)				Future (2025) with Mitigations			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
Northbound Left	170	--	--	--	--	--	3	--	3	--	3	--	3	--	--	--	--
Northbound LT	170	--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
10. Frederick Douglass Bridge & Pedestrian Crossing																	
Northbound Thru	270	--	--	--	--	53	m402	0	61	69	m400	0	62	--	--	--	--
Southbound Right	1550	--	--	--	--	0	0	~1225	#1225	0	0	~1274	#1271	--	--	--	--
11. East Oval & Frederick Douglass Bridge SB																	
Westbound Left	200	--	--	--	--	9	m3	34	m42	12	m6	42	m50	--	--	42	m50
Southbound Thru	230	--	--	--	--	345	371	~2259	m770	350	377	~2300	m770	--	--	~2300	m770
12. East Oval & South Capitol Street																	
Southbound Thru	460	--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
Southbound Right	460	--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
13. East Oval & South Capitol Street & Suitland Parkway																	
Eastbound Thru	1590	--	--	--	--	~675	#772	284	363	~675	#772	284	363	--	--	--	--
Southbound Left	100	--	--	--	--	181	200	842	m736	184	209	904	m664	--	--	--	--

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

Transit Facilities

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

This chapter concludes that:

- The site is well-served by existing transit;
- The development site is 0.3 miles from the Anacostia Metrorail station, and is served by several bus routes;
- The development site is surrounded by 14 Metrobus routes and one (1) DC Circulator route that travel along multiple primary corridors;
- Several planned transit projects will improve transit access to the site; and
- The project is expected to generate a manageable amount of transit trips that the existing transit service is capable of handling.

Existing Transit Service

The study area is well-served by Metrobus and has access to Metrorail. Combined, these transit services provide local and regional transit connections and link the site with major cultural, residential, employment, and commercial destinations throughout the region. Figure 28 identifies the major transit routes, stations, and stops in the study area.

The site is located 0.3 miles from the Anacostia Metro station, which is served by the Green Line. The Green Line travels south from Greenbelt, MD through Downtown DC to Suitland, MD while providing access to the District core. Connections can be made at the L'Enfant Plaza and Gallery Place-Chinatown Metrorail stations to access the other five (5) Metrorail lines, allowing additional access to points in Virginia and Maryland.

Under current operating conditions, Green Line trains run approximately every 12 to 20 minutes on weekdays. They run approximately every 15 to 20 minutes on the weekends.

The site is also serviced by 14 Metrobus routes and one (1) DC Circulator bus route along multiple primary corridors. These bus routes connect the site to many areas of the region, as well as several Metro stations serving all six (6) Metrorail lines which provide further connections to Virginia and Maryland. Table 10 shows a summary of the bus route information for the routes that serve the site, including service hours, headway, and distance to the nearest bus stop.

Table 11 shows WMATA's recommended amenities for each type of bus stop. Table 12 shows a detailed inventory of the amenities appearing at each of the existing bus stop within the transit study area.

DDOT Car Free Lanes for Buses and Bicycles

Peak-period, peak-direction car free lanes were recently added along Martin Luther King, Jr. Avenue SE between W Street SE and St. Elizabeth's East Campus. These car free lanes are accessible only to buses and bikes during the morning (7:00am – 9:30am) and evening (4:00pm – 6:30pm) peak periods. This car-free restriction is only in place in the peak direction of travel (northbound in the morning and southbound in the evening).

Planned Transit Service

MoveDC Transit Element

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 future 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 choices while improving the reliability of all transportation modes.

The transit element of *MoveDC* proposes the following transit service improvements near the proposed project:

- High-capacity transit along Martin Luther King Jr. Avenue SE and greater frequency of express bus service in the Anacostia neighborhood; and
- Streetcar service along Martin Luther King, Jr. Avenue, and Firth Sterling Avenue SE.

These improvements are proposed as part of the long-range plan, but not yet funded.

Site-Generated Transit Impacts

Transit Trip Generation

The proposed project is projected to generate 186 transit trips (64 inbound, 122 outbound) during the morning peak hour and 296 transit trips (166 inbound, 130 outbound) during the afternoon peak hour.

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

Table 10: Local Bus Route Information

Route Number	Route Name	Service Hours			Headway (minutes)	Walking Distance to Nearest Stop
		Weekdays	Saturdays	Sundays		
WMATA routes						
90	U Street-Garfield Line	4:29am-12:39am	4:27am-12:58am	4:32am-12:44am	12-30	0.4 mi (8 min)
A2	Anacostia-Washington Highlands Line	4:11am-12:10am	4:50am-12:10am	4:55am-12:08pm	10-30	0.4 mi (8 min)
A6, A7, A8	Anacostia-Livingston Line	4:10am-2:12am	3:55am-2:13am	4:05am-2:12am	3-10	0.4 mi (8 min)
A4	Anacostia-Fort Drum Line	4:48am-12:20am	5:40am-12:22am	5:36am-12:20am	10-30	0.4 mi (8 min)
B2	Bladensburg Road-Anacostia Line	4:25am-12:32am	4:27am-12:43am	5:16am-12:36am	10-30	0.4 mi (8 min)
P6	Anacostia-Eckington Line	4:10am-2:09am	4:04am-2:08am	4:15am-2:09am	15-35	0.4 mi (8 min)
V2	Capitol Heights-Minnesota Avenue Line	5:36am-2:12am	5:48am-2:16am	-	15-35	0.4 mi (8 min)
W2, W3	United Medical Center-Anacostia Line	5:48am-2:12am	6:10am-2:10am	6:10am-2:10am	30-40	0.4 mi (8 min)
W5 ¹	Anacostia-Blue Plains Line	6:04am-6:22pm	-	-	20	0.4 mi (8 min)
W6, W8	Garfield-Anacostia Loop Line	6:00am-12:37am	6:00am-12:31am	6:00am-12:31am	30-40	0.4 mi (8 min)
DDOT routes						
CH-US	Congress Heights-Union Station	6:00am-9:00pm	7:00am-9:00pm	7:00am-9:00pm	10	0.4 mi (8 min)

