

COMPREHENSIVE TRANSPORTATION REVIEW

**REUNION SQUARE, BUILDINGS 4, 5, & 8
STAGE 2 PUD**

WASHINGTON, DC

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EXECUTIVE SUMMARY

The following report is a Comprehensive Transportation Review (CTR) for the Reunion Square development. This report reviews the transportation aspects of the project's Stage 2 Planned Unit Development (PUD) Application (Zoning Commission Order 08-07C). The project falls within the C-3-A Zone and is subject to 1958 Zoning Regulations (ZR58).

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

Proposed Project

The overall Reunion Square development is located along Martin Luther King (MLK) Jr. Avenue in Southeast, Washington, D.C. The overall PUD site ("Site") is bordered by Shannon Place to the north, MLK Avenue to the east, Chicago Street and residential buildings to the south, and Railroad Avenue to the west. The proposed development subject to this CTR consists of three (3) mixed-use buildings within the overall Reunion Square development and are currently occupied by surface parking lots and various office and industrial buildings. The development plan for the Stage 2 PUD application proposes to replace these existing uses with three (3) mixed-use buildings ("proposed development"):

- Building 4 consists of 8,000 square feet of retail, 280,000 square feet of office space, and 324 parking spaces, with an additional 136 tandem spaces.
- Building 5 consists of a 119 room hotel, approximately 41,000 square feet of office space, and 56 proposed parking spaces.
- Building 8 consists of 133 residential, 14,000 square feet of retail, and 38 parking spaces.

Although the associated Zoning Commission application consists of a Stage 2 PUD application for Building 4 only, this CTR will address the proposed development associated with the Stage 2 PUD application for Buildings 5 and 8 as they are anticipated to be filed imminently.

The buildings analyzed as part of this CTR comprise part of the Reunion Square PUD, a vibrant, urban mixed use development along Martin Luther King, Jr. Avenue in the Anacostia neighborhood of Southeast, DC. The entire Reunion Square development has Stage 1 PUD approval, with Building 1 receiving Stage 2 approval in March, 2015.

As part of the proposed development, sections of the roadway network surrounding the proposed buildings will be improved. Pedestrian facilities along the perimeter of the three (3) buildings proposed will be improved so that they meet or exceed DDOT and ADA standards. This includes sidewalks that meet or exceed width requirements, crosswalks at all necessary locations, and curb ramps with detectable warnings. In addition, eight (8) existing curb cuts will be removed, including one (1) on Martin Luther King Jr. Avenue, five (5) along Shannon Place, and two (2) on W Street.

The proposed amount of parking for the three (3) buildings meets the practical needs of the development. Although the development does not meet the 1958 minimum requirements, it exceeds current 2016 minimum requirements, and is in accordance with the DC Comprehensive Plan recommendations to reduce parking requirements when efficient Transportation Demand Management measures are implemented.

The proposed development will include the following loading facilities:

- Building 4 will include three (3) 30-foot loading berths.
- Building 5 will include one (1) 30-foot loading berth and one (1) 20-foot service/delivery space.
- Building 8 will include one (1) 30-foot loading berth and one (1) 20-foot service/delivery space.

Access to the loading facilities within each proposed building will primarily be via Railroad Avenue for Building 4, W Street for Building 5, and the public alley for Building 8. These loading facilities will be sufficient to accommodate the practical needs of each proposed building.

The proposed development will meet the zoning requirements for bicycle parking by including 25 short-term bicycle parking spaces and 154 long-term bicycle parking spaces, as well as 10 showers and 64 lockers. This amount of bicycle parking, showers, and lockers 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 0.3 miles from the Anacostia Metrorail station. There are numerous Metrobus stops that service six (6) WMATA bus routes and one (1) DC Circulator route located adjacent to the Site along MLK Avenue.

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 well-connected pedestrian network. Most roadways within a quarter-mile radius provide sidewalks and curb ramps, particularly along the primary walking routes. There are areas to west and north of the Site which lack buffers, curb ramps, or crosswalks that meet DDOT and ADA standards. In addition, there are areas along Railroad Avenue that lack sidewalks all together.

The MLK Great Streets Project and other planned developments in the study area are expected to improve pedestrian facilities that currently do not meet DDOT and ADA standards.

As a result of the proposed development, pedestrian facilities along the perimeter of the proposed buildings will be improved such that they meet or exceed DDOT requirements and provide an improved pedestrian environment. Eight (8) existing curb cuts will be removed, including one (1) on Martin Luther King Jr. Avenue, five (5) on Shannon Place, and two (2) on W Street.

Bicycle

Bicycle infrastructure in the vicinity of the proposed development is suitable for commuting to and from entire Reunion Square development. The Site is immediately adjacent to the nearest designated bicycle facility, which is a signed route on Martin Luther King Jr. Avenue. This signed route connects with the Good Hope Road signed route, providing a direct route to the Anacostia Riverwalk Trail.

The Shepherd Branch Trail Project will add substantial bicycle infrastructure in the vicinity of the Site, providing a direct connection to the Anacostia Riverwalk Trail upon completion.

Although 1958 zoning regulations do not require short-term bicycle parking, the proposed development will provide short-

term bicycle parking along the perimeter of the three (3) buildings for patrons of the development. On-site secure long-term bicycle parking will be provided within each proposed building. The amount of bicycle parking provided will meet current (ZR16) zoning requirements.

Vehicular

The proposed development is well connected to regional roadways, such as the Suitland Parkway and the Anacostia Freeway (Interstate 295), primary and minor arterials such as Martin Luther King Jr. Avenue and South Capitol Street, as well as an existing network of collector and local roadways.

In order to determine the potential impacts of the proposed development on the transportation network, this report projects future conditions with and without development of the three (3) buildings and performs analyses of intersection delays and queues. These capacity analysis results were compared to the acceptable levels of delay set by DDOT standards, as well as existing queues, to determine if the proposed development will negatively impact the study area. The analysis concluded that six (6) intersections would require mitigations.

After exploring options for mitigating impacts at these intersections, this report is recommending improvements be considered for implementation. The analyses contained in the report demonstrate that a combination of enforcing existing turning restrictions, reallocating green time at signalized intersections, and proposing a signal at the intersection of Martin Luther King Jr. Avenue and Shannon Place can reduce delays that meet DDOT's requirements. The proposed mitigations recommended will improve the transportation network in the immediate area of the proposed development and will provide the necessary infrastructure to accommodate the currently proposed and future buildings associated with the Reunion Square PUD.

This report recommends that the Applicant coordinate with DDOT on the implementation of all mitigation measures.

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 mitigations are implemented.



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

- The Site's close proximity to Metrorail.
- The removal of eight (8) existing curb cuts on study area roadways, reducing vehicular-pedestrian conflicts.
- The inclusion of secure long-term bicycle parking spaces within the development that meet or exceed zoning requirements.
- The installation of short-term bicycle parking spaces around the perimeter of the three (3) buildings that exceed current (ZR16) zoning requirements.
- The creation of new pedestrian sidewalks that meet or exceed DDOT and ADA requirements.
- 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.
- A loading management plan designed to offset any potential impacts the loading activities of the proposed development might have on the surrounding intersections and neighborhood.
- The combination of enforcing existing turning restrictions, reallocating green time at signalized intersections, and a signal at the intersection of Martin Luther King Jr. Avenue and Shannon Place will improve the transportation network in the immediate area of the proposed development and will provide the necessary infrastructure to accommodate the currently proposed and future buildings associated with the Reunion Square PUD.



