Comprehensive Transportation Review

1100 South Capitol Street

Washington, DC

October 3, 2022

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Executive Summary

The following report is a Comprehensive Transportation Review (CTR) prepared on behalf of 1100 South Capitol, LLC (the "Applicant") for Design Review by the DC Zoning Commission (case ZC 22-28) ("the Project"). The Project is located at Square 698, Lots 814 and 817 in southeast Washington, DC.

The purpose of this CTR is to evaluate whether the Project will generate a detrimental impact to the transportation network surrounding the site.

This report concludes that **the Project will not have a detrimental impact** to the surrounding transportation network assuming the proposed site design elements and Transportation Demand Management (TDM) plan are implemented.

Proposed Project

The Project is located at 1100 S Capitol St SE, at the southeast corner of the intersection of L St SE and South Capitol Street. The site is bounded by the South Capitol Street service lane to the west, a church property to the south, a public alley to the east, and L St SE to the north. The site is currently occupied by a 30,400 square foot surface parking lot with approximately 110 existing surface parking spaces. The Project includes a mixed-use development program with approximately 248 residential units and 162 parking spaces in a below grade garage.

The ground floor of the project is proposed to contain the residential lobby and residential amenity spaces. However, the project has been designed to convert some residential amenity space to retail use should demand for retail use increase in the future. Accordingly, for purposes of this study, 1,500 square feet of retail space has been assumed to be provided in the project to account for any future trips generated by the retail use.

The Project will include a PUDO zone along L Street adjacent to the site to accommodate short-term pick up and drop off activities proximate to the building's main entrance.

Vehicular Access

Vehicular access to the parking garage is proposed from the north-south public alley on the eastern edge of the site. A non-exclusive 5-foot-wide surface easement is located along a portion of the east side of the property abutting the 15-foot-wide public alley. The easement was established to provide adequate space for vehicles by creating an effective alley width of 20 feet. As part of this project, the applicant will voluntarily provide a 5-foot building setback along the rest of the property's east frontage, thus effectively extending the 5-foot-wide easement for the entire extent of the alley abutting the property. The public alley will provide access to the following Project features:

- A two-way vehicular ramp accessing the underground parking garage with approximately 162 parking spaces;
- An internal loading area with a 12' x 30' loading berth and a (1) 10' x 20' service/delivery space; and
- Access to the internal bike storage room satisfying the zoning bike parking requirements with at least 83 long-term bicycle parking spaces.

All truck turning maneuvers will occur within the site and in the public alley, allowing for head-in/head-out access to and from the public roadway network. The number of loading berths and service spaces meet all zoning and DDOT dimensional requirements.

The Project will meet zoning requirements for parking by providing approximately 162 parking spaces within the below grade garage. The proposed parking supply does not meet any of the ZR-16 criteria that would trigger mitigation for "excess parking". Taking into account the removal of the existing surface lot with approximately 110 existing parking spaces, the redevelopment will result in a net increase of approximately 52 parking spaces.

The Project will satisfy the 2016 zoning requirements for bicycle parking by including a total of 95 bicycle parking spaces, including 83 long-term bicycle parking spaces and 12 short-term bicycle parking spaces. There will be a primary bike room located on the ground floor, and an ancillary bike room will potentially be located on P1. The primary bike room located on the ground floor will be accessed from the west side of the public alley, and short-term bicycle parking will be located within and along the perimeter of the site near the building entrance. The vehicular and bicycle parking are expected to meet the practical needs of the Project's residents.

Multi-Modal Overview

Trip Generation

The Project is transit-, pedestrian-, and bicycle-oriented. The Project is expected to generate new trips on the surrounding transportation network across all modes during the AM and PM peak hours.

The Project is expected to generate trips within the area as follows:

	AM Peak Hour	PM Peak Hour
Vehicle Trips	35	44
Transit Trips	33	43
Bicycle Trips	11	14
Pedestrian Trips	15	29

Transit

The Project is well-served by transit. It is located less than 0.10 miles from the closest entrance to the Navy Yard – Ballpark Metro station, 0.75 miles from the Waterfront Metrorail station, and is within a mile of two (2) other Metrorail stations. The site is also served by several major WMATA bus routes.

Several planned or proposed transit projects will improve transit access to the site, including nearby Transit Priority Corridors 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

The site is surrounded by a well-connected pedestrian network. Despite some incidences of sidewalks that do not meet width standards, overall, there is a well-connected pedestrian network surrounding the site. While crosswalks and curb ramps along the perimeter of the site meet DDOT and ADA standards, some sidewalks do not.

The site is expected to generate a manageable number of pedestrian trips, and the existing pedestrian facilities can accommodate these new trips.

The Project will include upgrading the streetscape along the Project's frontages along the South Capitol Street service lane and along L Street SE to include improved pedestrian pathways.

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 protected bicycle lanes along M St SE and Eye Street SE/SW.

The site is expected to generate a manageable amount of bicycle trips, and the existing bicycle facilities can accommodate these new trips. The development will include long-term bicycle parking within the parking garage and short-term bicycle parking along the perimeter of the site that meet DDOT and zoning requirements.

Vehicular

Vehicle access to the site is located along the public alley on the east side of the building, which can be accessed via L Street, M Street, and Half Street. M Street provides nearby access to collector roads and Interstate 695. These roadways provide connectivity to I-295, DC-295, and the Capital Beltway (I-495), which provide for efficient travel around the Washington region.

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 each development scheme. Intersection analyses were performed to obtain the average delay and queue a vehicle will experience. These average delays and queues were compared to the acceptable levels of delay set by DDOT standards as well as existing queues to determine if the Project will negatively impact the study area.

Further, the Project will replace an existing surface parking lot with approximately 110 existing vehicular parking spaces, and the redevelopment of the property will result in the vehicle trips generated by the existing parking lot removed from the surrounding transportation network. In order to provide a conservatively high estimate of the potential Project impact, no existing trips were removed from the network in this assessment; however, it is expected that the overall net impact of the Project will be lower than shown in this report given the removal of the existing parking lot trips.

Summary and Recommendations

This report concludes that the Project will not have a detrimental impact on the surrounding transportation and roadway network assuming that all planned site design elements are implemented.

Any impacts of the Project are mitigated via a Transportation Demand Management (TDM) plan which is detailed in the CTR.

Additionally, the Project includes several positive design elements that minimize potential transportation impacts, including:

- Close proximity to transit, including the Navy Yard-Ballpark and Waterfront Metrorail stations;

- Access to existing bicycle infrastructure, including shared bus-bicycle lanes on M St SE and Capital Bikeshare stations within a ½ mile radius;
- A location within a well-connected pedestrian network;
- A conveniently located long-term bicycle parking room that meets zoning requirements; and
- Short-term bicycle parking spaces along the perimeter of the site that meets zoning requirements.
- A new pick-up/drop-off (PUDO) zone along L Street SE.

Introduction

This report includes a CTR reviewing the transportation aspects of the Project. The site, shown in Figure 1 and Figure 2, is located at Square 698, Lots 814 and 817 in southwest, Washington, DC and is zoned D-5.

Purpose of Study

The purpose of this report is to:

1. Review the transportation elements of the 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 Project will influence the local transportation network. This report accomplishes this by identifying the potential trips generated by the Project on all major modes of travel and where these trips will be distributed on such network.
3. Determine whether the Project will lead to adverse impacts on the local transportation network.

Project Summary

The Project is located in the Navy Yard neighborhood in southeast DC. The site is generally bounded by South Capitol Street service lane to the west, an existing church to the south, a public alley to the east, and L Street SE to the north.

The Project includes removal of the existing surface parking lot and construction of a residential building with approximately 248 residential units and 162 parking spaces. For purposes of this CTR assessment, we have included 1,500 square feet of potential retail space on the ground floor of the building. The ultimate amount of retail space, if any, to be included within the Project will be determined at a later date.

Vehicular access to the parking garage is proposed via an existing public alley that connects to L, M, and Half Streets SW.

The loading area will be accessed from the adjacent north-south alley and include the zoning required 12' x 30' loading berth and 10' x 20' service space. These loading facilities will meet ZR16 minimum requirements, discourage on-street loading and unloading, and meet the practical needs of the Project.

Pedestrian access to the site will be available from L Street and the public alley.

Existing bicycle facilities near the site include bicycle lanes on Eye Street, M Street, Potomac Avenue, and First Street SE. These bicycle facilities provide connectivity to nearby neighborhoods including Southwest Waterfront, Washington Navy Yard, the National Mall and downtown DC, in addition to other local and regional bicycle facilities. The Project will include at least 83 long-term bicycle parking spaces within a bike room located on the ground floor adjacent to the loading area. A total of at least 12 short-term bicycle parking spaces will be available along the perimeter of the site in highly accessible locations near the building entrance.

The nearest Capital Bikeshare (CaBi) stations are located at First Street & M Street, SE and M Street SE & New Jersey Avenue, SE.

Contents of Study

This report contains nine (9) chapters as follows:

- Study Area Overview
  This chapter reviews the area near and adjacent to the Project and includes an overview of the site location.
- Project Design
  This chapter reviews the transportation components of the Project, including the site plan and access.
- Travel Demand Assumptions
  This chapter outlines the travel demand of the Project and 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 highlights the vehicular impacts of the Project, including presenting mitigation measures, if any, 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, outline 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 impacts of the Project. This includes a qualitative review of existing and proposed safety features surrounding the site.
- Summary and Conclusions
  This chapter presents a summary of the recommended mitigation measures by mode and presents overall findings and conclusions.

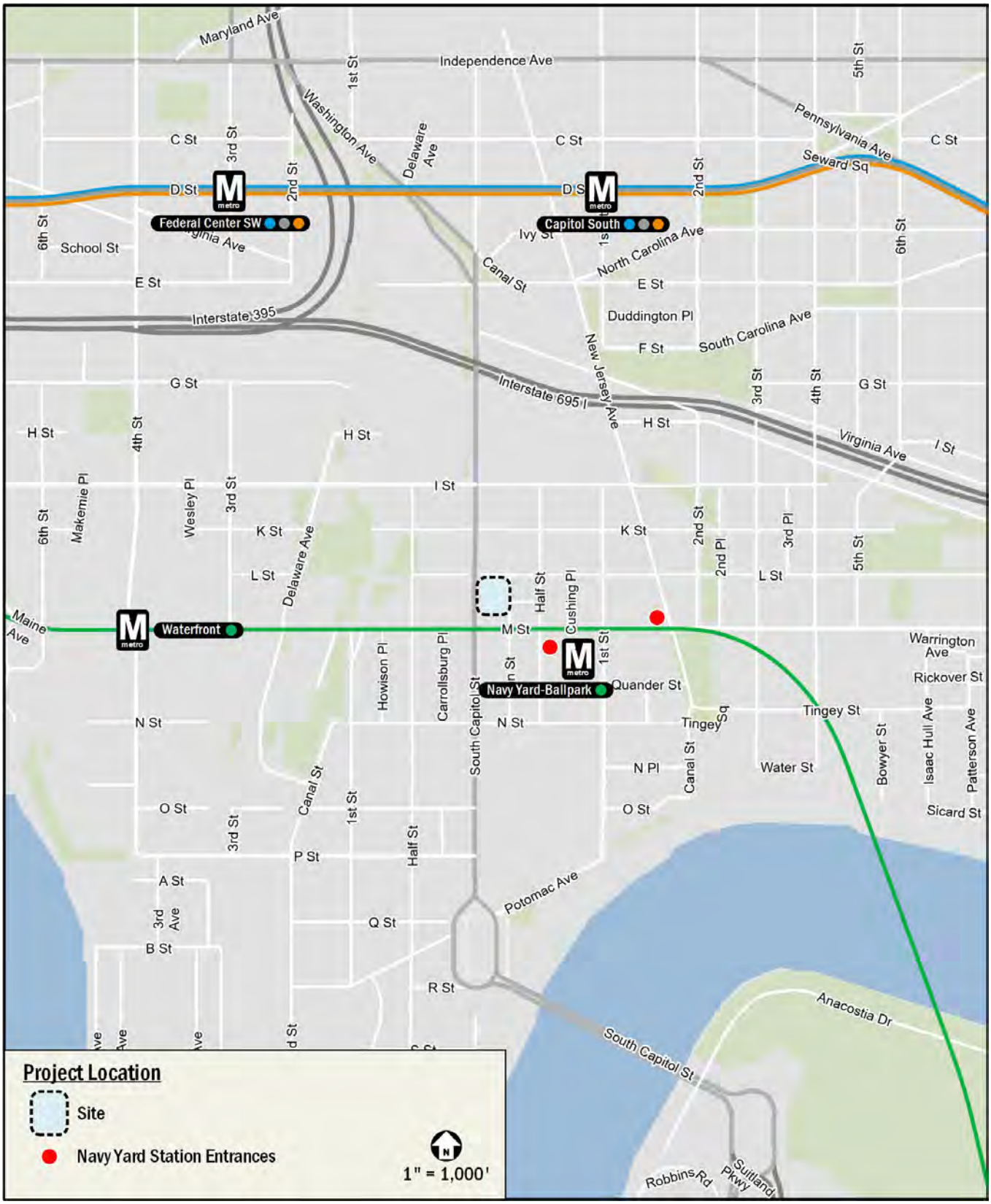

Figure 1: Project Site

Figure 2: Site 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 Project is surrounded by an extensive regional and local transportation system that will connect the Project's residents to the rest of the District of Columbia and surrounding areas.
- The Project is served by public transportation with access to local Metrobus lines and Metrorail.
- There is adequate bicycle infrastructure in the vicinity of the Project, with connectivity to east-west and north-south bicycle facilities.
- Pedestrian conditions are generally good, particularly along major walking routes.

Major Transportation Features

Overview of Regional Access

As shown in Figure 5, the site has ample access to regional vehicular, and transit-based transportation options that connect the Project to destinations around Washington D.C, Virginia, and Maryland.

The Project's adjacent public alley is accessible from the minor arterial roadway M St SE and the local road L St SE, both of which can be accessed from South Capitol Street with close proximity to Interstate 695. These roadways provide connectivity to the I-295, DC-295, and the Capital Beltway (I-495), which provide for efficient travel around the Washington region.

The Project is located a two (2)-minute walk or less than 0.1 miles from the Navy Yard-Ballpark Metrorail station and a 14-minute walk or 0.7 miles from the Waterfront Metrorail station, both on the Green Line. Connections can be made at the Gallery Pl-Chinatown and L'Enfant Plaza Metrorail stations to access the Blue, Orange, Silver, Yellow and Red Lines, providing access throughout the District and to locations in Virginia and Maryland.

Overall, the Project has access to several regional roadways and transit options, making it convenient to travel between the site and destinations in the greater Washington metropolitan area.

Overview of Local Access

There are a variety of local transportation options near the Project that serve vehicular, transit, walking, and bicycling trips.

The Project is directly served by a local vehicular network that includes minor arterial M St SE, as well as local roads L Street SE and Half St SE. The Project is also adjacent to the northbound service lane of the principal arterial South Capitol Street, which feeds into Interstate I-695.

The Metrobus system provides local transit service near the site, including connections to several neighborhoods within the District and additional Metrorail stations. As shown in Figure 6, there are three (3) Metrobus routes and one (1) DC Circulator route that serve the site.

The Project is located near several on-street bicycle facilities, including shared bus/bicycle lanes on M St SE. To accommodate bicyclists, the Project will provide on-site bicycle facilities as discussed in the Project Design chapter. A detailed review of existing, planned, and proposed bicycle facilities and connectivity is provided in the Bicycle Facilities chapter.

Pedestrian routes, such as those to public transportation stops, stadiums, retail, and community amenities, provide adequate pedestrian facilities.

Overall, the Project is surrounded by a robust local transportation network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

Carsharing

Two (2) companies provide carsharing service in the District of Columbia: Free2Move and Zipcar. Both services are private companies that provide registered users access to a variety of automobiles. Free2Move operates a point-to-point model that allows customers to pick up and drop off vehicles at any non-restricted metered curbside parking space or Residential Parking Permit (RPP) location in the defined "Home Area." Zipcar operates a reserved-space model where customers are required to borrow from and return vehicles to the same reserved carsharing space. Currently, there are two (2) Zipcar locations less than 0.25 miles from the site. The location, number of available vehicles, and walking distance is listed in Table 1.

Table 1: Zipcar Locations

Zipcar Location	Number of Vehicles	Walking Distance
25 M St SW	2 vehicles	0.2 miles (4 minutes)
1272 Van St SE	1 vehicle	0.3 (6 minutes)

Micromobility

Micromobility service in the District is provided by six (6) private dockless companies operating electric-assist bicycles (e-bikes) and electric scooters (e-scooters): Bird, Jump, Lime, Lyft, Skip, and Spin. These dockless vehicles are provided by private companies that give registered users access to a variety of e-bike and e-scooter options. These devices are used through each company-specific mobile phone application. Many dockless vehicles do not have designated stations where pick-up/drop-off activities occur like with Capital Bikeshare; rather, they are parked in public space, most commonly in the “furniture zone” or the portion of sidewalk between the walking path and the curb, often where other street signs, street furniture, trees, and parking meters are found. In addition to DDOT’s program, dockless pilots and demonstration programs are underway in Arlington County, Fairfax County, the City of Fairfax, the City of Alexandria, and Montgomery County.

Walk & Bike Score

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 in the SW Ballpark – Navy Yard neighborhood. Using the existing 1100 South Capitol Street address for the site, the site has a walk score of 95 (or “Walker’s Paradise”), and a bike score of 96 (or “Biker’s Paradise”). Maps of the surrounding area’s walk and bike scores can be found in Figure 3 and Figure 4, respectively. The following conclusions can be made based on the data obtained from Walkscore.com:

- The site is situated in an area with many destinations within walking distance;
- The site is situated in an area that is bicycle friendly with its proximity to a number of bicycle facilities including shared bike lanes and Capital Bikeshare stations.

Overall, the site and surrounding neighborhood have very good pedestrian, and bicycle accessibility. Additionally, other planned developments and roadway improvements will help increase pedestrian, transit, and bicycle accessibility in the neighborhood.

