COMPREHENSIVE TRANSPORTATION REVIEW

FLATS AT SOUTH CAPITOL PUD

WASHINGTON, DC

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EXECUTIVE SUMMARY

The following report is a Comprehensive Transportation Review (CTR) for the Flats at South Capitol Planned Unit Development (PUD). This report reviews the transportation aspects of the project's Consolidated Planned Unit Development (PUD) application (Zoning Commission Case Number is 18-14).

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

Proposed Project

The property is located at 3836-3848 South Capitol Street SE, on the east side of South Capitol Street SE between Halley Place SE and Xenia Street SE in southeast D.C. The existing property is developed with two multifamily apartment buildings with 30 housing apartments surrounded by open space area with approximately 12 parking spaces. There is a 15-foot wide paper alley to the rear of the property.

The applicant has requested a map amendment to rezone the property from the RA-1 zone to the RA-2 zone and would combine the lots to accommodate a single, multifamily building. The proposed development would include 106 affordable dwelling units and 17 parking spaces. An underground parking garage is proposed to be accessible from a proposed curb cut off South Capitol Street SE at the intersection of Xenia Street.

Vehicular and loading access for the project will be provided via the proposed site driveway off South Capitol Street SE. A loading zone will be located adjacent to the garage entrance within the closed parking garage.

The development will meet the zoning requirements for bicycle parking by including 5 short-term bicycle parking spaces and 36 long-term bicycle parking spaces. The development will supply long-term bicycle parking within the development and short-term bicycle parking around the perimeter of the site that meet zoning requirements. The bicycle parking will meet the practical needs of the development.

Multi-Modal Impacts and Recommendations

Transit

The Site is served by regional and local transit services via Metrobus and Metrorail. The Site is 1.5 miles from the Congress Heights Metrorail Station, with Metrobus stops located within walking distance of the Site along South Capitol Street.

Although the development will be generating new transit trips, existing facilities have enough capacity to accommodate the new trips.

Pedestrian

The Site is surrounded by a pedestrian network with an adequate pedestrian network as there are some neighborhood streets east and west of the Site which lack sidewalks. Most roadways within a quarter-mile radius provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes.

As a result of the development, pedestrian facilities along the, western perimeters of the site will be improved, including the installation of sidewalks that meet or exceed the width requirements, crosswalks at all necessary locations, curb ramps with detectable warnings.

The development will generate minimal pedestrian trips and the improved facilities will be able to handle the new trips.

Bicycle

The Site has some connectivity to existing on- and off-street bicycle facilities. Signed routes are available two (2) blocks away from the Site along Mississippi Avenue SE and First Street SE with connectivity to the Oxon Run Trail, Suitland Parkway Trail and Anacostia Riverwalk Trail. A capital bikeshare location is located 0.15 miles away from the Site at the intersection of Atlantic Street SE and South Capitol Street.

The development will provide short-term bicycle parking along the perimeter of the site. On-site secure long-term bicycle parking will be provided within the garage for residents of the development. The amount of bicycle parking provided meets zoning requirements.

The development will generate minimal bicycle trips and the existing facilities will be able to handle these new trips.

Vehicular

The Site is accessible from regional roadways, such as the Anacostia Freeway (DC Route 295) and several principal and minor arterials such as South Capitol Street SE and Martin Luther King Jr Avenue SE. These roadways create connectivity to the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs, as well as providing connectivity to the District core.

In order to determine impacts that the proposed development will have on the transportation network, this report projects future conditions with and without the proposed development and performs analyses of intersection delays and queues. These are compared to the acceptable levels of delay set by DDOT standards as well as existing queues to determine if the Site will negatively impact the study area. The analysis concluded that no mitigations need to be made as a result of the proposed development.

Summary and Recommendations

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

The development has several positive elements contained within its design that minimize potential transportation impacts, including:

- The Site's close proximity to transit.
- The inclusion of secure long-term bicycle parking.
- The installation of short-term bicycle parking spaces along the frontage of the Site that meet or exceed zoning requirements.
- The creation of new pedestrian sidewalks that meet or exceed DDOT and ADA requirements.
- Implementation of a Loading Management Plan (LMP) that minimizes the potential impacts from loading that the proposed development will have on the surrounding intersections and neighborhoods
- A robust Transportation Demand Management (TDM) plan that reduces the demand of single-occupancy, private vehicles during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.

INTRODUCTION

This report is a Comprehensive Transportation Review (CTR) of the Flats at South Capitol project. This report reviews the transportation aspects of the consolidated Planned Unit Development (PUD) application. The Site, shown in Figure 1 and Figure 2, is located at Square 6129, Lots 77 and 819 in the Bellevue neighborhood in Southeast, Washington, DC. The Site is currently zoned low-density Residential-Use (RA-1), with the Applicant requesting a change in zoning to moderate-density Residential-Use (RA-2. This CTR will be submitted into the Zoning Commission record for this case, as an evaluation of the transportation impacts of the proposed development. The Zoning Commission Case Number is 18-14.

PURPOSE OF STUDY

The purpose of this report is to:

1. Review the transportation elements of the development site plan and demonstrate that the site conforms to DDOT's general policies of promoting non-automobile modes of travel and sustainability.
2. Provide information to DDOT and other agencies on how the development of the site will influence the local transportation network. This report accomplishes this by identifying the potential trips generated by the site on all major modes of travel and where these trips will be distributed on the network.
3. Determine if development of the site will lead to adverse impacts on the local transportation network. Project Summary

PROJECT SUMMARY

The Flats at South Capitol PUD will redevelop two parcels along South Capitol Street containing two multifamily buildings. The development plan proposes replacing the existing properties with as single, multifamily building consisting of approximately 106 residential dwelling units. A total of 17 parking spaces will be provided within the garage.

CONTENTS OF STUDY

This report contains nine (9) sections as follows:

- *Study Area Overview*
  This section reviews the area near and adjacent to the proposed project and includes an overview of the site location.
- *Project Design*
  This section reviews the transportation components of the project, including the site plan and access. This chapter also contains the proposed Transportation Demand Management (TDM) plan for the site.
- *Trip Generation*
  This section outlines the travel demand of the proposed project. It summarizes the proposed trip generation of the project.
- *Traffic Operations*
  This section provides a summary of the existing roadway facilities and an analysis of the existing and future roadway capacity in the study area. This section highlights the vehicular impacts of the project, including presenting mitigation measures for minimizing impacts as needed.
- *Transit*
  This section summarizes the existing and future transit service adjacent to the site, reviews how the project's transit demand will be accommodated, outlines impacts, and presents recommendations as needed.
- *Pedestrian Facilities*
  This section summarizes existing and future pedestrian access to the site, reviews walking routes to and from the project site, outlines impacts, and presents recommendations as needed.
- *Bicycle Facilities*
  This section summarizes existing and future bicycle access to the site, reviews the quality of cycling routes to and from the project site, outlines impacts, and presents recommendations as needed.
- *Safety/Crash Analysis*
  This section reviews the potential safety impacts of the project. This includes a review of crash data at intersections in the study area and a qualitative discussion on how the development will influence safety.
- *Summary and Conclusions*
  This section presents a summary of the recommended mitigation measures by mode and presents overall report findings and conclusions.

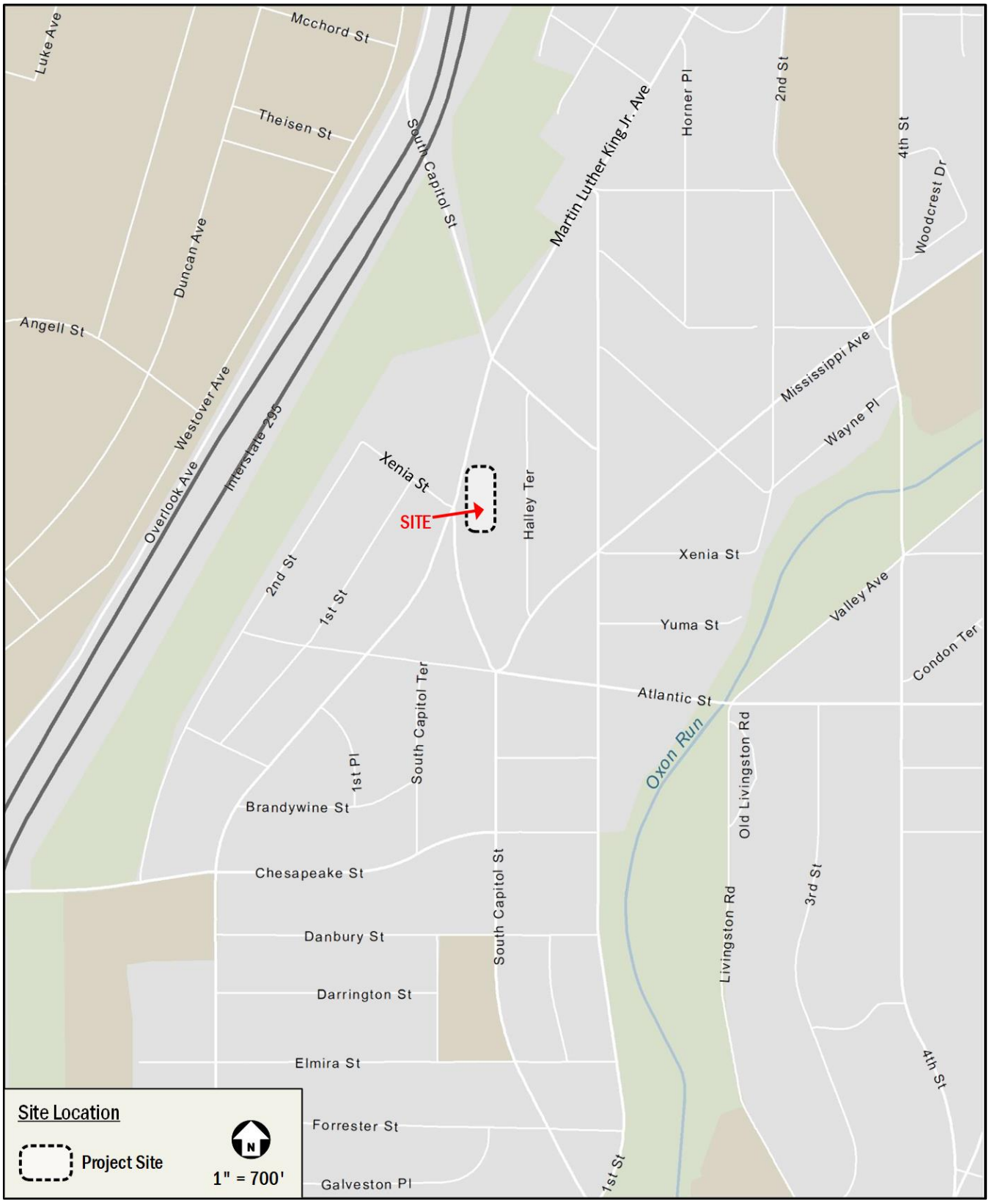

Figure 1: Site Location

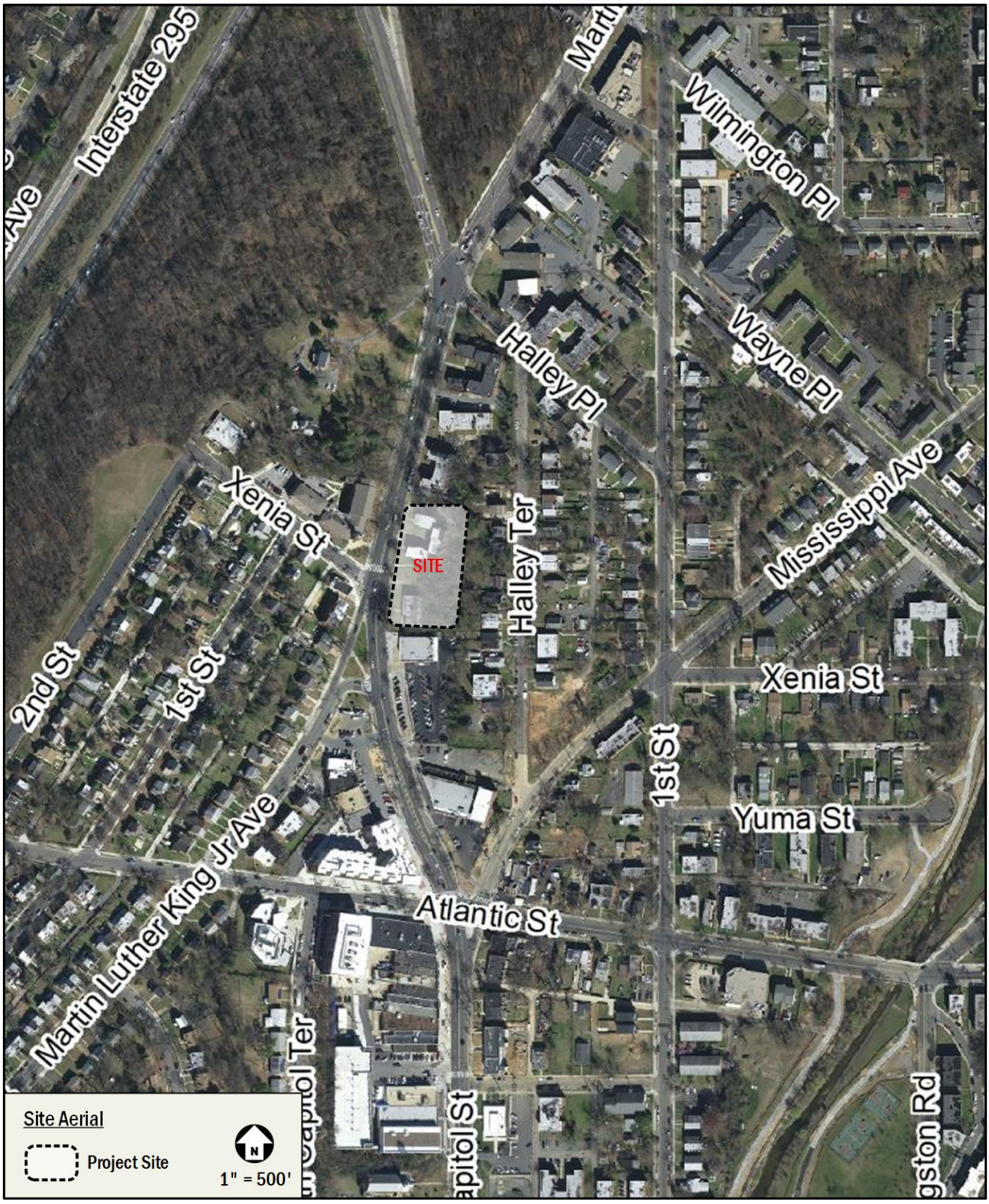

Figure 2: Site Aerial Update

STUDY AREA OVERVIEW

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

The following conclusions are reached within this chapter:

- The Site is surrounded by an extensive regional and local transportation system that will connect the residents of the proposed development to the rest of the District and surrounding areas.
- The Site is served by public transportation with access to local Metrobus lines and Metrorail.
- There is bicycle infrastructure in the vicinity of the Site, with connectivity to the Anacostia Riverwalk Trail.
- Pedestrian conditions are generally good, particularly along anticipated major walking routes; however, a barrier exists north of the site due to I-295.

MAJOR TRANSPORTATION FEATURES

Overview of Regional Access

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

The Site is accessible from regional roadways, such as the Anacostia Freeway (DC Route 295) and several principal and minor arterials such as South Capitol Street SE and Martin Luther King Jr Avenue SE. These roadways create connectivity to the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs, as well as providing connectivity to the District core.

The Site is located 1.5 miles the Congress Heights Metrorail station (served by the Green line). The Green Line connects northern and southern Prince George's County, Maryland, while providing access to the District core. In addition, the Green Line provides connections to all additional Metrorail lines allowing for access to much of the DC Metropolitan area.

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

Overview of Local Access

There are a variety of local transportation options near the Site that serve vehicular, transit, walking, and cycling trips, as shown on Figure 5. The Site is directly served by a local vehicular network that includes regional roadways, such as the Anacostia Freeway (DC Route 295) and several principal and minor arterials such as South Capitol Street SE and Martin Luther King Jr Avenue SE.

The Metrobus system provides local transit service in the vicinity of the Site, including connections to several neighborhoods within the District and additional Metrorail stations. As shown in Figure 5, there are five (5) bus routes that service the Site. Adjacent to the Site, there are two (2) bus stops along South Capitol Street. These bus routes connect the Site to many areas of the District, including area Metrorail Stations. A detailed review of transit stops within a quarter-mile walk of the Site is provided in a later section of this report.

There are several existing bicycle facilities near the Site that connect to areas within the District. Signed routes are available two (2) blocks away from the Site along Mississippi Avenue and First Street with connectivity to the Oxon Run Trail, Suitland Parkway Trail and Anacostia Riverwalk Trail. A detailed review of existing and proposed bicycle facilities and connectivity is provided in a later section of the report.

Anticipated pedestrian routes, such as those to public transportation stops, schools, and community amenities, provide adequate pedestrian facilities; however, there are some sidewalks and curb ramps that are missing or do not meet DDOT standards and a barrier exists north of the site due to I-295. A detailed review of existing and proposed pedestrian access and infrastructure is provided in a later section of this report.

Overall, the Flats at South Capitol Site is surrounded by a good local transportation network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

Carsharing

Four (4) carsharing companies provide service in the District: Zipcar, Maven, Free2Move and Car2Go. All four services are private companies that provide registered users access to a variety of automobiles. Of these, Zipcar and Maven have designated spaces for their vehicles. There is one (1) carshare

location with a total of two (2) vehicles within a quarter-mile of the Site at Elmira and South Capitol Street SE.

Carsharing is also provided by Car2Go and Free2Move, which provides point-to-point carsharing. Car2Go currently has a fleet of vehicles located throughout the District and Arlington, with Free2Go located within select areas of the District. Car2Go and Free2Move vehicles may park in any non-restricted metered curbside parking space or Residential Parking Permit (RPP) location in any zone throughout the defined "Home Area". Members do not have to pay the meters or pay stations. Car2Go and Free2Move do not have permanent designated spaces for their vehicles; however, availability is tracked through their website and mobile phone application, which provides an additional option for car-sharing patrons.

Bikeshare and Scooter Share

The Capital Bikeshare program provides an additional cycling option for residents, employees, and visitors throughout the District. The Bikeshare program has placed over 500 bicycle-share stations across Washington, DC, Arlington and Alexandria, VA, and most recently Montgomery County, MD with over 4,300 bicycles provided. A capital bikeshare location is located 0.15 miles away from the Site at the intersection of Atlantic Street SE and South Capitol Street.

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

Walkscore

Walkscore.com is a website that provides scores and rankings for the walking, biking, and transit conditions within neighborhoods of the District. Based on this website the project is located in the Congress Heights neighborhood. The site has a walk score of 48 (or "Car Dependent"), a transit score of 52 (or "Good Transit"), and a bike score of 33 (or "Somewhat Bikeable"). Figure 3 shows the neighborhood borders in relation to the site and displays a heat map for walkability and bikeability.

The site is situated in an area with poor walk scores because most errands are not in walking distance.