INTRODUCTION

This report is a Comprehensive Transportation Review (CTR) for Buildings 4, 5, and 8 (“proposed development”) of the Reunion Square development. This report reviews the transportation elements of the Second Stage Planned Unit Development (PUD) Application for Building 4, with Buildings 5 and 8 included in the analysis due to their imminent Second Stage PUD filings. The overall Reunion Square site (the “Site”), shown in Figure 1 and Figure 2, is located in Southeast, DC and generally bordered by Shannon Place to the north, Railroad Avenue to the west, Martin Luther King Jr. Avenue to the east, and Chicago Street to the South.

PURPOSE OF STUDY

The purpose of this report is to:

1. Review the transportation elements of the development site plan and demonstrate that the proposed development conforms to DDOT’s general policies of promoting non-automobile modes of travel and sustainability.
2. Provide information to DDOT and other agencies on how the proposed development will influence the local transportation network. This report accomplishes this by identifying the potential trips generated by the proposed development on all major modes of travel and where these trips will be distributed on the network.
3. Determine if development of Buildings 4, 5, & 8 will lead to adverse impacts on the local transportation network. This report accomplishes this by projecting future conditions with and without development of Buildings 4, 5, & 8 and performing analyses of vehicular delays. These delays are compared to the acceptable levels of delay set by DDOT standards to determine if the site will negatively impact the study area. In those areas where adverse impacts are identified and require mitigation, the report provides recommendations for improvements to the transportation network to mitigate the adverse impacts.

PROJECT SUMMARY

The Reunion Square Stage 2 PUD for Buildings 4, 5, and 8 will redevelop existing commercial and industrial buildings and

parking lots at three (3) sites along Shannon Place. The development plan proposes replacing these uses with the following mixed-used buildings:

- Building 4 will consist of 8,000 square feet of retail, 280,000 square feet of office space, and 324 parking spaces (with an additional 136 tandem spaces).
- Building 5 will consist of a 119 room hotel, approximately 41,000 square feet of office space, and 56 parking spaces.
- Building 8 will consist of 133 residential units, 14,000 square feet of retail, and 38 parking spaces.

All parking proposed will be located in below-ground garages of each building.

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 development.
- *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

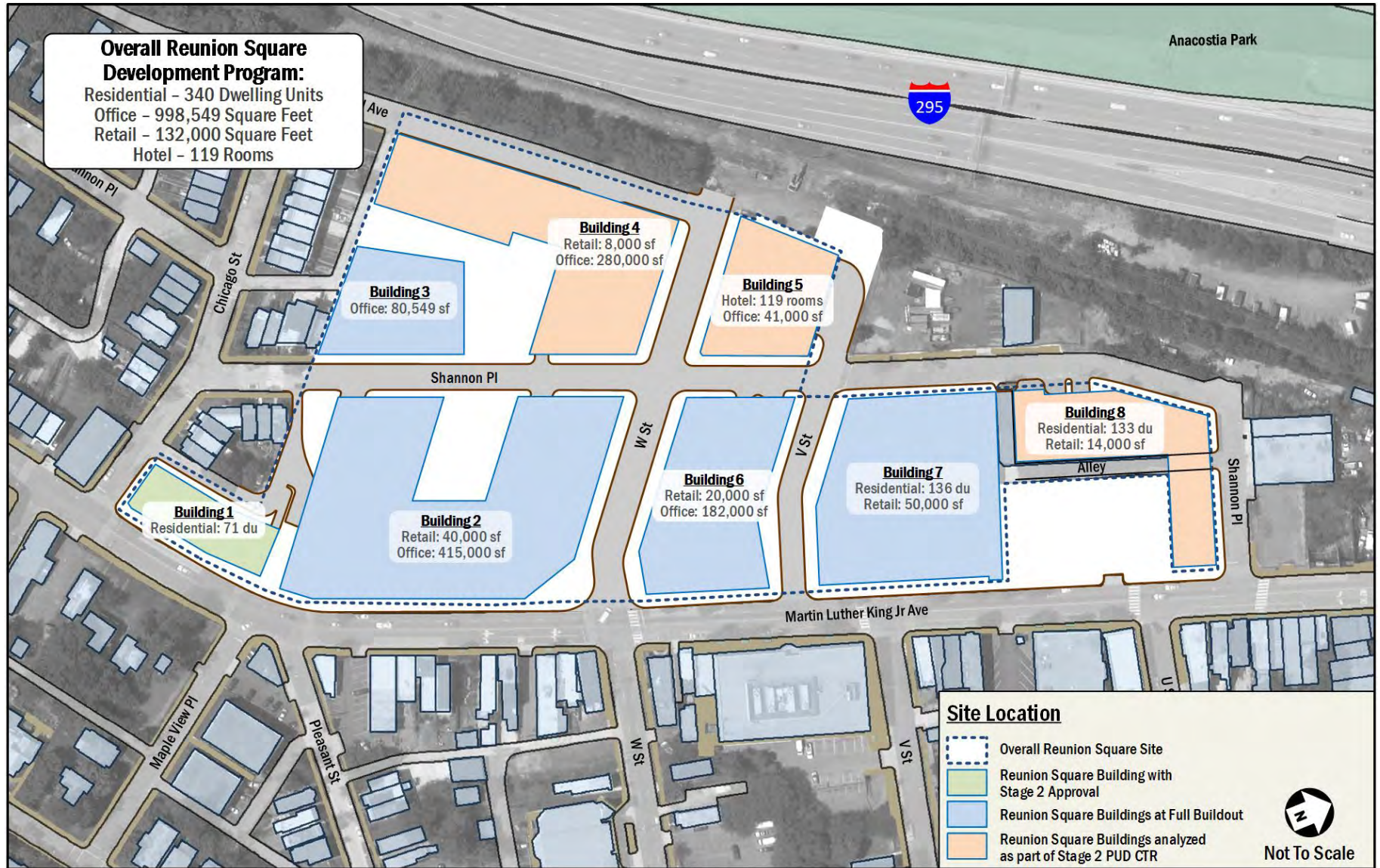


Figure 2: Site Aerial



STUDY AREA OVERVIEW

This section reviews the study area and includes an overview of the proposed development's 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 employees and patrons of the proposed development to the rest of the District and surrounding areas.
- The Site is served by public transportation with access to Metrorail and 11 local Metrobus lines.
- There is bicycle infrastructure in the vicinity of the Site, including signed routes along MLK Avenue. The Site is anticipated to connect with the future Shepherd Branch Trail, a rail trail that runs by the western perimeter of the Site.
- Pedestrian conditions are generally good, particularly along anticipated major walking routes; however, there are gaps west of the Site along Railroad Avenue, such as missing sidewalks, crosswalks and curb ramps.

MAJOR TRANSPORTATION FEATURES

Overview of Regional Access

As shown in Figure 4, the overall Reunion Square 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 several principal and minor arterials such as Martin Luther King (MLK) Jr. Avenue, Good Hope Road, and South Capitol Street. These roadways connect to interstates such as the Anacostia Freeway (I-295) and Suitland Parkway. The highways and interstates 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 0.3 miles from the Anacostia Metrorail station (served by the Green Line). The Green Line connects Greenbelt and Suitland, MD while providing access to the

District core. Of particular importance, the Green Line provides the sole heavy rail service to Ward 8 in Southeast, DC. The Green Line intersects with the Red Line at Gallery Place, where a direct connection to Union Station—a transfer point for MARC, VRE, and Amtrak services— can be made. Further transfers can be made at L'Enfant Plaza to connect with the other four 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 several principal and minor arterials such as MLK Avenue and Good Hope Road. In addition, these roads connect with regional thoroughfares, such as South Capitol Street and Minnesota Avenue.