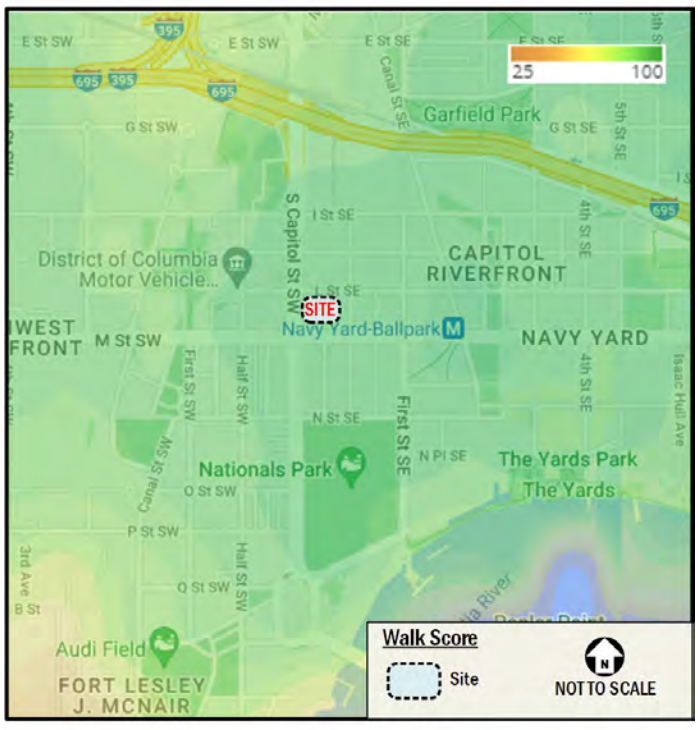

Figure 4: Walk Score

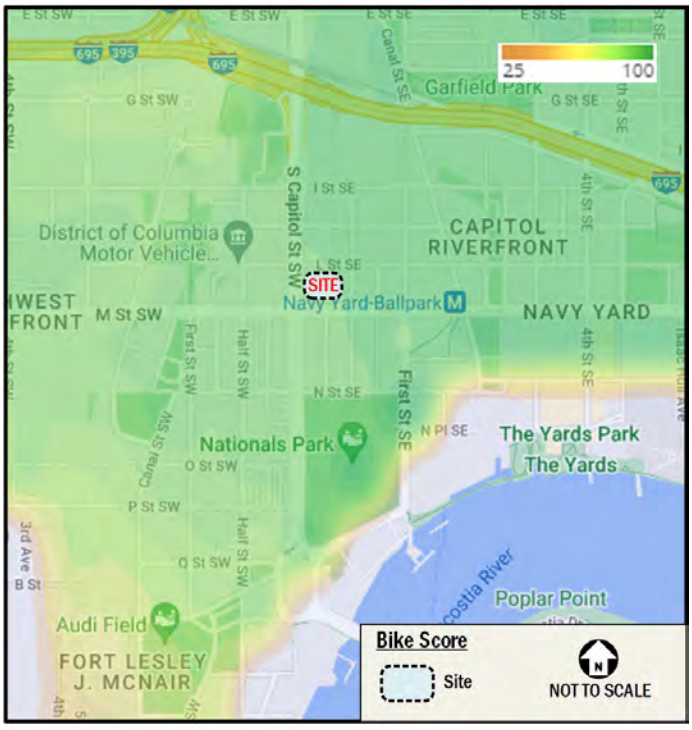

Figure 3: Bike Score

Future Projects

There are several District initiatives and approved developments located near the Project. These planned and proposed projects are summarized below.

MoveDC: Multimodal Long-Range Transportation Plan

MoveDC is the long-range transportation plan for DC. This plan provides an overarching framework of goals and policies that will guide transportation decisions in DC over a 25-year period.

The *MoveDC* report outlines strategies by mode, with a goal of full implementation by 2045. The plan hopes to achieve a transportation system that achieves the District's goals of safety, equity, mobility, project delivery, management and operations, sustainability, and enjoyable spaces.

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

- A segment of the Transit Priority Network, which would improve bus travel times and reliability through dedicated lanes, better stops, intersection treatments, and other improvements, along M Street SE/SW ;
- Segments of the Bicycle Priority Network along Eye Street SE/SW, M Street SE/SW, 4th Street SW, South Capitol Street, New Jersey Avenue SE, and Potomac Avenue SE;
- Funded protected bike lanes along Eye Street SE/SW, M Street SE/SW, and 4th Street SW;
- Other *MoveDC* recommendations are already being implemented and are detailed in the respective sections of this report.

South Capitol Street Corridor Project

DDOT's South Capitol Street project replaces the Frederick Douglass Memorial Bridge with a new span featuring a design that improves bicycle, pedestrian, and vehicular safety. The Project also includes two new traffic ovals, one of 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. In direct relation to the proposed project, the South Capitol Street Corridor project will reconfigure the intersection of South Capitol Street and Eye Street SW/SE, as well as relocate the I-395 ramps to and from South Capitol Street.

Phase 1 of the Project includes improvements from Potomac Avenue to Firth Sterling Avenue SE. This phase is currently under construction with both ovals and the newly constructed bridge open to traffic. Phase 1 is planned to be complete in 2022.

Phase 2 includes improvements from Potomac Avenue to the Southeast Freeway (I-695). This phase is not yet funded and is still under design.

M Street SE/SW Transportation Study

This study identified existing and future transportation challenges and ways to address them within a roughly 1.7-square-mile area along M Street SE/SW, and the Southwest waterfront from 12th Street SE to 14th Street SW, and from the Southwest/Southeast Freeway south to the Anacostia River/Washington Channel.

The M Street SE-SW Transportation Study identifies several potential improvement options for three conditions: near-term (2013-2016), mid-term (2015-2021), and long-term (2020 and beyond). These improvement options focused on:

- Encouraging the use of public transit and non-motorized modes by enhancing and increasing transit, bicycle, and pedestrian facilities;
- Improving capacity only on a few roadways and mostly modest improvements that are feasible for the main corridors;
- Providing a more balanced function for streets in terms of mobility and accessibility; and
- Increasing connectivity for all modes.

Vision Zero Action Plan

DDOT's *Vision Zero Action Plan* is the implementation strategy of DC's Vision Zero Initiative, which commits to reaching zero fatalities and serious injuries to travelers of DC's transportation system by the year 2024. The *Action Plan* is based on DC interagency workgroups, public input, local transportation data and crash statistics, and national and international best practices. Workgroups identified the guiding themes for the *Vision Zero Action Plan* and the goals of the DC government. The *Action Plan* focuses on the following themes:

- Create Safe Streets
- Protect Vulnerable Users
- Prevent Dangerous Driving
- Be Transparent and Responsive

Strategies within each theme assign lead and supporting agencies responsible for the planning and implementation of

each program. The plan also calls for partners external to the District government to ensure accountability and aid in implementation.

Capital Bikeshare Development Plan

DDOT's *Capital Bikeshare Development Plan* was originally released in 2016 to guide the continued growth of Capital Bikeshare in the District of Columbia. The most recent update of the *Development Plan* was released in 2020 and includes a new station at New Jersey Avenue and L Street SE, 0.2 miles from the site.

Planned Developments

There were 15 pipeline development projects identified in the vicinity of the site applicable for inclusion of this study. 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 or destination within the study area are included. Trip generation calculations for all background projects are included in the Technical Attachments.

The developments are shown in Figure 7 and described below.

The Wharf Phase II

The Wharf Phase II includes seven (7) buildings with a total of approximately 547,504 square feet of office space, 317 residential dwelling units, 119,059 square feet of retail, 116 hotel rooms, and 250 boat splits. Trip generation data was acquired via Gorove Slade's 2017 CTR for this project.

375 & 425 M Street SW

This project consisted of two buildings, an east building (375 M Street SW) with 309 dwelling units, 21,930 square feet of retail, and 18,660 square feet of commercial space; and a west building (425 M Street SW), with 296 dwelling units, 19,940 square feet of retail, and 19,450 square feet of commercial space. Originally a background project for Gorove Slade's 2017 CTR for the Wharf Phase II, trip generation data was acquired from this source.

The Bard

This project consists of a residential building with 134 dwelling units. Trip generation data was acquired by using ITE's 11th Edition Trip Generation Manual.

CSX East Redevelopment

This mixed-use development consists of three (3) buildings that include 222 hotel rooms, 758 residential units, and 49,000 square feet of retail. The hotel portion of the development is already complete and is not included in this analysis. This development is expected to be fully completed in 2023. Trip generation data was acquired from a transportation study completed by Gorove Slade.

CSX West Redevelopment

This development will include a residential building with 520 units. Trip generation data was acquired from a transportation study completed by Gorove Slade.

Capper Redevelopment

This development will consist of two buildings, a market rate building that with an estimated 120 units, and a public housing building with a mix of affordable and subsidized units. The market rate building will be located adjacent to K Street and the public housing building will be adjacent to I Street. Trip generation data was acquired by using ITE's 11th Edition Trip Generation Manual.

1319 South Capitol Street SW

This development includes a residential building with between 310 to 315 residential units. Trip generation data was acquired from a transportation study completed by Gorove Slade.

1000 4th Street SW (Waterfront Station II)

This development includes 449 units, of which 136 units will be affordable housing units. The development will also include space for childhood education, a performing arts theatre, and approximately 7,000 square feet of retail space. Trip generation data was acquired from a transportation study completed by Gorove Slade.

Randall School Redevelopment

This development includes approximately 18,600 square feet of commercial space and will have residential housing with 489 units. The Project is expected to open spring of 2023. Trip generation data was acquired from a transportation study completed by Gorove Slade.

The Yards Parcel A1

This development includes a mixed-use building with approximately 12,500 square feet of retail space and 300,000 square feet of office space. Trip generation data was acquired by using ITE's 11th Edition Trip Generation Manual.

The Yards Parcel F

This development includes a mixed-use building with 22,776 square feet of retail space and 279,295 square feet of office space. Trip generation data was acquired from a transportation study completed by Gorove Slade.

The Yards Parcel F1

This development includes a 600-seat theatre and a parking garage with approximately 230 spaces. This development has not yet started construction and is anticipated to open in 2024. Trip generation data was acquired by using ITE's 11th Edition Trip Generation Manual.

The Yards Parcel H

This development includes a mixed-use building with 478 residential units and 26,570 square feet of retail space. Trip generation data was acquired from a transportation study completed by Gorove Slade.

The Yards Parcel I

This development includes a mixed-use building with 379 residential units and 16,000 square feet of retail space. Trip generation data was acquired by using ITE's 11th Edition Trip Generation Manual.

5 M Street SW

This development includes approximately 688 residential units and 23,850 square feet of retail. This development is expected to be completed in 2024. Trip generation data was acquired from a transportation study completed by Gorove Slade.

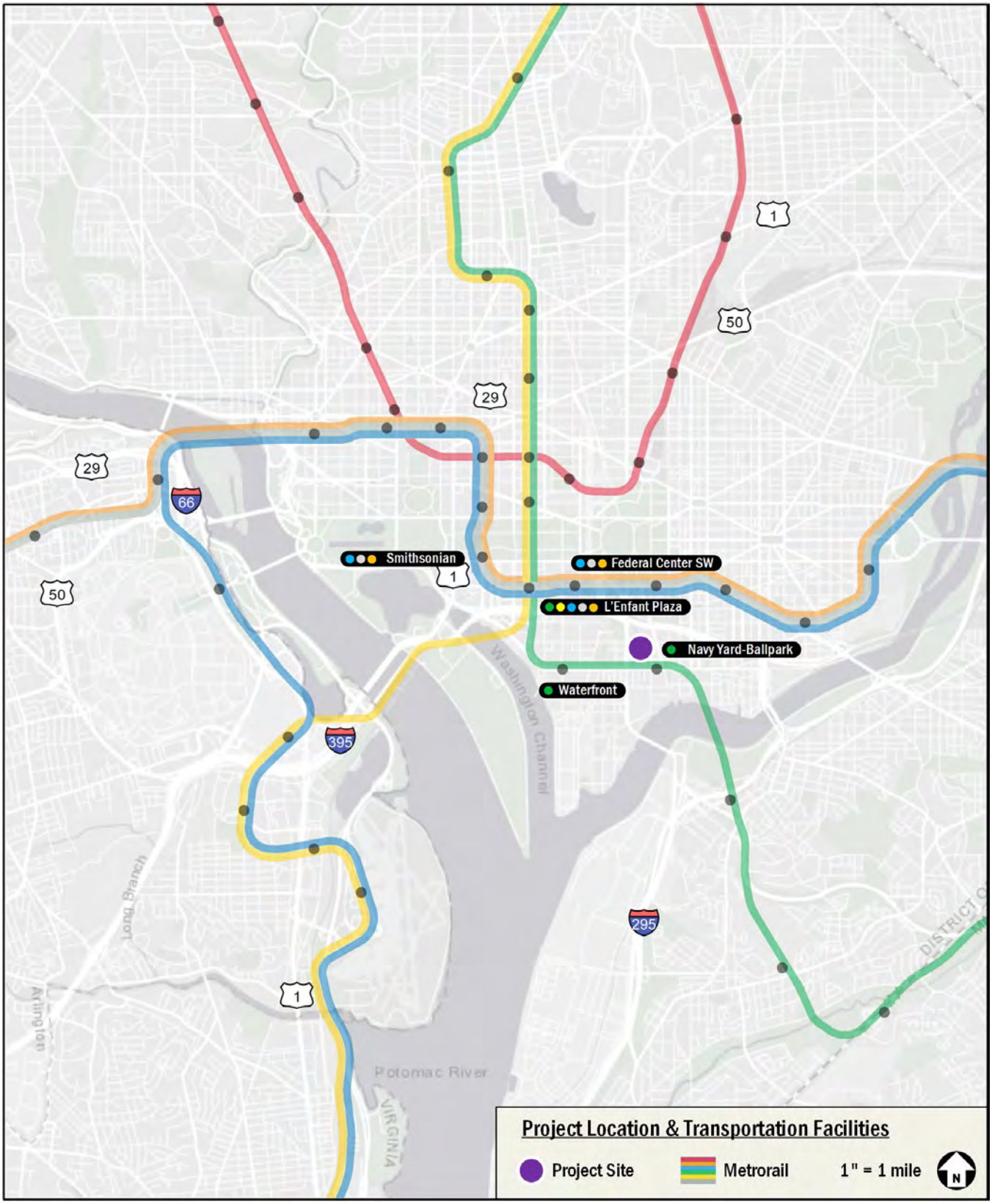

Figure 5: Regional Transportation Facilities

Figure 6: Major Local Transportation Facilities

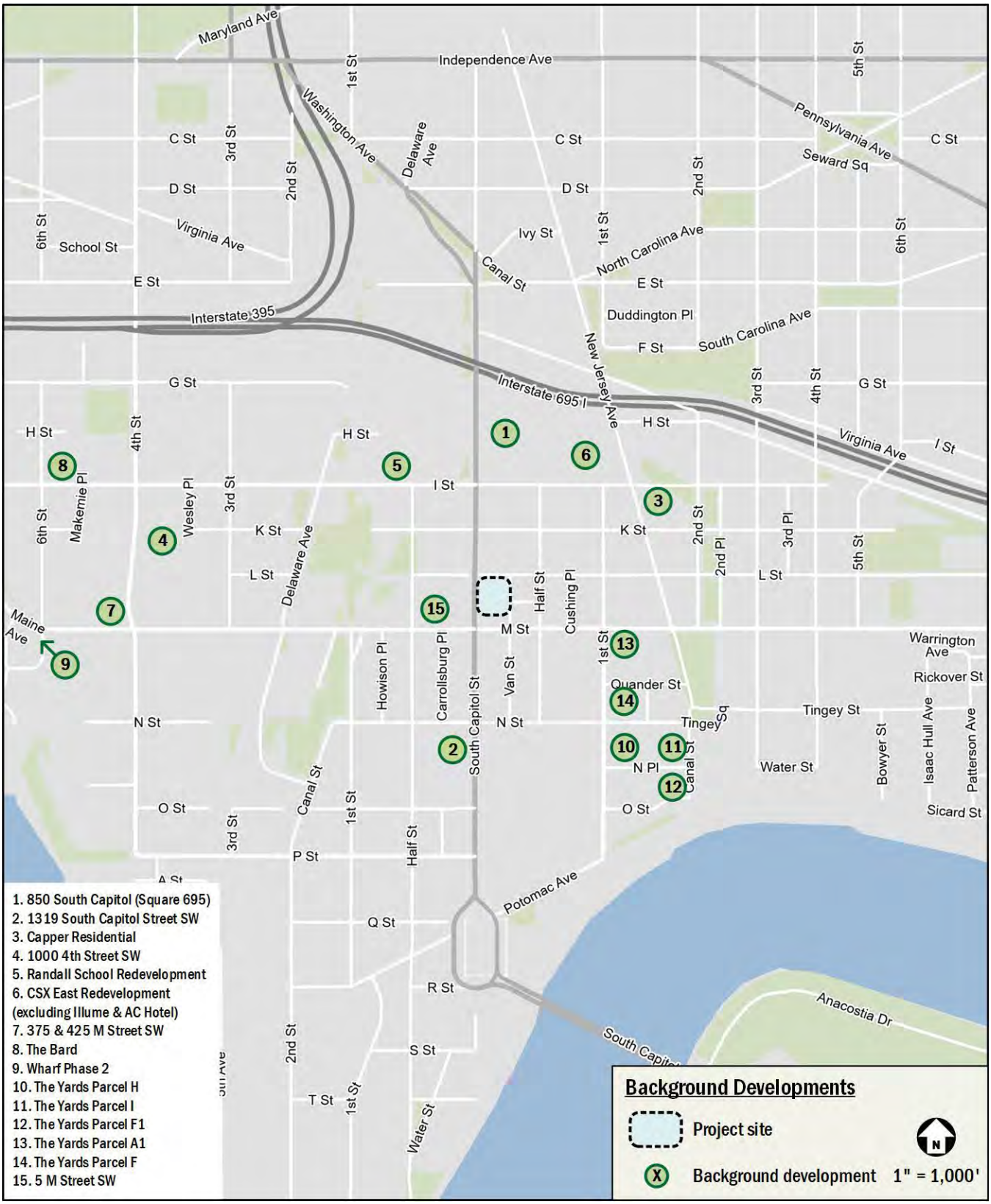

Figure 7: Background Developments

Project Design

This chapter reviews the transportation components of the Project's design, including the proposed site plan and access points. It includes descriptions of the Project's vehicular access, loading, parking, and bicycle and pedestrian facilities.

The proposed development of 1100 South Capitol Street will include a new residential building with up to approximately 248 residential units 162 parking spaces within a below grade garage. For purposes of this assessment, 1,500 square feet of potential ground floor retail space has been included. The ultimate amount of retail space, if any, will be determined at a later date. A site plan with access points by mode is shown in Figure 8.

Parcel Overview

The parcel is bounded by South Capitol Street service lane to the west, an existing church to the south, a public alley to the east, and L St SE to the north.

The development plan includes the following:

- 248 residential units
- 162-space vehicle parking garage
- Potential retail space (up to 1,500 sf, if any)

Alley Easement

A non-exclusive 5-foot-wide surface easement is located along a portion of the east side of the property abutting the 15-foot-wide public alley. The easement was established to provide adequate space for vehicles by creating an effective alley width of 20 feet. As part of this project, the applicant will voluntarily provide a 5-foot building setback along the rest of the property's east frontage, thus effectively extending the 5-foot-wide easement for the entire extent of the alley abutting the property.

Loading Facilities

Based on zoning requirements, the Project is required to provide one 12' x 30' (1) loading berth and one (1) 10' x 20' service/delivery space. The Project will meet these requirements by providing one (1) of each within the internal loading area. The loading berth and service/delivery space will be directly accessible from the alley to the east of the site. Trash and recycling are also located in the loading area, where collection will take place.

The alley easement and building setback will provide increased maneuverability within the existing alley system adjacent to the building, loading area and garage access.

The Project is expected to generate up to approximately five (5) total loading/delivery trips per day. The daily loading trip generation and assumptions include the following:

- Residential: One (1) loading trip based on the number of units, and an average unit turnover of 18 months;
- General: Four (4) general deliveries consisting of trash and recycling removal, mail, and parcel delivery for the entire site.

Vehicle and Bicycle Parking Facilities

As the site is located in a Downtown (D) zone, no vehicle parking is required. However, the development will include 162 parking spaces within the site's below-grade garage in order to meet the practical needs of the site.

District regulations mandate one (1) long-term bicycle parking space for every three (3) dwelling units and one (1) short-term bicycle parking space for every 20 dwelling units for residential uses. For the site's 248 dwelling units, a minimum of 83 long-term spaces and 12 short-term spaces are required. No bicycle or vehicle parking spaces would be required for the potential retail space, if included in the development.

The locations of bicycle and vehicle parking spaces within the site are shown in Figure 8.

Pick-Up/Drop-Off Zone Along L Street SE

The Project proposes to include a PUDO zone along L Street adjacent to the site to accommodate short-term pick up and drop off activities proximate to the building's main entrance. This area will include "No Parking" signage and will help discourage vehicles from stopping in the vehicular travel lane to perform these activities.

Urban Forestry Street Tree Inventory

Concentrations of street trees near the site are found along Half Street, L Street, and M Street SE, as seen in Figure 9.