¹Peak hour, peak direction only

Table 11: WMATA Recommended Bus Stop Amenities

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

Source: 2019 WMATA Bus Stop Amenity Reference Guide

Table 12: Bus Stop Inventory

Location	Stop ID	Routes Served	Amenities								
			Bus stop flag	Route map & schedule	Landing pad	Side walk	Bench	Shelter	Dynamic info sign	Lighting	Trash Bin
South Capitol St + Firth Sterling Ave (SB)	1003319	W4, W5	●			●					
South Capitol St + Firth Sterling Ave (NB)	1000331	W4, W5	●	●		●					
Firth Sterling Ave + Sumner Rd SE (EB)	1000348	A4, W4, W5	●	●		●				●	
Firth Sterling Ave + Sumner Rd SE (WB)	1000349	A4, W4, W5	●	●	●	●				●	
Anacostia Station + Bus Bay A	1003216	V2	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay B	1002953	B2	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay C	1002952	P6	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay D	1003359	W4	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay E	1000351	90	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay G	1003273	A4, W5	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay H	1003348	A2, A33	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay J	1003350	A6, A7	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay K	1003071	A8	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay L	1000365	A4, W5	●	●	●	●	●	●	●	●	●
Anacostia Station + Bus Bay M	1003318	W6, W8	●	●	●	●	●	●	●	●	●
Howard Rd SE + East Entrance to Anacostia Station (EB)	1000362	W2, W3	●	●	●	●	●	●	●	●	●
Howard Rd SE + East Entrance to Anacostia Station (WB)	1000363	W2, W3	●		●	●				●	●
Sheridan Rd + Martin Luther King Jr. Ave SE (SB)	1002962	W8	●			●					●
Sheridan Rd + Martin Luther King Jr. Ave SE (NB)	1000338	A33	●			●					●
Martin Luther King Jr Ave + Howard Rd SE (SB)	1000355	90, B2, W2, P6, W8, V2, W3	●	●	●	●					●
Martin Luther King Jr Ave + Howard Rd SE (NB)	1000354	90, B2, W2, P6, W6, V2, W3	●	●	●	●	●			●	●
Martin Luther King Jr Ave + Talbert St SE (SB)	1000372	90, B2, W2, P6, W8, V2, W3	●		●	●				●	●

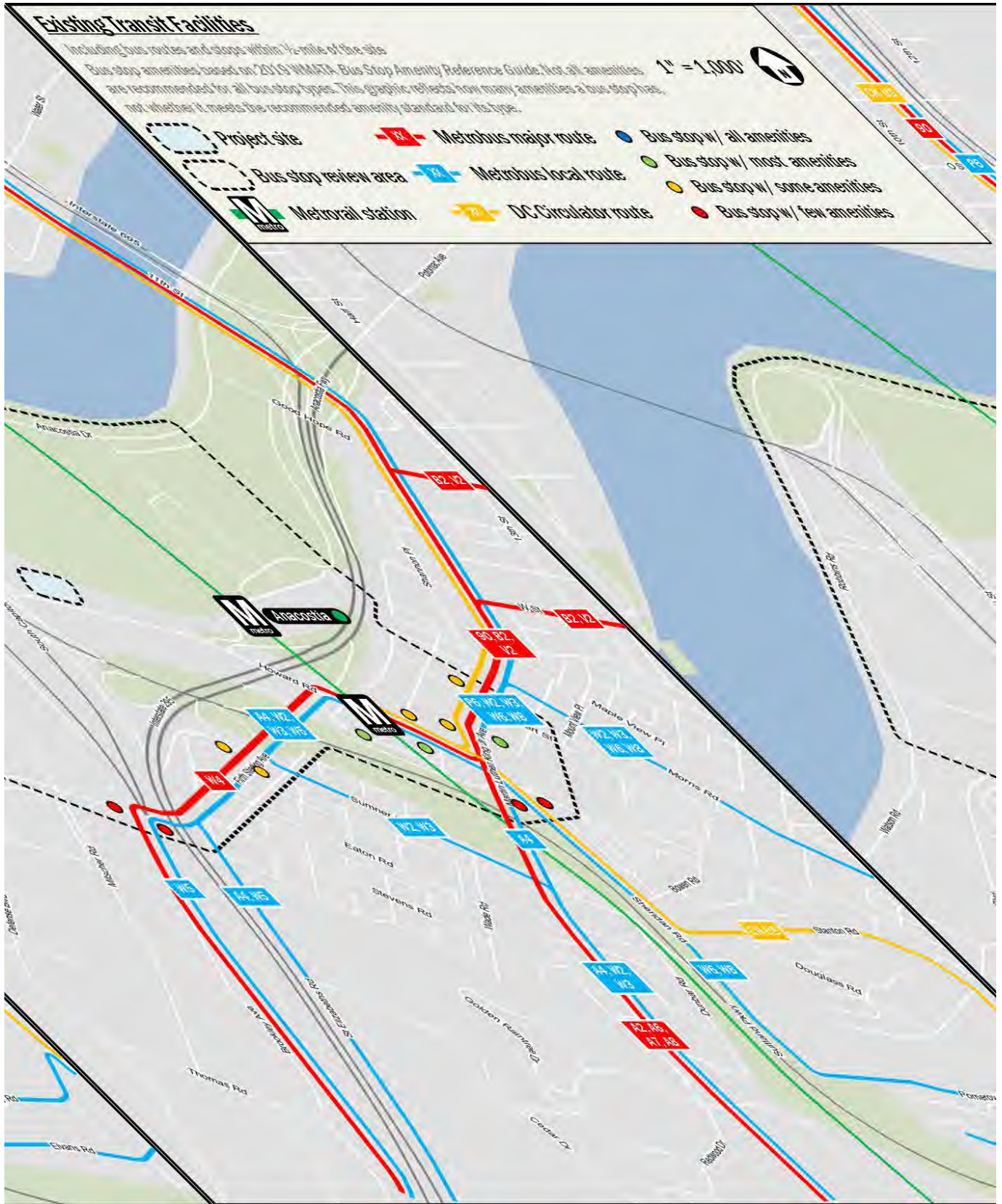


Figure 28: Existing Transit Facilities

Pedestrian Facilities

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

The following conclusions are reached within this chapter:

- The current pedestrian network surrounding the site only allows access to major destinations and many roads lack sidewalks;
- There are no barriers which block pedestrian pathways to nearby attractions; and,
- The project is expected to generate pedestrian trips to origins and destinations nearby, in addition to pedestrian trips generated by walking to and from transit stops. The pedestrian facilities surrounding the project can accommodate these new trips.