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 13 bus routes that service the Site, including 11 Metrobus local routes, one (1) MetroExtra Route, and one (1) DC Circulator route. These bus routes connect the Site to many areas of the District, including the Anacostia Metrorail station. A detailed review of transit stops within a quarter-mile walk of the Site is provided in the *Transit* section of this report.

There are several existing bicycle facilities near the Site that connect to areas within the District. Signed bicycle routes west and east of the Site provide connectivity to bicycle facilities in the Anacostia area, eventually connecting to the Anacostia Riverwalk Trail. Substantial bicycle improvements are planned along the western frontage of the Site as part of the proposed Shepherd Branch Trail, a former freight rail line whose right-of-way has been preserved. A detailed review of existing and proposed bicycle facilities and connectivity is provided in the *Bicycle Facilities* section of the report.

Anticipated pedestrian routes, such as those to public transportation stops, retail zones, 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. A detailed review of existing and proposed pedestrian access and infrastructure is provided in the *Pedestrian Facilities* section of this report, including development-related pedestrian improvements. Additionally, other planned roadway improvements will help increase the walkability and bikeability in the Anacostia neighborhood.

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

Carsharing

Three carsharing companies provide service in the District: Zipcar, Maven, and Car2Go. All three services are private companies that provide registered users access to a variety of automobiles. Of these, Zipcar and Maven have designated spaces for their vehicles. There are two (2) carshare locations with a total of eight (8) vehicles within a quarter mile walk of the Site, shown in Table 1.

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

Walkscore

Walkscore.com is a website that provides scores and rankings for the walking, biking, and transit conditions within neighborhoods of the District. Based on this website the planned development is located in the Anacostia neighborhood. This project location itself has a walk score of 64 (or “Somewhat Walkable”), transit score of 67 (or “Good

Transit”), and a bike score of 39 (or “somewhat bikeable”). Figure 3 shows the neighborhood borders in relation to the Site location and displays a heat map for walkability and bikeability. Although the neighborhood has lower walk and bicycle scores, the entirety of the Anacostia neighborhood is represented in the scores and underrepresents the immediate Site area.

The Site itself is situated in a more developed area of Anacostia that encompasses a good walk score because of the abundance of neighborhood serving retail locations that are in close proximity, where most errands can be completed by walking. The good transit score was based on the proximity to multiple bus lines, and the distance to the nearest Metrorail stop which is located 0.3 miles from the Site.

The Site is situated in an area of Anacostia that is suited for biking. The area near the riverfront is very flat with a Capital Bikeshare immediately east of the Site on MLK Avenue.

Overall, the Anacostia neighborhood has a good walk, good transit, and below average bike scores. New development in the area, including the proposed project itself and other planned developments and roadway improvements, will increase the walk and bike scores in the Anacostia neighborhood in the near future.

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.

Local Initiatives

MLK Great Streets

The MLK Great Streets Initiative is a multi-agency effort aiming to transform the Martin Luther King Jr. Avenue corridor into a thriving and inviting neighborhood center. Improvements to the corridor include, but are not limited to, street paving, curb reconstruction, street lighting, sidewalk improvements, and street tree plantings.

Table 1: Summary of Carshare Locations

Carshare Location	Number of Vehicles
Zipcar	
2101 Martin Luther King, Jr Avenue, SE	3 vehicles
1918 14 th Street, SE (7-Eleven)	5 vehicles
Total	8 vehicles

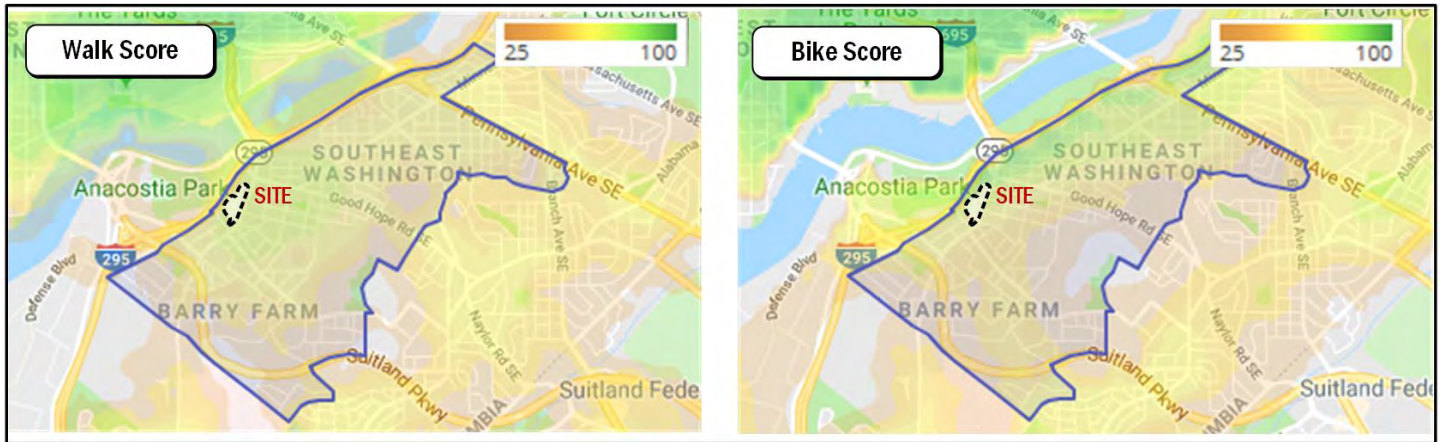


Figure 3: Walkscore of Site area

The corridor is currently experiencing significant commercial growth. Contributing to this are retail and office developments in Historic Anacostia and the Washington Highlands Neighborhood Library in Bellevue. The corridor will continue to see this commercial growth with the redevelopment of the former St. Elizabeths Hospital site, the future home of the US Department of Homeland Security and the US Coast Guard.

11th Street Bridges: Final Environmental Impact Statement

Construction of the 11th Street Bridge Project began in 2009 to replace two bridges built in the 1960s with three new bridges that separate local and freeway traffic, reducing congestion and improving mobility across the Anacostia River. This project is essential in achieving the larger vision of the Anacostia Waterfront Initiative. Additional benefits include:

- A pedestrian and bicycle path that connects with the Anacostia Riverwalk Trail
- Connection to the DC Streetcar network
- Environmental investments to treat all storm water in the project area
- An additional emergency evacuation route

Each build alternative was assessed for its environmental impacts on air and water quality, noise, visual impacts, etc. These impacts were found to be limited and generally the same for all alternatives. Any adverse impacts are temporary and concentrated in areas in close proximity to the project.

All proposed improvements have been made to the local area roadways from the 11th Street Bridges. No additional roadway improvements are forecasted.

SustainableDC: Sustainable DC Plan (2011)

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.

Anacostia Waterfront Transportation Master Plan

As part of the Anacostia Waterfront Initiative, the Anacostia Waterfront Transportation Master Plan outlines a plan to reshape the area’s transportation into one that is accessible and improves the quality of the environment itself. This is accomplished by replacing outdated and deteriorating facilities with context sensitive infrastructure solutions. The focus of the



plan focus is to establish an effective implementation plan for the improvement efforts in the area, based on cost, construction duration, environmental impacts, funding, and overall benefits to the waterfront community.

The Site's proximity to the Anacostia Waterfront and planned bicycle connections through the future Shepherd Branch Trail will allow better non-automotive access.