The site is situated in an area with decent bike scores due to its proximity to several bike facilities. The high transit score was based on the proximity to multiple bus lines.

Overall, the Congress Heights neighborhood has low walk, good transit, and decent bike scores. Additionally, other planned developments and roadway improvements will help increase the walk and bike scores in the Congress Heights neighborhood.

Future Projects

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

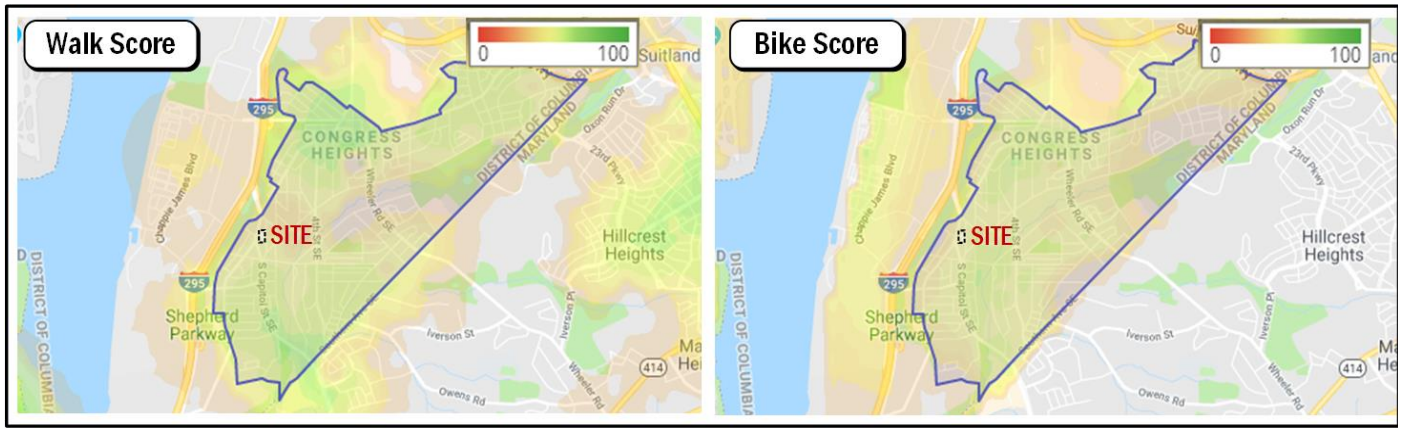

Figure 3: Summary of Walk and Bikescore

Local Initiatives

MoveDC: Multimodal Long-Range Transportation Plan

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

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

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

SustainableDC: Sustainable DC Plan

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

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

A combination of increasing public transit and decreasing vehicular mode shares has been suggested to meet the transportation targets. The transportation demand management (TDM) measures proposed in this CTR will help curtail vehicular mode share.

Far Southeast Southwest Area Element of the Comprehensive Plan

The Far Southeast Southwest Area Element is a chapter in the DC Comprehensive Plan that outlines planning efforts east of the Anacostia Freeway including neighborhoods such as Historic Anacostia, Congress Heights, Hillsdale, Woodland, Fort Stanton, Barry Farm, Bellevue, Washington Highland, Douglas/Shipley Terrace, Garfield Heights, and Knox Hill/Buena Vista. Action FSS-2.6A: Great Street Improvements includes plans to beautify South Capitol Street, maintaining the width of the street and landscaping it from Martin Luther King Jr Avenue to the Maryland border.

Bellevue Small Area Plan

The Bellevue Small Area Plan is a planning effort initiated by the District of Columbia Office of Planning that was created to identify and link all the recent investment that occurred in Bellevue by providing strategic recommendations that will aid in further economic growth within the neighborhood. This vision includes improved transportation options, providing easy access to parks, retail and housing options within Bellevue.

Planned Developments

There are several potential development projects in the vicinity of Flats at South Capitol Site. For the purpose of this analysis and consistent with DDOT and industry standards, only approved developments expected to be completed prior to the planned development with an origin/destination within the study area were included. Of the background developments considered, two (2) were ultimately included and is described below. Figure 6 shows the location of this development in relation to the proposed development.

17 Mississippi Avenue

The development will consist of an apartment building with 49 affordable units. This development lies within the study area southeast of the site and is currently under construction. The completion date is still to be determined.

SouthCap

The mixed-use development will consist of approximately 195 residential units and 5,000 square feet of ground floor retail. The development will be located at the SE corner of the South Capitol and Atlantic Street Intersection. The building is currently under construction and is expected to be completed by the end of 2019.

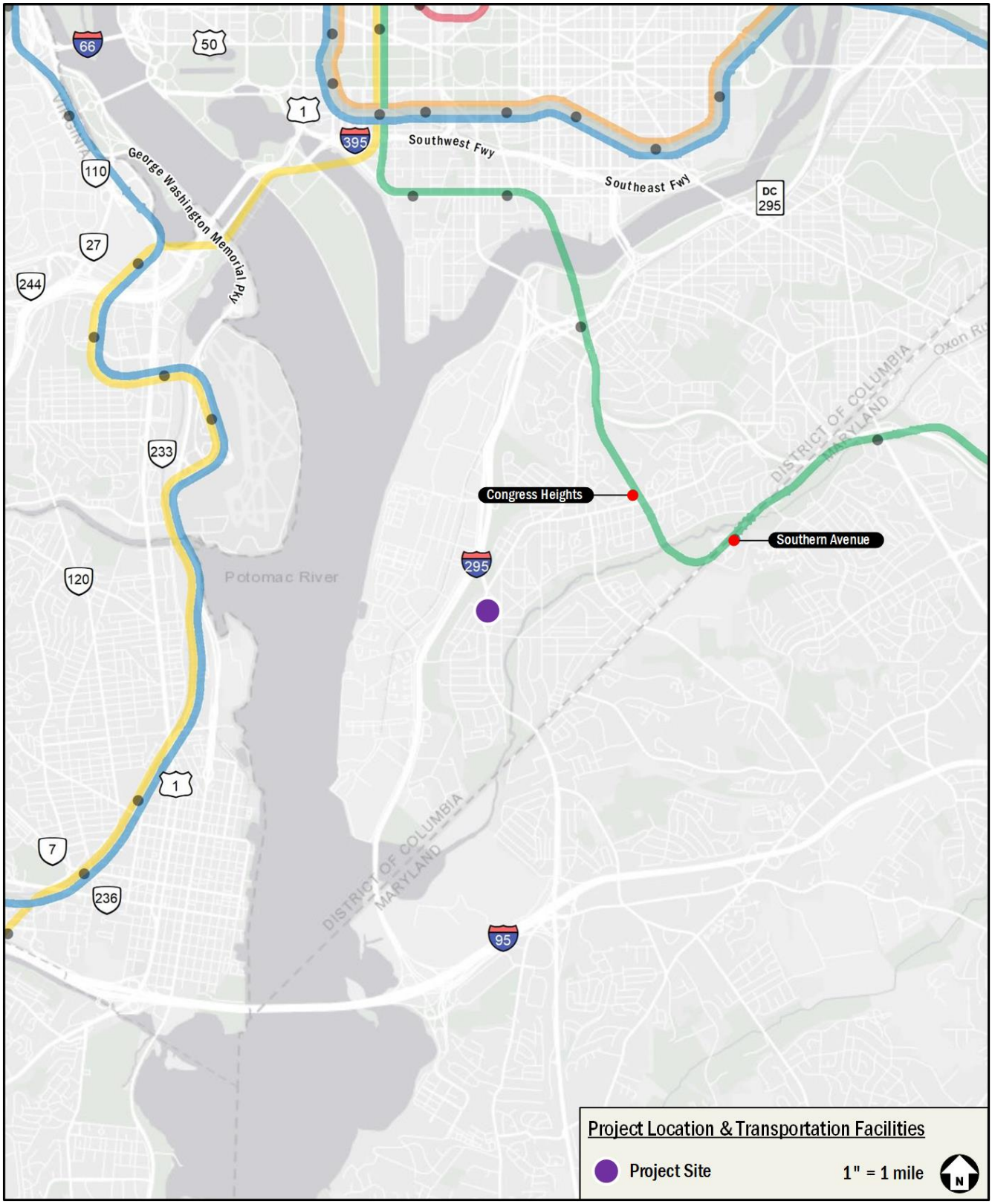

Figure 4: Major Regional Transportation Facilities

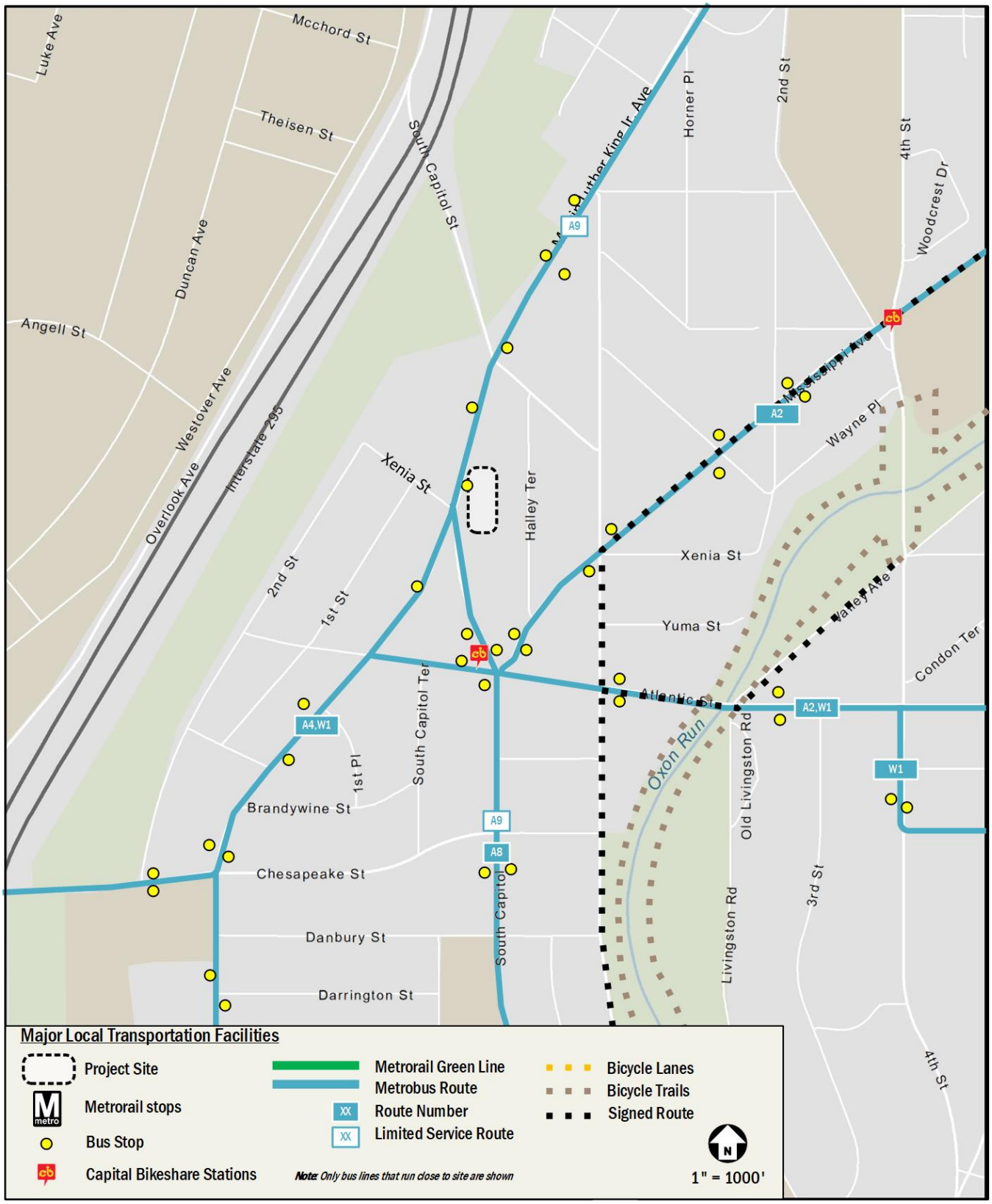

Figure 5: Major Local Transportation Facilities

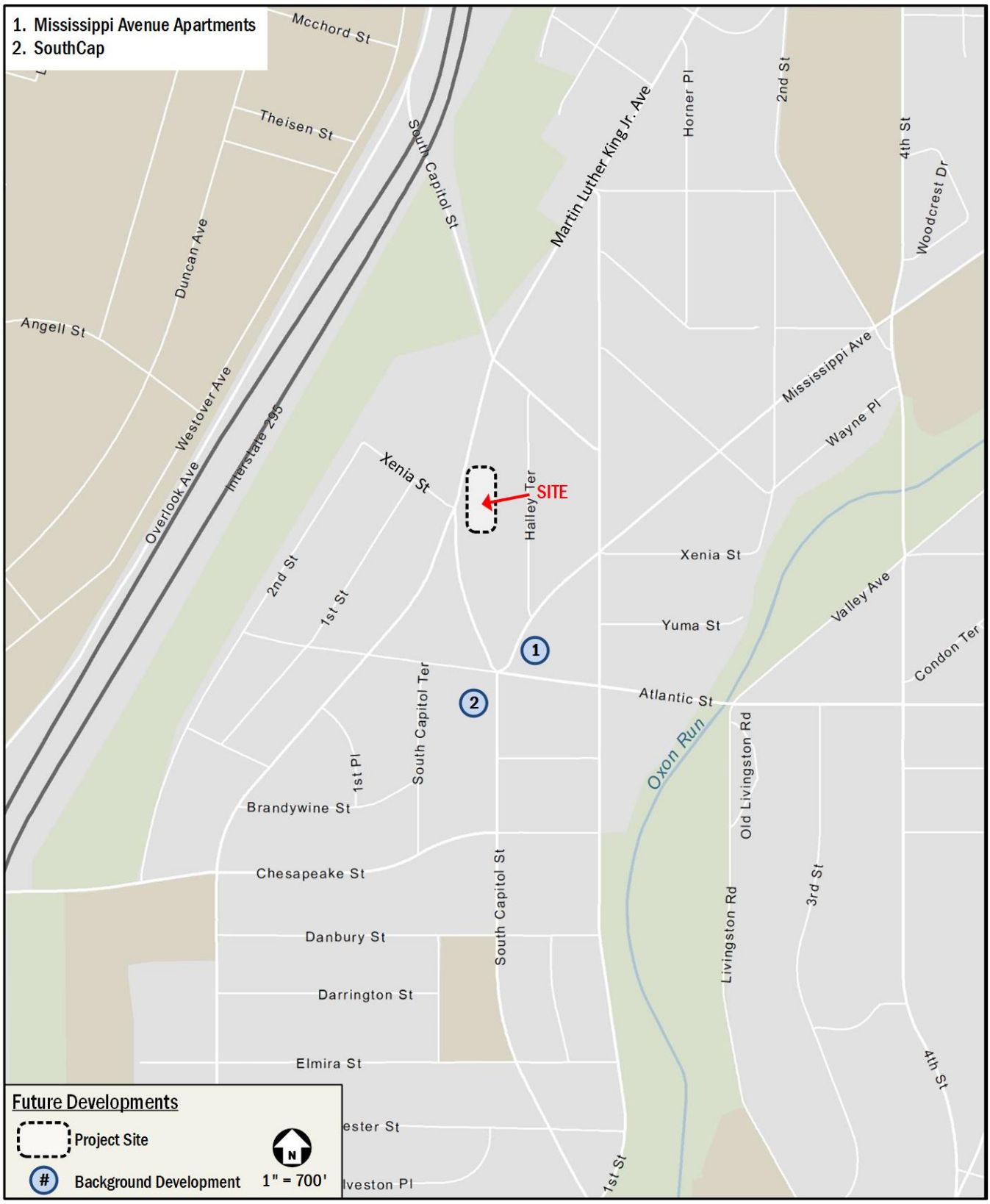

Figure 6: Planned Developments

PROJECT DESIGN

This section reviews the transportation components of the Flats at South Capitol development, including the proposed Site plan and access points. It includes descriptions of the proposed development's vehicular access, loading, parking, bicycle and pedestrian facilities, and Transportation Demand Management (TDM) plan.

The Site is developed with two multifamily apartment buildings with 30 affordable housing apartments surrounded by open space area with approximately 12 parking spaces. There is a 15-foot wide paper public alley to the rear of the property. The development will combine the lots to accommodate a single, multifamily building containing approximately 106 residential dwelling units. The development will provide an underground parking garage with 17 parking spaces that will be accessible from the proposed driveway off South Capitol Street at Xenia Street.

Figure 9 shows an overview of the development program and site plan elements.

SITE ACCESS AND CIRCULATION

Pedestrian Access

The primary pedestrian entrance for the building will be along the front of the building off of South Capitol Street.

Bicycle Access

Bicycle access to the secure long-term bicycle parking in the underground garage will utilized the planned driveway on South Capitol Street. The 36 long-term secure bicycle spaces will be provided in a dedicated storage room. Short-term spaces in the form of bicycle racks will be provided along the Site frontage.

Figure 10 shows a circulation plan with pedestrian and bicycle routes.

Vehicular Access

Vehicular access to the development will be provided by a proposed driveway curb cut along South Capitol Street at Xenia Street which will serve the underground garage.

Access to the loading facilities, consisting of one (1) 30-foot will be provided adjacent to the parking garage access utilizing the same driveway providing access to the parking garage.

Truck routing to and from the Site will be focused on designated primary truck routes, such as South Capitol Street and Martin Luther King Jr. Avenue. Detailed truck-turning diagrams are available in the Technical Attachments.

A circulation plan with vehicular and loading routes is shown on Figure 10.

ACCESS EVALUATION

Three options were considered when deciding the ultimate location of the site access: site access from the paper alley east of the site, site access from the existing curb cut at the north end of the site, and site access from a proposed curb cut off South Capitol Street at the intersection of Xenia Street. Based on initial conversations with DDOT at a meeting on June 25, 2018, site access from a curb cut off of South Capitol Street at the intersection of Xenia Street was identified as the best location for the proposed driveway.

Site access from the paper alley

A 15-foot paper alley is located to the east of the site, between South Capitol Street and Halley Terrace and connects with the existing site driveway. The alley is currently unbuilt and is approximately 1,000-feet long.

The following hardships were encountered when considering the 15-foot paper alley for site access:

- The grade of the paper alley is 15-feet to 25-feet higher in elevation compared to S Capitol Street, making it not feasible to construct and impractical to use for the project's parking and loading access. The difference in grade is presented in Exhibit 3 and Exhibit 4.
- The paper alley abuts several other lots on both sides of the site. Combined with the grade issues, this would create constructability issues for adjacent property owners.
- At 15-feet in width, the paper alley does not support two-way traffic. Essentially, an approximately 1000-foot long driveway would have to be constructed through the entire block in order to be used for site access. The location of the paper alley is shown in Exhibit 1.
- The paper alley contains a large amount of existing tree growth, including a 52-inch diameter heritage tree shown on the survey. The location of the heritage tree is identified in on Exhibit 2 and Exhibit 4.

Given all of these issues, access from the rear paper alley is confirmed to not be feasible.