Pedestrian Study Area

Pedestrian facilities within a quarter-mile of the site were evaluated, as well as walking routes to major destinations including the Anacostia Metro station. Most roads within the study area currently lack sidewalks, and of the existing ones, many do not meet standards. However, future planned sidewalks within the area will improve overall access and improve the quality and attractiveness of the walking environment within the study area. Figure 29 shows suggested pedestrian pathways, walking time, and distances.

Pedestrian Infrastructure

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

Existing Conditions

Overall, the pedestrian facilities within the study area provide a fair amount of connectivity to major local destinations. A summary of pedestrian facilities within the study area is shown on Figure 30. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by DDOT's *Design and Engineering Manual (2019)* in addition to Americans with Disabilities Act (ADA) standards. These facilities are shown within their respective land use types based on DC's Zoning Regulations of 2016, which determines which of DDOT's sidewalk width requirements apply to them. These sidewalk width requirements are shown in Table 13.

The study area contains only one street type, high density residential/light commercial, as described in Table 13. Roughly

half of the sidewalks surrounding the site do not comply with DDOT standards, which regulate the quality and attractiveness of walking, although most of the curb ramps do comply.

Due to the undeveloped character of the site's surroundings, there are few pedestrian facilities and street connections nearby. The site's proximity to the Anacostia River, Anacostia Park, and the I-295/Suitland Parkway interchange result in very few destinations within walking distance. Sidewalks on both sides of Howard Road connect the site to the Anacostia Metrorail station and commercial destinations along Martin Luther King, Jr. Avenue, and most streets connecting to destinations within the study area have a sidewalk on at least one side. However, the lack of street connections and the presence of freeways and interchanges surrounding the site do not provide for an ideal pedestrian environment. Many streets are also missing sidewalks and/or curb ramps, which may discourage walking.

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 are not desired but where they are present, a 48" clear space is required outside active vehicle traffic lanes and within marked crossings. As shown in Figure 30, nearly all existing curb ramps near the site meet ADA standards, but some signalized intersections lack a crosswalk on at least one side.

Pedestrian Infrastructure Improvements

As part of the South Capitol Street Corridor Project, a new traffic oval with a cycle track around its perimeter will be constructed on the east side of the Frederick Douglass Memorial Bridge. Sidewalks will be constructed on the inside and outside of the oval with connections to all adjacent streets. This project will also include multi-use paths, wider sidewalks, and crossing improvements along Suitland Parkway and Firth Sterling Avenue SE and will provide a safer and more attractive environment for bicyclists and pedestrians. A summary of future pedestrian facilities is shown in

Figure 31.

Site-Generated Pedestrian Impacts

On-site Pedestrian Infrastructure

At a future phase, a bicycle and pedestrian promenade will be constructed linking the forthcoming South Capitol Street East

Oval to the Anacostia Metrorail Station. This promenade will provide a comfortable walking route between the site, the Metrorail station, and points west of the Anacostia River. Sidewalks will also be rebuilt around the site’s entire street frontage to meet DDOT standards.

Pedestrian Trip Generation

The proposed project is projected to generate 35 pedestrian trips (20 inbound, 15 outbound) during the morning peak hour and 85 pedestrian trips (43 inbound, 42 outbound) during the afternoon peak hour.

The origins and destinations of pedestrian trips are likely to be:

- Retail locations outside of the site; and
- Neighborhood destinations such as schools, recreation centers, and parking in the vicinity of the site.

In addition to these trips, the transit trips generated by the site will also generate pedestrian demand between the site and nearby bus stops and Metrorail. It is expected that the existing and future pedestrian facilities can accommodate these new site-generated trips.