MoveDC: Multimodal Long-Range Transportation Plan (2014)

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

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

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

In direct relation to the study area, the MoveDC plan outlines a pedestrian and bicycle trail along the Anacostia Freeway (I-295) from South Capitol Street to East Capitol Street, a bicycle lane along 13th Street, SE from Good Hope Road to Pleasant Street, greater frequency of express bus service in the Anacostia neighborhood. These recommendations will create additional multi-modal capacity and connectivity to the proposed development and are described in detail in the forthcoming Transit and Bicycle Facilities sections.

DC's Transit Future System Plan

A well-balanced multimodal transportation system is essential to efforts to sustain and enhance the District's quality of life and economic growth. DC's Transit Future System Plan establishes the plan for an efficient and high-quality transit network that accomplishes this. The transit network serves to

connect residents to employment centers, commercial and recreational areas, and multimodal transportation hubs.

The plan recommends a network of eight (8) new interconnected streetcar lines and 13 new Metro Express bus lines. This will enhance mobility, support the increasing demand, and provide Metrorail coverage and core capacity relief. The Streetcar route in the Anacostia area is described in more detail in the next local initiative.

Anacostia Streetcar Extension Environmental Assessment (Section 106 and 4(f) Evaluations)

The Anacostia Streetcar Extension is an extension of the Anacostia Initial Line (AIL) streetcar which begins at South Capitol Street and Firth Sterling Avenue SE and terminates near the Anacostia Metro station. Streetcars were introduced to serve corridors with high transit use and the need for enhanced mobility.

The proposed extension would operate from the Anacostia Metrorail station and terminate at the intersection of Martin Luther King Jr. Avenue SE and Good Hope Road SE, near the 11th Street Bridge. The need for this extension consists of the following:

- Support sustainable land use and community needs
- Improve multimodal connectivity and access within the Anacostia community and to attractions throughout the District
- Increase capacity in the transportation network and provide additional sustainable transportation alternatives

Build alternatives received detailed evaluation for effects on cultural resources, traffic, air quality, noise and vibration, and land use.

In addition to the proposed streetcar extension, related streetscape improvements through FHWA's Great Streets program, will be incorporated along Martin Luther King Jr. Avenue SE from Howard Road SE to Good Hope Road SE as well as along the other roads that the streetcar would operate to enhance the pedestrian experiences for those accessing the system.



The extension of the Streetcar will not affect the roadway configurations of the study area intersections of the proposed development in build-out conditions.

Planned Developments

There are several potential development projects in the vicinity of the Reunion Square 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 five (5) background developments considered and described below, four (4) were ultimately selected for inclusion. Figure 6 shows the location of these developments in relation to the proposed development.

2100 Martin Luther King Avenue

The proposed residential project will see a seven-story building with 31 affordable housing units built at 2100 Martin Luther King Jr. Avenue. The development has yet to be entitled or approved and will not be included in the background analysis.

MLK Gateway

The proposed MLK Gateway Project will redevelop two (2) parcels at the intersection of Good Hope Road and Martin Luther King Jr. Avenue: sites which currently contain vacant one and two-story buildings along Good Hope Road and a vacant lot on MLK Avenue. The new development program consists of approximately 28,500 square feet of office space on the MLK Avenue parcel and approximately 22,000 feet of restaurant, grocery, and retail space on the Good Hope Road parcel. The development has an expected delivery date of 2020 and will be included in the background analysis.

Maple View Flats (2228 Martin Luther King Jr. Avenue)

The former Big K site at the intersection of MLK Avenue and Morris Road will replace two single family homes and one commercial building with a multi-use building that will provide 114 affordable housing units, approximately 14,500 square feet of ground floor retail, and two levels of underground parking. The two single family homes are of historic nature and were moved to another site in 2017. The development has an expected delivery date of Fall 2018 and will be included in the background analysis.

Poplar Point

A major mixed-use complex that will be located off of Howard Road west of the Reunion Square Site. Poplar point will include approximately 710 residential units, approximately 50,000 square feet of retail, and approximately 1.7 million square feet of office space. Although full buildout of the development is expected by 2030, Poplar Point was requested by DDOT to be included in the background analysis.

Barry Farm

The 26 acre Barry Farm housing development is slated to be redeveloped as part of the New Communities Initiative of the DC Housing Authority. The existing homes on the site will be redeveloped into up to 1,100 mixed income residential units, including apartments, condominiums, duplexes, rowhouses, and flats. Additionally the development will include approximately 59,000 square feet of retail and service uses. Phasing of the development will begin in 2020 and will be included in the background analysis.