Figure 8: Site Plan

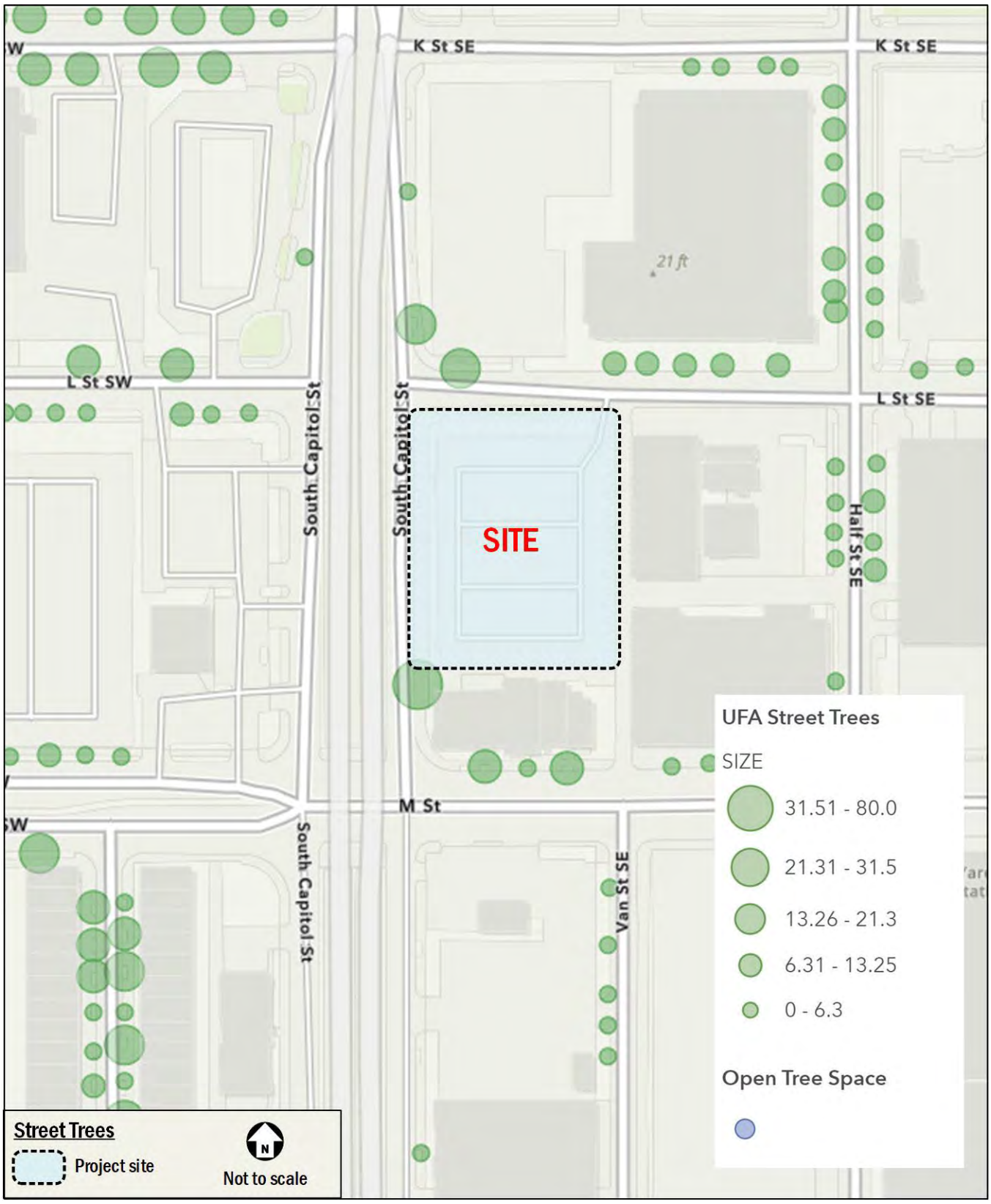

Figure 9: Street Trees

Site Access and Circulation

Pedestrian Access

Primary pedestrian access to the Project is proposed via the entrance on L St SE and additional access will be provided from the alley. If retail space is implemented, additional pedestrian access will be provided along the South Capitol Street SE frontage. A circulation plan including expected pedestrian routes is show in Figure 10.

Bicycle Access

Bicycle access will be provided via the existing public alley, where bicycles can enter and exit the bicycle storage room. The southern end of the alley is located a half-block from the M Street SE peak hour bus/bicycle lanes. A circulation plan including expected bicycle routes is shown in Figure 10.

Vehicular Access

Vehicular access to the site's parking garage is proposed to be accommodated via the public alley. A circulation plan including expected vehicular routes is show in Figure 10.

Curbside Management

Existing curbside uses were reviewed within approximately two (2) blocks of the site as shown in Figure 11.

Generally, metered street parking is available to the north of the site and permit-restricted street parking is available to the southwest. Most streets to the site's southeast do not permit parking.

As part of the Project, a new pick-up/drop-off (PUDO) zone will be implemented along the site's frontage on L Street SE. Proposed curbside conditions are shown in Figure 12.

Loading and Trash

Loading

The proposed loading facilities will accommodate all move-ins/move-outs and delivery demand for tenants without any detrimental impact to the surrounding network.

As described above, all loading activities will take place within the site's loading area accessed from the public alley. No back-up maneuvers from M Street SE, Half Street SE, or other public streets will be necessary for trucks to access the loading berth and/or service space.

Per ZR16 requirements, any residential development providing 50 or more dwelling units is required to provide one (1) loading berth and one (1) service/delivery space. The proposed development will meet these minimum requirements by providing one (1) of each type of loading space. Figure 10 shows vehicle paths to the loading area.

DDOT standards stipulate that truck movements for a site should be accommodated without back-in movements through public space. The Project has been designed to accommodate all loading from the public alley without any backing maneuvers to or from the public road network.

Trash

Trash pick-up will occur in the building's loading area. No trash will be stored in public space.

Parking

The proposed on-site parking has been designed based on the expected needs of the Project. The Project will include 162 vehicle parking spaces in the below-ground garage.

Electric Vehicle (EV) Parking

Section 1.6 of the DDOT CTR guidelines recommends that one (1) out of every 50 spaces be served by an EV charging station. Consistent with DDOT guidance, the Project will include 25 EV spaces with dedicated electrical capacity available for up to an additional 25 spaces.

Electric Vehicle Readiness Amendment Act of 2020

Per the Electric Vehicle Readiness Amendment Act of 2020, for building permits issues after January 1, 2022, all new construction or substantial improvement of commercial buildings and multi-unit buildings that have three (3) or more automobile off-road parking spaces are required to include EV make-ready infrastructure to accommodate the future installation of EV charging for at least 20% of parking spaces.

As of 3 October 2022, the law has not gone into effect because it has not been funded. The Applicant is aware that this requirement may go into effect prior to pulling their building permits and is committing to provide the EV make-ready infrastructure to accommodate more than the required 20% of the parking spaces on-site.

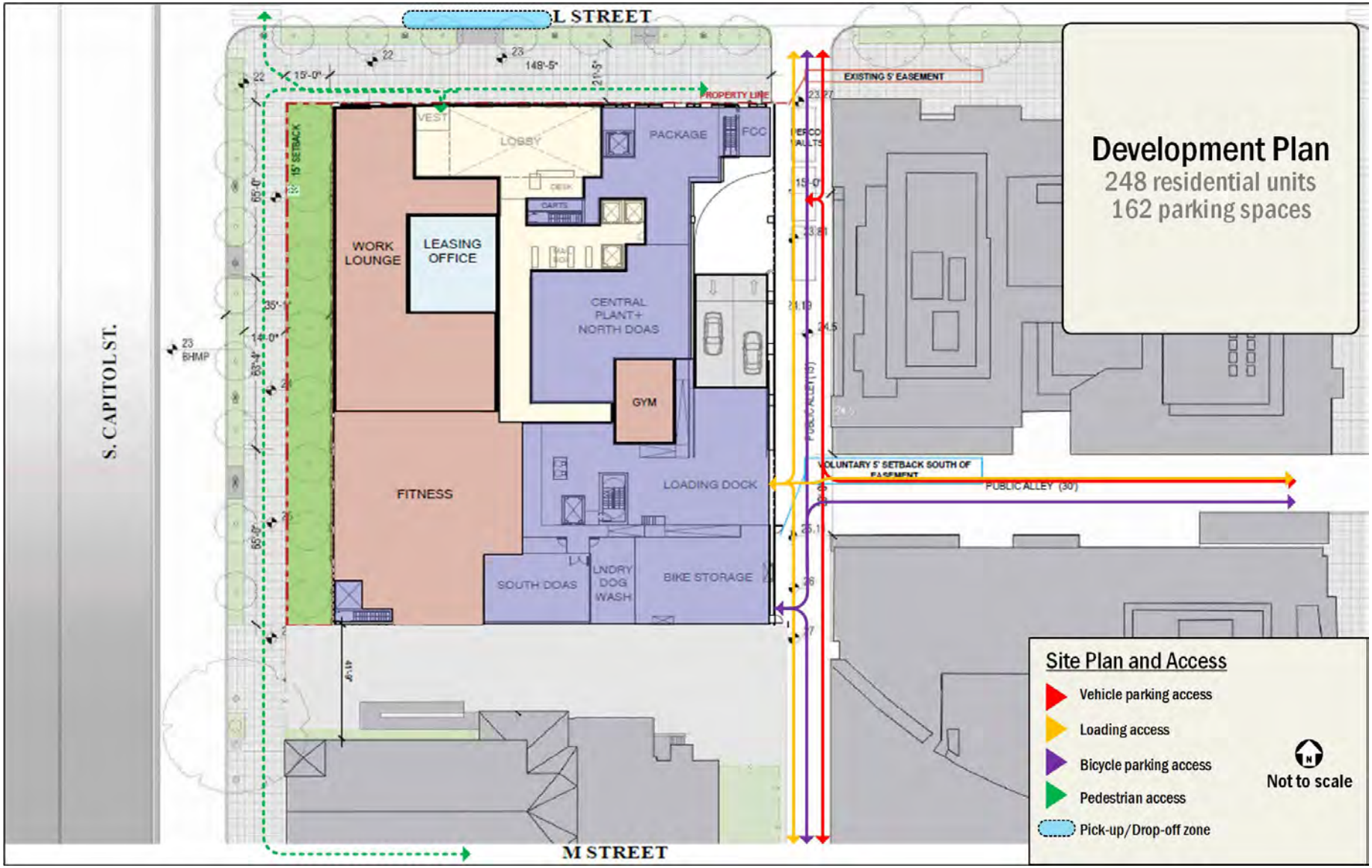

Figure 10: Proposed Circulation Plan

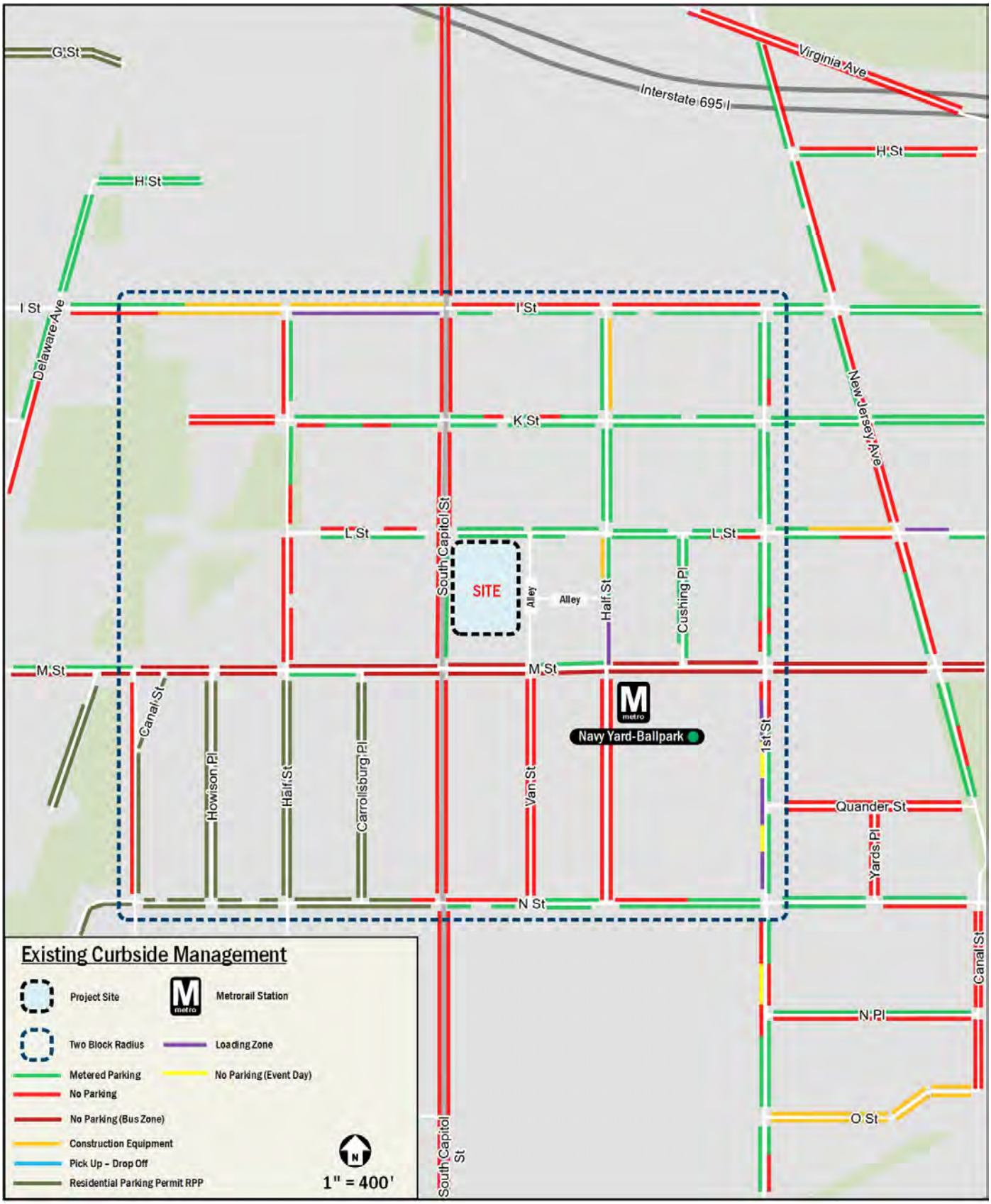

Figure 11: Existing Curbside Management

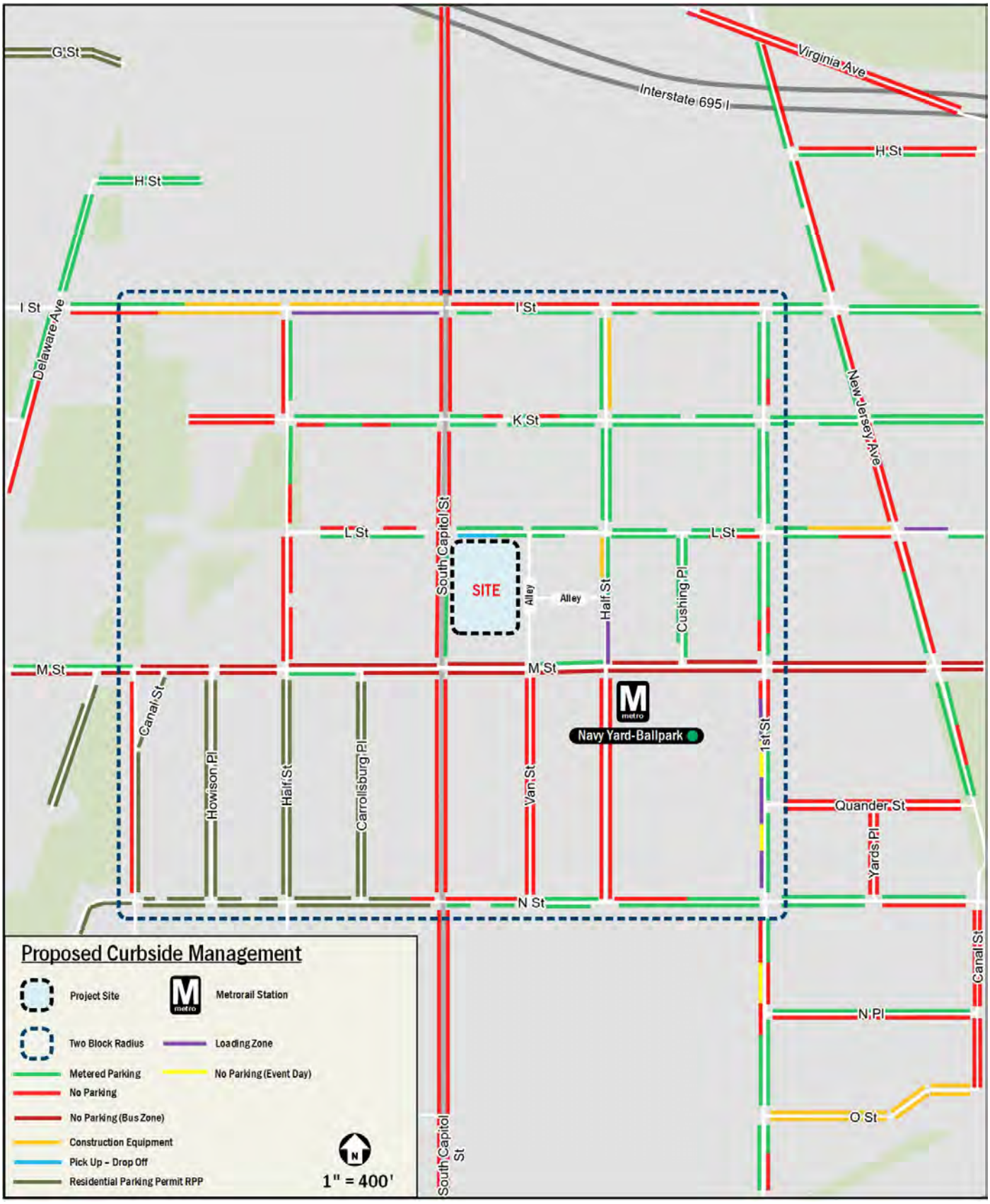

Figure 12: Proposed Curbside Management

Bicycle and Pedestrian Facilities

Bicycle Parking

The Project will provide at least 83 long-term and at least 12 short-term bicycle parking spaces. The Project's bicycle parking will meet or exceed ZR16 bicycle parking requirements and meet DCMR Title 18 Section 1214. Bicycle parking requirements are as follows:

Long-Term (83 spaces required)

- **ZR-16: Residential, multiple dwelling unit** – one (1) space for every three (3) dwelling units. After the first 50 spaces have been provided, provide spaces at one (1) space for every six (6) dwelling units.
    - ZR 16 requirement: 66 spaces required
- **DCMR Title 18 Section 1214 –** one (1) space per three (3) dwelling units
    - **DCMR 18-1214 requirement: 83 spaces required**

Long-term bicycle parking will be provided in the designated bike room, conveniently accessible on the ground floor directly from the adjacent public alley.

Short-Term (12 spaces required)

- **Residential, multiple dwelling unit** – one (1) space for every 20 dwelling units
- **248-unit building** –12 spaces required

Short-term bicycle parking spaces (racks) will be provided around the perimeter of the site in highly accessible locations near the building entrance. Bicycle parking requirements are show in Table 2.

Pedestrian Facilities

The site is surrounded by a well-connected pedestrian network. Despite some incidences of sidewalks that do not meet width standards, overall, there is a well-connected pedestrian network surrounding the site. While crosswalks and curb ramps along the perimeter of the site meet DDOT and ADA standards, some sidewalks do not. The Project will improve these facilities to meet DDOT standards.