Table 13: DDOT Sidewalk Width Requirements

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

Source: DDOT *Design and Engineering Manual*

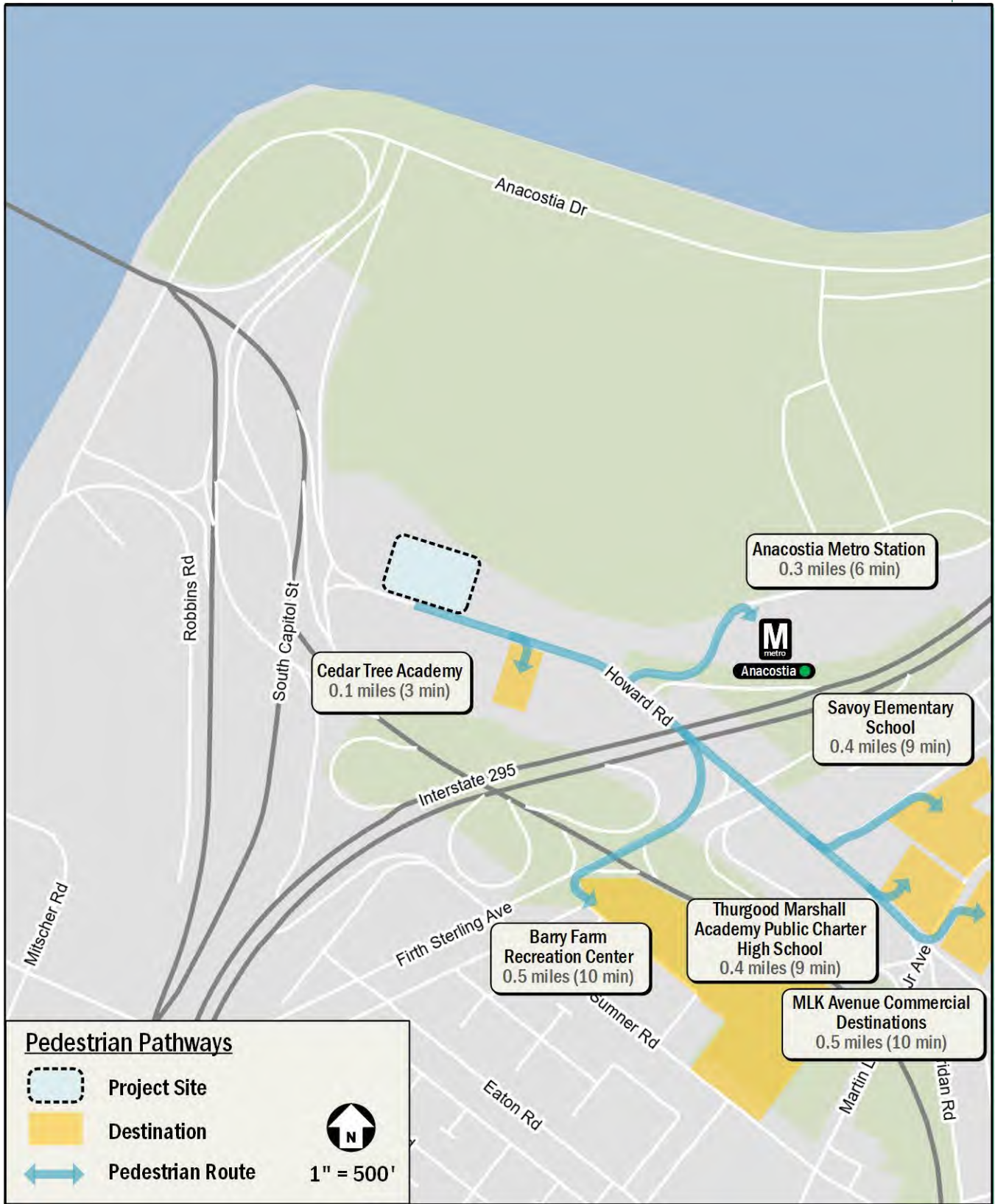


Figure 29: Pedestrian Pathways

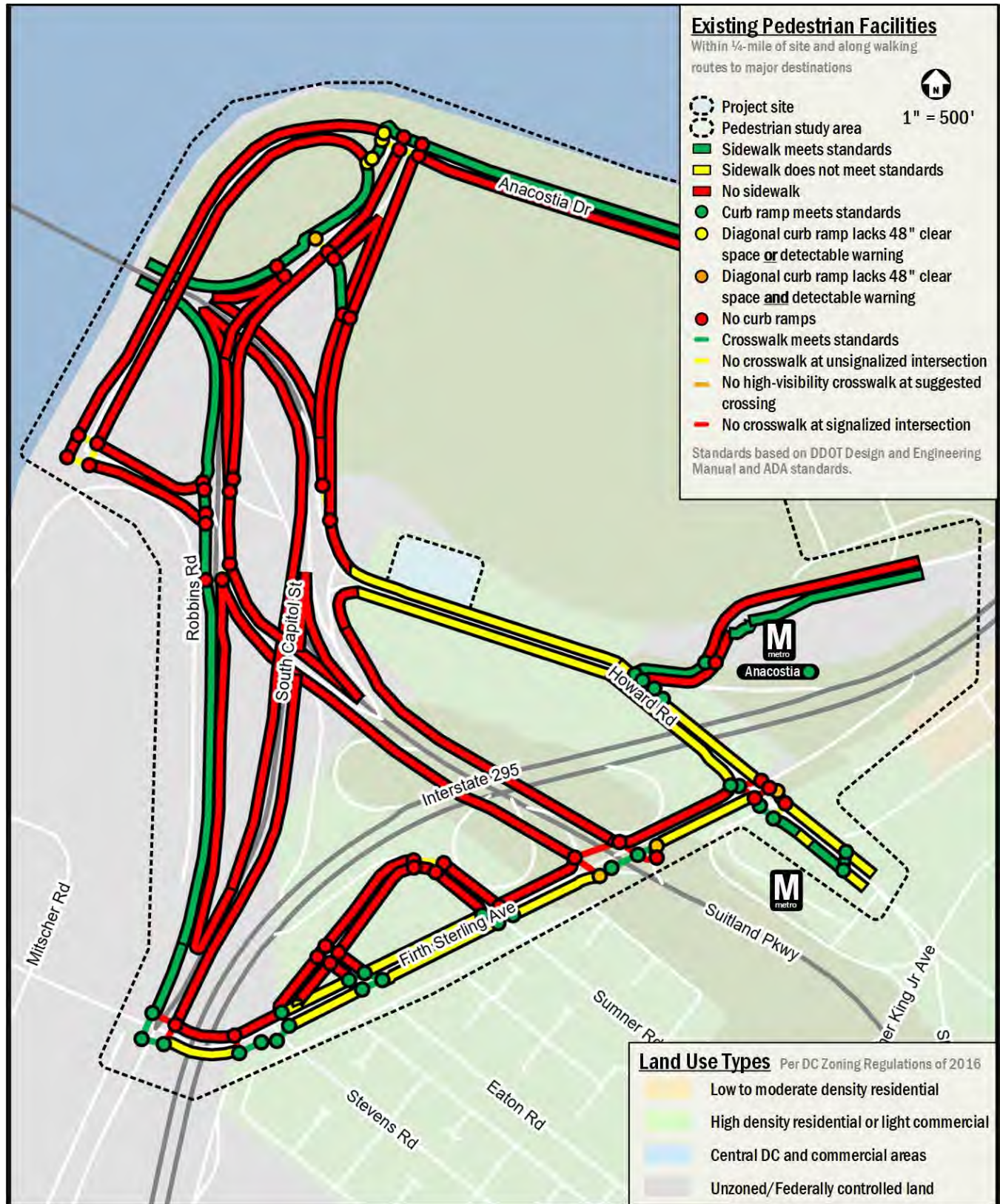


Figure 30: Existing Pedestrian Facilities

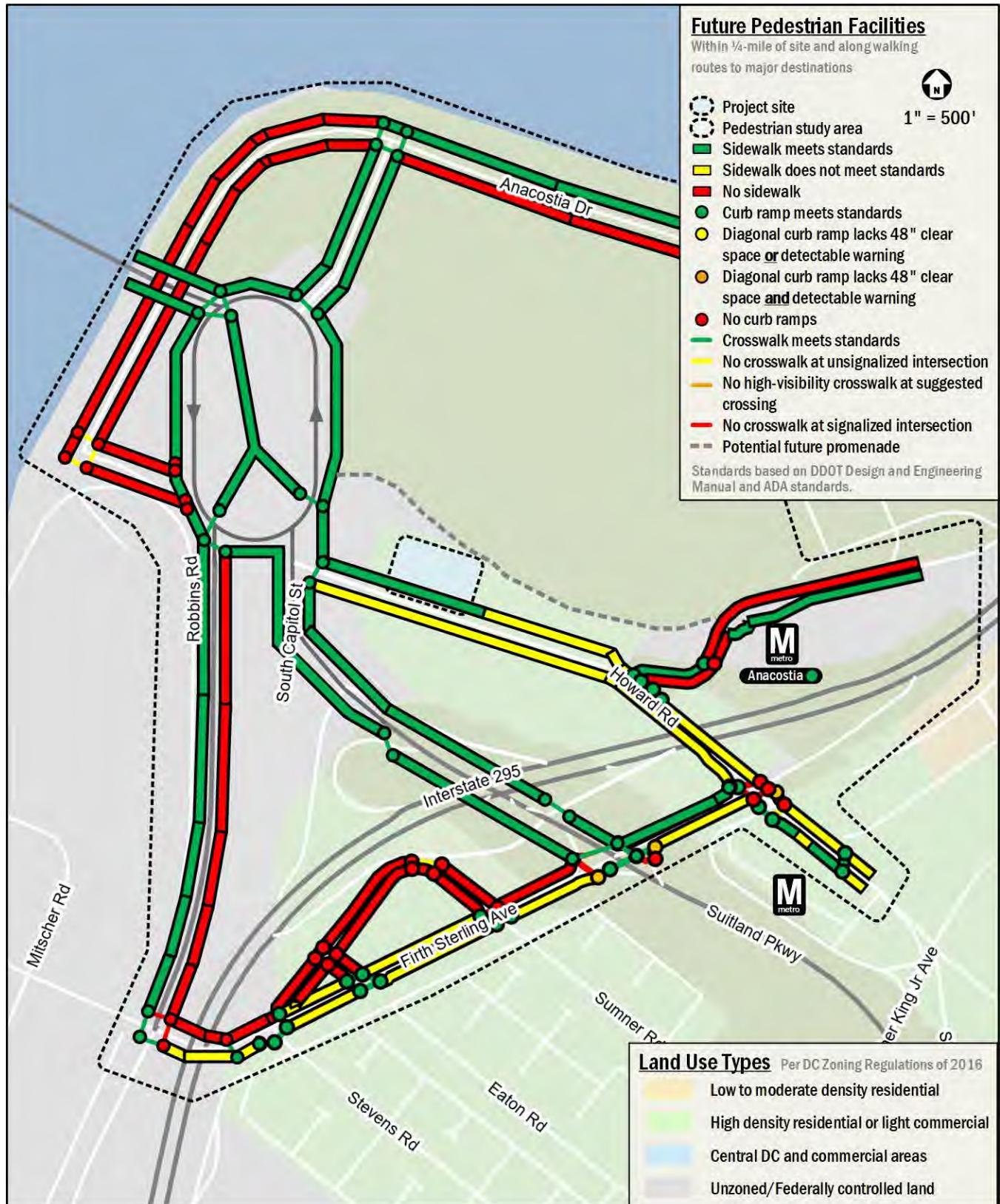


Figure 31: Future Pedestrian Facilities

Bicycle Facilities

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

The following conclusions are reached in this chapter:

- The site has access to several on- and off-street bicycle facilities within the study area;
- Several planned and proposed bicycle projects will improve bicycle access to the site;
- The project is expected to generate a manageable number of bicycle trips; therefore, site-generated bike trips can be accommodated on existing infrastructure; and
- The development site will include long-term bicycle parking on the ground level and within the below-grade garage and short-term bicycle parking along the perimeter of the site and along Howard Road that meet zoning requirements.

Existing Bicycle Facilities

The site is located near existing on- and off-street bicycle facilities. The development is located 0.3 miles from the Anacostia Riverwalk Trail and an off-street trail that connects to the Frederick Douglass Bridge, which can be used to access the bicycle lanes and cycle tracks on First Street SE and Potomac Avenue. Figure 32 illustrates existing bicycle facilities in the area.

Capital Bikeshare

In addition to personal bicycles, the Capital Bikeshare program provides additional cycle options for residents, employees, and patrons of the Bridge District Parcels 3 & 4 development. The program has placed over 500 bikeshare stations across the Washington, DC metropolitan area with over 4,500 bicycles in the fleet. There is one Capital Bikeshare station within a half mile of the site, which is an 11-dock station at the Anacostia Metro Station on Howard Road SE. Figure 32 illustrates this and other Capital Bikeshare locations in the area.

Dockless E-Scooters and E-Bicycles