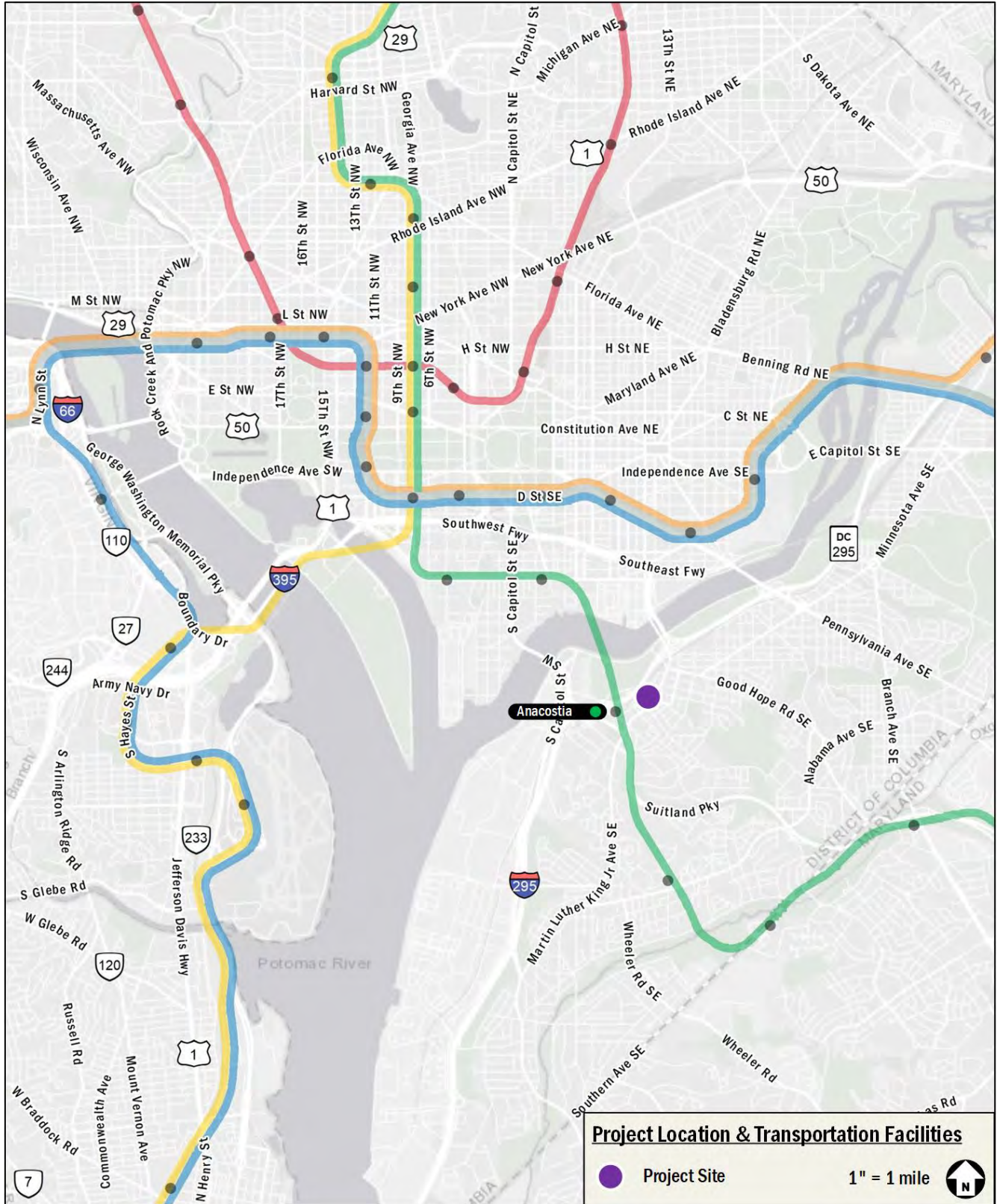


Figure 4: Major Regional Transportation Facilities

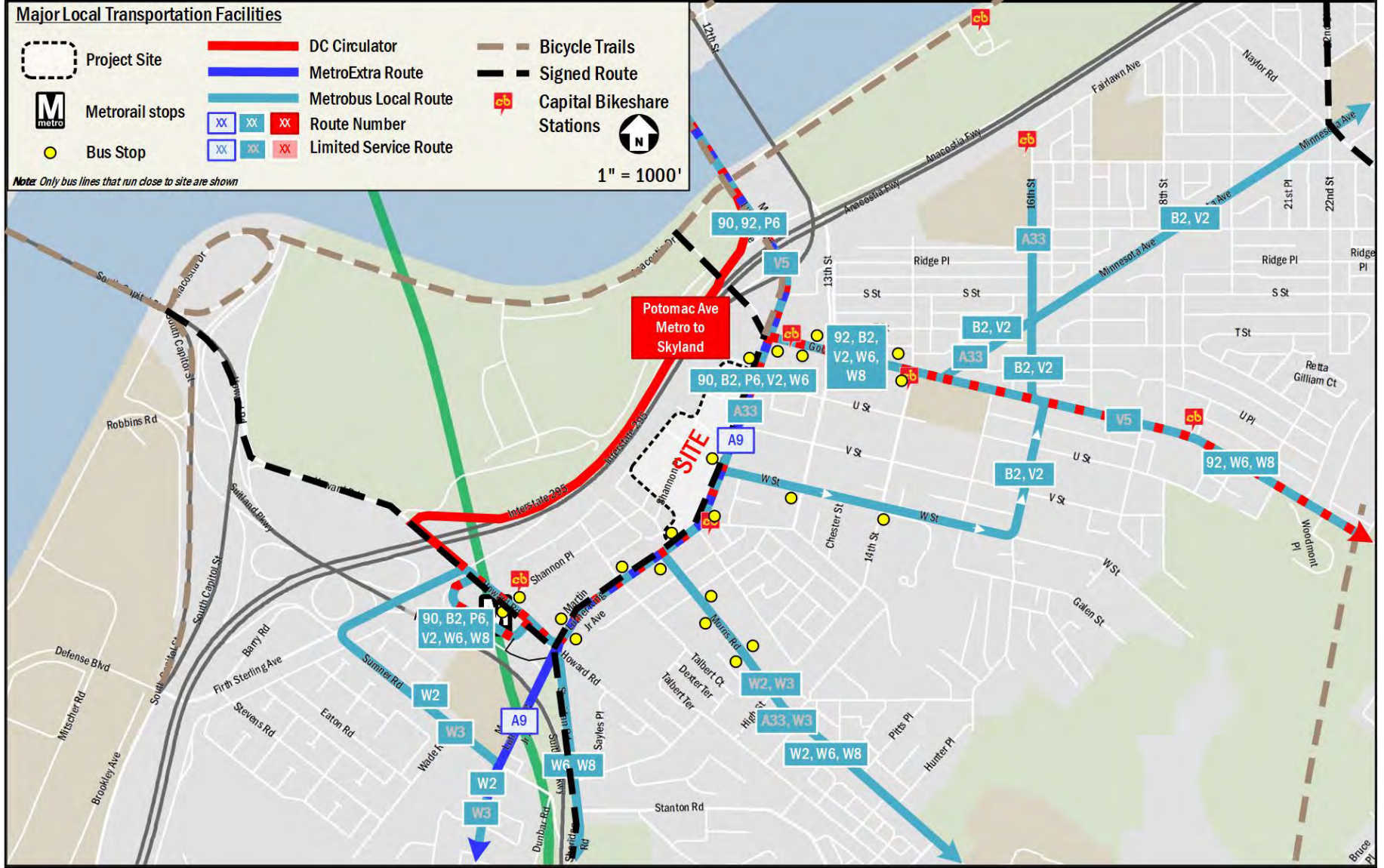


Figure 5: Major Local Transportation Facilities

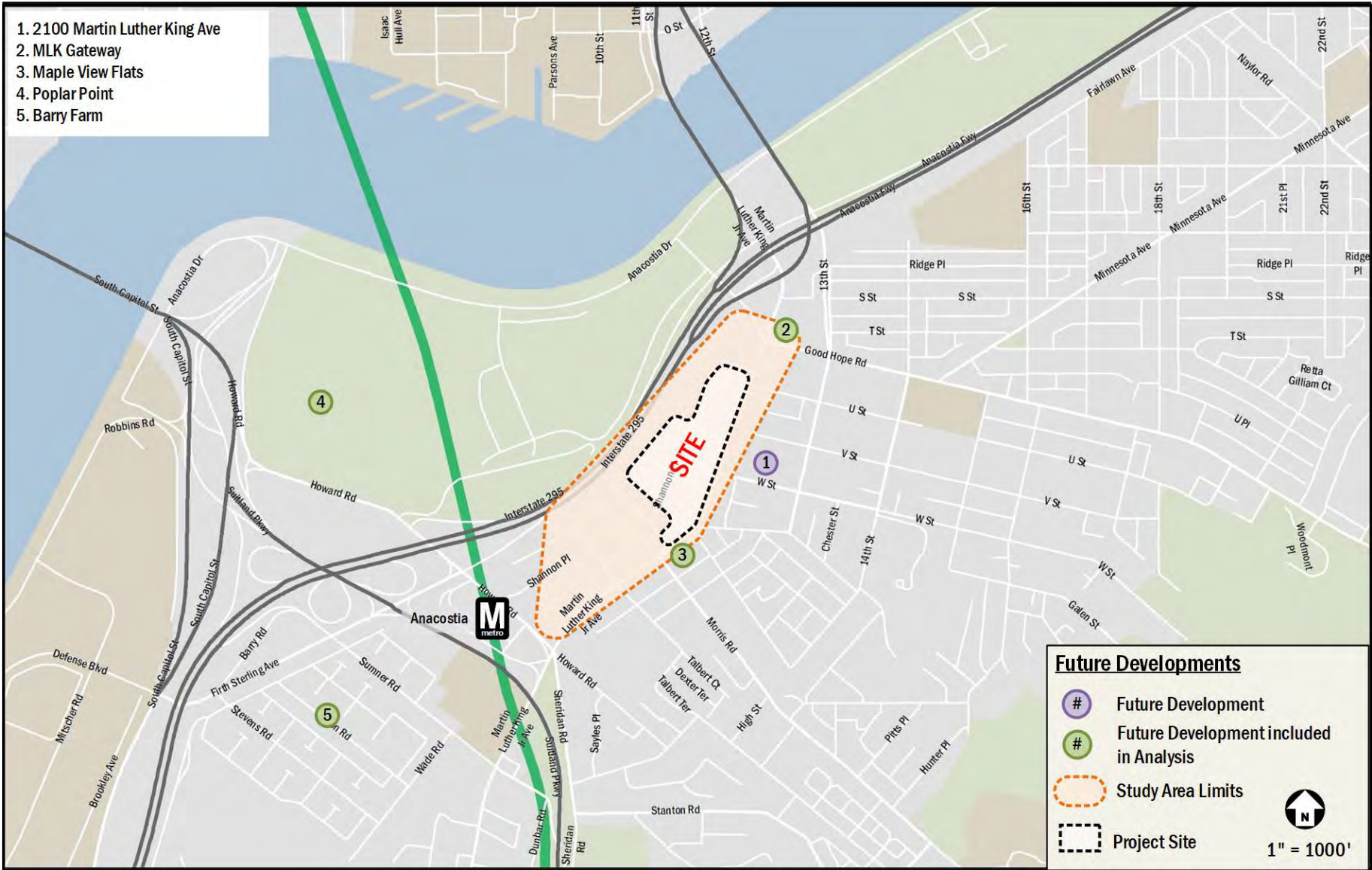


Figure 6: Future Development Map



PROJECT DESIGN

This section reviews the transportation components of the Reunion Square development associated with Buildings 4, 5, and 8 (“proposed development”). It includes the proposed site plan, access points, and descriptions of the proposed development’s vehicular access, loading, parking, bicycle and pedestrian facilities, and Transportation Demand Management (TDM) plan.

The entire Reunion Square PUD site (the “Site”) is located west of Martin Luther King Jr Avenue in the Historic Anacostia district of Southeast, DC. The Site is bordered by Shannon Place to the north, MLK Avenue to the east, Chicago Street and residential buildings to the south, and Railroad Avenue to the west.

Although the proposed development consists of a Stage 2 PUD application for Building 4 only, this CTR will address the proposed development associated with the Stage 2 PUD application for Buildings 5 and 8 as they are anticipated to be filed imminently.

The parcels which compose Buildings 4, 5, and 8 are currently occupied by a surface parking lot and various office and industrial buildings. The development plan for the Stage 2 PUD proposes to replace these existing uses with three (3) mixed-use buildings:

- Building 4 will contain 8,000 square feet of retail, 280,000 square feet of office space, and 324 parking spaces, with an additional 136 tandem spaces.
- Building 5 will contain a 119-room hotel, approximately 41,000 square feet of office space, and 56 proposed parking spaces.
- Building 8 will contain 133 residential units, 14,000 square feet of retail, and 38 parking spaces.

Figure 7 shows an overview of this Stage 2 PUD development program and site plan elements, with plans of Buildings 4, 5, and 8 shown in Figure 8, Figure 9, and Figure 10, respectively.

SITE ACCESS AND CIRCULATION

Pedestrian Access

Pedestrian access to the proposed development will occur off of Martin Luther King Jr. Avenue, Shannon Place, and W Street.

Individual access to the buildings included in this CTR are as follows:

- Building 4 is situated on the southwest corner of the Site, in between Railroad Avenue and Shannon Place. Primary pedestrian access will utilize W Street and Shannon Place.
- Building 5 is situated immediately to the north of Building 4. Primary pedestrian access will utilize Shannon Place and W Street.
- Building 8 is situated at the northwest corner of the Site. Primary pedestrian access will utilize Shannon Place and Martin Luther King Jr. Avenue.

Bicycle Access

Bicycle access to the proposed development will occur off of Shannon Place, W Street, and Martin Luther King Jr. Avenue—a signed bicycle route. Secure, long-term bicycle parking will be provided in each of the buildings analyzed in this CTR. Bicycle access to these buildings are as follows:

- Bicyclists will enter the Building 4 parking garage along Railroad Avenue, which is accessible from W Street.
- Bicyclists will enter the Building 5 parking garage from W Street.
- Bicyclists will enter the Building 8 secure bicycle storage room using the retail entrance on Shannon Place along the western perimeter of the building.

Short-term bicycle parking will be placed around the perimeter of each building, with the location to be decided upon further coordination with DDOT during the public space process.

Figure 28 shows an area map with bicycle routes to and from the Site.

Vehicular Access

The main entry points to the overall Reunion Square PUD Site will take place from intersections off of Martin Luther King Jr. Avenue at Shannon Place, W Street, and Chicago Street.