Site access from existing curb cut at north end of site

The 12-foot existing curb cut is located just north of the site and currently can only support one-way traffic given its narrow width. The existing curb cuts are presented in the Technical Appendix. The following hardships were encountered when considering the existing curb cut at the north end of the site:

- The existing curb is located at the highest elevation along the frontage of the site (8' above southern site frontage) which makes it impractical to use for underground parking and loading.
- The existing access location would require a significant portion of the usable site area to be used for the parking access and truck turning movements, which would greatly reduce the amount of affordable housing the project can provide.
- In order to accommodate two-way traffic and meet the DDOT standards for distance from adjacent curb cut, the driveway would have to be widened to the south. To account for lost space, the project would have to add additional height and/or cellar units, which would increase the overall mass of the building in relationship to the context to the neighborhood. This would increase the already 4-story building.

Given these issues, using the existing curb cut location to serve the proposed development was not recommended.

Proposed site access from South Capitol Street SE at the intersection of Xenia Street

A curb cut for site access is proposed off the intersection of South Capitol Street and Xenia Street. The proposed site access will lead directly into the underground garage with loading operations adjacent to the garage entrance.

The proposed curb cut off South Capitol Street SE at the intersection of Xenia Street has been identified as the best option for the following reasons:

- Having the driveway located where the existing grade is the lowest is more suitable to accommodate an underground parking garage and loading dock.
- The proposed driveway accommodates head-in and head-out movements for both vehicles and trucks, improving existing operations and eliminating the need for vehicles to back-out of the site's current driveway, which is only 12-feet wide.
- Due to the limited amount of vehicle parking on site, the site's proximity to transit, and affordable nature of the project, the project will yield few vehicular trips. As scoped with DDOT, the project generates 14 vehicle trips during the AM Peak Hour (3 in and 11 out) and 19 vehicles during the PM peak hour (12 in and 7 out). It is important to note that the increase in the number of parking spaces on site is only 5.
- A sight distance evaluation was performed at the proposed curb cut to determine if there are any sight distance concerns associated with the proposed site driveway. The American Association of State Highway and Transportation Officials (AASHTO) manual outlines the distance required for stopped vehicles to make left and right hand turns from minor streets onto major streets. Based on the standards set forth by AASHTO, the required sight distance for stopped vehicles turning left onto a major road with a 30-mph speed limit is 335 feet. The sight distance available for left turns is approximately 480 feet. Based on the standards set forth by AASHTO, the required sight distance for stopped vehicles turning right onto a major road with a 30-mph speed limit is 290 feet. The sight distance available for right turns is approximately 340 feet. Based on this analysis, both sight distances exceed AASHTO standards. The sight distance evaluation figure is shown in Figure 11.

Based on the items outlined above, the proposed site access from South Capitol Street SE at the intersection of Xenia Street is recommended as the best location to provide access to the site.

Discussions of Additional Scoping Items

According to the scoping comments dated December 12, 2019: "*If access is granted from S. Capitol, having the driveway opposite Xenia St SW, as shown, DDOT will require permanently closing the one-way SB segment of MLK Jr Ave SW (while still accommodating the lone S.F. home driveway to MLK) and*

conducting All-way stop/traffic signal warrants for the new intersection of S. Cap/Xenia/Site Driveway. The remaining portion of MLK adjacent to the NPS reservation will need to be converted to two-way." Based on the analyses below, there is no need for either the signal or road closure based on the project. Further, due to the affordable housing nature of the project, there is a limited budget for off-site improvements as benefits of the PUD.

Signal Warrant Analysis

A signal warrant was analyzed for the intersection of South Capitol Street and Xenia Street/Site Driveway based on the projected peak hour 2021 Future Volumes with Development. Section 4C.01 in The Manual on Uniform Traffic Control Devices (MUTCD) outlines the traffic conditions required to warrant a traffic signal. As in Figure 7, "Figure 4C-3, Warrant 3-Peak Hour" was used to analyze this intersection. The plotted points represent the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for the peak hour. If the plotted points fall above the applicable curve in Figure 4C-3 for the existing combination of approach lanes, a traffic signal is warranted. Due to low volumes coming from Xenia street and the Site Driveway, the plotted point does not fall above the curve; therefore, does not meet the threshold for a traffic signal.

All-Way Stop Warrant Analysis

An all-way stop warrant was also analyzed for the intersection of South Capitol Street and Xenia Street/Site Driveway based on the projected peak hour 2021 Future Volumes with Development. Section 2B.07 in The Manual on Uniform Traffic Control Devices (MUTCD) outlines the traffic conditions required to warrant a traffic signal. According to Section 2B.07 in the MUTCD the following conditions following criteria should be met for an all way stop sign installation:

- The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and
- The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour.

As in Figure 8, similar to the signal warrant, the low volumes coming from Xenia Street and the Site Driveway do not meet the threshold for an all-way stop.

Closing MLK Leg

The intersection of South Capitol Street and Xenia Street currently acts as a four-legged intersection with vehicles turning right off southbound South Capitol and Xenia Street onto the MLK Jr Avenue southbound. With the addition of the site driveway, the intersection will operate as a 4-legged intersection with an additional receiving leg. It was suggested by DDOT to close the MLK Jr Avenue leg at this intersection; however, closing the MLK Jr Avenue leg would add significant cost to the proposed affordable housing residential project. Additionally, closing the MLK Jr Avenue leg would cause properties to no longer have direct access from MLK Jr Avenue. The limited number of site trips this development is producing (14 in the AM, 19 in the PM) does not justify a large off-site improvement. The costs associated with changing the geometry of the intersection would greatly affect the ability of the Applicant to move forward with this project. In addition, the owners of the properties fronting on this segment of MLK Jr Avenue have not been consulted about this and surely would object to closing their street.

Site Access Conclusion

Three options were considered when evaluating the ultimate location of the site access for the proposed 3836-3848 South Capitol Street residential development: site access from the paper alley east of the site, site access from the existing curb cut at the north end of the site, and site access from a proposed curb cut off of South Capitol Street at the intersection of Xenia Street. Based on the results of the feasibility analysis performed by the project architect and evaluation based on professional engineering judgment, site access from a proposed curb cut off South Capitol Street at the intersection of Xenia Street is recommended. The low number of vehicles entering and exiting the driveway will have very little effect on the intersection; therefore, not requiring reconfiguring the existing geometry of the intersection.

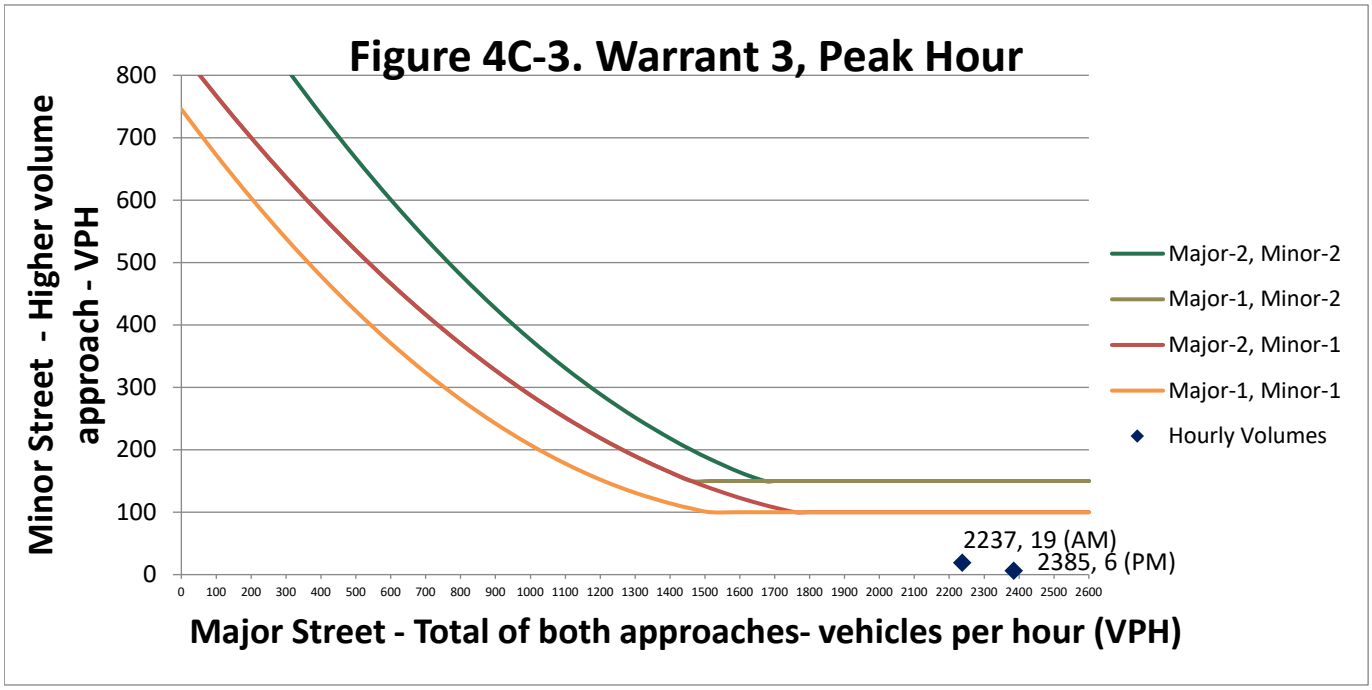

Figure 7: Signal Warrant

Major Street: South Capitol Street
Minor Street: Xenia Street

Highest Volume Hours	2021 Volumes		
	Major	Minor	
	Vehicular	*Vehicular*	*Peds+Bikes*
1	2385	10	3
2	2290	10	3
3	2242	9	3
4	1908	8	2
5	1813	8	2
6	1622	7	2
7	1503	6	2
8	1431	6	2
Average	**1899**	**8**	**2**
Volume Warrants			
Major Vehicular Traffic > 300 veh/hr?	yes		
Minor Vehicular + Peds + Bike > 200 units/hr?	no		
All-way stop warranted?	no		

Figure 8: All Way Stop Warrant

LOADING AND TRASH

Loading

The proposed loading facilities will accommodate all delivery demand without detrimental impacts. As required by zoning, the development is planned to be served by one (1) 12-foot wide, 30-foot long loading berth and 20-foot service space.

The proposed development is expected to generate approximately four (4) loading trips per day. This includes three (3) general deliveries consisting of trash removal, mail, and parcel delivery, approximately one (1) residential delivery, calculated based on an average unit turnover of 18 months with two deliveries per turnover (one move-in and one move-out). Figure 9 shows the location of the loading zone and trash removal services. The loading facilities provided by the development will be sufficient to accommodate this demand.

DDOT standards stipulate that truck movements for a site should be accommodated without back-in movements through public space. The proposed development has been designed to accommodate head-in/head-out loading maneuvers for the 30-foot trucks.

Turning maneuvers into and out of the Site are included in the Technical Attachments.

Loading Management Plan

A loading management plan was developed to minimize any impacts from loading activities related to the development, with the following elements:

- A loading manager will be designated by the building management. The manager will coordinate with residents to schedule deliveries and will be on duty during delivery hours.
- Residents will be required to schedule move-in and move-outs with the loading manager through leasing terms.
- The dock manager will coordinate with trash pick-up to help move loading expeditiously between their storage area inside the building and the curb beside the loading area to minimize the time trash trucks need to use the loading area.
- Trucks using the loading area will not be allowed to idle and must follow all District guidelines for heavy vehicle operation including but not limited to DCMR 20 – Chapter 9, Section 900 (Engine Idling), the regulations set forth in DDOT's Freight Management and Commercial Vehicle Operations document, and the primary access routes listed in the DDOT Truck and Bus Route System.
- The loading manager will be responsible for disseminating DDOT's Freight Management and Commercial Vehicle Operations document to drivers as needed to encourage compliance with District laws and DDOT's truck routes. The dock manager will also post these documents in a prominent location within the service area.

Based on the expected truck deliveries and the loading facilities provided, this report concludes that the loading plan for the Site is adequate.

Trash

Trash for the development will be accommodated using a trash compactor inside the loading area of each building. No trash will be stored in public space.

PARKING

The parking provided by the PUD should accommodate all parking needs on-site. Based on ZR16 requirements for the proposed RA-2 zone, the building is required to provide one (1) space per three (3) dwelling units in excess of four (4) units, for a total of 34 spaces. As allowable by 11 DCMR Subtitle C § 702.1(c)(4), a 50% reduction in required parking is warranted as the Site is within 0.25 miles of a Priority Corridor Network Metrobus Route stop, in this case the A4 and A8 MetroExtra stop at Xenia Street and South Capitol Street. With the applicable reduction, the development is required to provide 17 parking spaces. The proposed development will include 17 parking spaces, meeting zoning requirements.

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle Facilities

Per zoning regulations, the residential portion is required to supply one (1) short-term bicycle parking space for every 20 dwelling units; therefore, the development is required to supply five (5) short-term bicycle spaces. These short-term spaces will include inverted U-racks placed along the Site frontage near the building entrance. The Applicant will work with DDOT to select the exact location for the racks in public space.

Per zoning regulations, the residential portion of the building is required to supply one (1) long-term bicycle parking space for every three (3) dwelling units, resulting in a total of 36 long-term bicycle parking spaces. The project will meet the required number of secure long-term spaces for residents in the ground-floor parking garage.

Pedestrian Facilities

As part of the development, pedestrian facilities around the perimeter of the Site will be improved to meet DDOT and ADA standards. The installation of new sidewalks along the site frontage along South Capitol Street, that will meet or exceed the width requirements, as well as curb ramps at the new site entrance.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

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

The TDM plan for the Flats at South Capitol development is based on the DDOT expectations for TDM programs. The Applicant proposes the following TDM measures:

- The Applicant will identify a TDM Leader (for planning, construction, and operations) at the building, who will act as a point of contact with DDOT/Zoning Enforcement with annual updates. The TDM Leader will work with residents to distribute and market various transportation alternatives and options.
- The Applicant will provide TDM materials to new residents in the Residential Welcome Package materials.
- The Applicant will meet Zoning requirements to provide bicycle parking facilities at the proposed development. This includes secure parking located on-site and a minimum of 5 short-term bicycle parking spaces around the perimeter of the Site.
- The Applicant will meet Zoning requirements by providing 36 long-term bicycle parking spaces in the development garage, meeting Zoning Requirements.
- The Applicant will provide a bicycle repair station to be located in the secure long-term bicycle storage room.
- The Applicant will install a Transportation Information Center Display (electronic screen) within the residential lobby containing information related to local transportation alternatives.