Shared Mobility Device (SMD) service in the District is provided by eight (8) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies and one (1) electric moped company. These devices are parked not at designated stations like Capital Bikeshare but rather in public space. Further information about SMDs is provided in the Study Area Overview.

Planned Bicycle Improvements

Several bicycle improvements are planned near the site. These are shown on Figure 32.

DDOT Car Free Lanes for Buses and Bikes

DDOT included the segment of Martin Luther King, Jr. Avenue SE between W Street SE and St. Elizabeth's East Campus as one of its quick-build bus priority pilot projects as part of the District's COVID-19 response and recovery. These projects are being implemented along corridors DDOT has already identified for permanent transit improvements.

The Martin Luther King, Jr. Avenue SE car-free lanes are accessible only to buses and bikes during the morning (7:00am – 9:30am) and evening (4:00pm – 6:30pm) peak periods. The car-free restriction is only in place in the peak direction of travel (northbound in the morning and southbound in the evening).

Anacostia Waterfront Transportation Master Plan

As part of the District's multi-agency Anacostia Riverfront Initiative, the existing Anacostia Riverwalk Trail will be extended from its current terminus at the intersection of South Capitol Street and Firth Sterling Avenue SE to the Oxon Hill Farm Trail.

The design phase is planned to be completed in the summer of 2021 and the construction phase completed in the winter of 2024.

South Capitol Street Corridor Project

This project will replace the Frederick Douglass Memorial Bridge with a new span featuring a design that improves bicycle, pedestrian, and vehicular safety. The project also includes two (2) new traffic ovals, one on each side of the bridge, as well as a reconstructed South Capitol Street north of the bridge. The east oval, within a mile of the proposed project, will be constructed with a cycle track around its perimeter. This project also includes improvements along Firth Sterling Avenue SE and Suitland Parkway including multi-use paths and crossing improvements.