Vehicular access to the proposed development are as follows:

- Access to the Building 4 parking garage will be on Railroad Avenue, accessible from W Street and Shannon Place. The entrance to the loading facilities will be adjacent to the parking entrance on Railroad Avenue, providing the building with three (3) 30-foot



berths. Building 4 will utilize two (2) existing curb cuts along Railroad Avenue.

- Access to the Building 5 parking garage is will be on V Street. Access to this portion of V Street will have no outlet from Shannon Place. The entrance to the loading facilities will be along W Street, providing the building with one (1) 30-foot berth and one (1) service/delivery space. Building 5 will utilize one (1) existing curb cut along V Street.
- Access to the Building 8 parking garage will be on Shannon Place on the western perimeter of the Building. Entrance to the loading facility will utilize the alley which bisects Building 8, accessible from Shannon Place at the north and west ends of the alley. The loading facilities will consist of one (1) 30-foot berth and one (1) service/delivery space. Building 8 will utilize one (1) existing curb cut along Shannon Place.

Each building access point will lead to an underground parking garage. The majority of vehicles are expected to arrive and depart the proposed development via the intersections of Martin Luther King Jr. Avenue and Shannon Place (unsignalized) & Martin Luther King Jr. Avenue and W Street, which is a signalized intersection. Interior vehicular circulation will be achieved utilizing Shannon Place to reach destinations to the south and north.

Figure 8, Figure 9, and Figure 10 provide pedestrian, bicycle, and vehicular access diagrams to Buildings 4, 5, and 8, respectively.

The Applicant has agreed to close three (3) curb cuts with the construction of Building 4--one (1) along Shannon Place and two (2) along W Street. Building 8 will have five (5) curb cuts closed--one (1) along Martin Luther King Jr. Avenue and four (4) along Shannon Place. The closure of these curb cuts will improve pedestrian facilities by eliminating conflicts between vehicles and pedestrians, particularly along the highly traveled Martin Luther King Jr. Avenue sidewalks.

LOADING AND TRASH

Loading

The proposed loading facilities will accommodate all delivery demand without detrimental impacts.

Truck routing to and from the proposed development will be mainly on designated primary truck routes, such as Good Hope Road, the Anacostia Freeway, and Martin Luther King Jr, Avenue. However, it is expected that most trucks will travel along Martin Luther King Jr. Avenue to access the proposed development.

The First Stage PUD for Curtis Properties was approved through the 1958 Zoning Regulations (ZR58). Therefore, the Second Stage PUD application will utilize ZR 58 regulations for loading in the C-3-A zone.

Per the 1958 zoning regulations, the proposed development is required to provide the following loading facilities at each building:

- Building 4: three (3) loading berths at a minimum depth of 30 feet and one (1) service/delivery space at a minimum depth of 20 feet. The building will provide three (3) 30-foot loading berths, with relief requested for the service/delivery space as this can be accommodated in one of the three (3) loading berths.
- Building 5: one (1) loading berth at a minimum depth of 30 feet and one (1) service/delivery space at a minimum depth of 20 feet. The building will provide one (1) 30-foot loading berth and one (1) service/delivery space, meeting zoning requirements.
- Building 8: one (1) loading berth at a minimum depth of 55 feet and one (1) service/delivery space at a minimum depth of 20 feet. Building 8 will provide one (1) 30-foot loading berth and one (1) service/delivery space, with relief requested for the 55'foot loading berth.