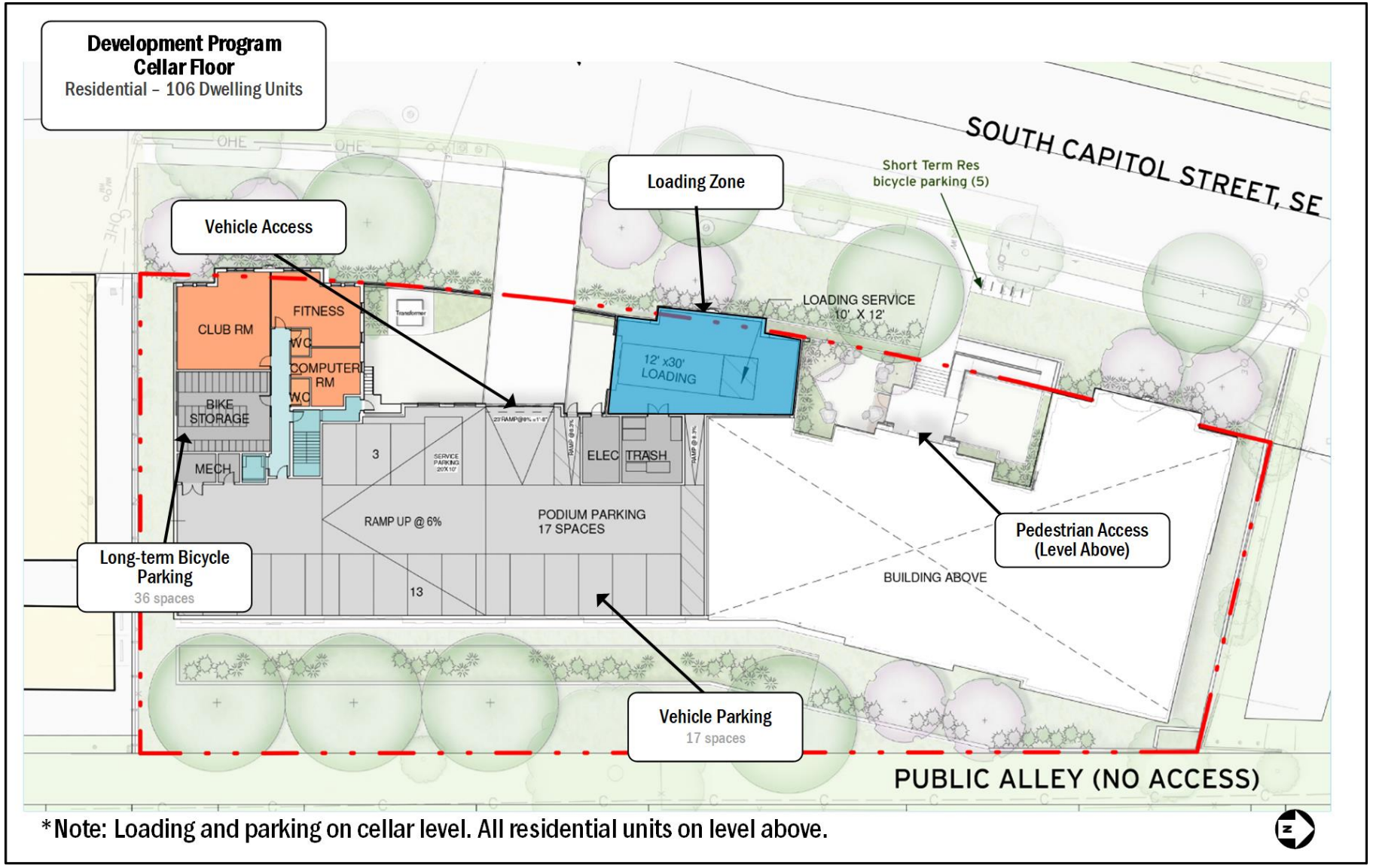

Figure 9: Site Plan

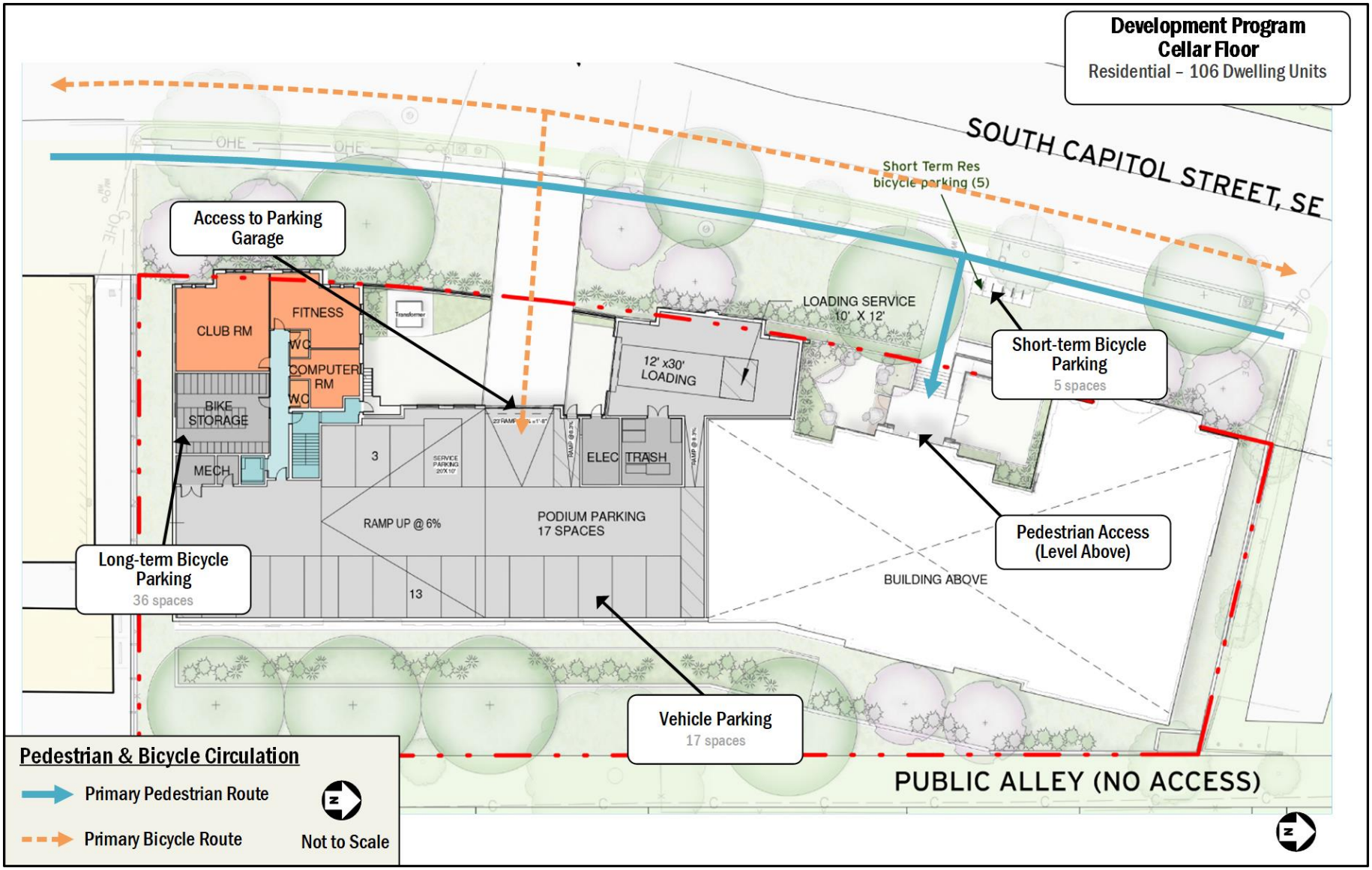

Figure 10: Pedestrian and Bicycle Circulation

Figure 11: Sight Distance Analysis

TRIP GENERATION

This section outlines the transportation demand of the proposed Flats at South Capitol project. It summarizes the projected trip generation of the development by mode, which forms the basis for the chapters that follow. These assumptions were vetted and approved by DDOT as a part of the scoping process for the study.

Traditionally, weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. This methodology was supplemented to account for the urban nature of the Site (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.

Residential trip generation was calculated based on ITE land use 221, Mid-Rise Apartment, splitting trips into different modes using assumptions derived from census data for the residents that currently live near the Site. The vehicular mode split was then adjusted to reflect the parking supply and other developments with similar proximity to Metrorail and Metrobus.

The mode split assumptions are summarized in Table 1. A summary of the multimodal trip generation for the overall development is provided in Table 2 for both peak hours. The development is expected to generate 14 vehicular trips (3 in, 11 out) during the morning peak hour and 19 vehicular trips (12 in, 7 out) during the afternoon peak hour. Detailed calculations are included in the Technical Attachments.

Table 1: Mode Split Assumptions

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

Table 2: Multi-Modal Trip Generation Summary

Mode	AM Peak Hour			PM Peak Hour		
	In	*Out*	*Total*	*In*	*Out*	*Total*
Auto	3 veh/hr	11 veh/hr	14 veh/hr	12 veh/hr	7 veh/hr	19 veh/hr
Transit	4 ppl/hr	13 ppl/hr	17 ppl/hr	14 ppl/hr	8 ppl/hr	22 ppl/hr
Bike	1 ppl/hr	3 ppl/hr	4 ppl/hr	3 ppl/hr	3 ppl/hr	6 ppl/hr
Walk	1 ppl/hr	3 ppl/hr	4 ppl/hr	3 ppl/hr	3 ppl/hr	6 ppl/hr

TRAFFIC OPERATIONS

This section provides a summary of an analysis of the existing and future roadway capacity surrounding the Site. Included is an analysis of potential vehicular impacts of the Flats at South Capitol development and a discussion of potential improvements.

The purpose of the capacity analysis is to:

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

This analysis was accomplished by determining the traffic volumes and roadway capacity for Existing Conditions, Background Conditions, and Total Future Conditions.

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

The following conclusions are reached within this chapter:

- Under Existing Conditions, three (3) study intersections operate at unacceptable levels of service.
- The addition of trips generated by background developments and inherent growth do not affect the delays or queuing at the study area intersections.
- The Project will not have a detrimental impact to the surrounding vehicular network.
- The addition of site generated trips growth does not affect the delays or queuing at any intersections.

STUDY AREA, SCOPE, & METHODOLOGY

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

The scope of the analysis contained within this report was extensively discussed with and agreed to with DDOT. The general methodology of the analysis follows national and DDOT guidelines on the preparation of transportation impact evaluations of site development.

Capacity Analysis Scenarios

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

Specifically, the roadway capacity analysis examined the following scenarios:

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

Study Area

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

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

1. South Capitol Street SE/Halley Place SE & Martin Luther King Jr Avenue SE
2. South Capitol Street SE & Xenia Street & Martin Luther King Jr Avenue Ramp
3. South Capitol Street & Martin Luther King Jr Avenue
4. South Capitol Street & Atlantic Street SE
5. Atlantic Street & Mississippi Avenue
6. Martin Luther King Jr Avenue & Atlantic Street

Figure 12 shows a map of the study area intersections. Of note, intersection 2 (South Capitol Street SE/Xenia Street/Martin Luther King Jr Avenue) was divided into two different intersections.

Traffic Volume Assumptions

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

Existing Traffic Volumes

The existing traffic volumes are comprised of turning movement count data, which was collected on: Wednesday, November 14, 2017 from 6:30 to 9:30 AM and 4:00 to 7:00 PM. The results of the traffic counts are included in the Technical Attachments. For all intersections, the system morning and afternoon peak hours were used. The existing peak hour traffic volumes are shown Figure 14. The morning peak hour was from 7:15 am to 8:15 am and the PM peak hour was from 5:15 to 6:15 pm.

2021 Background Traffic Volumes (without the project)

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

- Traffic generated by developments within the vicinity of the Site and expected to be completed prior, or close to 2021 (known as background developments); and
- Inherent growth on the roadway (representing regional traffic growth).

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

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

Based on these criteria, and as discussed with and agreed to with DDOT, two (2) developments were included in the 2021 Background scenario: the SouthCap and 17 Mississippi Avenue.

Studies for background developments were based on the ITE Trip Generation Manual, 10th edition, with mode splits based on those used for Flats at South Capitol. Mode split and trip generation assumptions for the background developments are shown in Table 3.

While the background developments represent local traffic changes, regional traffic growth is typically accounted for using growth rates. The growth rates used in this analysis are derived using the Metropolitan Washington Council of Government's (MWCOG) currently adopted regional transportation model, comparing the difference between the year 2018 and 2021 model scenarios as vetted and agreed to by DDOT. The growth rates observed in this model served as a basis for analysis assumptions. The applied growth rates are shown Table 4. The background growth volumes are show in Figure 15.

The traffic volumes generated by background developments and by the inherent growth along the network were added to the existing traffic volumes in order to establish the 2021 Background traffic volumes. The traffic volumes for the 2021 Background conditions are shown on Figure 17.

2021 Total Future Traffic Volumes (with the project)

The 2021 Total Future traffic volumes consist of the 2021 Background volumes with the addition of the traffic volumes generated by the proposed development (site-generated trips). Thus, the 2021 Total Future traffic volumes include traffic generated by: the existing volumes, background developments, the inherent growth on the study area roadways, and the proposed project.

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

The residential trip distribution was significantly influenced by the CTPP TAZ flow data for drivers commuting from the Site's TAZ and adjusted based on traffic volumes and patterns. The origin of outbound and destination of inbound residential vehicular trips was the below-grade parking garage of the development.

Based on this review and the Site access locations, the site-generated trips were distributed through the study area intersections. A summary of trip distribution assumptions and specific routing is provided on Figure 18 for outbound trips and on Figure 19 inbound trips.

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

network, and the proposed development. The proposed development generated traffic volumes are shown on Figure 21. The 2021 Total Future traffic volumes are shown on 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, PHF were calculated from the turning movement data that was collected in the field, using a minimum PHF of 0.85.

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

Geometry and Operations Assumptions

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

Existing Geometry and Operations Assumptions

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

The lane configurations and traffic controls for the Existing Conditions are shown on Figure 13.

2021 Background Geometry and Operations Assumptions

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

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

Based on these criteria, there are no background improvements within the vicinity of the site. The 2021 Background Geometry is that of the 2018 Existing Geometry.

2021 Total Future Geometry and Operations Assumptions

The configurations and traffic controls for the 2021 Future Conditions were based on those for the Existing and 2021 Background Conditions with the addition of the site driveway at the intersection of South Capitol Street and Xenia Street.

The lane configurations and traffic controls for the 2021 Total Future Conditions are shown on Figure 20.

VEHICULAR ANALYSIS RESULTS

Intersection Capacity Analysis

Intersection capacity analyses were performed for the three scenarios outlined previously at the intersections contained within the study area during the morning and afternoon peak hours. Synchro version 9.1 was used to analyze the study intersections based on the *Highway Capacity Manual* (HCM) 2000 methodology.

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

The LOS capacity analyses were based on: (1) the peak hour traffic volumes; (2) the lane use and traffic controls; and (3) the Highway Capacity Manual (HCM) methodologies (using *Synchro* software). The average delay of each approach and LOS is shown for the signalized intersections in addition to the overall average delay and intersection LOS grade. The HCM does not give guidelines for calculating the average delay for a two-way

stop-controlled intersection, as the approaches without stop signs would technically have no delay. Detailed LOS descriptions and the analysis worksheets are contained in the Technical Attachments.

Table 5 shows the results of the capacity analyses, including LOS and average delay per vehicle (in seconds) for the Existing, 2021 Background, and 2021 Future scenarios. The capacity analysis results are shown on Figure 23 for the morning peak hour and Figure 24 for the afternoon peak hour.

Under existing conditions, four study intersections have at least one approach that operates under unacceptable conditions during at least one study scenario and during at least one of the peak hours. However, the addition of the site trips does not worsen the conditions. The capacity analysis results indicate that the following approaches operate at LOS F or LOS E during all three scenarios:

- MLK Jr Avenue & South Capitol Street & Halley Place
  - Eastbound (AM)
  - Westbound (AM)
  - Southbound (AM)
- South Capitol Street & Xenia Street
  - Eastbound (AM, PM)
- South Capitol Street & MLK JR Ave & Driveway
  - Eastbound (AM, PM)
  - Westbound (AM)
- South Capitol Street & Atlantic Street
  - Southbound (AM, PM)

Queuing Analysis

In addition to the capacity analyses presented above, a queuing analysis was performed at the study intersections. The queuing analysis was performed using Synchro software. The 50th percentile and 95th percentile queue lengths are shown for each lane group at the study area signalized intersections. The 50th percentile queue is the maximum back of queue on a median cycle. The 95th percentile queue is the maximum back of queue that is exceeded 5% of the time. For unsignalized intersection, only the 95th percentile queue is reported for each lane group (including free-flowing left turns and stop-controlled movements) based on the HCM 2000 calculations. HCM 2000 does not calculate queuing for all-way stops.

Table 6 shows the queuing results for the study area intersections. Two of the study intersections exhibits one or more lane group that exceeds the given storage length during the existing conditions:

- MLK Jr Avenue & South Capitol Street & Halley Place
  - Eastbound Left Thru (AM, PM)

- South Capitol Street & Atlantic Street
  - Westbound Left Turn (AM, PM)
  - Westbound Right (AM, PM)
  - Northbound Thru Left (AM)
  - Southbound Left (AM)
  - Southbound Thru (PM)

The addition of site trips does not worsen the queue lengths at the study intersections.

Mitigation Measures

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

Following these guidelines, there are no impacts as a result of the development; therefore, no mitigation measures needed to be made.

Table 3: Summary of Background Development Trip Generation

Background Development	ITE Land Use Code Trip Generation, 9th Ed.	Quantity	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
17 Mississippi Avenue	221 Residential (Rate)	49 du	6	13	19	15	9	24
	Non-Auto Reduction: 60%		*-4*	*-8*	*-12*	*-10*	*-7*	*-16*
		Total Trips	**2**	**5**	**7**	**5**	**3**	**8**
SouthCap	221 Residential	195 du	20	58	78	60	40	100
	Non-Auto Reduction: 40%		*-12*	*-35*	*-47*	*-36*	*-24*	*-60*
	820 Shopping Center (Rate)	5,000 sf	4	4	8	16	84	100
	Non-Auto Reduction: 40%		*-2*	*-2*	*-4*	*-9*	*-46*	*-55*
		Total Trips	**8**	**20**	**28**	**24**	**35**	**59**
		Net Background Site Trips	**10**	**25**	**35**	**29**	**38**	**67**

Table 4: Applied Annual and Total Growth Rates

Road	Intersections	Proposed Annual Growth Rate		Proposed Total Growth Rate 2018-2021	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
South Capitol Street SE- NB	1,2,3,4	0.00%	0.00%	0.00%	0.00%
South Capitol Street SE- SB	1,2,3,4	0.00%	0.00%	0.00%	0.00%
MLK Jr Avenue SE- NB	1,2,6	0.00%	0.00%	0.00%	0.00%
MLK Jr Avenue SE- SB	1,2,6	0.00%	0.00%	0.00%	0.00%
Atlantic Street SE- EB	4,5,6	2.00%	0.00%	6.12%	0.00%
Atlantic Street SE -WB	4,5,6	2.00%	0.05%	6.12%	1.50%