Capital Bikeshare Expansion

Capital Bikeshare's 2019 development plan calls for two (2) new Capital Bikeshare stations near the site: one at the Barry Farm Recreation Center and one at the Anacostia Community Museum.

MoveDC Bicycle Element

The bicycle element of *MoveDC*, the District's multimodal long-range transportation plan, includes the following bicycle improvements near the development that are proposed but not yet funded or planned:

- Bicycle lanes along 13th Street from Good Hope Road to Pleasant Street SE; and
- Multi-use trails along the Anacostia Freeway (I-295) from South Capitol Street to East Capitol Street, through National Park Service land between Anacostia Drive and the Anacostia Metrorail station, along Suitland Parkway north of Pomeroy Road, and along South Capitol Street.

11th Street Bridge Park

As part of the reconstruction of the 11th Street SE bridge across the Anacostia River, a portion of the old bridge will be reconstructed as a new civic space devoted to outdoor recreation and the arts. The new bridge will include a bicycle/pedestrian connection across the river between the Anacostia neighborhood and the Washington Navy Yard, with bicycle connections to downtown along 11th Street SE, and it will be easily accessible from the proposed recreation center.

Shepherd Branch Trail

The Shepherd Branch Trail was envisioned in 2004 as part of the DC Streetcar Project in order to address the lack of safe and comfortable bicycle and pedestrian facilities in the existing roadway network between C Street SE and South Capitol Street. The proposed trail will run along Anacostia Freeway approximately 0.3 miles from the site and will connect the site to the future South Capitol Street, Suitland Parkway, and 11th Street Bridge bicycle and pedestrian facilities.

Site-Generated Bicycle Impacts

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

On-site Bicycle Infrastructure

As part of the proposed project, a bicycle and pedestrian promenade will be constructed linking the forthcoming South Capitol Street East Oval to the Anacostia Metrorail Station. This promenade will provide convenient bicycle access to the retail and residential portions from the site. In connecting to the new South Capitol Street path, the promenade will provide a bicycle connection from the site to the Navy Yard neighborhood,

downtown DC, the Anacostia Riverwalk Trail, and other parts of southeast DC.

The development will provide short- and long-term bicycle parking spaces, the quantities of which exceed zoning requirements.

The development will supply 99 short-term bicycle spaces. Short-term bicycle parking spaces will be provided in highly visible and accessible areas along the perimeter of the site and along Howard Road.

The development will provide at least 201 long-term spaces. These parking spaces will be distributed between a ground-level bike room facing the promenade and the below-grade garage.

Bicycle Trip Generation

The proposed project is projected to generate 53 bicycle trips (22 inbound, 31 outbound) during the morning peak hour and 105 bicycle trips (56 inbound, 49 outbound) during the afternoon peak hour.

It is expected that existing bicycle facilities can accommodate these new site-generated trips.

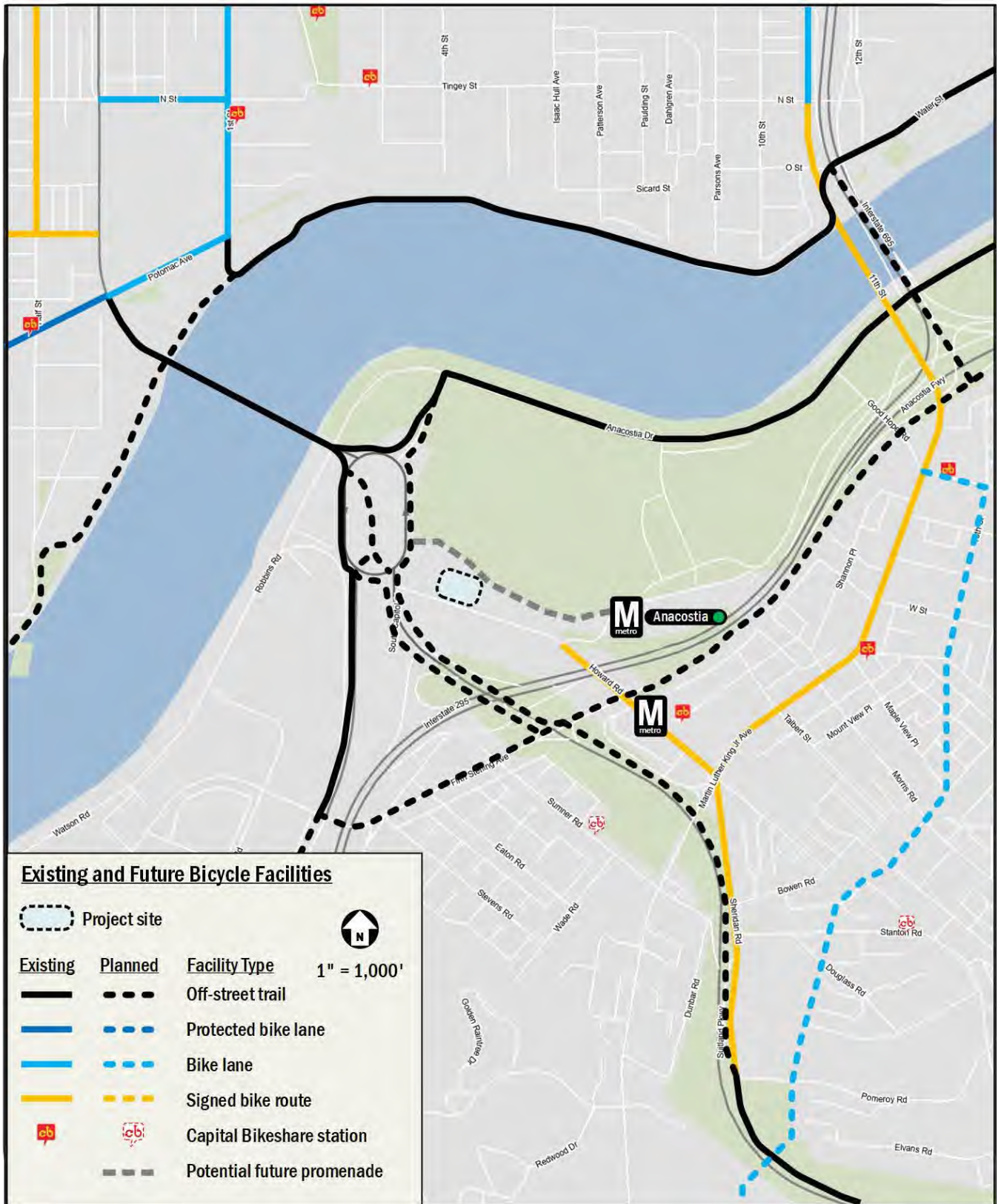


Figure 32: Existing and Future Bicycle Facilities

Safety Analysis

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

Summary of Safety Analysis

A safety analysis was performed to determine if there are any intersections that pose any obvious conflicts with vehicles, pedestrians, or bicyclists. Data to determine this included DDOT's most recent *Traffic Safety Statistics Report (2016-2018)*, *Vision Zero Action Plan*, Open Data DC Vision Zero Safety data, and DDOT's Navy Yard/Capitol Riverfront Safety Assessment.