The proposed development is expected to generate a maximum of approximately 14 total truck trips per day. This includes three (3) general deliveries consisting of trash removal, mail, and parcel delivery, and the following deliveries per building:

- Building 4: two (2) retail deliveries for the retail space.
- Building 5: four (4) hotel deliveries and two (2) retail deliveries for the retail space.
- Building 8: one (1) residential delivery, calculated based on an average unit turnover of 18 months with two (2) deliveries per turnover (one move-in and one move-out), two (2) retail deliveries for the retail space.



The loading facilities provided by the development will be sufficient to accommodate this demand.

DDOT standards stipulate that truck movements for a development should be accommodated without back-in movements through public space. The ground floors of the proposed development buildings have been designed to accommodate 30-foot truck loading maneuvers with minimal back-in movements in Public Space. The movements are as follows:

- Building 4: Vehicles will enter the loading berths by traveling on W Street westbound and turning onto Railroad Avenue. Back-in maneuvers will be utilized into the berths from Railroad Avenue. Head-out maneuvers will be used for outbound traffic onto Railroad Avenue northbound.
- Building 5: Vehicles will enter the loading berth by traveling south on Shannon Place and west on W Street. Back-in maneuvers will be utilized into the berth and service space from Railroad Avenue. Head-out maneuvers will be used for outbound traffic onto W Street eastbound.
- Building 8: Vehicles may enter the loading berth by utilizing the north-south alley from Shannon Place, with back-in maneuvers utilized into the berth. Head-out maneuvers will be used for outbound traffic onto either southbound or northbound Shannon Place.

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

Loading Management Plan

The Applicant has proposed the following measures to offset the requested relief of the required service/delivery space in Building 4 and any potential impacts the loading activities of the proposed development might have on the surrounding intersections and neighborhoods:

All Uses (Buildings 4, 5, 8)

- The dock manager(s) will schedule deliveries such that the dock's capacity is not exceeded. In the event that an unscheduled delivery vehicle arrives while the dock is full, that driver will be directed to return at a later time when a berth will be available so as to not impede the drive aisle that passes in front of the loading dock.

- The dock manager(s) will monitor inbound truck maneuvers and will ensure that trucks accessing the loading dock do not block vehicular traffic except during those times when a truck is actively entering the loading facilities.
- Trucks using the loading dock 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 dock manager(s) will be responsible for disseminating suggested truck routing maps to the building's tenants and to drivers from delivery services that frequently utilize the loading dock. The dock manager(s) will also distribute flyers and materials as DDOT's Freight Management and Commercial Vehicle Operations document to drivers as needed to encourage compliance with idling laws. The dock manager(s) will also post these documents in a prominent location within the service area.

Retail (Buildings 4, 8)

- A loading dock manager will be designated by the retail tenants. The dock manager will coordinate with vendors and tenants to schedule deliveries and will be on duty during delivery hours.
- All retail tenants will be required to schedule deliveries that utilize the loading docks – defined here as any loading operation conducted using a truck 20' in length or larger.

Residential (Building 8)

- Deliveries by the large 30' trucks will occur during off-peak hours, between 6:30PM and 6:30AM.

Based on the expected number of truck deliveries and the amount of loading facilities provided, this report concludes that the loading plan for the proposed development is adequate.

Trash

Trash for all buildings will be accommodated using a trash compactor in the loading area within each building. No trash will be stored in public space.

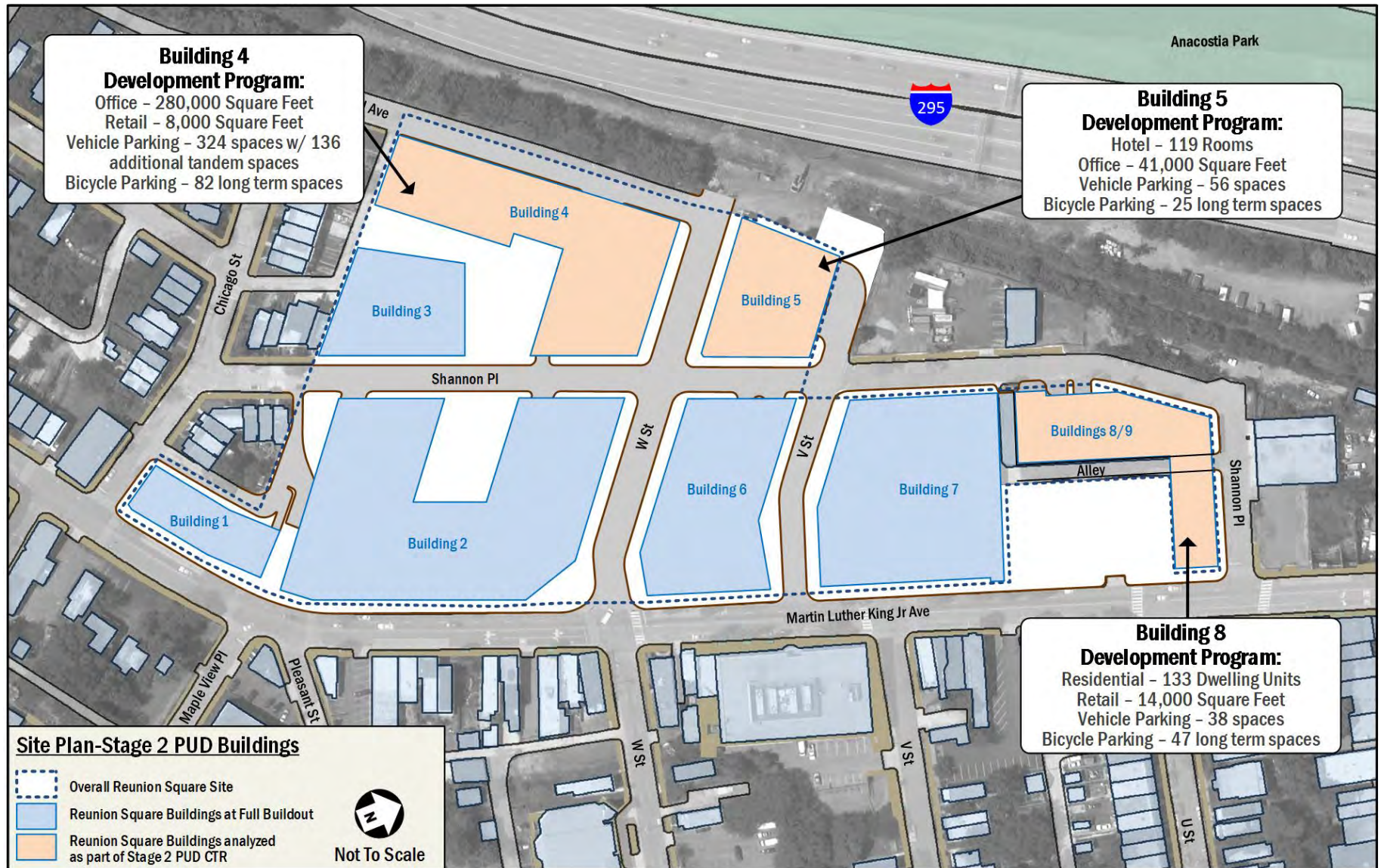


Figure 7: Site Plan (Overall Development)