Figure 12: Study Area Intersections

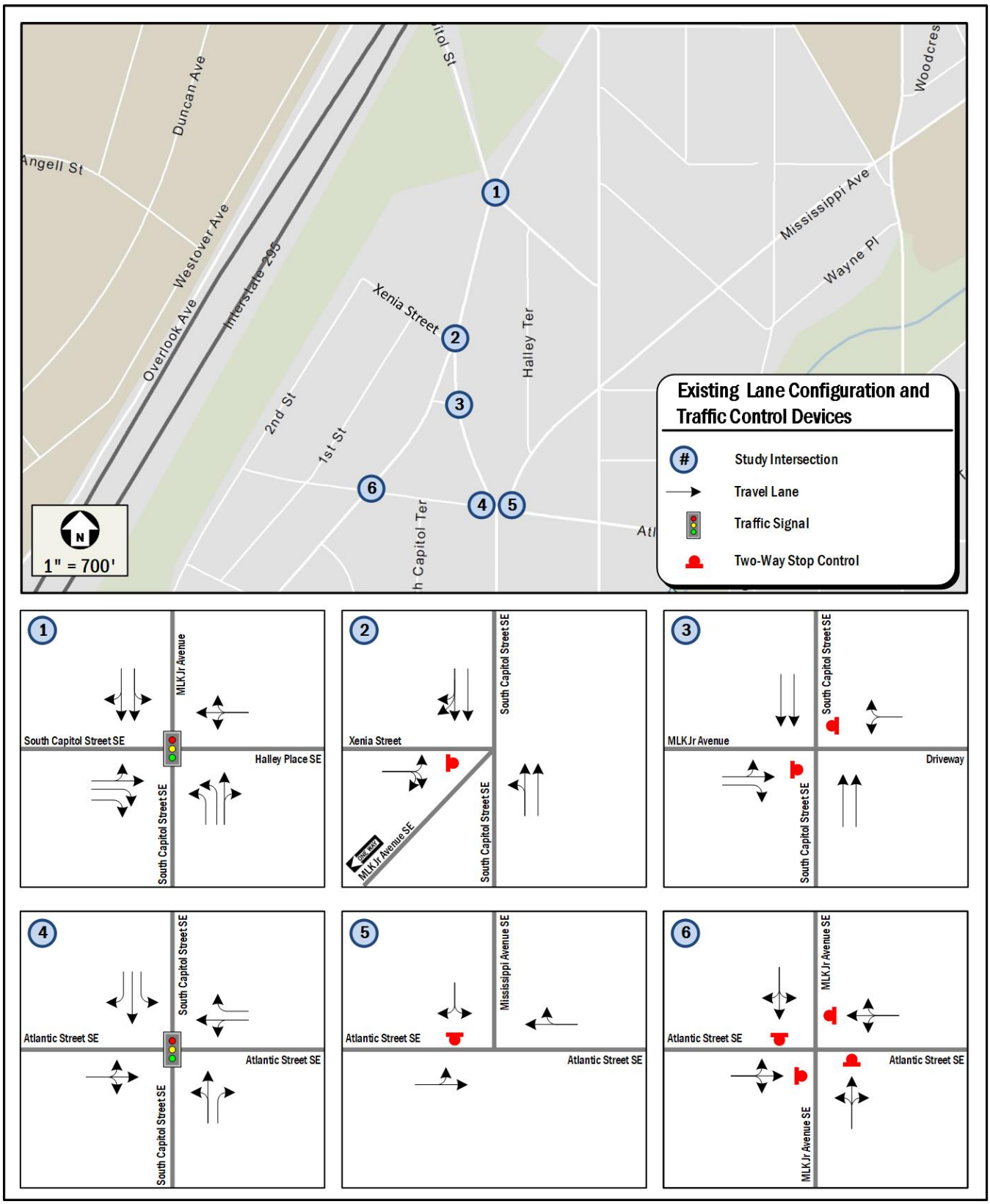

Figure 13: Existing Lane Configuration and Traffic Control Devices

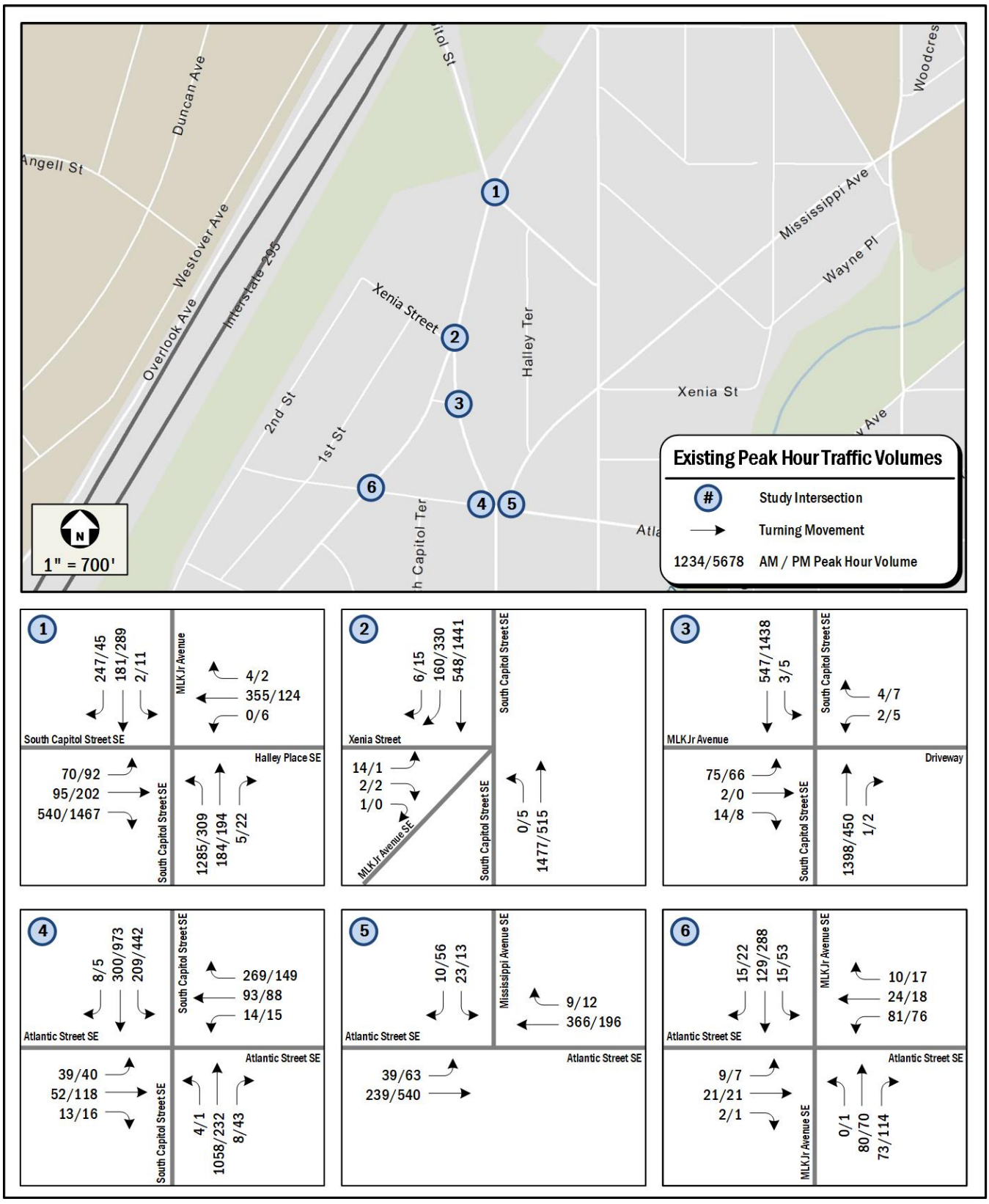

Figure 14: Existing Peak Hour Traffic Volumes

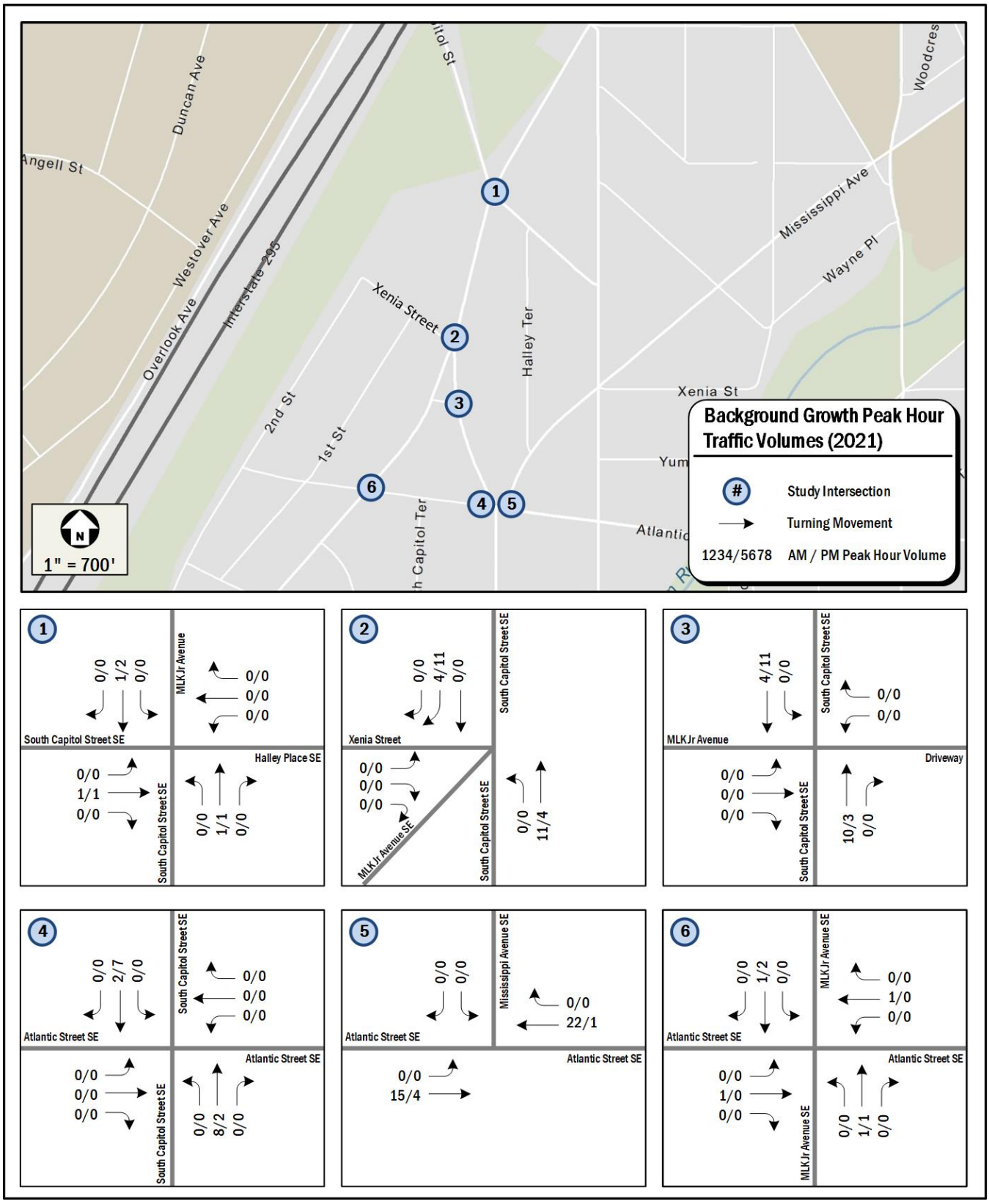

Figure 15: Background Growth Peak Hour Traffic Volumes (2021)

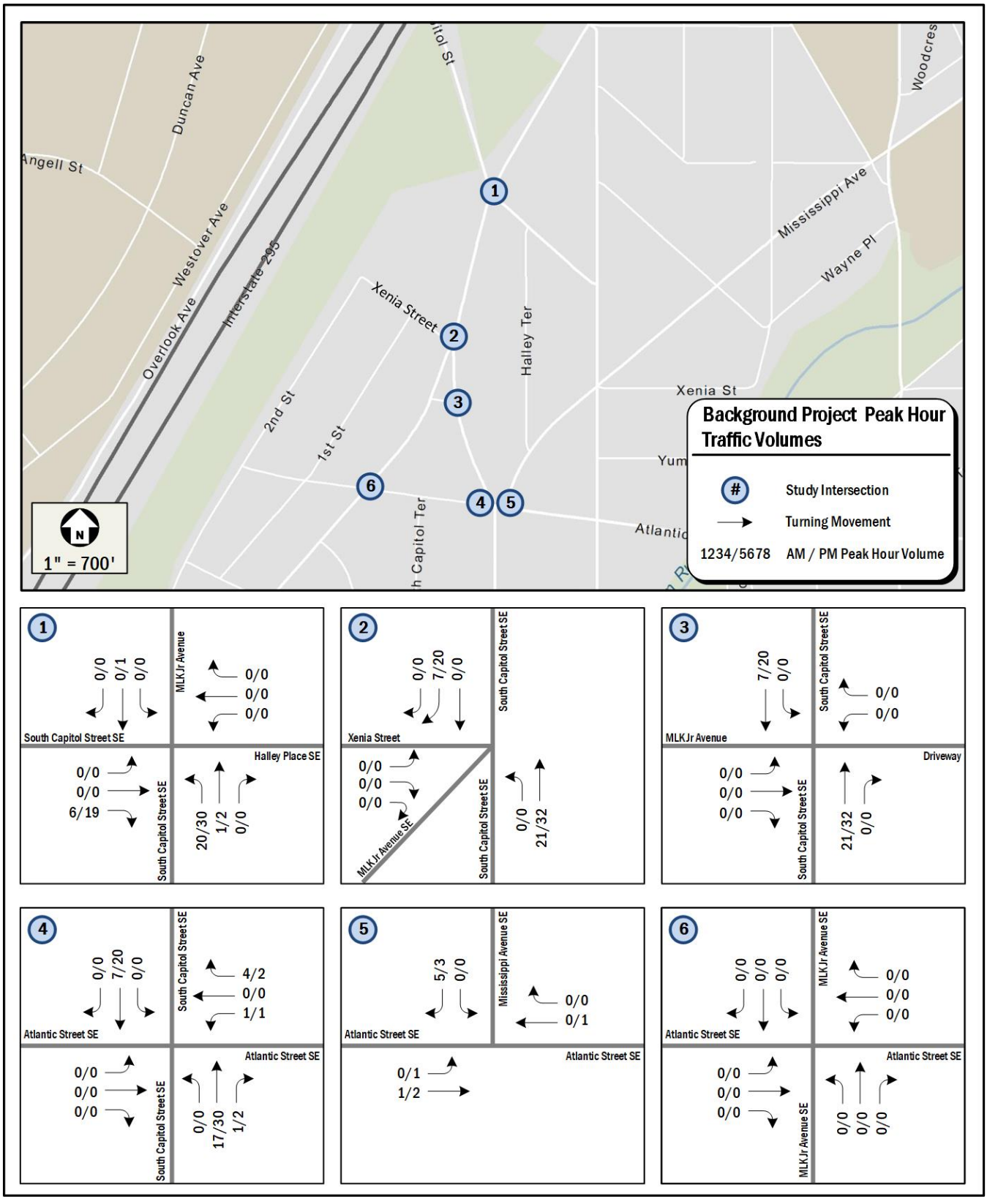

Figure 16: Background Project Peak Hour Traffic Volumes

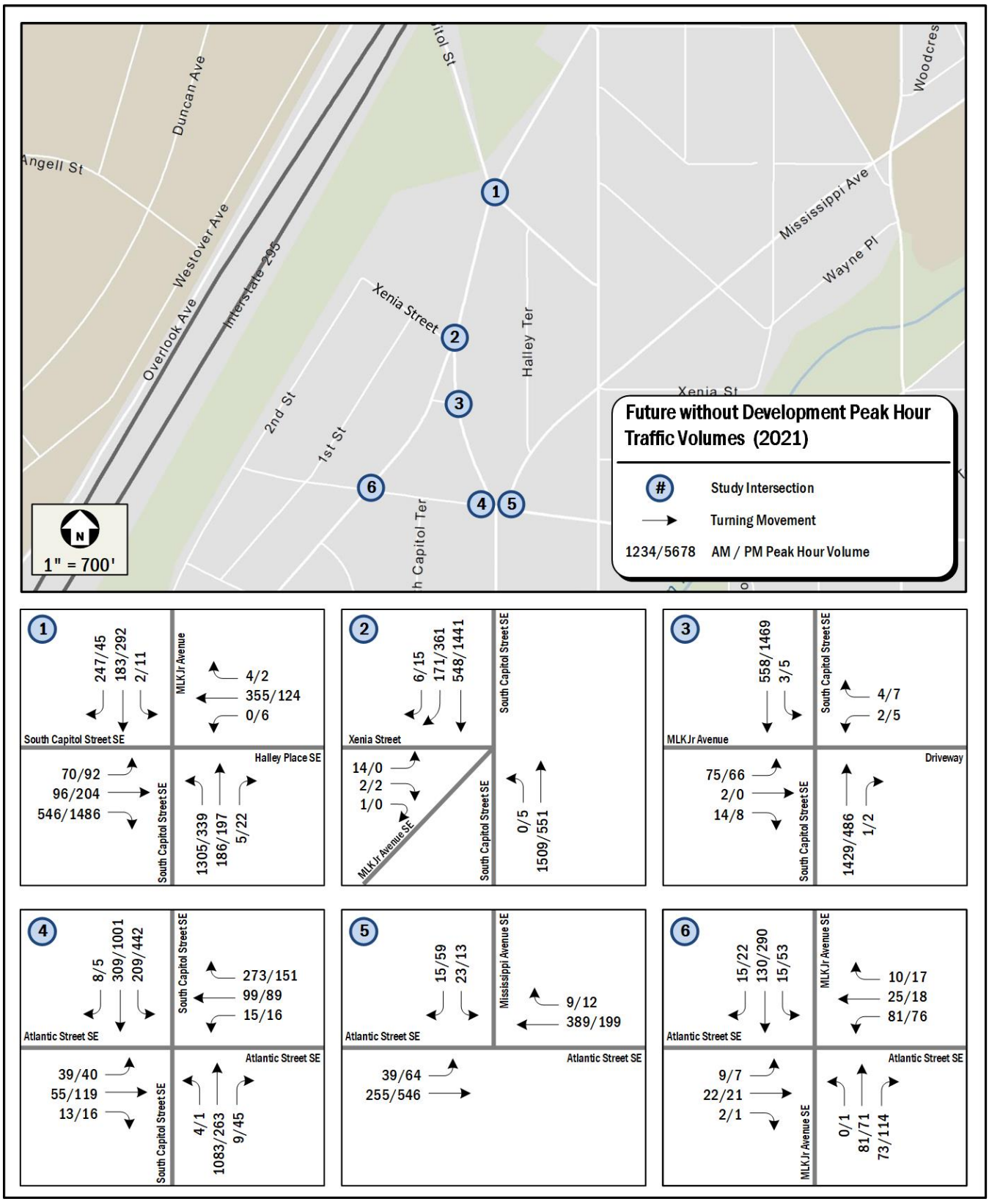

Figure 17: Future without Development Peak Hour Traffic Volume (2021)