Table 2: Bicycle Parking Requirements

Size	Bicycle Parking ZR16 Rate*		ZR16 Bicycle Parking Spaces Required		DCMR Long-Term Spaces Required
	Long-Term	Short-Term	Long-Term	Short-Term	
248 units	1 for 3 du	1 for 20 du	66	12	83

*Rates applied at 50% after the first 50 spaces for each use

Transportation Demand Management

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

While the development does not trigger intersection mitigation, the proposed parking supply exceeds DDOT's preferred parking maximums. Per the DDOT CTR guidelines, where a development's proposed parking supply is greater than 25% higher than DDOT's preferred maximum parking, strategies and methodologies of the Enhanced Plus Plan highlighted in DDOT's CTR guidance can be adopted to mitigate project impacts. The following is a list of TDM strategies the Applicant proposes for the 1100 South Capitol Street development, including Enhanced and Enhanced Plus components.

For the entire building, the Applicant proposes the following:

- 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. The Transportation Coordinators will act as points of contact with DDOT, goDCgo, and Zoning Enforcement and will provide their contact information to goDCgo.
- Transportation Coordinator will conduct an annual commuter survey of building employees and residents on-site, and report TDM activities and data collection efforts to goDCgo once per year.
- Transportation Coordinator will develop, distribute, and market various transportation alternatives and options to the residents, 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 Coordinator will subscribe to goDCgo's residential newsletter and receive TDM training from goDCgo to learn about the transportation conditions for this project and available options for implementing the TDM Plan.
- Provide welcome packets to all new residents that should, at a minimum, 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. Brochures can be ordered from DDOT's goDCgo program by emailing info@godcgo.com.
- Provide 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.
- Post all transportation and TDM commitments on building website, publicize availability, and allow the public to see what has been promised.
- Offer one (1) SmarTrip card and one (1) complimentary Capital Bikeshare coupon good for a free ride to every new resident.
- Provide at least 12 short-term and 83 long-term bicycle parking spaces.
- Long-term bicycle storage rooms will accommodate non-traditional sized bikes including cargo, tandem, and kids' bikes, with a minimum of four (4) spaces designed for longer cargo/tandem bikes (10 feet by 3 feet) for this Project. A minimum of eight (8) spaces will be designed with electrical outlets for the charging of electric bikes and scooters. A minimum of 42 spaces will be placed horizontally on the floor. There will be no fee to the residents or employees for usage of the bicycle storage room and strollers will be permitted to be stored in the bicycle storage room.
- Install EV charging infrastructure for a minimum of twenty-five (25) spaces in the parking garage, with dedicated electrical capacity available for up to an additional 25 spaces.
- Following the issuance of a Certificate of Occupancy for the Project, the Transportation Coordinator will submit documentation 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.
- Following the issuance of a Certificate of Occupancy for the Project, the Transportation Coordinator will submit a letter to the Zoning Administrator, DDOT, and goDCgo every five (5) years (as measured from the final Certificate of Occupancy for the Project) summarizing continued

substantial compliance with the transportation and TDM conditions in the Order, unless no longer applicable as confirmed by DDOT. If such letter is not submitted on a timely basis, the building shall have sixty (60) days from date of notice from the Zoning Administrator, DDOT, or goDCgo to prepare and submit such letter.

Enhanced TDM Components

- Offer one (1) one-year Capital Bikeshare membership to each residential unit during the initial lease-up of the building.
- Provide a bicycle repair station in each long-term bicycle parking storage room.
- Provide one (1) collapsible shopping cart (utility cart) for every 50 residential units, for a total of five (5) to encourage residents to walk to the grocery store and run errands.

Enhanced Plus TDM Components

- Offer one (1) SmarTrip card pre-loaded with $25 to each residential unit during the initial lease-up of the building.
- Fund and install the expansion of the existing First Street SE and M Street SE Capital Bikeshare (CaBi) station with a single four-dock expansion plate (or other location to be confirmed with and approved by DDOT).
- Hold a transportation event for residents, employees, and members of the community once per year for two (2) years following the opening of the building. Examples include resident social, walking tour of local transportation options, goDCgo lobby event, transportation fair, WABA Everyday Bicycling seminar, bicycle safety/information class, bicycle repair event, etc.
- To encourage teleworking, provide a business center on-site and available to residents as a part of the building's amenity package 24 hours per day, 7 days per week. Access to a copier and internet services will be included, as well as both communal and private workstations.
- Collect parking demand and trip generation data annually for two (2) years after building opening and report this information to DDOT's Planning and Sustainability Division (PSD).
- Offer a carshare company the right of first offer to provide two cars for carsharing services in the parking garage.

Travel Demand Assumptions

This chapter outlines the transportation demand for the Project. 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.

As previously noted, the Project will replace an existing surface parking lot with approximately 110 existing vehicular parking spaces. Therefore, the redevelopment of the property will result in the vehicle trips generated by the existing parking lot removed from the surrounding transportation network. In order to provide a conservatively high estimate of the potential Project impact, no existing trips were removed from the network in this assessment; however, it is expected that the overall net impact of the Project would be lower than shown in this report given the removal of the existing parking lot trips.

Mode Split Methodology

Mode split (also called mode share) is the percentage of travelers using a particular type (or mode) of transportation when traveling. Mode split assumptions for this report were based on prior approved projects in the area, survey data, Census data at the tract and Traffic Analysis Zone (TAZ) levels. Table 3 summarizes the mode split assumptions for this report. Sources for these mode split assumptions can be found in the Technical Attachments.

Table 3: Summary of Mode Split Data

Land Use	Mode			
	Auto	Transit	Bike	Walk
Residential	45%	35%	10%	10%
Retail	20%	20%	10%	50%

Trip Generation Methodology

Traditionally, weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th 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.

While a retail use is not currently planned, 1,500 SF of retail space is being included to provide a conservatively high trip generation estimate in the event that a portion of the residential amenity space is converted to retail space in the future. Trip generation for the proposed land use was calculated based on ITE Land Use 222, *Multifamily Housing (Mid-Rise). Trip generation for the potential retail use was calculated using ITE Land Use* 822, *Strip Retail Plaza. T*rips were then split into different modes using assumptions outlined in the Mode Split Methodology section of this report.

As shown in

Table 4, the proposed development is expected to generate trips on the surrounding network across all modes. The AM peak hour trip generation is projected to include up to 35 vehicle trips per hour, up to 33 transit trips per hour, up to 11 bicycle trips per hour, and up to 15 pedestrian trips per hour. The PM peak hour trip generation is projected to include up to 44 vehicle trips per hour, up to 43 transit trips per hour, up to 14 bicycle trips per hour, and up to 29 pedestrian trips per hour. Trip generation calculations for the development are included in the Technical Attachments.

As discussed in the capacity analysis section of this report, the addition of site generated vehicle trips does not significantly impact delays or queues at the study intersections. The Project will not trigger mitigation requirements at any of the study intersections and will mitigate any potential minor site impacts through a robust TDM plan with enhanced and enhanced plus components.

Table 4: Summary of Trip Generation

Mode	Land Use	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto (veh/hr)	Residential	12	21	33	22	18	40
	Retail	1	1	2	2	2	4
	Total	**13**	**22**	**35**	**24**	**20**	**44**
Transit (ppl/hr)	Residential	11	19	30	20	16	36
	Retail	2	1	3	4	3	7
	Total	**13**	**20**	**33**	**24**	**19**	**43**
Bike (ppl/hr)	Residential	3	6	9	6	4	10
	Retail	1	1	2	2	2	4
	Total	**4**	**7**	**11**	**8**	**6**	**14**
Walk (ppl/hr)	Residential	2	6	8	6	5	11
	Retail	4	3	7	8	10	18
	Total	**6**	**9**	**15**	**14**	**15**	**29**

Traffic Operations

This chapter summarizes the analysis of the existing and future roadway capacity surrounding the Project. Included is an analysis of potential vehicular impacts of the Project.

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, if any are required.

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 to by DDOT staff.

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

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

- The capacity analyses show a LOS E or F at an intersection or along an approach 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 five (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.

This chapter concludes:

- Under Existing Conditions, (1) study intersection operates at an unacceptable levels of service.
- The addition of background developments and growth under Background Conditions results in three (3) study intersections operating at unacceptable levels of service.
- The addition of site-generated trips does not significantly affect the delays or queuing at the study intersections. The development will have minimal influence on traffic capacity in the study area.
- The Project, will not have a detrimental impact to the surrounding vehicular network, with the implementation of site design elements and proposed TDM strategies.

Study Area, Scope, and Methodology

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

The general methodology of the analysis follows national and DDOT guidelines on the preparation of transportation impact evaluations of site development.

Capacity Analysis Scenarios

The vehicular 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 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:

- 2022 Existing Conditions
- 2026 Future Conditions without the development (2026 Background Conditions)
- 2026 Future Conditions with the development (2026 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. Half Street & M Street SW
2. South Capitol Street & K Street
3. South Capitol Street SB Service Lane & L Street SW
4. South Capitol Street NB Service Lane & L Street SE
5. South Capitol Street SB Ramps & M Street SW
6. South Capitol Street NB Ramps & M Street SE
7. South Capitol Street & N Street
8. L Street SE & Site Alley
9. Van Street, Site Alley & M Street SE
10. Half Street & L Street SE
11. Half Street SE & Site Alley
12. Half Street & M Street SE

Figure 13 shows a map of the study area intersections.

Geometric and Operations Assumptions

With no additional roadway improvements planned for completion prior to the targeted opening of the Project, the intersection and lane geometry and operations assumed in all scenarios were those present when the data collection occurred, as agreed to during the scoping process. Gorove Slade made observations and confirmed the lane configurations and traffic controls at the intersections within the study area. Existing signal timings and offsets were obtained from DDOT and are included in the Technical Attachments.

The lane configurations and traffic controls assumed in the analysis 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

The existing traffic volumes are comprised of turning movement count data collected on two (2) separate dates. Counts at South Capitol Street & N Street SE were collected on Wednesday, May 18, 2022, and counts at all other study intersections were collected on Wednesday, June 8, 2022. All data was collected between the hours of 6:30 and 9:30 AM and 4:00 and 7:00 PM, and for all intersections, the intersection morning and afternoon peak hours were used. Local schools and the government were in session when the turning movement count data was collected.

Existing 2022 volumes are shown in Figure 15 with full turning movement count details available in the Technical Attachments.

Background Traffic Volumes (without the Project)

The traffic projections for the 2026 Background Conditions consist of the existing volumes with two (2) additions:

- Inherent growth on the roadway (representing regional traffic growth), and
- The impacts of future developments located in the study area.

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

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

Based on these criteria, fifteen (15) developments were considered and determined to meet the above criteria. These developments include the following:

1. 1319 South Capitol Street SW
2. Capper Residential
3. 1000 4th Street SW
4. Randall School Redevelopment
5. CSX West Redevelopment
6. CSX East Redevelopment (excluding Illume & AC Hotel)
7. 375 & 425 M Street SW
8. The Bard
9. Wharf Phase 2
10. The Yards Parcel G

11. The Yards Parcel I
12. The Yards Parcel F1
13. The Yards Parcel A1
14. The Yards Parcel F
15. 5 M Street SW

Information on the development programs of these background project is included in the Future Projects section of this report.

Existing traffic studies with mode splits, trip generation, and trip distributions were used when available for all developments. Trip generation, mode splits, and trip distributions were calculated independently using ITE's 11th Edition Trip Generation Manual for background developments without a study available. Detailed mode split and trip generation information is included in the Technical Attachments.

While the background developments represent local traffic changes, regional traffic growth was accounted for using regional growth rates. The growth rates used in this analysis were derived using the Metropolitan Washington Council of Government's (MWCOG) currently adopted regional transportation model, comparing the difference between the 2019 and 2025 model scenarios. The growth rates observed in this model served as a basis for analysis assumptions. The applied growth rates are shown in Table 6 and growth rate calculations are provided in the Technical Attachments.

The background growth volumes to 2026 are shown in Figure 16 and volumes generated by background developments are shown in Figure 17. Both of these sets of volumes were added to the existing traffic volumes to establish the 2026 Background traffic volumes. The traffic volumes for the 2026 Background Conditions are shown in Figure 18.

Total Future Traffic Volumes (with the Project)

The 2026 Total Future traffic volumes consist of the 2026 Background volumes with the addition of the traffic volumes generated by the proposed project. Thus, the 2026 Total Future traffic volumes include traffic generated by: the existing volumes, background developments, the inherent growth on the study area roadways, and the Project.

Trip distribution for the site-generated trips was determined based on: (1) CTPP TAZ data, (2) past approved trip distributions for nearby residential developments, and (3) the location of the parking access.

Based on this review and the site access locations, the Project-generated trips were distributed through the study area intersections. The destination of inbound trips and the origin of outbound trips was either the M Street SE or L Street SE entrances to the public alley bordering the site.

A summary of trip distribution assumptions is provided in Figure 19, and Figure 20 shows the detailed assignment of these trips at each study intersection. The total project-generated traffic volumes are shown in Figure 21, and the 2026 Total Future traffic volumes are shown in Figure 22.

Peak Hour Factors

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

For the Existing Conditions analysis, the PHF was calculated from the turning movement data that was collected in the field, using a minimum PHF of 0.85 for each intersection. Per DDOT guidelines, the intersection PHF remained the same through all study scenarios.

Vehicular Analysis Results

Intersection Capacity Analysis

Intersection capacity analyses were performed for the three (3) study scenarios at the intersections contained within the study area during the AM and PM peak hours. *Synchro* Version 11 was used to analyze the study intersections based on the 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 lowest acceptable LOS threshold in the District; however, 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 and reports 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, 2026 Background, and 2026 Total Future scenarios. Table 8 shows a comparison of the volume to capacity (v/c) ratios for each scenario.

While some intersections operate beyond DDOT's congestion standards, the Project will not trigger vehicular mitigation at any of the study intersections based on DDOT's CTR guidelines.

Existing Conditions: One (1) study intersection exhibits unacceptable levels of service under Existing Conditions:

- South Capitol Street & N Street
  - Westbound (AM/PM)
  - Northbound (PM)
  - Southbound (AM/PM)

Background Conditions: With the introduction of trips from background developments, the following three (3) study intersections exhibit unacceptable levels of service:

- South Capitol Street (Southbound) Service Lane & M Street SW
  - Southbound (AM)
- South Capitol Street & N Street
  - Overall (PM)
  - Westbound (AM/PM) (Consistent with Existing)
  - Northbound (PM) (Consistent with Existing)
  - Southbound (AM/PM) (Consistent with Existing)
- Van Street, Site Alley & M Street SE
  - Northbound (AM)

Total Future: The introduction of site-generated trips does not result in any additional study intersections or lane groups exhibiting a delay which exceeds the acceptable threshold. This indicates that minimal changes in delay are anticipated across the network. Therefore, no mitigations are necessary.

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 free-flowing left turns and stop-controlled movements) based on the HCM calculations.

Existing Conditions: Table 9 shows the queuing results for the study area intersections. One (1) study intersection exhibits one or more lane groups that exceed the given storage length under Existing Conditions:

- South Capitol Street & N Street
  - Westbound LTR (AM)
  - Northbound TR (AM)
  - Southbound R (PM)

Background Conditions: The introduction of trips from background developments results in one (1) study intersection that exhibits one or more lane groups that exceed the given storage length:

- South Capitol Street & N Street
  - Westbound LTR (AM/PM)
  - Northbound TR (AM) (Consistent with Existing)
  - Southbound R (PM) (Consistent with Existing)

Total Future: The introduction of site-generated trips does not result in any additional study intersections or lane

groups exhibiting a queue which exceeds the storage length. This indicates that minimal changes in queuing are anticipated across the network. Therefore, no mitigations are necessary.

Table 5: Summary of Background Trip Generation

Background Development	Trip Generation Source	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)		
		In	Out	Total	In	Out	Total
Wharf Phase 2	Gorove Slade Study	383	122	505	195	399	594
375 & 425 M Street SW	Gorove Slade Study	60	119	179	136	104	240
The Bard	Gorove Slade Study	35	19	54	44	19	63
CSX East Redevelopment	Gorove Slade Study	101	212	313	142	112	254
CSX West Redevelopment	Gorove Slade Study	14	41	55	40	24	64
Capper Redevelopment	ITE Trip Gen. 10th Ed.	15	36	51	43	30	73
1319 South Capitol Street	Gorove Slade Study	11	33	44	33	21	54
1000/1001 4th St	Gorove Slade Study	58	115	173	33	82	115
Randall School Redevelopment	Gorove Slade Study	32	106	138	110	67	177
Yards Parcel A1	ITE Trip Gen. 10th Ed.	108	19	127	28	111	139
Yards Parcel F	Gorove Slade Study	102	18	120	29	113	142
Yards Parcel F1	ITE Trip Gen. 10th Ed.	1	0	1	9	6	15
Yards Parcel H	Gorove Slade Study	22	54	76	63	46	109
Yards Parcel I	ITE Trip Gen. 10th Ed.	15	36	51	44	32	76
5 M Street SW	Gorove Slade Study	31	39	70	50	36	86
Total		**395**	**456**	**851**	**442**	**544**	**986**

Table 6: Applied Annual and Total Growth Rates

Roadway	Dir.	Proposed Annual Growth Rate Between 2022 and 2027 [1]		Proposed Total Growth Between 2022 and 2027	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Half St SE	NB	0.50%	2.00%	2.53%	10.41%
	SB	2.00%	0.50%	10.41%	2.53%
Half St SW [2]	NB	0.10%	0.10%	0.50%	0.50%
	SB	0.10%	0.10%	0.50%	0.50%
K St SE/SW [2]	EB	0.10%	0.10%	0.50%	0.50%
	WB	0.10%	0.10%	0.50%	0.50%
L St SE/SW [2]	EB	0.10%	0.10%	0.50%	0.50%
	WB	0.10%	0.10%	0.50%	0.50%
M St SE/SW	EB	1.30%	0.10%	6.67%	0.50%
	WB	0.10%	0.80%	0.50%	4.06%
N St SE/SW	EB	0.50%	2.00%	2.53%	10.41%
	WB	0.50%	0.50%	2.53%	2.53%
South Capitol St	NB	0.10%	0.30%	0.50%	1.51%
	SB	0.90%	0.10%	4.58%	0.50%
Van St SE [2]	NB	0.10%	0.10%	0.50%	0.50%
	SB	0.10%	0.10%	0.50%	0.50%

[1] These rates were applied to volumes grown from 2022 existing conditions. Rates are based on MWCOG's currently adopted regional transportation model and/or AADT data.

[2] Neither AADT nor MWCOG data is available for these streets; therefore a conservative 0.10% growth rate per year was used.