Based on available data, two (2) study intersections were identified with potential conflicts. The following details the conflict at these intersections.

Potential Impacts

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

Howard Road & Firth Sterling Avenue SE

In 2018, this intersection was ranked as the single most hazardous intersection in the entire District of Columbia by crash rate (i.e., crashes per traffic volume) and the 6th most hazardous intersection by crash severity cost, a metric that considers the level of injury and property damage occurring from the crash, according to the *Traffic Safety Statistics Report*. In this report, it was ranked as the 2nd most hazardous by crash composite index, a ranking that incorporates both factors in addition to crash frequency (the raw number of crashes at an intersection). Open Data DC's Crashes in DC dataset similarly indicates it as a high-crash location relative to other intersections in the District.

This intersection currently operates as a signalized four-legged intersection with the northern leg, the I-295 northbound on-ramp, operating as one-way in the northbound direction. Howard Road SE and Firth Sterling Avenue SE are two collector roads that, at the time of crash data collection, carried a significant volume of commuters to and from I-295 due to this northbound on-ramp as well as a southbound off-ramp intersecting Howard Road SE approximately 400 feet to the west.

In addition, this intersection lacks quality pedestrian facilities – none of the sidewalks leading to the intersection meet DDOT

standards, and the northbound approach of Firth Sterling Avenue SE lacks a sidewalk on the west side. The slip lanes on two of the intersection's four create pedestrian hazards, and many crossings lack a painted crosswalk or curb ramp. In fact, there is no way for pedestrians to safely cross Howard Road SE due to the lack of any crossing facilities. Many of the existing crosswalks and lane markings appear faded and may be difficult for drivers to see. No bicycle facilities currently exist at this intersection.

As of September 2021, the southbound off-ramp onto Howard Road SE has been removed, and the northbound on-ramp is planned to be removed as part of the South Capitol Street Corridor Project. In addition, as part of this project, a 12-foot multi-use path will be constructed on the south side of Howard Road, a 6-foot sidewalk meeting DDOT standards will be constructed on the north side, and all intersection crossings will be improved with ADA-compliant curb ramps and high-visibility crosswalks. The removal of the highway ramps will reduce traffic volumes through the intersection, and the sidewalk and path improvements will improve pedestrian and bicycle comfort and safety, thereby likely reducing the number and severity of crashes at this intersection.

Firth Sterling Avenue SE & Suitland Parkway

In 2018, this was intersection ranked as the 18th most hazardous intersection in the District by crash severity cost as well as the 26th by crash composite index and the 35th by crash frequency. Open Data DC's Crashes in DC dataset also indicates it as a high-crash location relative to other intersections in the District. This intersection operates as a standard, signalized four-legged intersection.

Suitland Parkway is a limited-access expressway that primarily transports commuters from suburban Maryland and southeast DC across the Anacostia River to downtown DC. Its westbound/northbound traffic volumes peak in the morning, and its eastbound/southbound volumes peak in the afternoon. As it currently exists, pedestrian and bicycle facilities are subpar along the nearby stretch of Firth Sterling Avenue SE and nonexistent along Suitland Parkway. While it is common for limited-access roads to not have extensive bicycle and pedestrian facilities, this intersection is located close to multiple residential neighborhoods and less than a quarter-mile from the Anacostia Metrorail station – therefore, this lack of facilities creates a hazardous environment for nearby residents. Right-turn slip lanes are

present at three (3) of the intersection's four (4) corners, and only one (1) crosswalk is present.

This intersection will be reconstructed as part of the South Capitol Street Corridor Project. The southbound approach of Firth Sterling Avenue SE will increase from two (2) to three (3) lanes. While this alteration will increase the crossing distance for pedestrians, several other improvements will greatly enhance pedestrian and bicyclist safety at this intersection. These improvements include a new multi-use paths on both sides of Suitland Parkway, a multi-use path on the west side of the northern leg of Firth Sterling Avenue, removal of two (2) of the existing three (3) right-turn slip lanes, and the addition of high-visibility crosswalks and ADA-compliant curb ramps on two (2) additional legs of the intersection. The removal of the slip lanes will decrease the speed of drivers turning right, likely preventing crashes, and the path and crossing improvements will improve pedestrian and bicycle safety and comfort.

Summary and Conclusions

This report is a Comprehensive Transportation Review (CTR) on behalf of on behalf of Redbrick LMD (the “Applicant”) for Design Review by the Zoning Commission (Zoning Commission Case Number ZC 21-13) for the property located at Square 5860 and Lot 0097 in Southeast, Washington, DC.

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

Proposed Project

The site is located at 632 Howard Road SE and is bounded by Howard Road SE to the south, National Park Service property to the north, DDOT property to the west, and a vacant parcel to the east.

The development program includes up to 760 residential units, up to 51,000 square feet of retail space (including a 31,030 square foot grocer), and 355 garage parking spaces.

Vehicle access to the parking garage and loading facilities is proposed from a new public access easement connecting to Howard Road SE.

The loading facilities within the site consist of one (1) 75-foot loading berth, three (3) 30-foot loading berths, and two (2) service/delivery spaces. All truck turning maneuvers will occur within private space, allowing for head-in/head-out access to and from the public roadway network.

The Bridge District Parcels 3 & 4 development will satisfy the ZR16 zoning requirements for bicycle parking by providing 201 long-term bicycle parking spaces (157 required) and 99 short-term bicycle parking spaces (53 required). The Bridge District Parcels 3 & 4 development will supply secure long-term bicycle parking within the building and short-term bicycle parking along the perimeter of the site. The vehicular and bicycle parking will also meet the practical needs of the development’s residents, patrons, and employees.