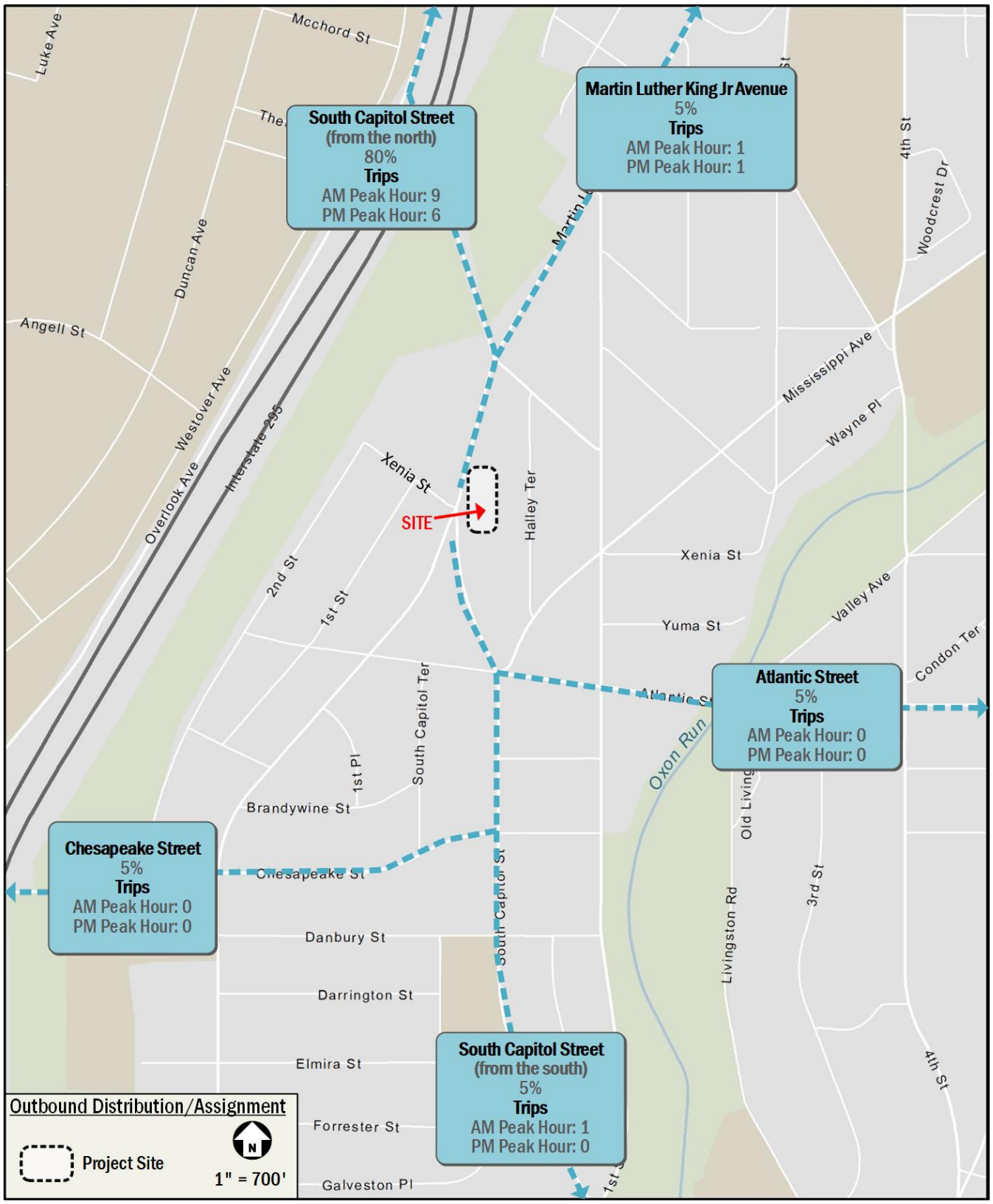

Figure 18: Outbound Trip Distribution

Figure 19: Inbound Trip Distribution

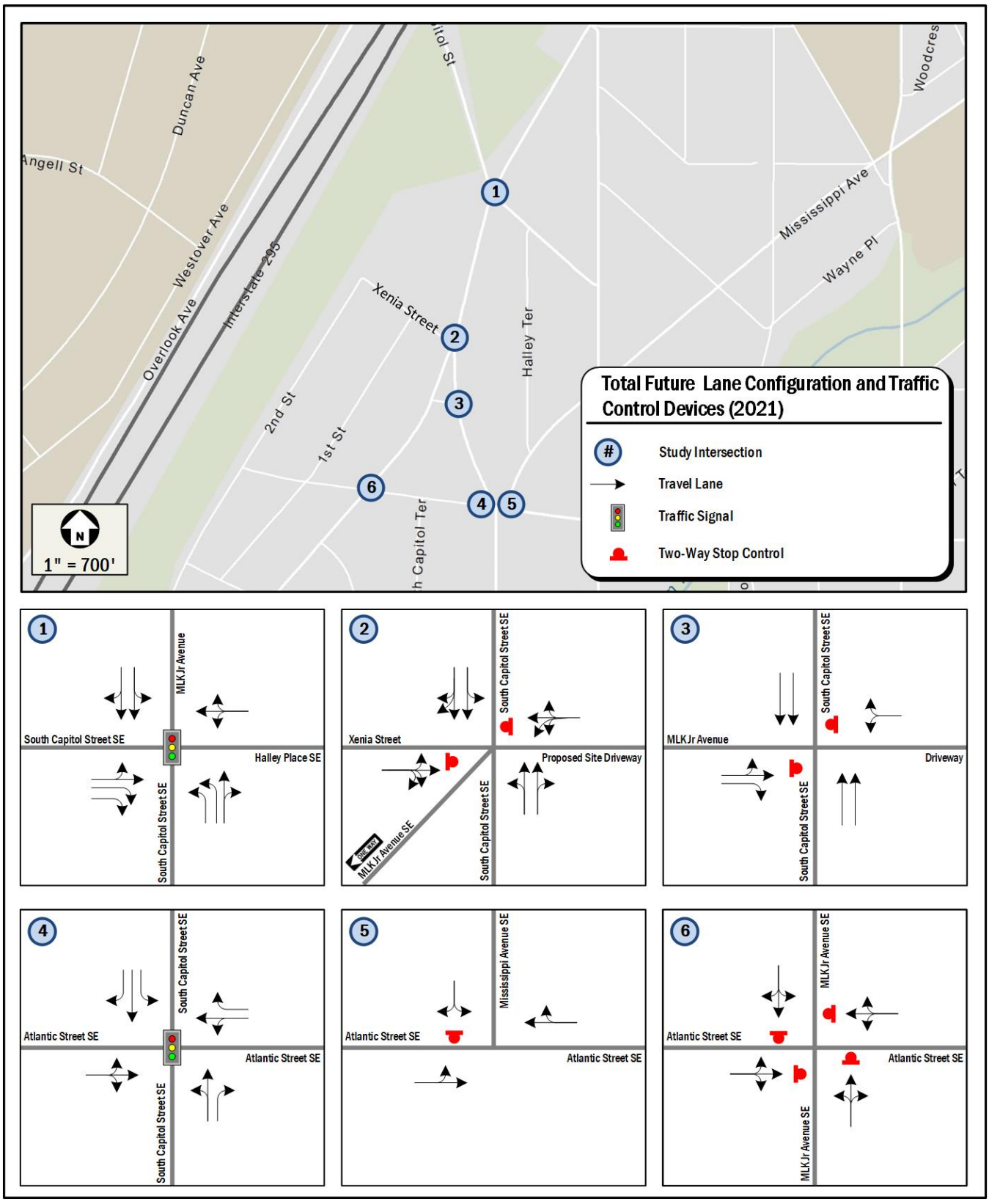

Figure 20: Total Future Lane Configuration and Traffic Control Devices (2021)

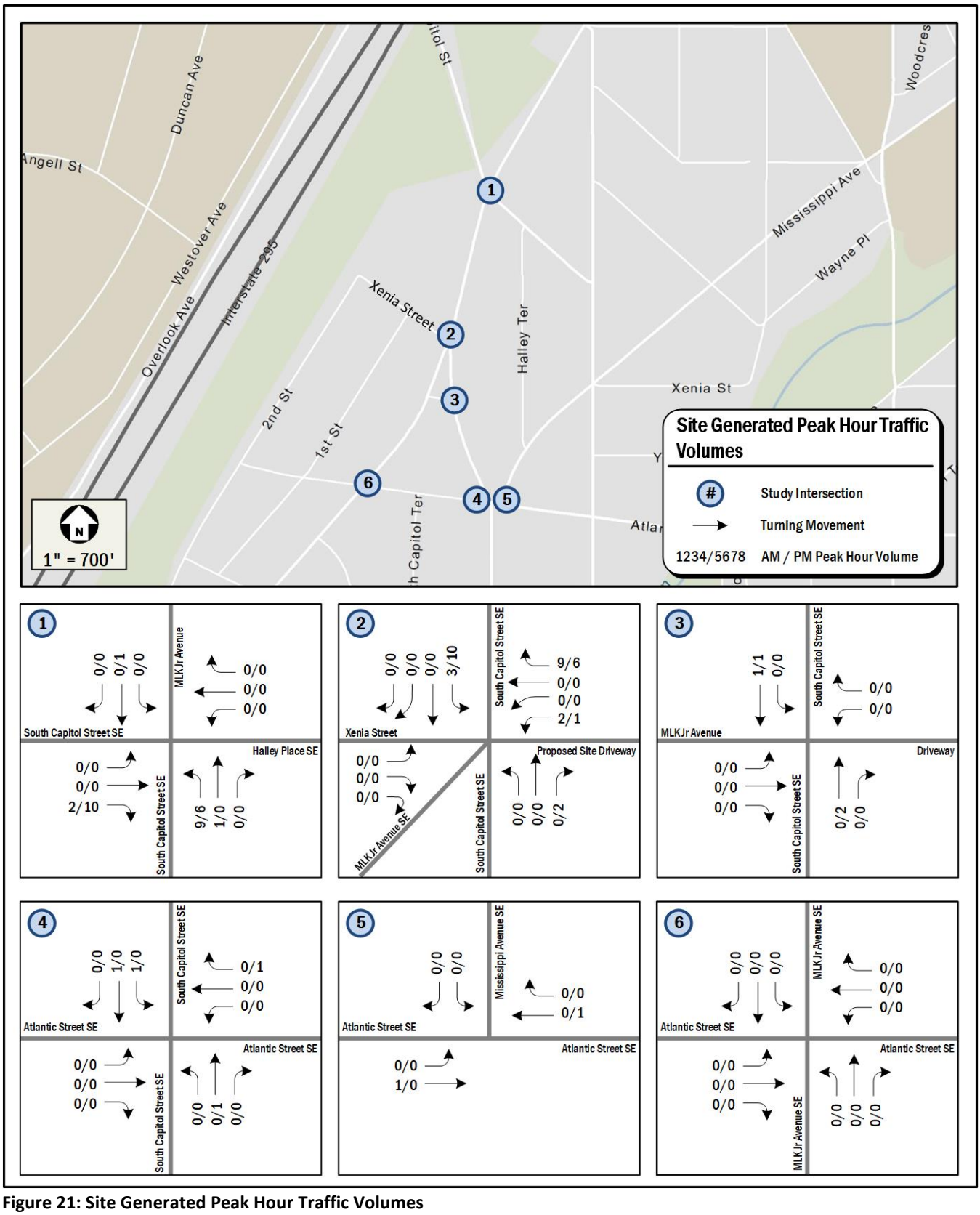

Figure 21: Site Generated Peak Hour Traffic Volumes

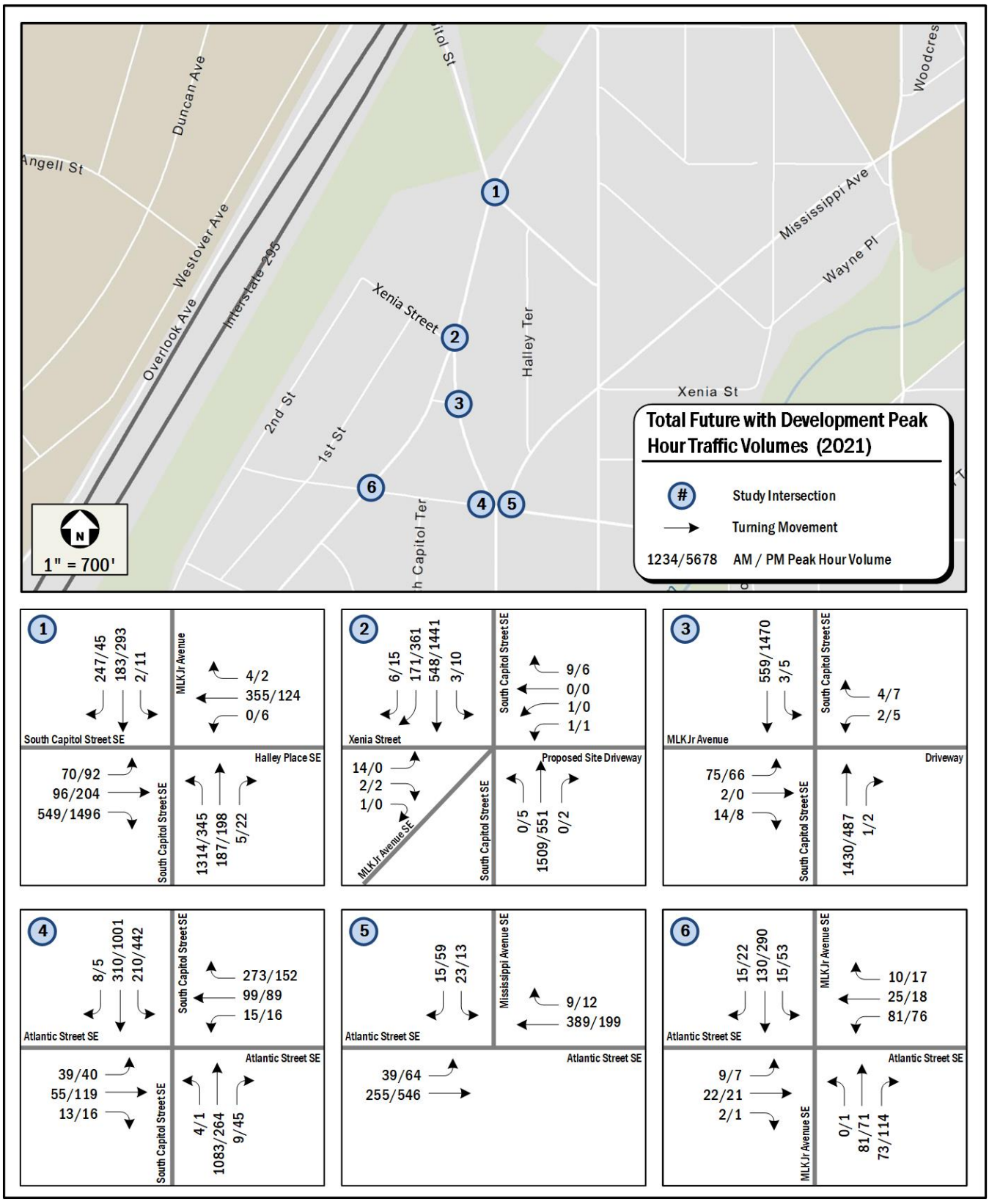

Figure 22: Future with Development Peak Hour Traffic Volumes (2021)

Table 5: LOS Results

Intersection	Approach	Existing Conditions (2018)				Background Conditions (2021)				Total Future Conditions (2021)			
		AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. MLK Jr Avenue & South Capitol Street & Halley Place	**Overall**	**129.2**	**F**	**27.6**	**C**	**122.2**	**F**	**27.8**	**C**	**121.8**	**F**	**28.0**	**C**
	Eastbound	381.7	F	26.8	C	364.5	F	27.2	C	362.6	F	27.5	C
	Westbound	162.7	F	36.5	D	153.6	F	36.1	D	153.6	F	36.1	D
	Northbound	18.4	B	16.0	B	18.5	B	16.5	B	18.6	B	16.5	B
	Southbound	55.5	E	45.6	D	55.7	E	45.8	D	55.7	E	45.8	D
2. South Capitol Street & Xenia Street/Site Driveway	Eastbound	39.2	E	42.0	E	41.7	E	44.8	E	62.3	F	65.3	F
	Westbound	--	--	--	--	--	--	--	--	25.0	D	15.0	C
	Northbound	0.0	A	0.0	A	0.0	A	0.2	A	0.0	A	0.3	A
	Southbound	0.0	A	0.0	A	0.0	A	0.0	A	0.1	A	0.2	A
3. South Capitol Street & MLK Jr Avenue & Driveway	Eastbound	**103.3**	**F**	**363.5**	**F**	**103.1**	**F**	**377.7**	**F**	**103.6**	**F**	**379.5**	**F**
	Westbound	38.5	E	21.3	C	43.7	E	21.3	C	43.8	E	21.4	C
	Northbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Southbound	0.1	A	0.0	A	0.1	A	0.0	A	0.1	A	0.0	A
4. South Capitol Street and Atlantic Street	Overall	117.8	F	89.5	F	116.4	F	82.6	F	117.2	F	82.5	F
	Eastbound	51.2	D	42.3	D	50.4	D	42.0	D	50.4	D	42.0	D
	Westbound	51.3	D	28.2	C	51.3	D	28.0	C	51.3	D	28.0	C
	Northbound	37.0	D	19.8	B	41.4	D	20.5	C	41.4	D	20.5	C
	Southbound	342.8	F	120.4	F	330.6	F	110.4	F	332.9	F	110.3	F
5. Atlantic Street & Mississippi Avenue	**Eastbound**	**1.2**	**A**	**1.4**	**A**	**1.4**	**A**	**1.4**	**A**	**1.4**	**A**	**1.4**	**A**
	Westbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Southbound	14.1	B	11.9	B	14.5	B	11.9	B	14.5	B	11.9	B
6. Atlantic Street & MLK Jr Avenue	Eastbound	8.3	A	9.1	A	8.2	A	8.9	A	8.2	A	8.9	A
	Westbound	9.2	A	10.1	B	9.0	A	9.8	A	9.0	A	9.8	A
	Northbound	8.6	A	9.4	A	8.4	A	9.1	A	8.4	A	9.1	A
	Southbound	9.3	A	14.1	B	9.0	A	12.9	B	9.0	A	12.9	B

Table 6: Queueing Results (in feet)

Intersection	Approach	Storage Length (Feet)	Existing Conditions (2018)				Future Background Conditions (2021)				Total Future Conditions (2021)			
			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. MLK Jr Avenue & South Capitol Street & Halley Place	Eastbound LT	200	~264	#384	222	#354	~255	#378	222	#351	~255	#378	222	#351
	Eastbound Right	1330	13	30	340	446	12	30	355	463	13	31	361	475
	Westbound LTR	595	~373	#570	95	146	~360	#555	88	146	~360	#555	88	146
	Northbound Left	665	468	m541	86	130	475	m538	96	143	481	m545	95	141
	Northbound TR	665	202	m211	98	125	200	m210	107	136	201	m212	108	138
	Southbound LTR	850	164	226	130	182	165	227	132	184	165	227	132	184
2. South Capitol Street & Xenia Street & Site Driveway	Eastbound LTR	485	--	14	--	2	--	13	--	2	--	20	--	4
	Westbound LTR	20	--	--	--	--	--	--	--	--	--	5	--	2
	Northbound Left	750	--	0	--	1	--	0	--	1	--	0	--	1
	Northbound TR	750	--	0	--	0	--	0	--	0	--	0	--	0
	Southbound Left	210	--	0	--	0	--	0	--	0	--	1	--	1
	Southbound TR	210	--	0	--	0	--	0	--	0	--	0	--	0
3. South Capitol Street & MLK Jr Avenue & Driveway	Eastbound Right	580	--	111	--	178	--	111	--	170	--	111	--	170
	Eastbound LT	580	--	2	--	2	--	2	--	2	--	2	--	2
	Westbound LTR	20	--	5	--	5	--	5	--	4	--	5	--	4
	Northbound LT	510	--	0	--	0	--	0	--	0	--	0	--	0
	Northbound Right	510	--	0	--	0	--	0	--	0	--	0	--	0
	Southbound Left	195	--	0	--	0	--	1	--	0	--	1	--	0
	Southbound TR	195	--	0	--	0	--	0	--	0	--	0	--	0
4. South Capitol Street & Atlantic Street	Eastbound LTR	515	81	139	125	199	78	140	122	197	78	140	122	197
	Westbound LT	20	83	142	77	124	86	148	71	124	86	148	71	124
	Westbound Right	20	139	233	0	31	138	235	0	37	138	235	0	37
	Northbound TL	355	751	#1124	133	195	796	#1166	146	217	796	#1166	147	218
	Northbound Right	85	0	0	0	0	0	0	0	0	0	0	0	0
	Southbound Left	105	~306	m#458	~560	#756	~301	m#453	~531	#737	~303	m#452	~531	m#735
	Southbound Thru	510	86	m145	695	#921	88	m149	689	#1028	90	m150	691	#1023
	Southbound Right	510	0	m1	0	m0	0	m1	0	m0	0	m1	0	m0
5. Atlantic Street & Mississippi Avenue	Eastbound LT	20	--	2	--	4	--	3	--	4	--	3	--	4
	Westbound TR	380	--	0	--	0	--	0	--	0	--	0	--	0
	Southbound LR	225	--	7	--	11	--	8	--	11	--	8	--	11
6. Atlantic Street & MLK Jr Avenue	Eastbound LTR													
	Westbound LTR													
	Northbound LTR													
	Southbound LTR													