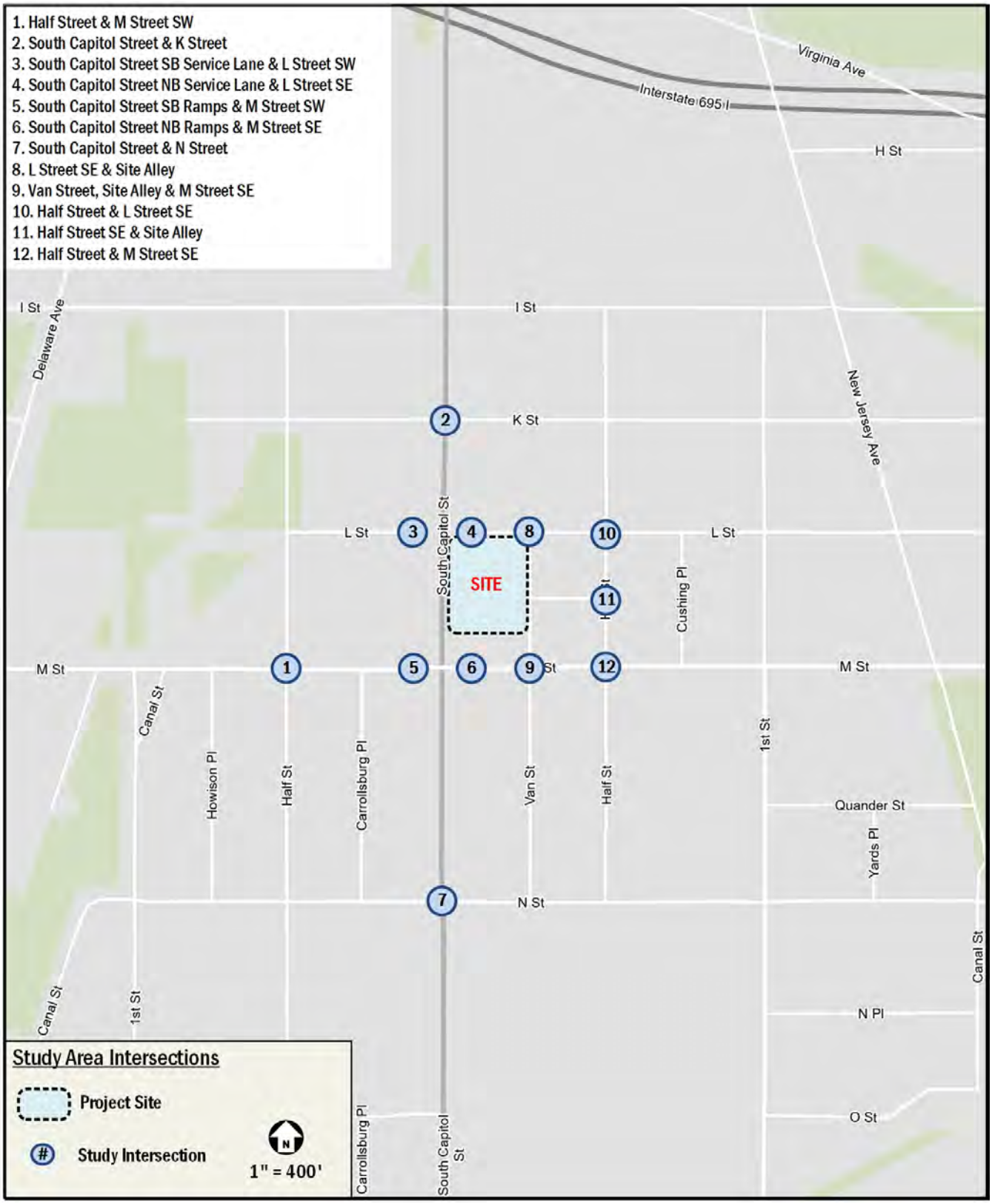

Figure 13: Study Area Intersections

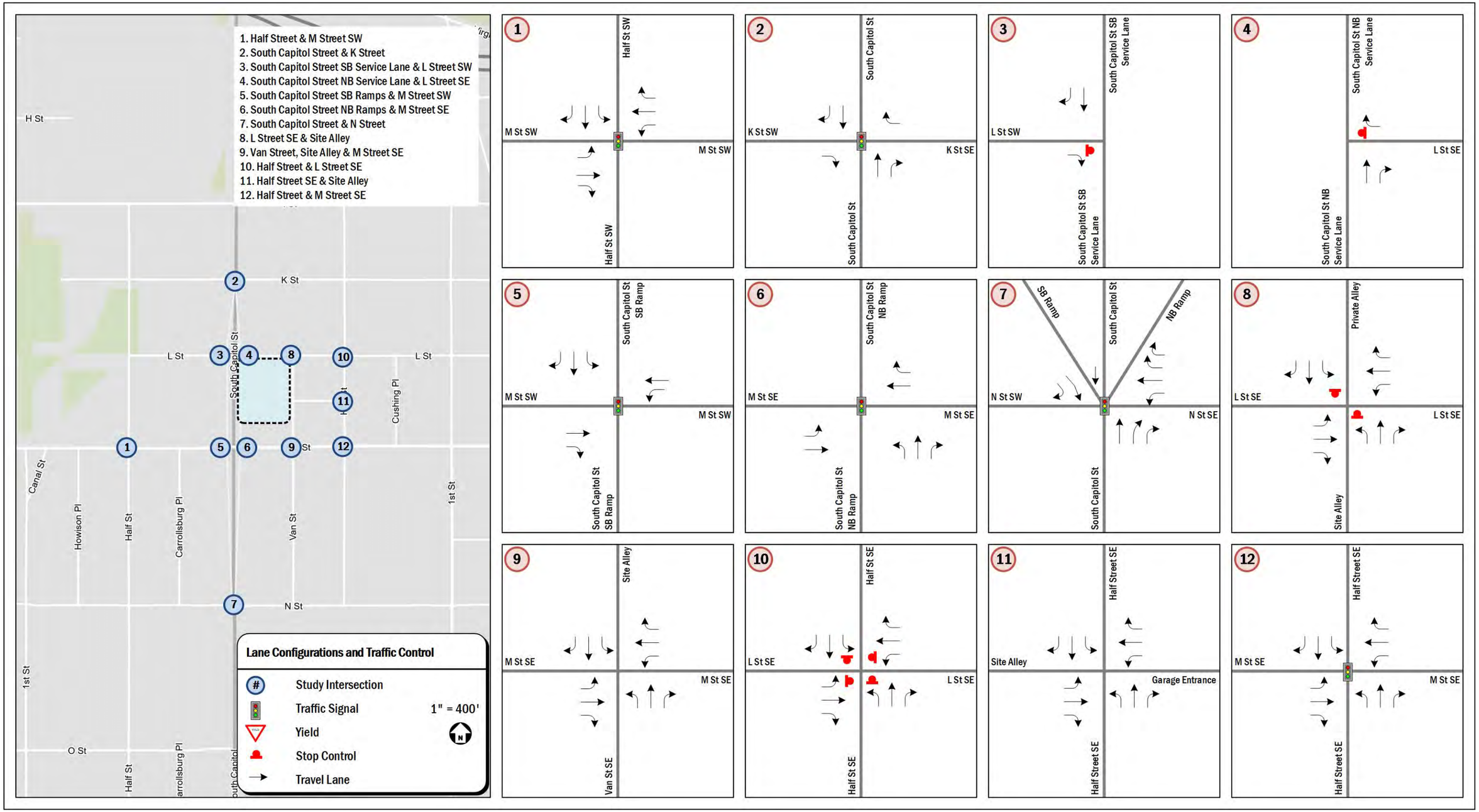

Figure 14: Lane Configuration and Traffic Control

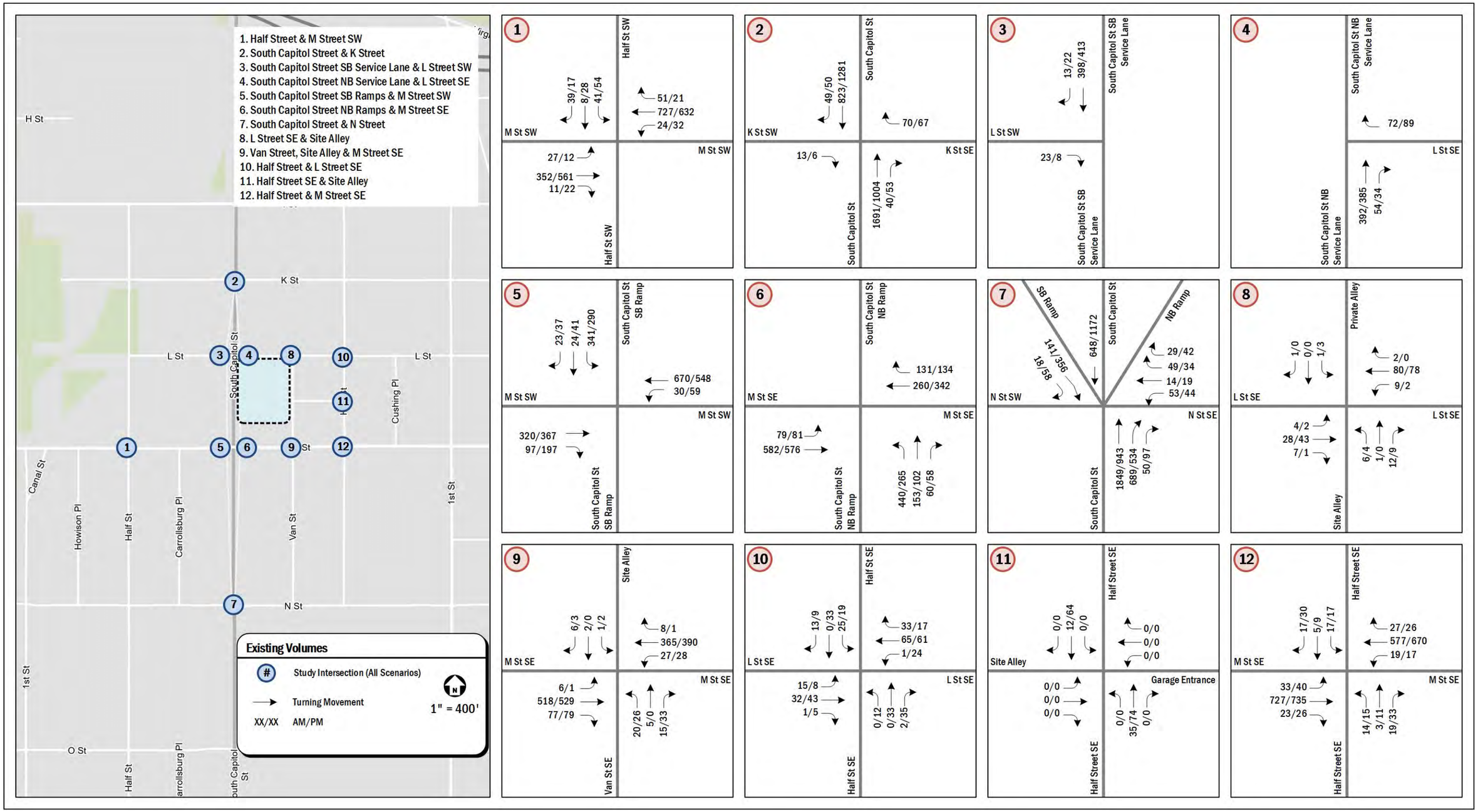

Figure 15: Existing (2022) Volumes

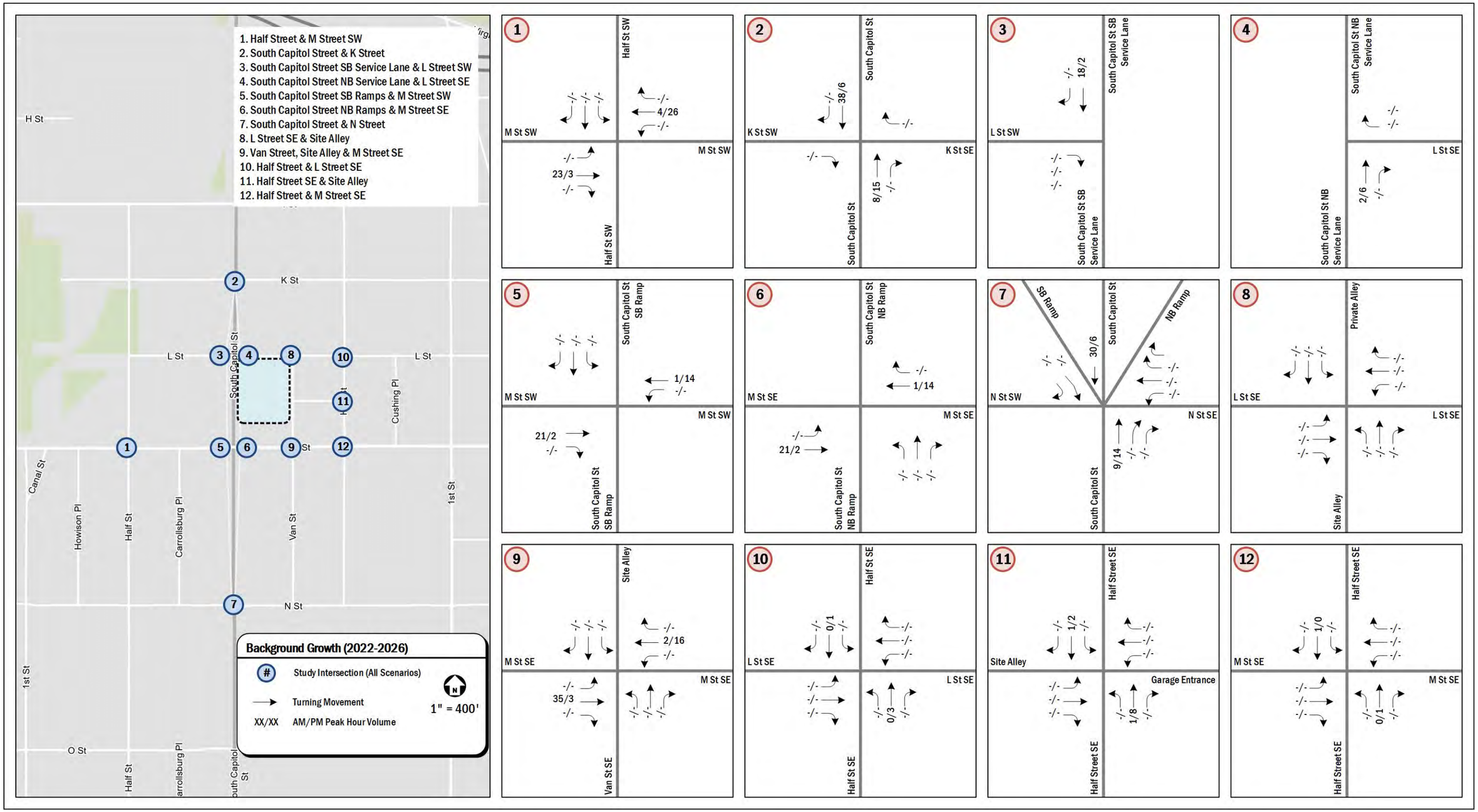

Figure 16: Background Growth (2022-2026)