Multi-Modal Overview

Trip Generation

The Bridge District Parcels 3 & 4 development is transit-, pedestrian-, and bicycle-oriented. The proposed project is expected to generate new trips on the surrounding transportation network across all modes during the morning and afternoon peak

hours. However, the new trips generated by the project will not have a detrimental impact on the transportation network due to impact mitigation measures including a TDM plan that will be implemented as part of the redevelopment. The multi-modal trip generation for the proposed project is as follows:

- The AM peak hour trip generation is projected to include 166 vehicles/hour, 186 transit riders/hour, 53 bicycle trips/hour, and 35 walking trips/hour.
- The PM peak hour trip generation is projected to include 307 vehicles/hour, 296 transit riders/hour, 105 bicycle trips/hour, and 85 walking trips/hour.

Transit

The development site is well-served by transit. It is located 0.3 miles from the Anacostia Metrorail station and is served by several local bus routes.

Several planned or recently implemented transit projects will improve transit access to the site, including the peak-period bus- and bike-only lanes on Martin Luther King, Jr. Avenue SE as well as other improvements proposed in *MoveDC*, the District’s long-range transportation plan.

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

Pedestrian

Due to the undeveloped character of the site’s surroundings, there are few pedestrian destinations and street connections nearby. While adequate pedestrian facilities exist between the site and the Anacostia neighborhood to the east, the roadways to the north, south and west of the site are not suitable for pedestrians as they currently exist.

The South Capitol Street Corridor Project will reconfigure these roadways and improve them with wide sidewalks and multi-use paths. The site is expected to generate a manageable number of pedestrian trips, and the forthcoming pedestrian facilities will be able to accommodate these new trips.

Bicycle

The site has access to several on- and off-street bicycle facilities. Several planned and proposed bicycle projects will improve bicycle access to the site, including new protected bike lanes and multi-use paths as part of the South Capitol Street Improvements project, the 11th Street Bridge Reconstruction, and

the Suitland Parkway Trail Extension as well as an expanded network of other cycle tracks and bicycle trails in the area. At a future phase of development, a bicycle and pedestrian promenade will be constructed linking the forthcoming South Capitol Street East Oval to the Anacostia Metrorail Station.

The site is expected to generate a manageable amount of bicycle trips, and the existing and forthcoming bicycle facilities will be able to accommodate these new trips.

The development will include long-term bicycle parking in the ground floor and lower levels facing the promenade, and short-term bicycle parking will be located along the perimeter of the site and across Howard Road. Although not all spaces will meet zoning requirements, at a minimum the required number will.

Vehicular

The site is accessible from two (2) major freeways, I-295 and Suitland Parkway. The site is also served by principal arterial South Capitol Street and collectors Howard Road and Firth Sterling Avenue SE. These roadways connect the site to I-395 and I-695, as well as Capital Beltway (I-495) which surrounds Washington, DC and its inner suburbs while also providing connectivity to the District core.

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

Based on DDOT's outlined capacity impact thresholds, this analysis concludes that two (2) intersections require mitigation as a result of impacts to delay and/or queues created by the additional vehicular volumes associated with the Bridge District Parcels 3 & 4 development.

Impacts and recommended mitigation measures associated with the project are described below. A detailed review of intersection capacity and impacts that trigger mitigation based on DDOT's criteria is included in the Traffic Operations section of this report.

Howard Road SE & Suitland Parkway

During the morning peak hour, westbound delays increase by more than DDOT's five (5) percent delay increase mitigation

threshold between Background and Total Future Conditions. Since this intersection will become unsignalized as part of the South Capitol Street Corridor Project and adding additional vehicular capacity is not feasible, additional TDM strategies are proposed to address the potential impacts at this intersection due to project-generated trips.

East Oval & Frederick Douglass Bridge SB

During the afternoon peak hour, southbound delays increase by more than DDOT's five (5) percent delay increase mitigation threshold between Background and Total Future Conditions. It is not possible to adjust the signal timings at this intersection to mitigate delays while still (1) maintaining actuated-coordinated control and (2) allowing enough time for pedestrians to cross the southbound leg of the intersection. Therefore, it is recommended that the signal at this intersection be set up as pre-timed rather than actuated-coordinated, with the timings adjusted to account for the projected traffic volumes. This modification only partially addresses the site-generated delays at this intersection, however, so additional TDM strategies are also proposed to make up this difference.

Safety

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

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

Howard Road & Firth Sterling Avenue SE

This intersection was ranked as the most hazardous intersection in the District in 2018 by crash rate and the 2nd most hazardous by crash composite index. Currently, this intersection carries a significant volume of traffic entering and exiting I-295 while at the same time lacking quality pedestrian and bicycle facilities. As part of the South Capitol Street Corridor Project, the highway on-ramp at this intersection and the off-ramp 400 feet to the west will both be removed, and a multi-use path, sidewalks, and crossing improvements will be installed at this intersection, all of which will mitigate the existing hazards.

Firth Sterling Avenue SE & Suitland Parkway

This intersection was ranked as the 18th most hazardous intersection by crash severity cost and the 26th most hazardous by crash composite index. As a limited-access road, Suitland Parkway primarily transports commuters from southeast DC and

suburban Maryland through the District towards downtown DC. No pedestrian facilities exist on Suitland Parkway adjacent to this intersection, and the existing facilities on Firth Sterling Avenue do not meet DDOT or ADA standards. As part of the South Capitol Street Corridor Project, two (2) right turn slip lanes will be removed from this intersection, and new multi-use paths and crossing improvements will be added. These modifications will greatly improve safety at this intersection.

Transportation Demand Management (TDM) Plan

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

Summary and Recommendations

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

The Bridge District Parcels 3 & 4 project has several positive design elements that minimize potential transportation impacts, including:

- The site's close proximity to transit and existing bicycle infrastructure;
- A future bicycle and pedestrian promenade linking the site, the Frederick Douglass Memorial Bridge, and the Anacostia Metrorail Station;
- The inclusion of secure long-term bicycle parking that exceeds zoning requirements;
- The installation of short-term bicycle parking spaces along the frontage of the site that exceeds zoning requirements;
- A TDM plan that reduces the demand of single-occupancy, private vehicles during peak period travel times or shifts