HCM Does Not Report Queues at All-Way Stop Controlled Intersections

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

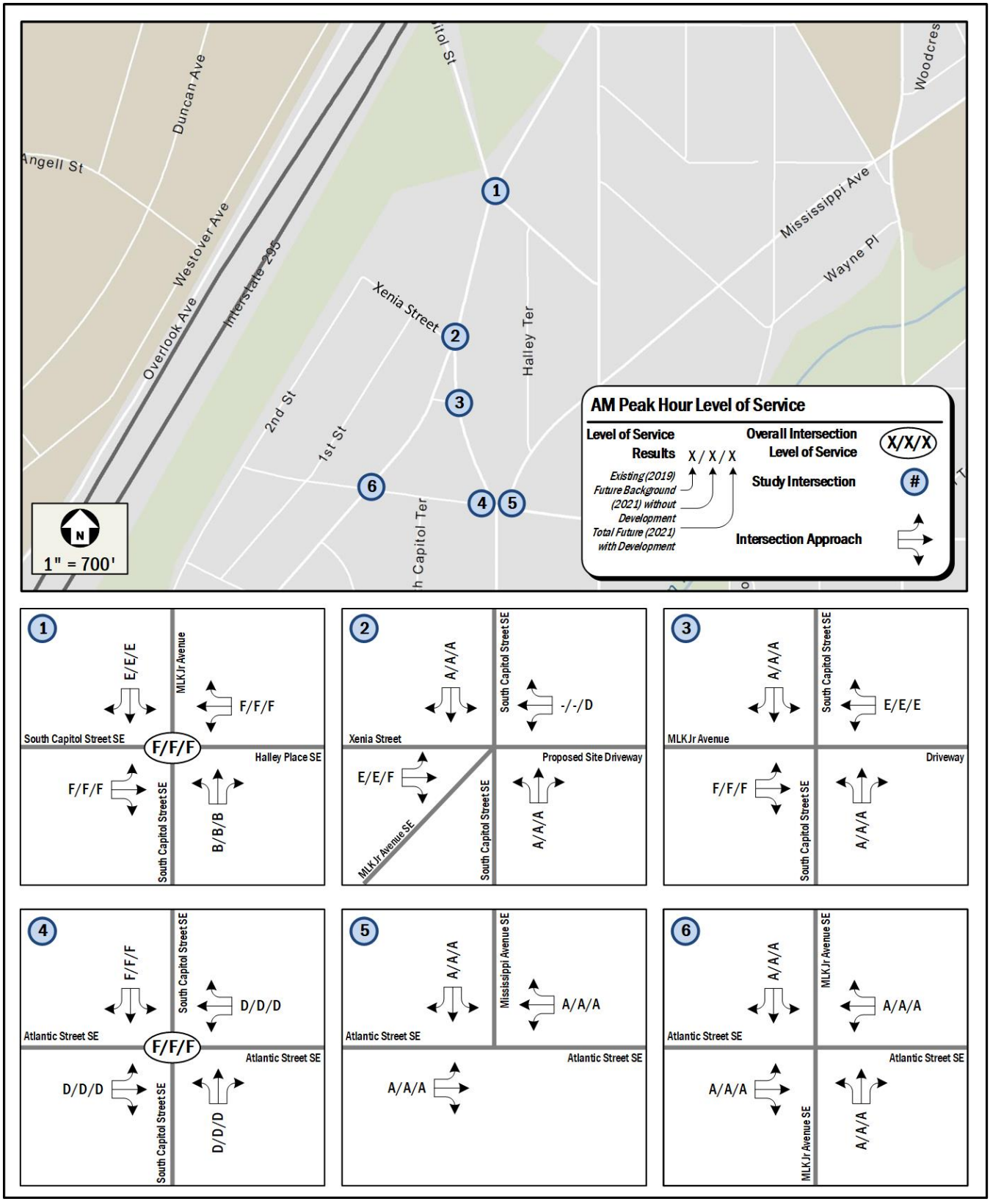

Figure 23: AM Peak Hour Level of Service Results

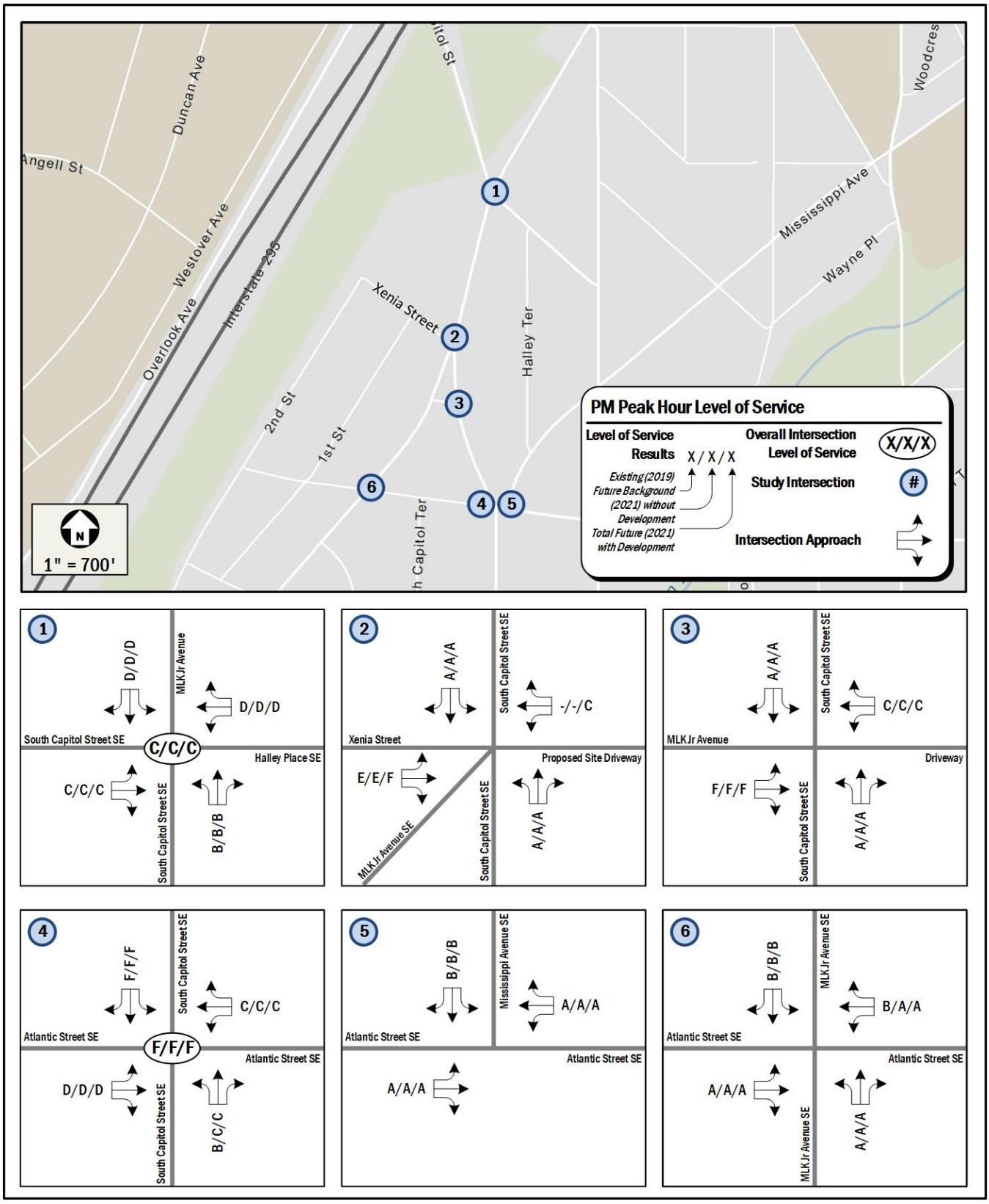

Figure 24: PM Peak Hour Level of Service

TRANSIT

This section discusses the existing and proposed transit facilities in the vicinity of the Site, accessibility to transit, and evaluates the overall transit impacts of the Flats at South Capitol project.

The following conclusions are reached within this chapter:

- The development has adequate access to transit.
- The development is located 1.5 miles from the Congress Heights Metrorail Station.
- The development Site is surrounded by five (5) Metrobus routes within a five-minute walk that travel along multiple primary corridors.
- The development is expected to generate a manageable number of transit trips and the existing service is capable of handling these new trips.

EXISTING TRANSIT SERVICE

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

The Site is located approximately 1.5 miles the Congress Heights Metrorail Station (serviced by the Green Line). The Green Line connects northern and southern Prince George's County, Maryland, while providing access to the District core. In addition, the Green Line provides connections to all additional Metrorail lines allowing for access to much of the DC Metropolitan area. Green Line trains run every 8 minutes during the weekday morning and afternoon peak hours between 5:00 AM to 9:30 AM and 3:00 PM to 7:00 PM and approximately every 12 minutes during the weekday midday hours from 9:30 AM to 3:00 PM and every 12 to 20 minutes during the weekday off-peak periods and on weekends.

The Congress Heights station is accessible from the Site by foot via Martin Luther King Jr Avenue and Alabama Street, or by Metrobus.

The Site is also serviced by local Metrobus routes, providing the Site with additional connectivity to the Congress Heights Metrorail Station, in addition to the stations, where transfers can be made to other bus routes and the Metrorail lines, providing connectivity to the downtown core and other areas of the District, Maryland, and Virginia. The A4 and A8 bus routes serves the Site directly north of the intersection of South Capitol Street and Xenia Street, providing direct access to and from Northwest, DC during peak commute hours. Table 7 shows a summary of the bus route information for the routes that serve the Site, including service hours, headway, and distance to the nearest bus stop.

Figure 25 shows a detailed inventory of the existing Metrobus stops within a quarter-mile walkshed of the Site. Each stop is evaluated based on the guidelines set forth by WMATA's Guidelines for the Design and Placement of Transit Stops. A detailed breakdown of individual bus stop amenities and criteria for standards is included in the Technical Attachments.

PROPOSED TRANSIT SERVICE

MoveDC

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

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

No transit related improvements were outlined in the MoveDC plan that directly affect the proposed development.

WMATA and DDOT Transit Studies

WMATA studied capacity of Metrorail stations in its *Station Access & Capacity Study (2008).* The study analyzed the capacity of Metrorail stations for their vertical transportation, for example the capacity of the station at elevators, stairs, and escalators to shuttle patrons between the street, mezzanine, and platforms. The study also analyzed stations capacity to process riders at fare card gates. For both analyses, vertical transportation and fare card gates, volume-to-capacity ratios were calculated for existing data (from 2005) and projections for the year 2030. According to the study, the Congress Heights

station can currently accommodate future growth at all access points.

WMATA has also studied capacity along Metrobus routes. DC's *Transit Future System Plan* (2010) lists the bus routes with the highest load factor (a ratio of passenger volume to bus capacity). A load factor is considered unacceptable if it is over 1.2 during peak periods or over 1.0 during off-peak or weekend periods. According to this study Metrobus routes that travel near the Site operate at a load factor that is at or below its capacity during peak periods of the day.

SITE IMPACTS

Transit Trip Generation

The Site is projected to generate 17 transit trips (4 inbound, 13 outbound) during the morning peak hour and 22 transit trips (14 inbound, 8 outbound) during the afternoon peak hour.

US Census data was used to determine the distribution of those taking Metrorail and those taking Metrobus. The Site lies in TAZ 20340 and data shows that approximately 49 percent of transit riders used Metrobus and the remainder use Metrorail. That said, approximately 9 people will use Metrorail and 8 will use Metrobus during the morning peak hour; approximately 11 people will use Metrorail and 11 will use Metrobus during the afternoon peak hour.

Even though it is expected that the majority of new trips will be made via Metrobus and Metrorail, site-generated transit trips will not cause detrimental impacts to Metrobus or Metrorail service

Table 7: Metrobus Route Information

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
A4	Anacostia Fort Drum Line	Weekdays: 5:00am –12:43am Weekends: 5:40am – 3:10am	Weekdays: 20 minutes Weekends: 30–40 minutes	100 ft, 1 min
A2, A8	Anacostia-Congress Heights Line	Weekdays: 5:45am – 11:49pm	Weekdays: 30 minutes	100 ft, 1 min
A9	Martin Luther King Jr. Ave Limited Line	Weekday: 5:55am 6:52pm	Weekdays: 15 minutes	0.2 miles, 5 min
W1	Shipley Terrace-Fort Drum	Weekday: 5:45am to 8:43pm	Weekday: 20 minutes	0.2 miles, 5 min

Figure 25: Existing Transit Facilities

PEDESTRIAN FACILITIES

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

The following conclusions are reached within this chapter:

- The existing pedestrian infrastructure surrounding the Site provides an adequate walking environment. There are sidewalks along the majority of primary routes to pedestrian destinations with some gaps in the system.
- The development is expected to generate a minimal number of pedestrian trips; however, the pedestrian trips generated by walking to and from transit stops will be more substantial, particularly bus stops within a five-minute walk.

PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the Site were evaluated as well as routes to nearby transit facilities and prominent retail and neighborhood destinations. The Site is generally accessible to transit options such as bus stops directly adjacent to the Site along South Capitol Street. There are some areas of concern within the study area that negatively impact the quality of and attractiveness of the walking environment. This includes roadway conditions that reduce the quality of walking conditions, narrow or nonexistent sidewalks, and incomplete or insufficient crossings at busy intersections and I-295 that limits connectivity to the north. Figure 26 shows suggested pedestrian pathways, walking time and distances, and barriers and areas of concern.

PEDESTRIAN INFRASTRUCTURE

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

Existing Conditions

A review of pedestrian facilities surrounding the proposed development shows that most facilities meet DDOT standards, resulting in an adequate walking environment. I-295 presents a challenge for pedestrians by limiting connectivity to the north. Figure 27 shows a detailed inventory of the existing pedestrian infrastructure surrounding the Site. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by DDOT's *Design and Engineering Manual (2019)* in addition to ADA standards. Sidewalk widths and requirements for the District are shown below in Table 8.

Within the area shown, the majority of roadways are considered residential. Sidewalks surrounding the Site, along South Capitol Street comply with DDOT standards. All primary pedestrian destinations are accessible via routes with sidewalks, some of which met DDOT standards. Some, residential streets east and west of the Site lack sidewalks; however, these streets are generally low-volume.

ADA standards require that curb ramps be provided wherever an accessible route crosses a curb and must have a detectable warning. Additionally, curb ramps shared between two crosswalks are not desired. As shown in Figure 27, under existing conditions crosswalks and curb ramps with detectable warnings are present along South Capitol Street.

Pedestrian Infrastructure Improvements

As a result of the development, pedestrian facilities around the perimeter of the Site will be improved to meet DDOT and ADA standards. This includes the installation or reconstruction of sidewalks along South Capitol Street adjacent to the project site that meet or exceed the width requirements, crosswalks at all necessary locations, curb ramps with detectable warnings, and additional design elements such as plantings, fencing, and streetscaping will result in improvements over existing conditions.

SITE IMPACTS

Pedestrian Trip Generation

The Flats at South Capitol development is expected to generate seven (4) walking trips (1 inbound, 3 outbound) during the morning peak hour and 6 walking trips (3 inbound, 3 outbound) during the afternoon peak hour. The origins and destinations of these trips are likely to be:

- Employment opportunities where residents can walk to work;
- Retail locations outside of the Site; and
- Neighborhood destinations such as schools, libraries, and parks in the vicinity of the Site.

In addition to these trips, the transit trips generated by the Site will also generate pedestrian demand between the Site and nearby transit stops, including bus stops within a five-minute walk.

The pedestrian network will have the capacity to absorb the newly generated trips from the Site.

Table 8: Sidewalk Requirements

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

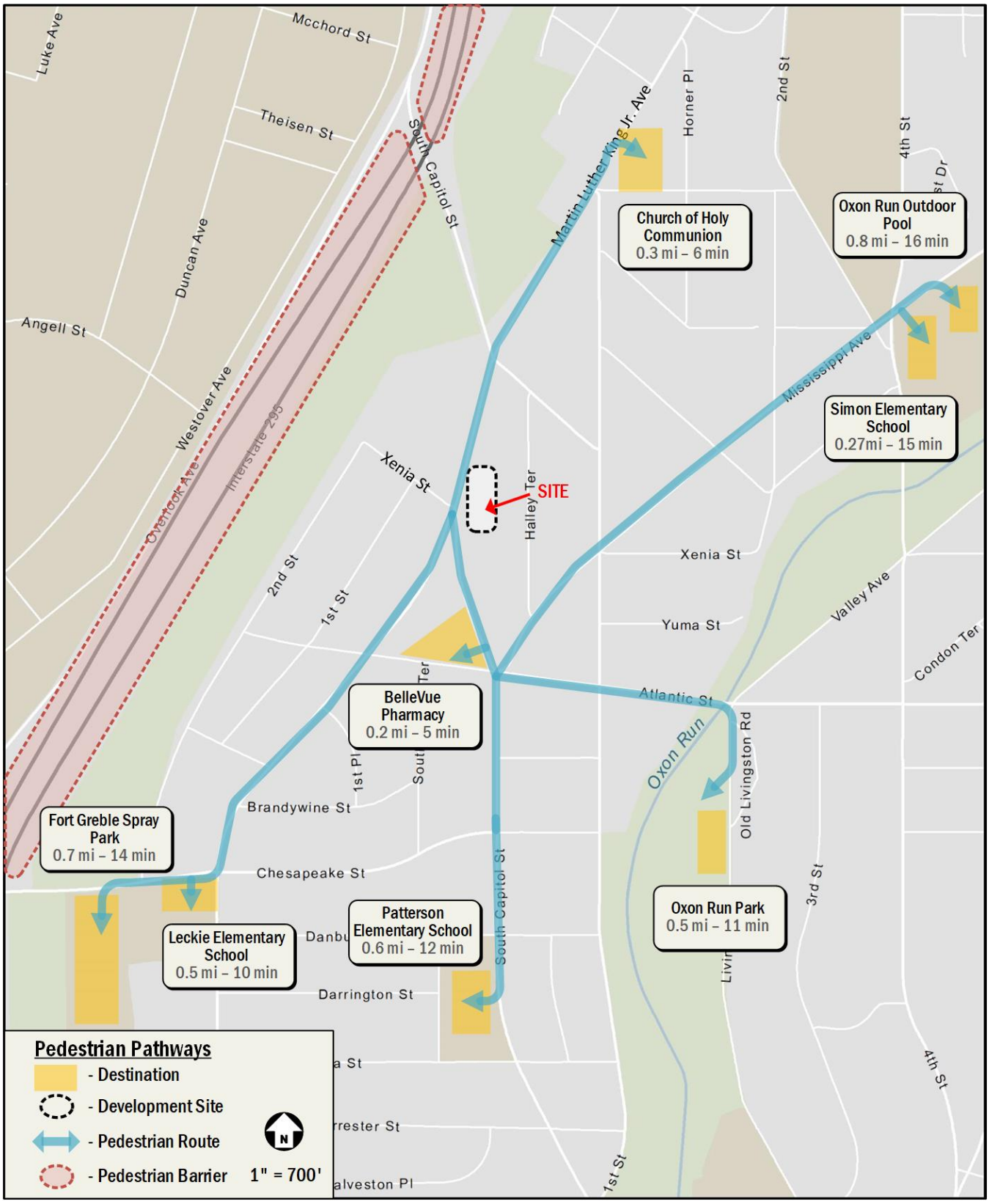

Figure 26: Pedestrian Pathways

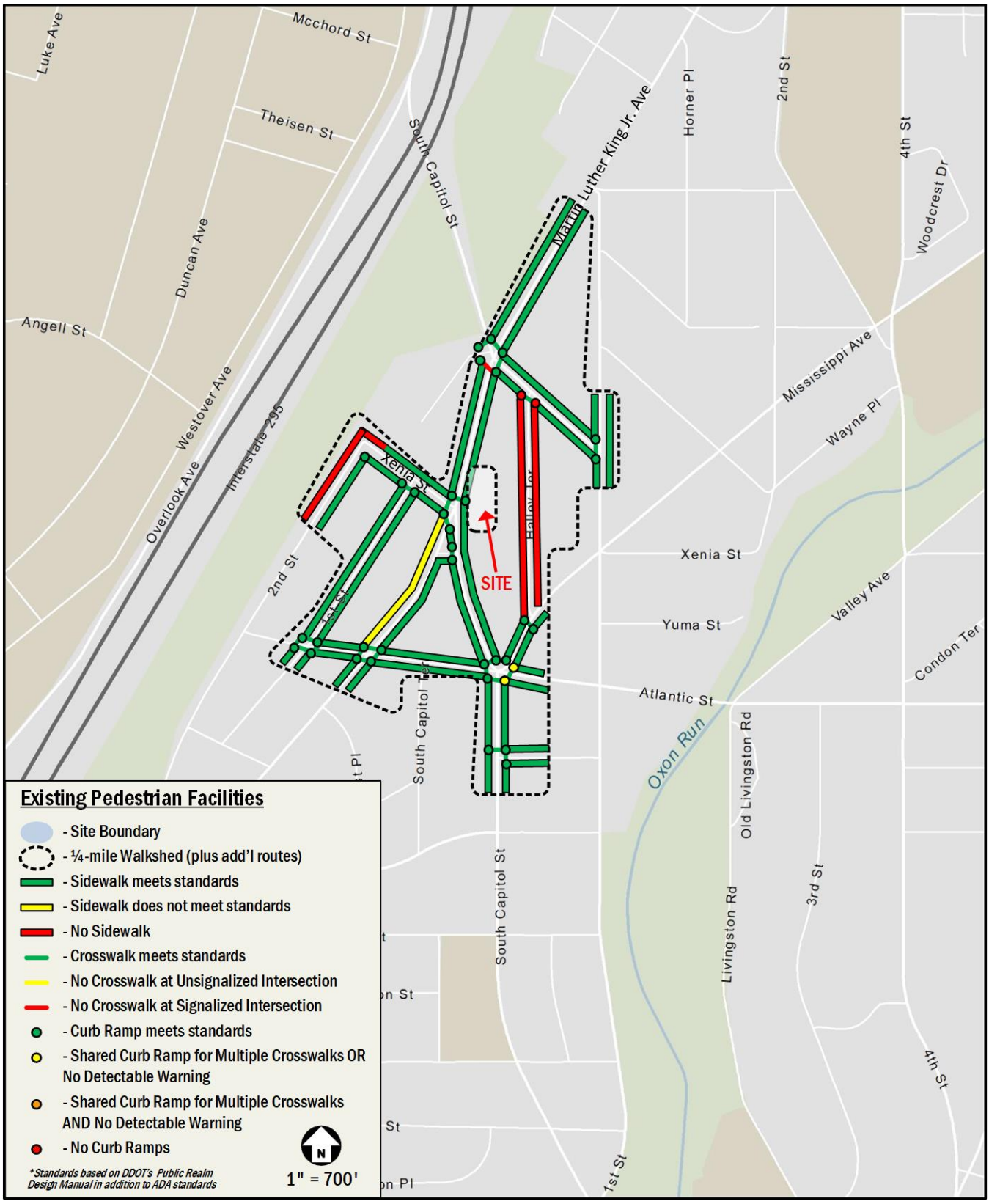

Figure 27: Existing Pedestrian Facilities

BICYCLE FACILITIES

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

The following conclusions are reached within this chapter:

- The Site has access to several on and off-street bicycle facilities including the Oxon Run Trail.
- The development is not expected to generate a significant number of bicycle trips; therefore, all site-generated bike trips can be accommodated on existing infrastructure.
- The development will include secure bicycle parking on site for residents of the development.
- The development will include short-term bicycle racks along the perimeter of the Site.