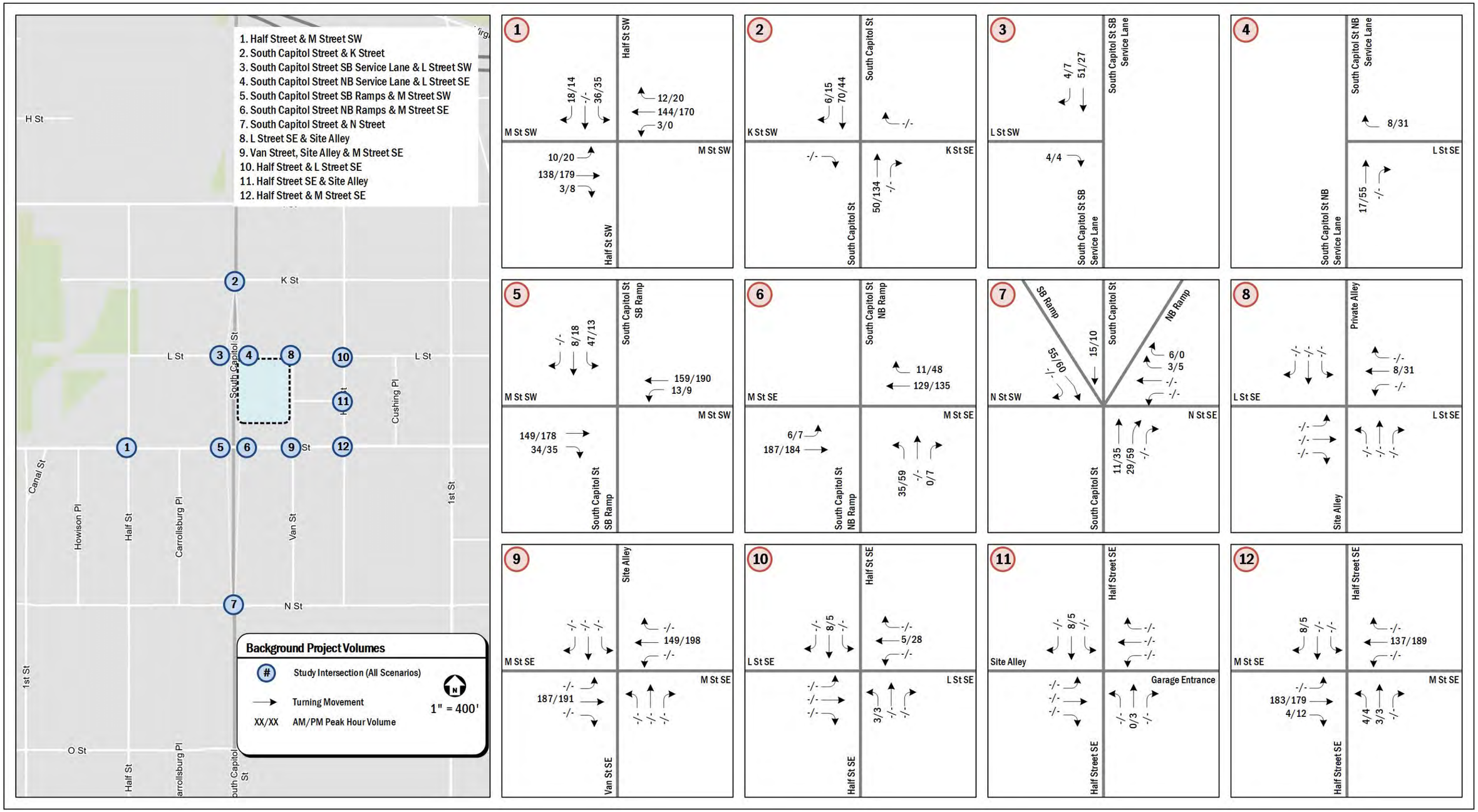

Figure 17: Background Project Volumes

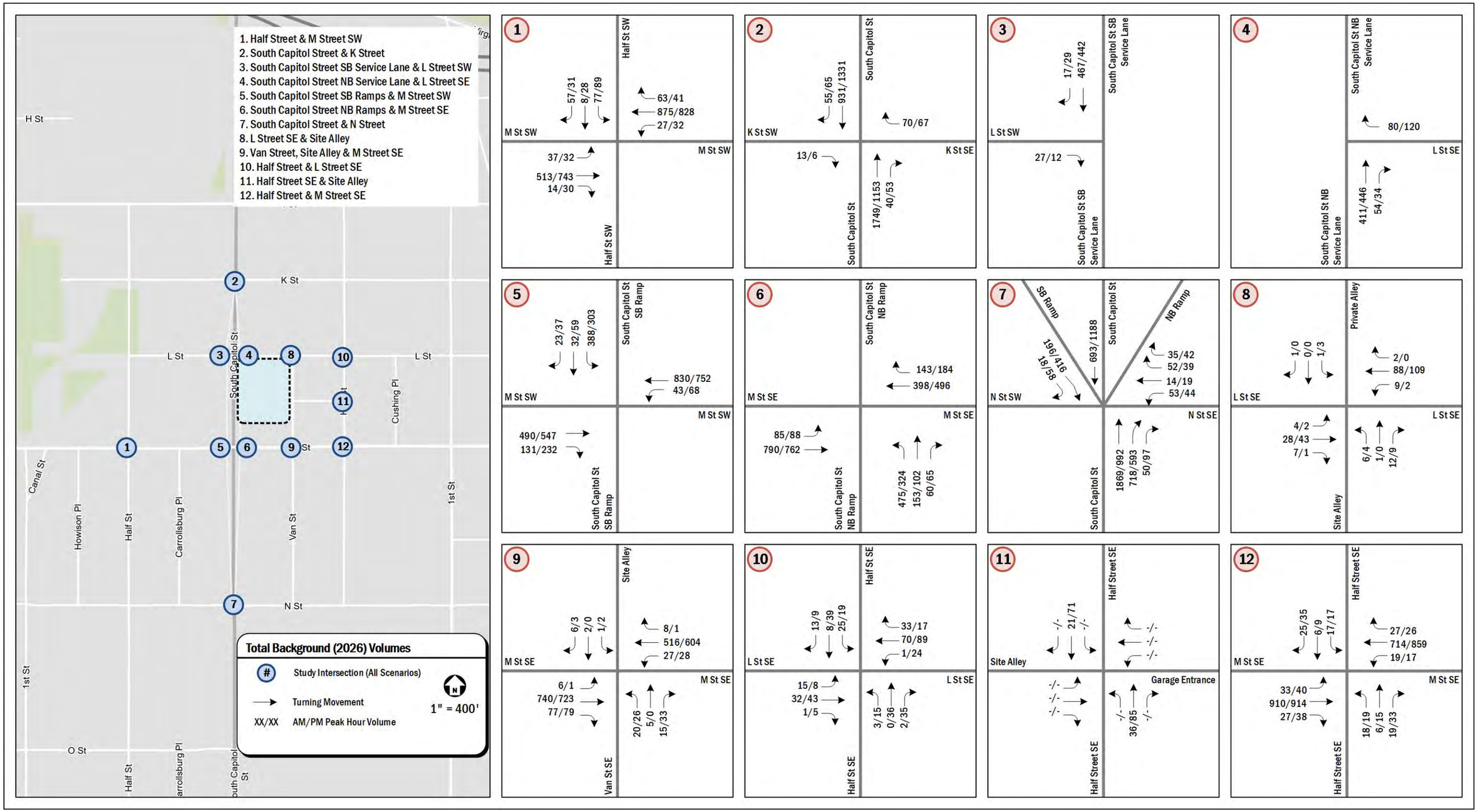

Figure 18: Total Background (2026) Volumes

Figure 19: Trip Distribution

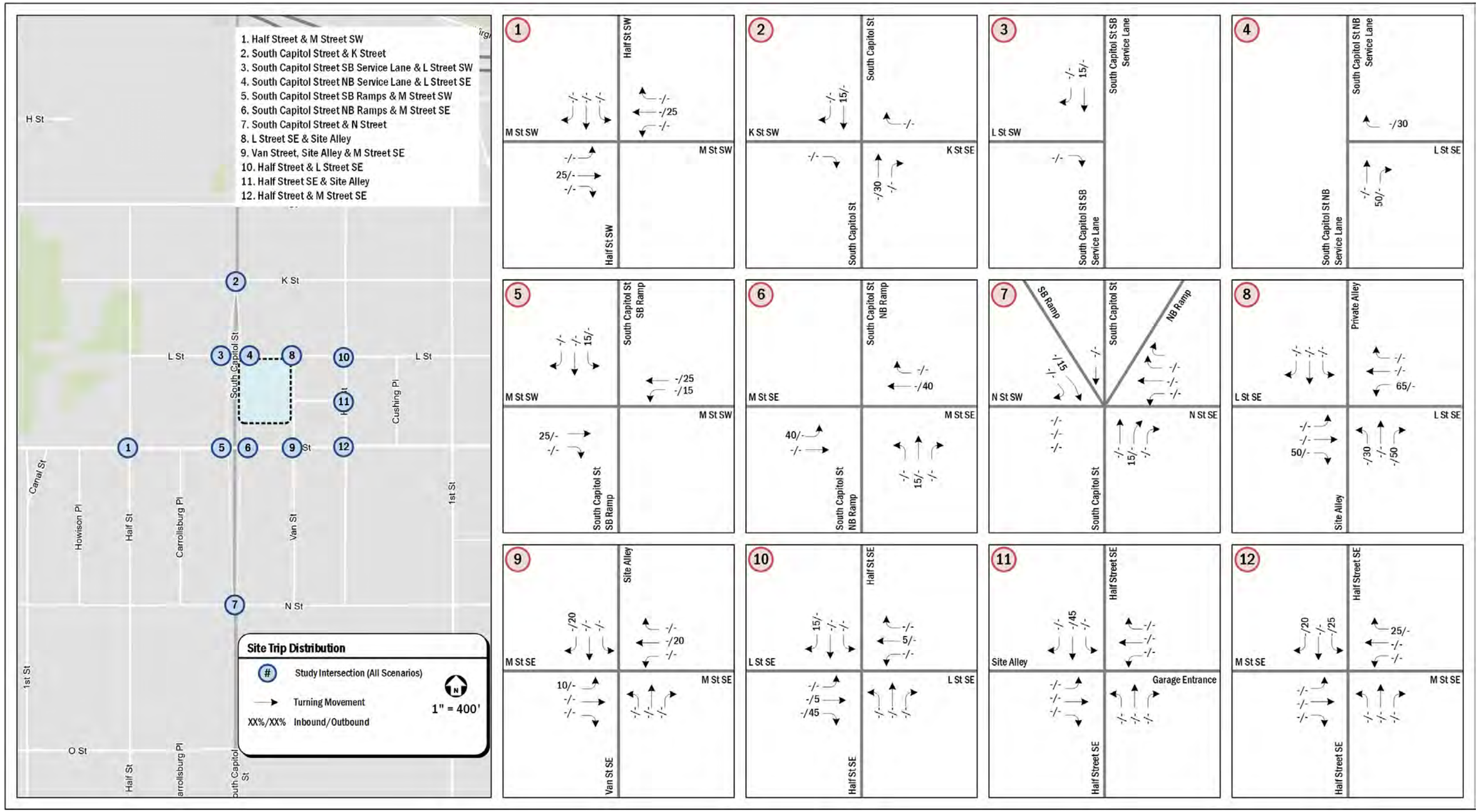

Figure 20: Site Trip Distribution at Study Intersections

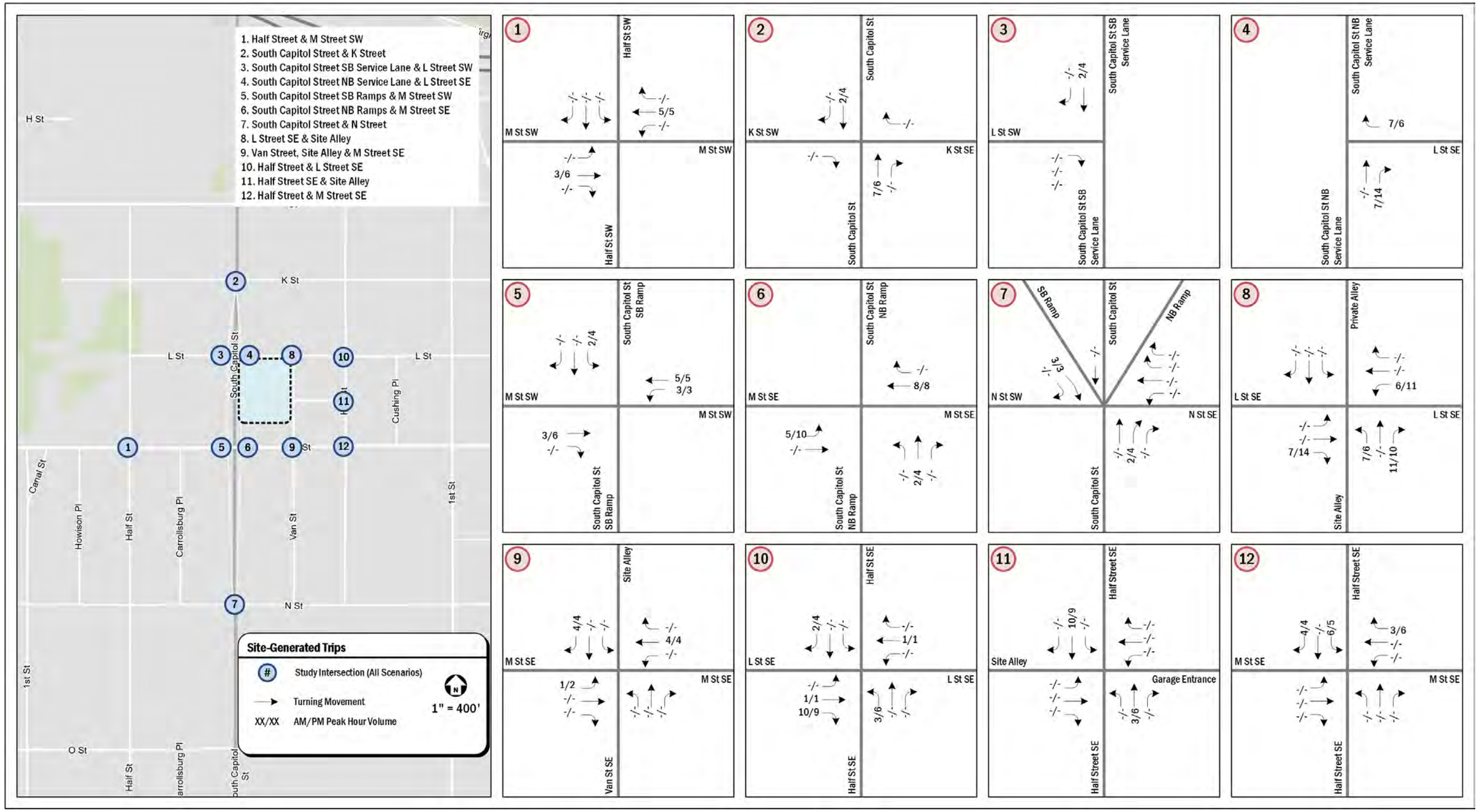

Figure 21: Site-Generated Peak Hour Volumes

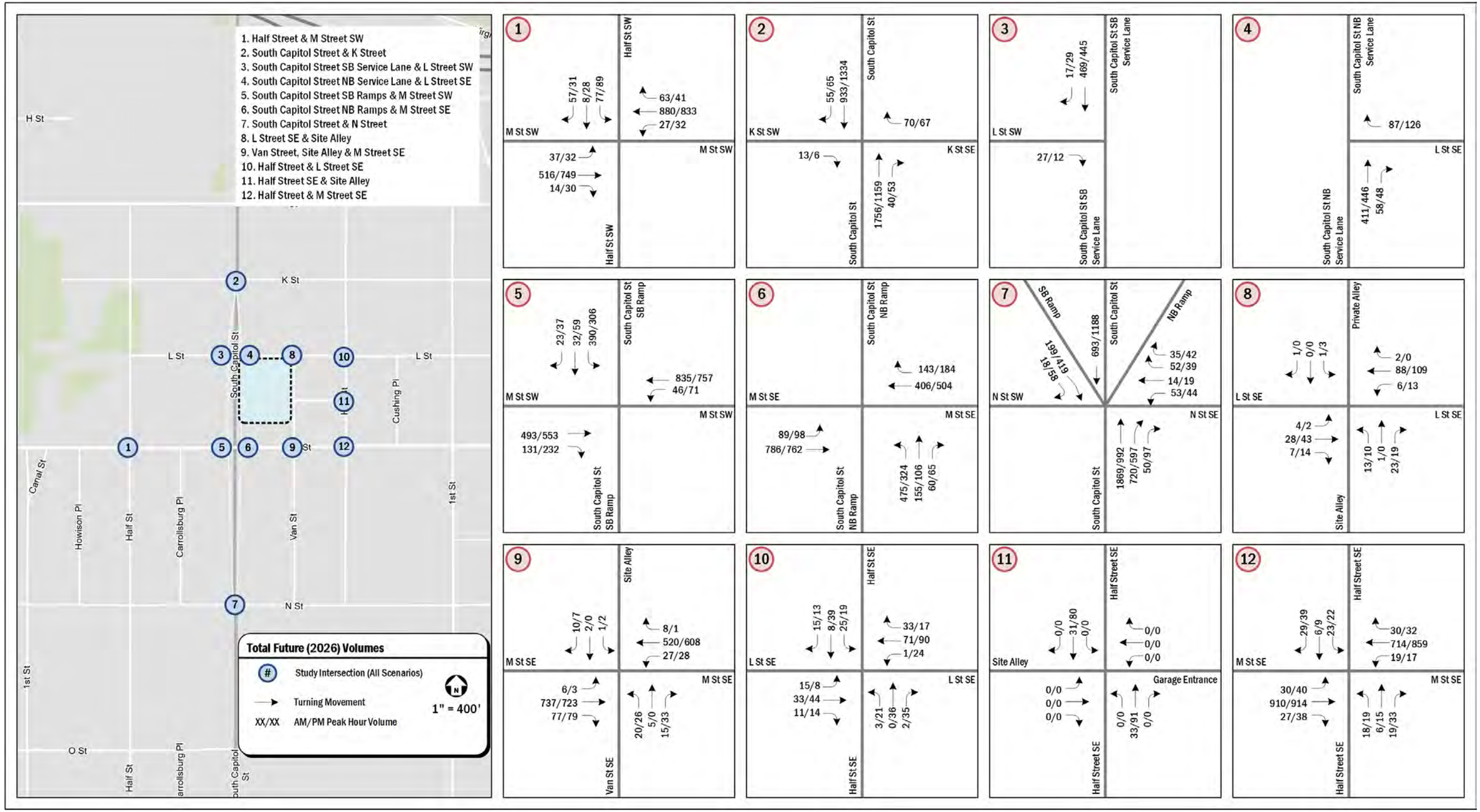

Figure 22: Total Future (2026) Volumes

Table 7: LOS Results

	Intersection and Approach	Existing (2022)				Background (2026)				Future (2026)			
		AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.	**Half Street & M Street SW**												
	Overall	**7.7**	**A**	**7.9**	**A**	**8.7**	**A**	**8.6**	**A**	**8.7**	**A**	**8.6**	**A**
	Eastbound	8.1	A	8.6	A	8.6	A	9.2	A	8.7	A	9.3	A
	Westbound	3.9	A	2.5	A	3.3	A	2.1	A	3.3	A	2.1	A
	Northbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Southbound	40.7	D	41.1	D	45.3	D	45.4	D	45.3	D	45.4	D
2.	**South Capitol Street & K Street**												
	Overall												
	Eastbound	10.5	B	11.8	B	10.9	B	12.1	B	10.9	B	12.1	B
	Westbound	16.3	C	11.7	B	16.7	C	12.3	B	16.8	C	12.3	B
	Northbound	0.0	A	0.0	A	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
3.	**South Capitol Street SB Service Lane & L Street SW**												
	Overall												
	Eastbound	10.4	B	9.9	A	10.8	B	10.1	B	10.8	B	10.3	B
	Southbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
4.	**South Capitol Street NB Service Lane & L Street SE**												
	Overall												
	Westbound	10.4	B	10.5	B	10.6	B	11.1	B	10.7	B	11.2	B
	Northbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
5.	**South Capitol Street SB Ramps & M Street SW**												
	Overall	**23.3**	**C**	**20.6**	**C**	**25.4**	**C**	**20.2**	**C**	**25.4**	**C**	**20.2**	**C**
	Eastbound	34.9	C	29.3	C	38.0	D	29.9	C	38.0	D	29.9	C
	Westbound	1.2	A	1.0	A	1.1	A	1.0	A	1.1	A	1.0	A
	Southbound	50.6	D	39.6	D	55.8	E	40.7	D	56.0	E	40.8	D
6.	**South Capitol Street NB Ramps & M Street SE**												
	Overall	**22.4**	**C**	**23.0**	**C**	**23.3**	**C**	**25.2**	**C**	**23.4**	**C**	**25.4**	**C**
	Eastbound	2.8	A	1.6	A	3.6	A	2.2	A	3.7	A	2.3	A
	Westbound	39.2	D	30.7	C	42.7	D	33.9	C	42.9	D	34.1	C
	Northbound	32.1	C	47.6	D	33.1	C	53.0	D	33.2	C	53.4	D
7.	**South Capitol Street & N Street**												
	Overall	**21.7**	**C**	**64.8**	**C**	**24.2**	**C**	**84.9**	**F**	**24.4**	**C**	**86.2**	**F**
	Westbound	55.4	E	55.4	E	55.5	E	55.2	E	55.5	E	55.2	E
	Northbound	17.3	B	69.8	E	17.9	B	92.8	F	18.0	B	94.4	F

	Intersection and Approach	Existing (2022)				Background (2026)				Future (2026)			
		AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
	Southbound	69.8	E	108.4	F	91.1	F	165.5	F	93.0	F	168.5	F
8.	**L Street SE & Site Alley**												
	Overall												
	Eastbound	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A
	Westbound	0.8	A	0.2	A	0.7	A	0.1	A	1.3	A	1.1	A
	Northbound	9.1	A	9.0	A	9.2	A	9.1	A	9.4	A	9.4	A
	Southbound	9.3	A	9.7	A	9.4	A	9.9	A	9.6	A	10.5	B
9.	**Van Street, Site Alley & M Street SE**												
	Overall												
	Eastbound	0.1	A	0.0	A	0.1	A	0.0	A	0.1	A	0.0	A
	Westbound	0.7	A	0.8	A	0.6	A	0.6	A	0.6	A	0.6	A
	Northbound	22.9	C	21.9	C	37.2	E	34.6	D	38.1	E	36.0	E
	Southbound	15.0	C	13.6	B	20.4	C	17.9	C	16.9	C	14.1	B
10.	**Half Street & L Street SE**												
	Overall												
	Eastbound	7.5	A	14.9	B	7.5	A	15.4	C	7.5	A	15.3	C
	Westbound	7.5	A	16.3	C	7.6	A	18.0	C	7.6	A	19.1	C
	Northbound	6.9	A	1.2	A	7.4	A	1.4	A	7.6	A	2.2	A
	Southbound	7.5	A	2.7	A	7.5	A	2.5	A	7.6	A	2.4	A
11.	**Half Street SE & Site Alley**												
	Overall												
	Eastbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Northbound	0.0	A	0.0	A	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
12.	**Half Street & M Street SE**												
	Overall	**12.6**	**B**	**15.2**	**B**	**13.6**	**B**	**16.6**	**B**	**13.7**	**B**	**16.8**	**B**
	Eastbound	12.6	B	15.3	B	13.8	B	17.1	B	13.9	B	17.3	B
	Westbound	11.7	B	14.5	B	12.4	B	15.9	B	12.5	B	16.0	**B**
	Northbound	20.9	C	17.8	B	21.1	C	18.0	B	21.1	C	18.0	B
	Southbound	21.2	C	18.0	B	21.6	C	18.1	B	22.3	C	18.5	B