EXISTING BICYCLE FACILITIES

The Site has connectivity to existing on and off-street bicycle facilities. Residential low volume streets surrounding the Site provide connectivity to existing bicycle facilities near the Site. Signed routes are available two (2) blocks away from the Site along Mississippi Avenue SE, Atlantic Street SE and First Street SE with connectivity to the Oxon Run Trail.

Access to the Oxon Run Trail is approximately 0.4 miles from the Site off Atlantic Street and connects Oxon Run Park north of the site to the Oxon Cove south of the site.

Mississippi Avenue provides a north-south link to and from the Site, utilizing a series of signed bicycle routes leading to the Congress Heights Metrorail station and eventually to the Anacostia Riverwalk Trail.

These bicycle facilities connect the Site to areas within the District and Maryland. Figure 28 illustrates the existing bicycle facilities in the study area.

Under existing conditions there is no short-term bicycle parking located around the perimeter of the Site.

PROPOSED BICYCLE FACILITIES

MoveDC

The MoveDC plan outlines several bicycle improvements in the vicinity of the Site. These improvements are broken up into four tiers that rank the priority for implementation. The four tiers are broken down as follows:

- *Tier 1*
  Investments should be considered as part of DDOT's 6-year Transportation Improvement Program (TIP) and annual work program development, if they are not already included. Some projects may be able to move directly into construction, while others become high priorities for advancement through the Project Development Process.

  There are no tier 1 additions planned for near the Site.

- *Tier 2*
  Investments within this tier are not high priorities in the early years of MoveDC implementation. These investments could begin moving through the Project Development Process if there are compelling reasons for their advancement.

  There are two tier 2 additions that will positively affect bicycle connectivity to and from the Site. A 1.4-mile bicycle lane along 49th Street between Minnesota Avenue and East Capitol Street is planned, replacing the current shared lane system in place for this portion. Additionally, a 1-mile bicycle lane along Division Avenue between Eastern Avenue and East Capitol Street is planned, which will greatly improve the north-south bicycle connectivity near the Site.

- *Tier 3*
  Investments within this tier are not priorities for DDOT-led advancement in the early years of MoveDC's implementation. They could move forward earlier under circumstances, such as real estate development initiatives and non-DDOT partnerships providing the opportunity for non-District-led completion of specific funding.

- *Tier 4*
  Generally, investments within this tier are not priorities for DDOT-led advancement and are lower priority for project development in the early years of implementation.

Due to the timeline of the proposed development, this report will focus on the Tier 1 and Tier 2 recommendations within the vicinity of the Site.

Although these projects are discussed in the MoveDC plan, they are not currently funded nor included in DDOT's Transportation Improvement Plan thus they will not be

assumed as complete for this report. The investments will however be shown in

Capital Bikeshare

The Capital Bikeshare program provides additional cycling options for residents, employees, and patrons of the planned development. The Bikeshare program has placed over 500 Bikeshare stations across Washington, DC, Arlington, and Alexandria, VA, Montgomery County, MD, and most recently Fairfax County, VA, with 4,300 bicycles provided. Capital Bikeshare currently has one existing station with 14 available bicycle docks within a quarter-mile biking distance of the Site at the intersection of South Capitol Street and Atlantic Street just south of the Site. Figure 28 illustrates the existing Capital Bikeshare facilities in the area.

On-Site Bicycle Elements

The project will include approximately five (5) short-term bicycle spaces in front of the site along South Capitol Street. These short-term spaces will include inverted U-racks placed in a high-visibility area.

The project will also include secure long-term bicycle parking. The plans identify a total of approximately 36 long-term spaces, within the parking garage which meets current ZR16 regulations.

SITE IMPACTS

Bicycle Trip Generation

The Flats at South Capitol development is expected to generate four (4) bicycle trips (1 inbound, 3 outbound) during the morning peak hour and six (6) bicycle trips (3 inbound, 3 outbound) during the afternoon peak hour. Despite the low number of anticipated bicycle site trips, bicycling will be an important mode getting to and from the Site. With significant facilities located on site and existing routes to and from the Site, the impacts from bicycling will be minimal when compared to the impacts of other modes of transportation.

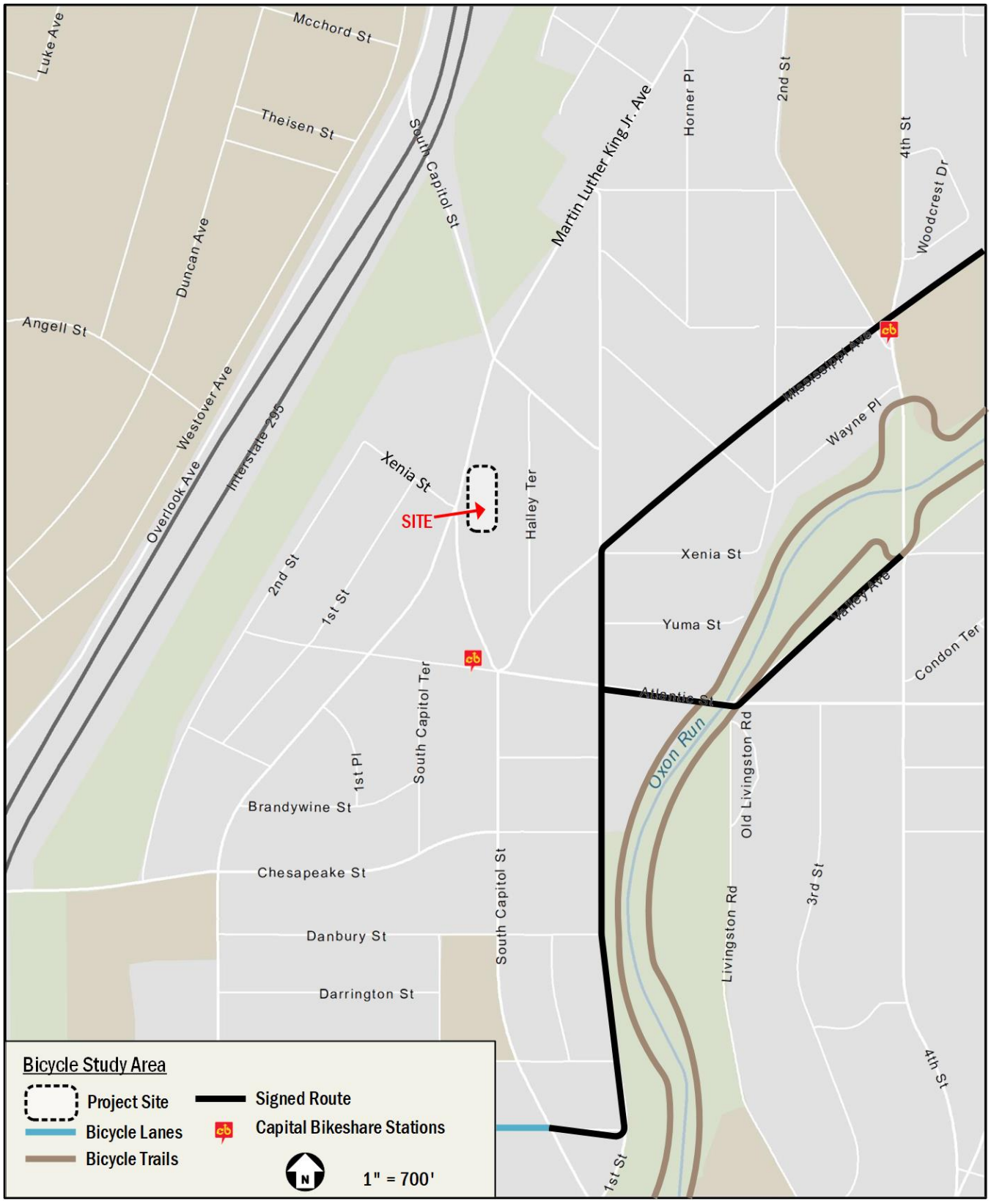

Figure 28: Existing Bicycle Facilities

CRASH DATA ANALYSIS

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

SUMMARY OF AVAILABLE CRASH DATA

A crash analysis was performed to determine if there was an abnormally high crash rate at any study area intersection. DDOT provided the last three years of intersection crash data, from 2015 to 2017 for the study area. This data was reviewed and analyzed to determine the crash rate at each location. For intersections, the crash rate is measured in crash per million-entering vehicles (MEV). The crash rates per intersections are shown in Table 9.

According to the Institute of Transportation Engineers' *Transportation Impact Analysis for Site Development*, a crash rate of 1.0 or higher is an indication that further study is required. Three (3) of the six intersections in this study area meet this criterion as shown in Table 9 and detailed in Table 10. The Flats at South Capitol development should be developed in a manner to help alleviate, or at minimum not add to, the conflicts at this intersection.

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

Generally, the reasons why an intersection has a high crash rate cannot be derived from crash data, as the exact details of each crash are not represented. Some summaries of crash data can be used to develop general trends or eliminate possible causes. Table 10 contains a breakdown of crash types reported for the four intersections with a crash rate over 1.0 per MEV.

POTENTIAL IMPACTS

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

- *South Capitol Street & Martin Luther King Jr Avenue*

This intersection was found to have a crash rate of 1.26 crashes per MEV over the course of the three-year study period. Although 24 crashes were recorded, only 21 were classified under a specific reason. The majority of specified crashes at this intersection were parked vehicles and side swipe crashes. Parked vehicle crashes at this intersection is likely due to the parking along Halley Place. Sideswipe crashes can often occur when a vehicle makes a last-second lane change, which could be the case at this intersection. This report does not recommend mitigation measure at this intersection as the project is not projected to influence the commuting patterns or geometry of this intersection that could negatively influence safety.

- *South Capitol Street & Xenia Street*

This intersection was found to have a crash rate of 1.12 crashes per MEV over the course of the three-year study period. The majority of specified crashes at this intersection were parked vehicles and side swipe crashes. Parked vehicle crashes intersection could be due to the parking along Xenia Street. Sideswipe crashes can often occur when a vehicle makes a last-second lane change, which could be the for vehicles turning onto Xenia Street. This report does not recommend mitigation measure at this intersection. Although the project is changing the geometry of this intersection, the changes will not negatively influence safety due to the low volume of vehicles added by the proposed development.

- *South Capitol Street & Mississippi Avenue*

This intersection was found to have a high crash rate of 2.53 crashes per MEV over the course of the three-year study period. The majority of specified crashes at this intersection were side swipe crashes. Sideswipe crashes can often occur when a vehicle makes a last-second lane change, which could be the case at for vehicles turning off South Capitol Street at this intersection. This report does not recommend mitigation measure at this intersection as the project is not projected to make changed to the commuting patterns or geometry of this intersection that could negatively influence safety.

Table 9: Intersection Crash Rates

Intersection		Total Crashes	Ped Crashes	Bike Crashes	Rate per MEV*
1.	South Capitol Street & Halley Place	24	0	0	0.59
2.	South Capitol Street & Martin Luther King Jr Avenue SW	36	1	0	**1.26**
3.	South Capitol Street SE & Xenia Street SW	36	1	0	**1.12**
4.	South Capitol Street SE & Atlantic Avenue SE	28	1	1	0.96
5.	South Capitol Street & Mississippi Avenue	28	1	1	**2.53**
6.	Martin Luther King Jr Avenue SW & Atlantic Street SW	6	0	0	0.73

Table 10: Crash Type Breakdown

	Intersection	Rate per MEV	Right Angle	Left Turn	Right Turn	Rear End	Side Swiped	Head On	Parked	Fixed Object	Ran Off Road	Ped. Involved	Backing	Non-Collision	Under/Over Ride	Unspecified	Total
2.	South Capitol Street & Martin Luther King Jr Avenue SW	**1.26**	0 *0%*	2 *6%*	0 *0%*	4 *11%*	5 *14%*	0 *0%*	7 *19%*	1 *3%*	0 *0%*	0 *0%*	1 *3%*	1 *3%*	0 *0%*	15 *42%*	**36**
3.	South Capitol Street SE & Xenia Street SW	**1.12**	0 *0%*	2 *7%*	0 *0%*	4 *14%*	5 *17%*	0 *0%*	*0%*	1 *3%*	0 *0%*	0 *0%*	1 *3%*	1 *3%*	0 *0%*	15 *52%*	**29**
5.	South Capitol Street & Mississippi Avenue	**2.53**	1 *4%*	1 *4%*	1 *4%*	0 *0%*	5 *18%*	0 *0%*	0 *0%*	0 *0%*	0 *0%*	0 *0%*	0 *0%*	0 *0%*	0 *0%*	20 *71%*	**28**

SUMMARY AND CONCLUSIONS

This report is a Comprehensive Transportation Review (CTR) for the Flats at South Capitol Planned Unit Development (PUD). The report reviews the transportation aspects of the project's Consolidated PUD application. The Zoning Commission Case Number is 18-14. This report concludes that **the project will not have a detrimental impact** to the surrounding transportation network assuming that all planned site design elements are implemented.

Proposed Project

The property is located at 3836-3848 South Capitol Street SE, on the west side of South Capitol Street SE between Halley Place SE and Xenia Street SE in southeast D.C. The existing property is developed with two multifamily apartment buildings with 30 apartments surrounded by open space area with approximately 12 parking spaces. There is a 15-foot wide paper alley to the rear of the property.

The applicant has requested a map amendment to rezone the property from the RA-1 zone to the RA-2 zone and would combine the lots to accommodate a single, multifamily building. The proposed development would include 106 affordable dwelling units and 17 parking spaces. An underground parking garage is proposed to be accessible from a proposed curb cut off South Capitol Street SE at the intersection of Xenia Street.

Vehicular and loading access for the project will be provided via the proposed site driveway off South Capitol Street SE. A loading zone will be located adjacent to the garage entrance within the closed parking garage.

The development will meet the zoning requirements for bicycle parking by including 5 short-term bicycle parking spaces and 36 long-term bicycle parking spaces. The development will supply long-term bicycle parking within the development and short-term bicycle parking around the perimeter of the site that meet zoning requirements. This amount of bicycle parking will meet the practical needs of the development.

Multi-Modal Impacts and Recommendations

Transit

The Site is served by regional and local transit services via Metrobus and Metrorail. The Site is 1.5 miles from the Congress Heights Metrorail Station, with Metrobus stops located within walking distance of the Site along South Capitol Street.

Although the development will be generating new transit trips, existing facilities have enough capacity to accommodate the new trips.

Pedestrian

The Site is surrounded by a pedestrian network with an adequate pedestrian network as there are some neighborhood streets east and west of the Site which lack sidewalks. Most roadways within a quarter-mile radius provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes.

As a result of the development, pedestrian facilities along the western perimeters of the site will be improved, including the installation of sidewalks that meet or exceed the width requirements, crosswalks at all necessary locations, and curb ramps with detectable warnings.

The development will generate minimal pedestrian trips and the improved facilities will be able to handle the new trips.

Bicycle

The Site has some connectivity to existing on- and off-street bicycle facilities. Signed routes are available two (2) blocks away from the Site along Mississippi Avenue SE and First Street SE with connectivity to the Oxon Run Trail, Suitland Parkway Trail and Anacostia Riverwalk Trail. A capital bikeshare location is located 0.15 miles away from the Site at the intersection of Atlantic Street SE and South Capitol Street.

The development will provide short-term bicycle parking along the perimeter of the site. On-site secure long-term bicycle parking will be provided within the garage for residents of the development. The amount of bicycle parking provided meets zoning requirements.

The development will generate minimal bicycle trips and the existing facilities will be able to handle these new trips.

Vehicular

The Site is accessible from regional roadways, such as the Anacostia Freeway (DC Route 295) and several principal and minor arterials such as South Capitol Street SE and Martin Luther King Jr Avenue SE. These roadways create connectivity to the Capital Beltway (I-495) that surrounds Washington, DC

and its inner suburbs, as well as providing connectivity to the District core.

In order to determine impacts that the proposed development will have on the transportation network, this report projects future conditions with and without the proposed development and performs analyses of intersection delays and queues. These are compared to the acceptable levels of delay set by DDOT standards as well as existing queues to determine if the Site will negatively impact the study area. The analysis concluded that no mitigations need to be made as a result of the proposed development.

Summary and Recommendations

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

The development has several positive elements contained within its design that minimize potential transportation impacts, including:

- The Site's close proximity to transit.
- The inclusion of secure long-term bicycle parking.
- The installation of short-term bicycle parking spaces along the frontage of the Site that meet or exceed zoning requirements.
- The creation of new pedestrian sidewalks that meet or exceed DDOT and ADA requirements.
- Implementation of a Loading Management Plan (LMP) that minimizes the potential impacts from loading that the proposed development will have on the surrounding intersections and neighborhoods
- A robust Transportation Demand Management (TDM) plan that reduces the demand of single-occupancy, private vehicles during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.