Table 8: v/c Comparison

	Intersection and Movement	Existing (2022)		Background (2026)		Future (2026)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*
		v/c	v/c	v/c	v/c	v/c	v/c
1.	**Half Street & M Street SW**						
	Eastbound L	0.10	0.03	0.17	0.12	0.17	0.12
	Eastbound TR	0.15	0.23	0.22	0.30	0.22	0.31
	Westbound L	0.05	0.08	0.07	0.10	0.07	0.10
	Westbound TR	0.31	0.24	0.37	0.32	0.38	0.32
	Southbound LTR	0.30	0.32	0.48	0.48	0.48	0.48
2.	**South Capitol Street & K Street**						
	Eastbound R	0.02	0.01	0.02	0.01	0.02	0.01
	Westbound R	0.19	0.11	0.20	0.12	0.20	0.12
	Northbound TR	0.43	0.24	0.45	0.28	0.45	0.28
	Southbound TR	0.21	0.31	0.24	0.32	0.24	0.32
3.	**South Capitol Street SB Service Lane & L Street SW**						
	Eastbound R	0.04	0.01	0.05	0.02	0.05	0.02
	Southbound TR	0.18	0.17	0.21	0.18	0.21	0.18
4.	**South Capitol Street NB Service Lane & L Street SE**						
	Westbound R	0.11	0.12	0.12	0.18	0.13	0.19
	Northbound TR	0.17	0.16	0.18	0.18	0.18	0.18
5.	**South Capitol Street SB Ramps & M Street SW**						
	Eastbound L	--	--	--	--	--	--
	Eastbound T	0.37	0.30	0.57	0.44	0.57	0.44
	Eastbound R	0.10	0.18	0.13	0.22	0.13	0.22
	Westbound LT	0.32	0.31	0.41	0.43	0.42	0.43
	Southbound L	0.65	0.49	0.74	0.53	0.74	0.53
	Southbound LTR	0.64	0.47	0.64	0.52	0.73	0.52
6.	**South Capitol Street NB Ramps & M Street SE**						
	Eastbound L	0.21	0.21	0.27	0.29	0.28	0.30
	Eastbound T	0.40	0.33	0.54	0.44	0.54	0.44
	Westbound TR	0.38	0.38	0.57	0.56	0.58	0.56
	Northbound L	0.58	0.64	0.61	0.74	0.62	0.75
	Northbound LTR	0.57	0.61	0.61	0.71	0.60	0.71
7.	**South Capitol Street & N Street**						
	Westbound LTR	0.47	0.43	0.48	0.46	0.48	0.46
	Northbound T	0.85	0.46	0.86	0.49	0.86	0.49
	Northbound R	0.68	1.28	0.71	1.40	0.71	1.41
	Southbound T	0.43	0.89	0.46	0.90	0.46	0.90

	Intersection and Movement	Existing (2022)		Background (2026)		Future (2026)	
		AM Peak	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*
		v/c	v/c	v/c	v/c	v/c	v/c
	Southbound R	0.62	1.05	0.86	1.23	0.88	1.24
8.	**L Street SE & Site Alley**						
	Eastbound	0.00	0.00	0.00	0.00	0.00	0.00
	Westbound	0.01	0.00	0.01	0.00	0.01	0.01
	Northbound	0.02	0.02	0.02	0.02	0.05	0.04
9.	**Van Street, Site Alley & M Street SE**						
	Eastbound TR	0.16	0.17	0.23	0.17	0.16	0.17
	Westbound T	0.11	0.12	0.16	0.12	0.11	0.12
	Northbound LR	0.17	0.23	0.27	0.23	0.17	0.23
10.	**Half Street & L Street SE**						
	Eastbound LTR	--	0.14	--	0.15	--	0.17
	Westbound LTR	--	0.26	--	0.34	--	0.36
	Northbound LTR	--	0.01	--	0.01	--	0.02
	Southbound LTR	--	0.02	--	0.02	--	0.02
11.	**Half Street SE & Site Alley**						
	Eastbound	0.00	0.00	0.00	0.00	0.00	0.00
	Northbound	0.00	0.00	0.00	0.00	0.00	0.00
	Southbound	0.01	0.04	0.01	0.05	0.02	0.05
12.	**Half Street & M Street SE**						
	Eastbound LT	0.43	0.49	0.53	0.61	0.54	0.62
	Eastbound R	--	--	--	--	--	--
	Westbound LT	0.34	0.42	0.42	0.53	0.42	0.54
	Westbound R	--	--	--	--	--	--
	Northbound LTR	0.11	0.14	0.11	0.16	0.11	0.16
	Southbound LTR	0.13	0.15	0.16	0.16	0.16	0.19

Table 9: Queuing Results (in feet)

	Intersection and Lane Group	Storage Length (ft)	Existing (2022)				Background (2026)				Future (2026)			
			AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
1.	**Half Street & M Street SW**													
	Eastbound L	160	8	21	3	10	11	28	9	23	11	28	9	23
	Eastbound TR	315	52	0	62	80	76	0	110	0	76	0	111	0
	Westbound L	140	3	m7	3	m5	2	m6	2	m4	2	m6	2	m4
	Westbound TR	305	56	54	17	21	57	53	17	20	56	52	17	20
	Southbound LTR	315	61	113	61	115	103	173	97	166	61	113	61	113
2.	**South Capitol Street & K Street**													
	Eastbound R	340	--	2	--	1	--	2	--	1	--	2	--	1
	Westbound R	355	--	18	--	10	--	18	--	10	--	18	--	10
	Northbound TR	330	--	0	--	0	--	0	--	0	--	0	--	0
	Southbound TR	280	--	0	--	0	--	0	--	0	--	0	--	0
3.	**South Capitol Street SB Service Lane & L Street SW**													
	Eastbound R	315	--	3	--	1	--	4	--	1	--	4	--	1
	Southbound TR	305	--	0	--	0	--	0	--	0	--	0	--	0
4.	**South Capitol Street NB Service Lane & L Street SE**													
	Westbound R	390	--	9	--	11	--	10	--	16	--	12	--	17
	Northbound TR	330	--	0	--	0	--	0	--	0	--	0	--	0
5.	**South Capitol Street SB Ramps & M Street SW**													
	Eastbound L	135	--	--	--	--	--	--	--	--	--	--	--	--
	Eastbound T	300	89	118	87	118	143	180	139	177	144	181	140	181
	Eastbound R	300	0	50	57	103	11	61	66	117	11	62	66	117
	Westbound LT	46	10	10	6	5	10	10	6	5	10	10	6	5
	Southbound L	310	163	249	140	222	190	#298	152	238	192	#301	154	241
	Southbound LTR	310	158	246	129	209	187	#289	146	231	187	#289	147	233
6.	**South Capitol Street NB Ramps & M Street SE**													
	Eastbound L	47	2	m8	2	3	1	m9	1	7	1	m10	1	9
	Eastbound T	47	6	23	11	11	18	34	36	31	18	35	36	31
	Westbound TR	345	73	108	93	128	125	168	154	200	128	171	158	202
	Northbound L	600	215	321	171	267	229	341	206	#333	233	346	209	#337
	Northbound LTR	600	208	313	161	254	226	337	192	298	223	333	194	301
7.	**South Capitol Street & N Street**													

	Intersection and Lane Group	Storage Length (ft)	Existing (2022)				Background (2026)				Future (2026)			
			AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
			50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
	Westbound LTR	160	106	175	93	158	109	179	99	165	109	179	99	165
	Northbound TR	505	632	758	195	234	651	782	211	253	651	782	211	253
	Southbound T	1325	192	240	591	705	210	261	605	721	210	261	605	721
	Southbound R	550	135	214	~415	#626	196	#341	~549	#770	199	#347	~555	#779
8.	**L Street SE & Site Alley**													
	Eastbound		--	0	--	0	--	0	--	0	--	0	--	0
	Westbound		--	1	--	0	--	1	--	0	--	1	--	1
	Northbound		--	2	--	1	--	2	--	1	--	4	--	3
9.	**Van Street, Site Alley & M Street SE**													
	Eastbound TR	165	--	0	--	0	--	0	--	0	--	0	--	0
	Westbound T	345	--	3	--	0	--	3	--	0	--	3	--	0
	Northbound LR	570	--	15	--	22	--	26	--	36	--	27	--	37
10.	**Half Street & L Street SE**													
	Eastbound LTR	370	--	--	--	12	--	--	--	13	--	--	--	15
	Westbound LTR	175	--	--	--	25	--	--	--	37	--	--	--	40
	Northbound LTR	200	--	--	--	1	--	--	--	1	--	--	--	2
	Southbound LTR	245	--	--	--	1	--	--	--	1	--	--	--	1
11.	**Half Street SE & Site Alley**													
	Eastbound		--	0	--	0	--	0	--	0	--	0	--	0
	Northbound		--	0	--	0	--	0	--	0	--	0	--	0
	Southbound		--	0	--	0	--	0	--	0	--	0	--	0
12.	**Half Street & M Street SE**													
	Eastbound LT	165	89	119	100	134	119	156	134	177	120	157	136	179
	Eastbound R	70	--	--	--	--	--	--	--	--	--	--	--	--
	Westbound LT	345	67	91	86	116	86	115	116	153	87	116	117	155
	Westbound R	170	--	--	--	--	--	--	--	--	--	--	--	--
	Northbound LTR	575	14	37	21	48	17	42	24	53	17	42	24	53
	Southbound LTR	290	15	39	20	46	19	46	21	49	23	53	24	54

Transit Facilities

This chapter discusses the existing and planned transit facilities in the vicinity of the Project, accessibility to transit, and the overall transit impacts of the 1100 South Capitol Street Development.

This chapter concludes that:

- The Project has favorable existing transit service for existing development near the site;
- The Project is approximately 0.20 miles away from Navy Yard-Ballpark Metrorail station entrance and within a mile of four additional Metrorail stations;
- The Project has access to the Eastern Market – L'Enfant Plaza Circulator within 0.1 miles of the site;

Existing Transit Service

One (1) WMATA bus route, route P6 along M Street SE, as well as the Eastern Market – L'Enfant Plaza DC Circulator stop just steps away from the Project. In addition, Omniride's D300 Dale City – Navy Yard Express travels between Navy Yard in DC and Dale City Virginia and stops less than a block from the Project. Additional transit routes stop within the ½ mile walkshed review area. In total, as shown in Figure 23, the transit study area is served by three (3) Metrobus routes and one (1) Circulator route. Table 10 shows a summary of the bus route information for the routes that serve the site, including service hours, headways, and distance to the nearest bus stop. Table 11 show an inventory of bus stops within the study area.

Within the one (1) mile, there are four (4) Metrorail stations accessible to the site. These stations include: Federal Center Station on the Blue, Orange, and Silver Lines (1.0 mile away); Waterfront Station on the Green Line (0.70 miles away); Navy Yard-Ballpark Station on the Green Line (0.10 miles away); and South Capitol Station on the Blue, Orange, and Silver Lines (0.70 miles away).

The Blue Line travels north from Franconia, VA through Alexandria and Arlington, VA to the District core before continuing east toward Largo, MD.

The Silver Line travels east from Reston, VA through Tysons Corner and Arlington, VA to the District core before continuing east toward Largo, MD.

The Blue, Orange, and Silver Lines run every 20 minutes on weekdays, and every 24 minutes on weekends.

The Green Line travels north from Branch Avenue in Suitland, MD through Anacostia and the District core before continuing northwest towards College Park and Greenbelt, MD.

The Green and Yellow Lines run every 15 minutes on weekdays, and every 20 minutes on weekends.

Starting in October 2021, Metrorail service has experienced reduced frequencies due to a safety issue with their 7000-series railcars. As of September 2022, this remains unresolved.

Planned Transit Service

moveDC Transit Priority Network

The draft Transit Priority Network in the ongoing *moveDC* 2021 update, the District's multimodal long-range transportation plan, proposes transit priority infrastructure such as dedicated transit lanes, better transit stops, and/or special treatments for buses at intersections along designated corridors. Specific treatments along given streets or route paths are not proposed but rather prioritized as part of the long-range plan.

Various WMATA bus routes and the DC Circulator Eastern Market-L'Enfant Plaza route are partially covered by these transit corridors:

- WMATA bus routes P6 and V4 (in addition to the Eastern Market-L'Enfant Plaza Circulator route) are partially covered by the M Street SE/SW priority corridor.

These proposed improvements have the potential to improve bus speeds and service to the site in the future. This corridor is shown in Figure 23.

Site-Generated Transit Impacts

Transit Trip Generation

The land uses of the proposed development are projected to generate 33 transit trips (13 inbound and 20 outbound) during the AM peak hour and 43 transit trips (24 inbound and 19 outbound) during the PM peak hour.

Table 10: Local Bus Route Information

Route Number	Route Name	Service Hours at Stop Closest to Site			Headway (minutes)	Walking Distance to Nearest Stop
		Weekdays	Saturdays	Sundays		
	WMATA routes					
74	Convention Center-Southwest Waterfront Line	5:18am-10:35pm	6:47am-10:38pm	6:48am-10:33pm	30	0.3 mi (6 min)
P6	Anacostia-Eckington Line	4:23am-2:02am	4:16am-2:01am	4:16am-2:01am	15-30	0.1 mi (1 min)
V4	Capitol Heights-Minnesota Avenue Line	4:43am-11:35pm	4:51am-10:29am	4:51am-9:47pm	15-30	0.3 mi (6 min)
	DDOT routes					
EM-LP	Eastern Market-L'Enfant Plaza	6:00am-9:00pm	7:00am-9:00am	7:00am-9:00am	10	0.1 mi (1 min)

Table 11: Bus Stop Inventory

Location	Stop ID	Routes Served	Amenities							
			Bus stop flag	Route map & schedule	Landing pad	Sidewalk	Bench	Shelter	Lighting	Trash Recp.
M St + 4th St SW (EB)	1000498	A9, 74, EM-LP	●	●	●	●			●	●
M St + Half St SE (WB)	1000509	P6, V1, EM-LP	●		●	●			●	●
M St + 1st St SW (WB)	1000516	P6, V1	●	●	●	●			●	●
M St + Delaware Ave SW (WB)	1000517	P6, V1, EM-LP	●	●	●	●	●	●	●	●
3rd St + M St SW (NB)	1000520	P6, V1	●	●	●	●			●	●
3rd St + L St SW (SB)	1000525	P6, V1	●	●	●	●				
3rd St + K St SW (NB)	1000530	P6, V1	●	●	●	●	●	●	●	●
M St + Half St SW (WB)	1003001	P6, V1	●	●	●	●				●
M St + Half St SE (EB)	1003032	P6, V1, EM-LP	●	●	●	●			●	●
M St + New Jersey Ave SE (WB)	1003148	A9, P6, V1, V4, EM-LP	●	●	●	●	●	●	●	●
M St + 4th St SW (WB)	1003690	A9, 74, EM-LP	●	●	●	●			●	●
M St + Delaware Ave SW (EB)	1003704	74			●	●			●	●
1st St + K St SE (NB)	1003793	V4	●	●	●	●			●	●

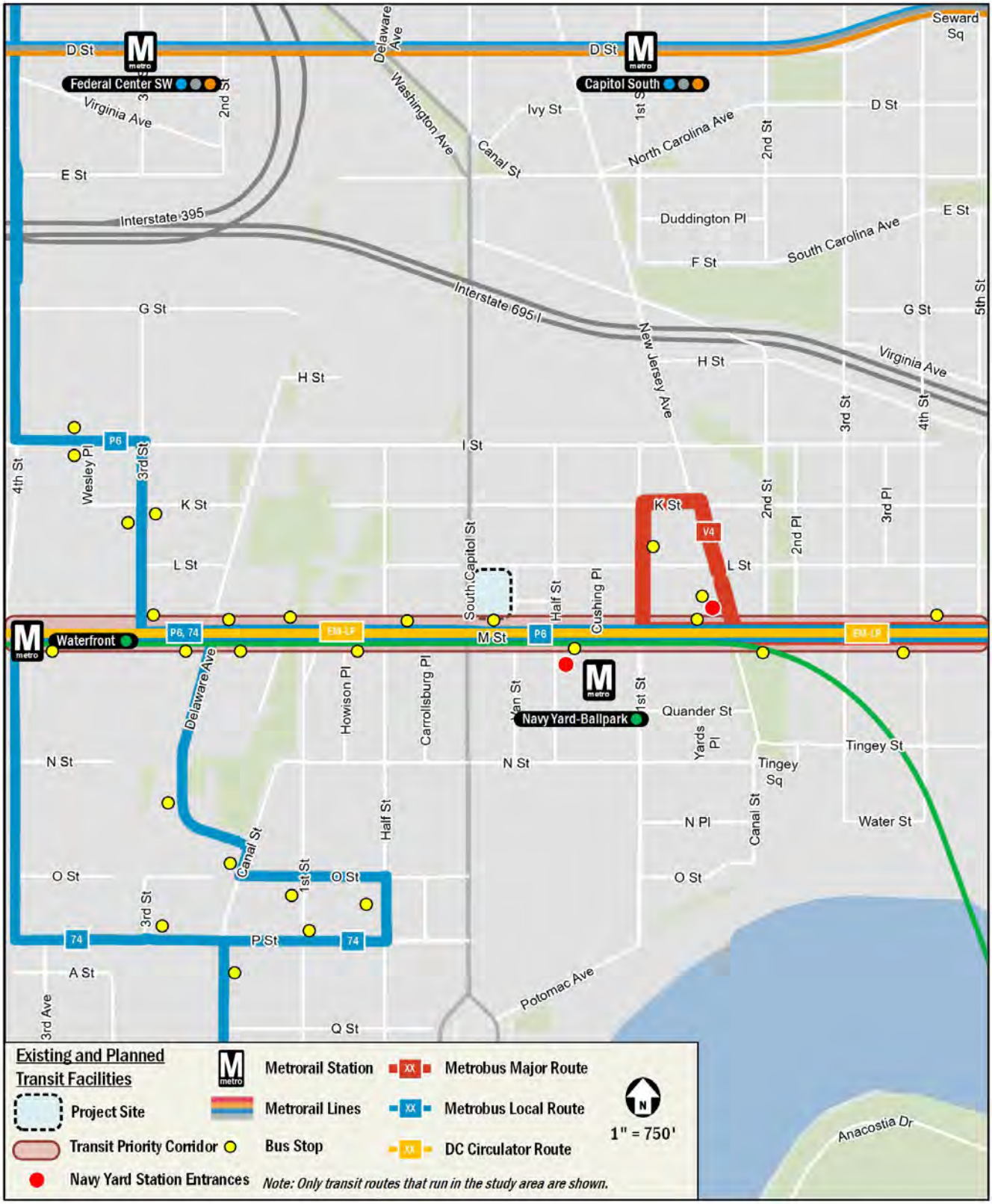

Figure 23: Existing and Planned Transit Facilities

Pedestrian Facilities

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

The following conclusions are reached within this chapter:

- The existing pedestrian infrastructure surrounding the Project provides a quality walking environment. There is a well-connected pedestrian network;
- Some pedestrian facilities on-site along L Street and South Capitol Street Service Road do not meet DDOT and ADA standards;
- The Project will improve pedestrian conditions along L Street SE and the South Capitol Street SE service lane with new streetscapes along the site frontage;
- 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 an approximately ¼ mile walk of the Project were evaluated, as well as along the path to the Metrorail stations within one (1) mile. The existing site has good connectivity to major local destinations with no missing sidewalks.

Pedestrian Infrastructure

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

Existing Conditions

There are minor areas of concern within the study area that may impact the quality and attractiveness of walking, such as inadequate sidewalks on M Street SE, on the South Capitol Street Service Road, and L Street SE where the proposed pick up-drop off loading zone will be located. Most other sidewalks meet standards.

The inadequate sidewalk along L Street SE and the South Capitol Street service lane will be improved with the Project.

A full overview of existing pedestrian conditions is shown in Figure 24.

Proposed Pedestrian Improvements

The Project proposes widened sidewalks along L Street SE's south side (along site frontage) and the east side of the South Capitol Street service lane. These new sidewalks will conform to DDOT and ADA standards.

The proposed building will be set back 15 feet from the lot line along South Capitol Street. The space between the building and the lot line will be improved with landscaping adjacent to the public space streetscape.

Site-Generated Pedestrian Impacts

The Project is expected to generate a manageable number of pedestrian trips.

Pedestrian Trip Generation

The land uses of the proposed development are projected to generate 15 pedestrian trips (6 more inbound, 9 more outbound) during the AM peak hour and 29 pedestrian trips (14 inbound, 15 outbound) during the PM peak hour.

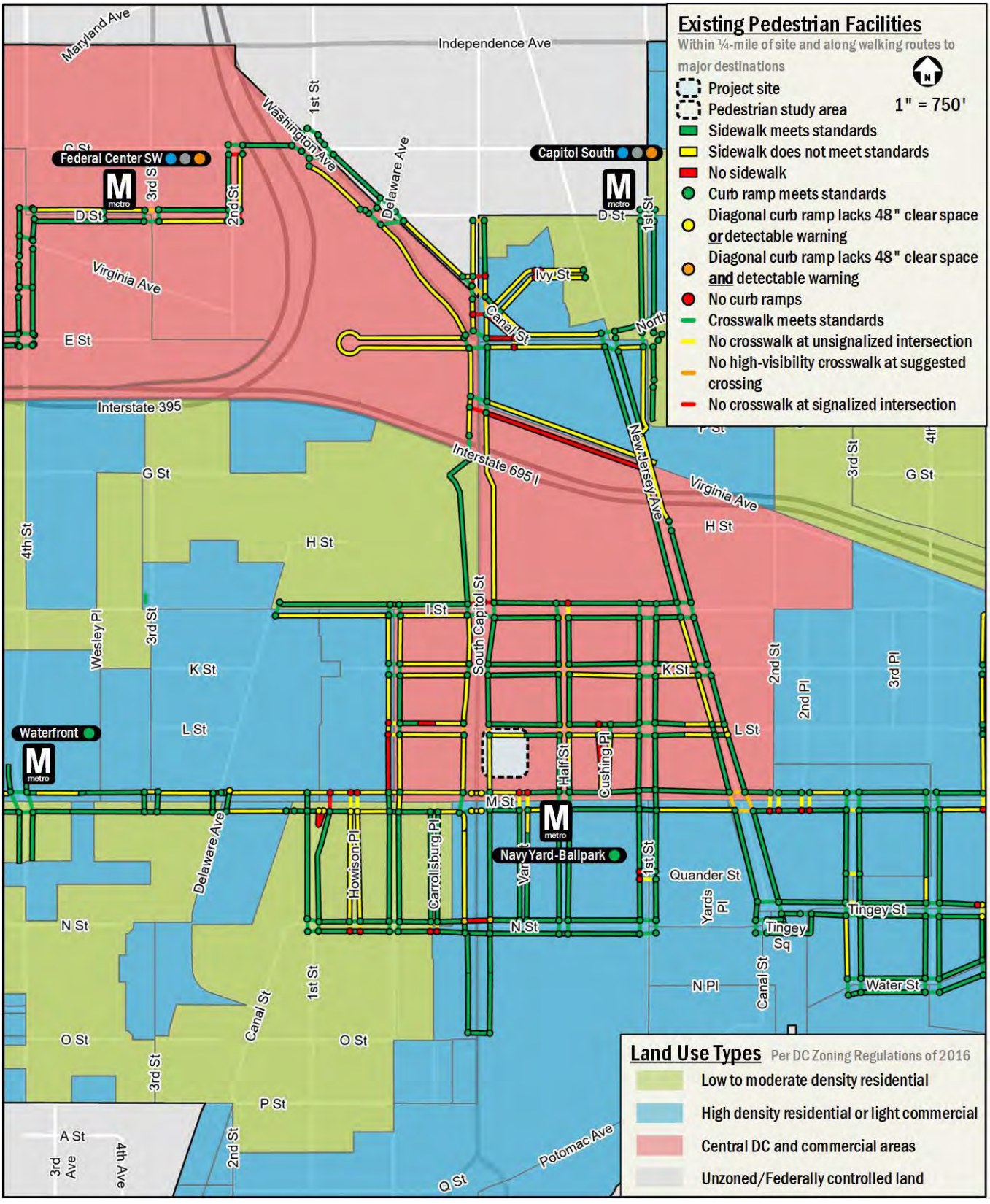

Figure 24: Existing Pedestrian Facilities

Bicycle Facilities

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

The following conclusions are reached within this chapter:

- The Project has access to on- and off-street bicycle facilities within the study area;
- Planned bicycle projects have improved bicycle access to the site, including the construction of shared bicycle lanes along M Street SE.
- The Project is expected to generate a manageable number of bicycle trips that can be accommodated by proposed on-site facilities and the surrounding bicycle network; and
- The Project will include bicycle parking that meet zoning requirements.

Existing Bicycle Facilities

The site has access to existing on- and off-street bicycle facilities. The development is located adjacent to shared bicycle lanes on M Street SE and within two (2) blocks of bike lanes along First Street SE and New Jersey Ave SE. The Navy Yard area neighbors bicycle trails located at the Southwest Waterfront and Washington Navy Yard regions, such as the Wharf bicycle trail and the Anacostia Riverwalk trail.

Capital Bikeshare

In addition to personal bicycles, the Capital Bikeshare program provides additional bicycle options for residents and visitors. The program has placed over 600 bikeshare stations across the Washington metropolitan area with over 5,000 bicycles in the fleet. Three (3) Capital Bikeshare stations are within a 1/2 mile radius of the site:

- A 19-dock station on the northwest corner of First Street SE and M Street SE; and
- A 19-dock station located adjacent to M Street SW at First Street SW
- A 23-dock station on the northwest corner of Third Street SE and M Street SE.

Figure 25 illustrates these and other Capital Bikeshare locations in the area.

Micromobility

As of August 2022, micromobility service in the District is provided by eight (8) private dockless companies operating electric-assist bicycles (e-bikes) and electric scooters (e-scooters). These include two (2) companies operating e-bikes (HelBiz and Jump) and six (6) companies operating e-scooters (Bird, Lime, Lyft, Razor, Skip, and Spin). These dockless vehicles are provided by private companies that give registered users access to a variety of e-bike and e-scooter options. These devices are used through each company-specific mobile phone application. Many dockless vehicles do not have designated stations where pick-up/drop-off activities occur like with Capital Bikeshare; rather, they are parked in public space, most commonly in the “furniture zone” or the portion of sidewalk between where people walk and the curb, often where other street signs, street furniture, trees, and parking meters are found. In addition to DDOT’s program, dockless pilots and demonstration programs are underway in Arlington County, Fairfax County, the City of Fairfax, the City of Alexandria, and Montgomery County.

Planned Bicycle Improvements

Several bicycle improvements are planned near the site. These improvements are shown in Figure 25.

DDOT Bikeways Expansion

DDOT has embarked on a plan to build over 20 miles of new protected bike lanes by 2023. The most recent expansion of bikeways include the shared bicycle lanes located along M Street SE.

moveDC Bicycle Priority Network

As part of its ongoing update to the District’s multimodal long-term transportation plan, *moveDC*, DDOT has designated both funded and future planned improvements to the District’s Bicycle Priority Network. Funded improvements are locations that currently have funding identified for construction within six (6) years,

Additionally, DDOT has designated future planned improvements to the network that may be added in the future but currently do not have committed funding. One Future planned improvement located near the site is the bicycle facility that will extend from South Capitol Street from the traffic circle at Navy Yard to the

intersection of South Capitol Street, E Street SW, and Washington Ave SW.

Proposed Bicycle Improvements

The proposed development will include convenient internal secure bike parking within the building with a primary bike room located on the ground floor with direct access to the adjacent public alley. An ancillary bike room will potentially be located on P1. The alley provides connections for cyclists to Half Street SE, L Street SE and M Street SE.

Bicycle Parking

The Project will provide at least 83 long-term and at least 12 short-term bicycle parking spaces. The Project's bicycle parking will meet or exceed ZR16 bicycle parking requirements and meet DCMR Title 18 Section 1214. Long-term bicycle parking will be located in the bike storage room and short-term bicycle parking will be located around the perimeter of the site.

Site-Generated Bicycle Impacts

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

Bicycle Trip Generation

The land uses of the proposed development, when compared to existing land uses, are projected to generate 11 more bicycle trips (four (4) more inbound, seven (7) more southbound) during the AM peak hour and 14 more bicycle trips (eight (8) more inbound, six (6) more outbound) during the PM peak hour.

It is expected that existing bicycle facilities, along with the planned bicycle facilities can accommodate these new site-generated trips.

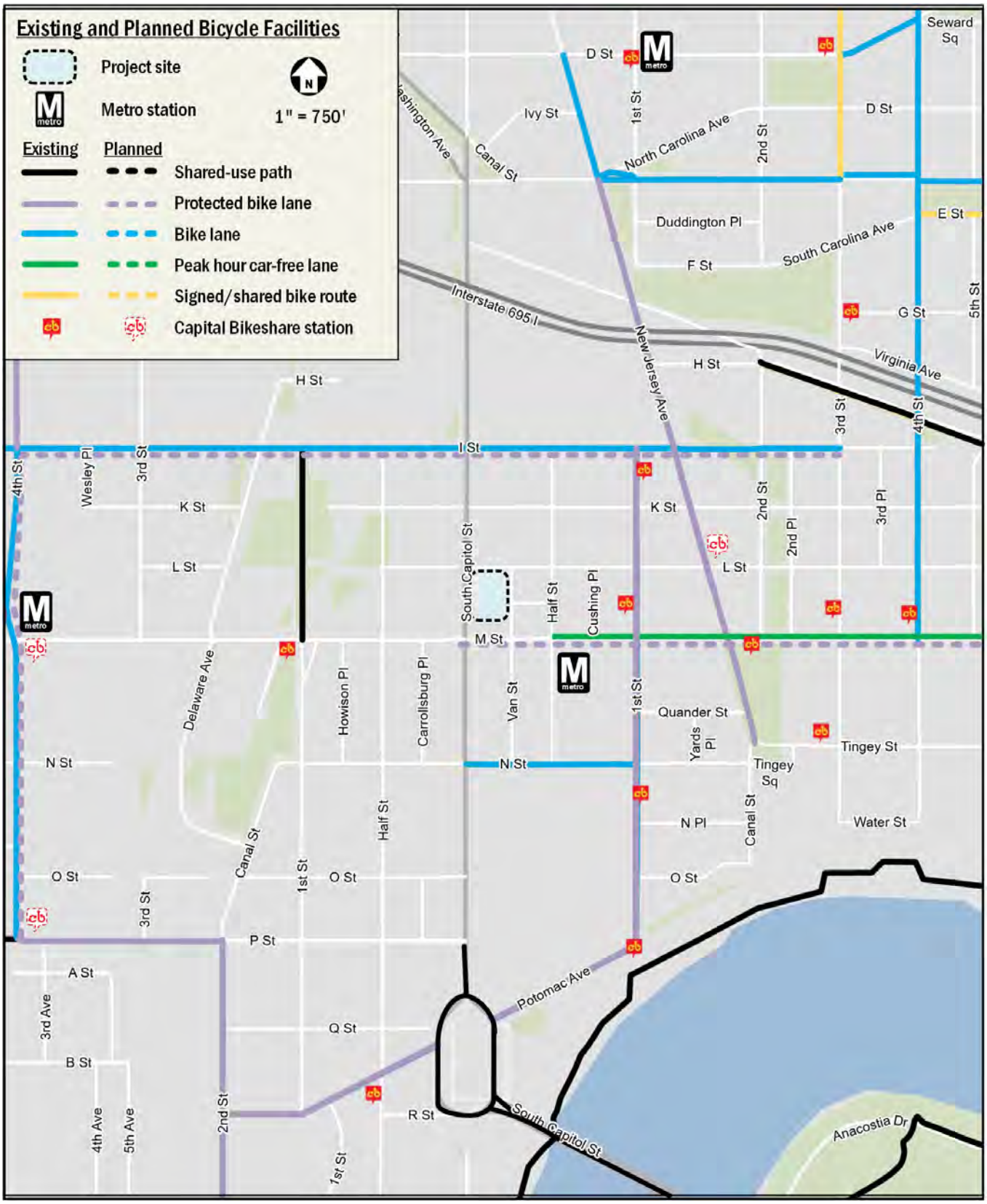

Figure 25: Existing and Future Bicycle Facilities

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* (2018-2020), *Vision Zero Action Plan*, and Open Data DC Vision Zero Safety data.

Potential Impacts

This section reviews two (2) intersections within a ¼ mile radius of the site that were identified to pose potential conflicts to vehicles, pedestrians, and bicyclists.

M Street SE & South Capitol Street

The intersection of South Capitol Street Service Lane (Southbound) and M Street SW and South Capitol Street Service Lane (Northbound) and M Street SE have frequent crash incidents. The two (2) service lanes for South Capitol Street intersect with M Street SE that form an above grade intersection over South Capitol Street main street. The intersections mentioned were identified as having a significant number of crash reports. Open Data DC's Crashes in DC dataset also indicates it as a high-crash location relative to other intersections in the District. Vehicular crashes are most prevalent in the center of the intersection where more conflict points are located. The intersection is signalized, and have vehicle turn lane markings. Signage clearly displays yield to pedestrians and No Blocking Intersection. Crosswalks along M Street are fragmented by a 60 ft median. The Crosswalks along the South Capitol Street Service ramps are uninterrupted.

The intersection is ranked outside the top 100 most dangerous intersections by the crash composite index.

Conclusion

This report is a Comprehensive Transportation Review (CTR) prepared on behalf of 1100 South Capitol, LLC (the "Applicant") for Design Review by the DC Zoning Commission (case ZC 22-28) ("the Project"). The Project is located at Square 698, Lots 814 and 817 in southeast Washington, DC.

The purpose of this CTR is to evaluate whether the Project will generate a detrimental impact to the transportation network surrounding the site.

This report concludes that **the Project will not have a detrimental impact** to the surrounding transportation network assuming the proposed site design elements and Transportation Demand Management (TDM) plan are implemented.

Proposed Project

The Project is located at 1100 S Capitol St SE, at the southeast corner of the intersection of L St SE and South Capitol Street. The site is bounded by the South Capitol Street service lane to the west, a church property to the south, a public alley to the east, and L St SE to the north. The site is currently occupied by a 30,400 square foot surface parking lot with approximately 110 existing surface parking spaces. The Project includes a mixed-use development program with approximately 248 residential units and 162 parking spaces in a below grade garage.

The ground floor of the project is proposed to contain the residential lobby and residential amenity spaces. However, the project has been designed to convert some residential amenity space to retail use should demand for retail use increase in the future. Accordingly, for purposes of this study, 1,500 square feet of retail space has been assumed to be provided in the project to account for any future trips generated by the retail use.

The Project will include a PUDO zone along L Street adjacent to the site to accommodate short-term pick up and drop off activities proximate to the building's main entrance.

Vehicular Access

Vehicular access to the parking garage is proposed from the north-south public alley on the eastern edge of the site. A non-exclusive 5-foot-wide surface easement is located along a portion of the east side of the property abutting the 15-foot-wide public alley. The easement was established to provide adequate space for vehicles by creating an effective alley width of 20 feet. As part of this project, the applicant will voluntarily provide a 5-foot building setback along the rest of the property's east frontage, thus effectively extending the 5-foot-wide easement for the entire extent of the alley abutting the property. The public alley will provide access to the following Project features:

- A two-way vehicular ramp accessing the underground parking garage with approximately 162 parking spaces;
- An internal loading area with a 12' x 30' loading berth and a (1) 10' x 20' service/delivery space; and
- Access to the internal bike storage room satisfying the zoning bike parking requirements with at least 83 long-term bicycle parking spaces.

All truck turning maneuvers will occur within the site and in the public alley, allowing for head-in/head-out access to and from the public roadway network. The number of loading berths and service spaces meet all zoning and DDOT dimensional requirements.

The Project will meet zoning requirements for parking by providing approximately 162 parking spaces within the below grade garage. The proposed parking supply does not meet any of the ZR-16 criteria that would trigger mitigation for "excess parking". Taking into account the removal of the existing surface lot with approximately 110 existing parking spaces, the redevelopment will result in a net increase of approximately 52 parking spaces.

The Project will satisfy the 2016 zoning requirements for bicycle parking by including a total of 95 bicycle parking spaces, including 83 long-term bicycle parking spaces and 12 short-term bicycle parking spaces. There will be a primary bike room located on the ground floor, and an ancillary bike room will potentially be located on P1. The primary bike room located on the ground floor will be accessed from the west side of the public alley, and short-term bicycle parking will be located within and along the perimeter of the site near the building entrance. The vehicular and bicycle parking are expected to meet the practical needs of the Project's residents.

Multi-Modal Overview

Trip Generation

The Project is transit-, pedestrian-, and bicycle-oriented. The Project is expected to generate new trips on the surrounding transportation network across all modes during the AM and PM peak hours.

The Project is expected to generate trips within the area as follows:

	AM Peak Hour	PM Peak Hour
Vehicle Trips	35	44
Transit Trips	33	43
Bicycle Trips	11	14
Pedestrian Trips	15	29

Transit

The Project is well-served by transit. It is located less than 0.10 miles from the closest entrance to the Navy Yard – Ballpark Metro station, 0.75 miles from the Waterfront Metrorail station, and is within a mile of two (2) other Metrorail stations. The site is also served by several major WMATA bus routes.

Several planned or proposed transit projects will improve transit access to the site, including nearby Transit Priority Corridors 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

The site is surrounded by a well-connected pedestrian network. Despite some incidences of sidewalks that do not meet width standards, overall, there is a well-connected pedestrian network surrounding the site. While crosswalks and curb ramps along the perimeter of the site meet DDOT and ADA standards, some sidewalks do not.

The site is expected to generate a manageable number of pedestrian trips, and the existing pedestrian facilities can accommodate these new trips.

The Project will include upgrading the streetscape along the Project's frontages along the South Capitol Street service lane and along L Street SE to include improved pedestrian pathways.

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 protected bicycle lanes along M St SE and Eye Street SE/SW.

The site is expected to generate a manageable amount of bicycle trips, and the existing bicycle facilities can accommodate these new trips. The development will include long-term bicycle parking within the parking garage and short-term bicycle parking along the perimeter of the site that meet DDOT and zoning requirements.

Vehicular

Vehicle access to the site is located along the public alley on the east side of the building, which can be accessed via L Street, M Street, and Half Street. M Street provides nearby access to collector roads and Interstate 695. These roadways provide connectivity to I-295, DC-295, and the Capital Beltway (I-495), which provide for efficient travel around the Washington region.

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 each development scheme. Intersection analyses were performed to obtain the average delay and queue a vehicle will experience. These average delays and queues were compared to the acceptable levels of delay set by DDOT standards as well as existing queues to determine if the Project will negatively impact the study area.

Further, the Project will replace an existing surface parking lot with approximately 110 existing vehicular parking spaces, and the redevelopment of the property will result in the vehicle trips generated by the existing parking lot removed from the surrounding transportation network. In order to provide a conservatively high estimate of the potential Project impact, no existing trips were removed from the network in this assessment; however, it is expected that the overall net impact of the Project would be lower than shown in this report given the removal of the existing parking lot trips.

Summary and Recommendations

This report concludes that the Project will not have a detrimental impact on the surrounding transportation and roadway network assuming that all planned site design elements are implemented.

Any impacts of the Project are mitigated via a Transportation Demand Management (TDM) plan which is detailed in the CTR.

Additionally, the Project includes several positive design elements that minimize potential transportation impacts, including:

- Close proximity to transit, including the Navy Yard-Ballpark and Waterfront Metrorail stations;

- Access to existing bicycle infrastructure, including shared bus-bicycle lanes on M St SE and Capital Bikeshare stations within a ½ mile radius;
- A location within a well-connected pedestrian network;
- A conveniently located long-term bicycle parking room that meets zoning requirements; and
- Short-term bicycle parking spaces along the perimeter of the site that meets zoning requirements.
- A new pick-up/drop-off (PUDO) zone along L Street SE.