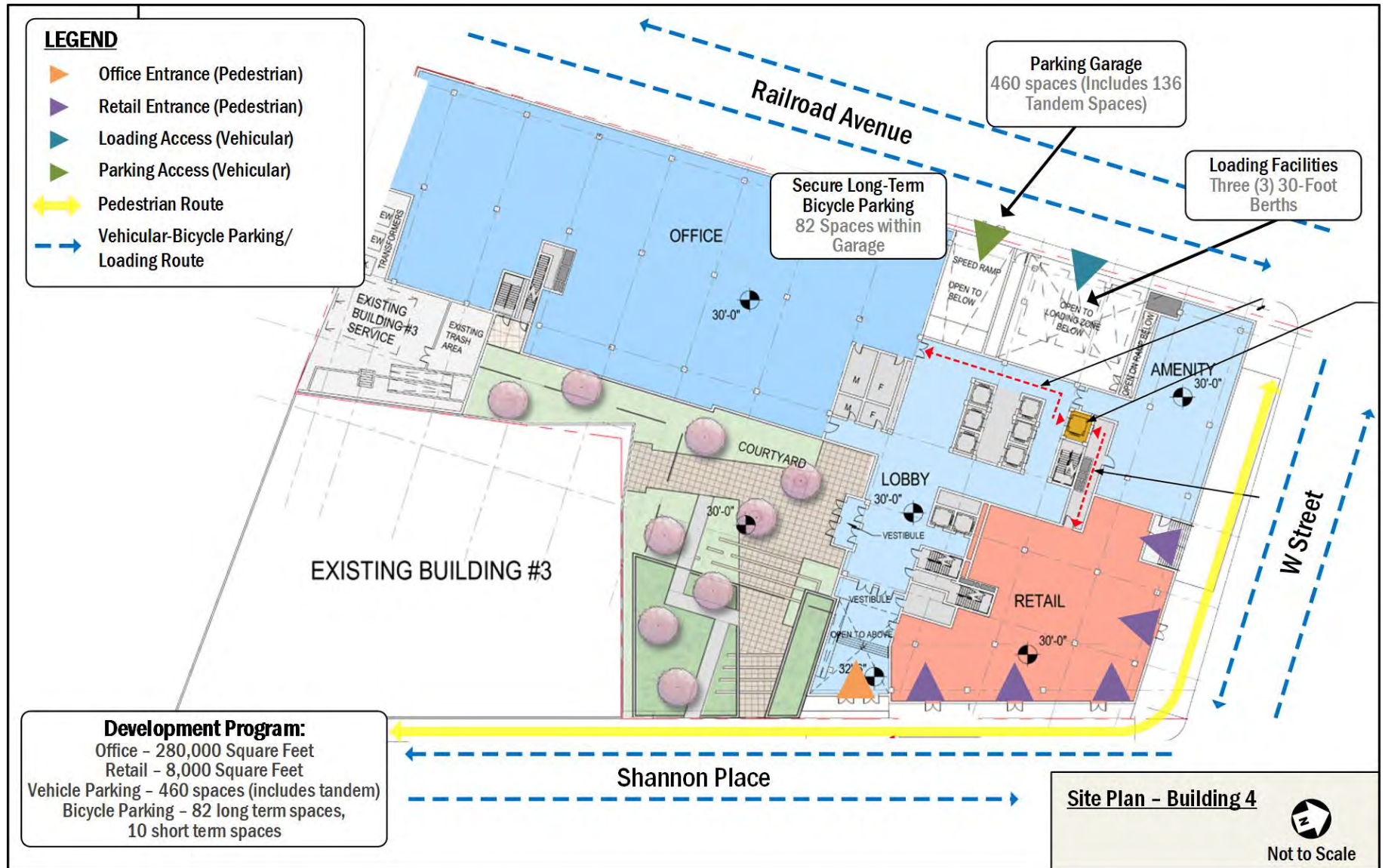


Figure 8: Building 4 Site Plan and Access

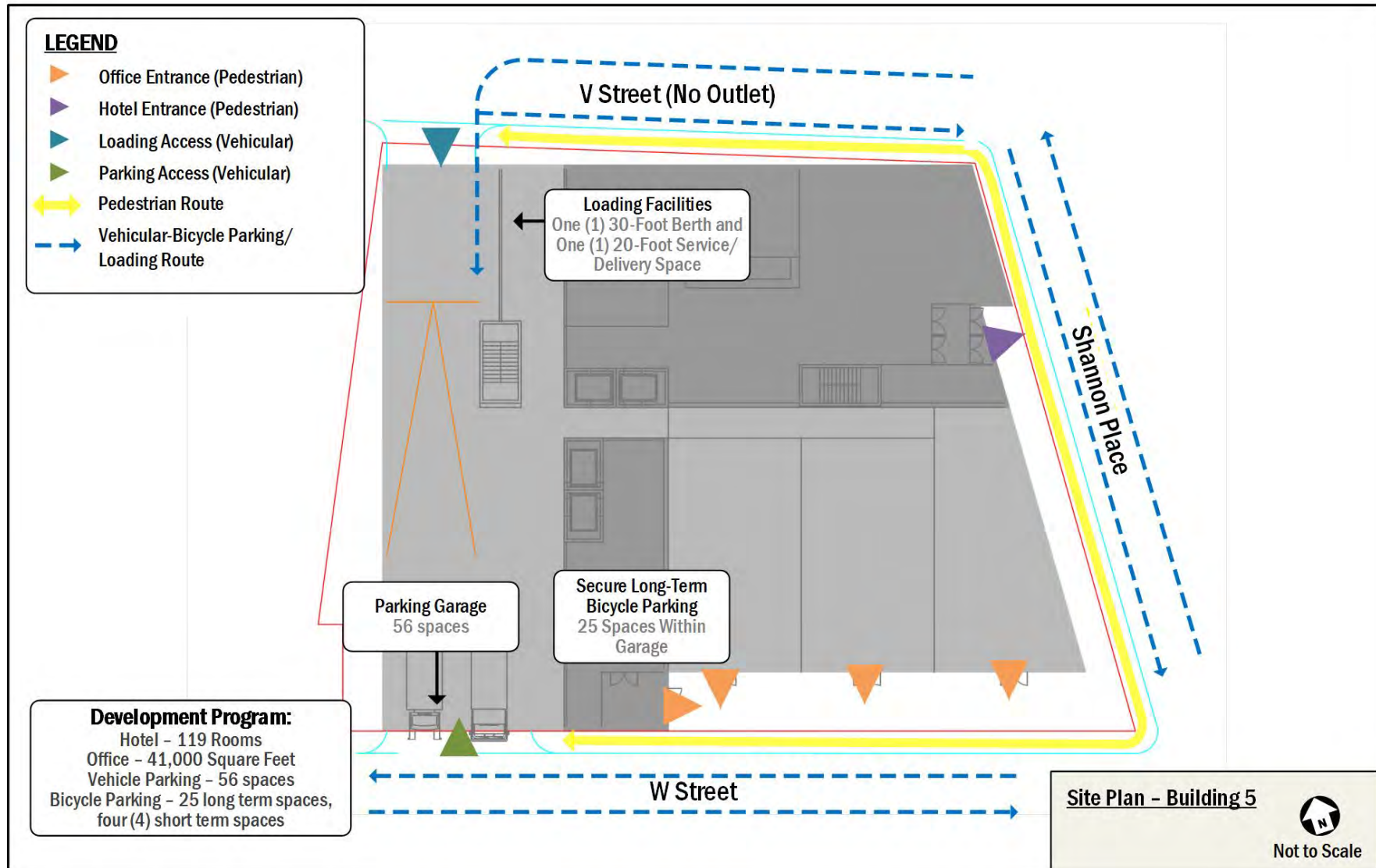


Figure 9: Building 5 Site Plan and Access

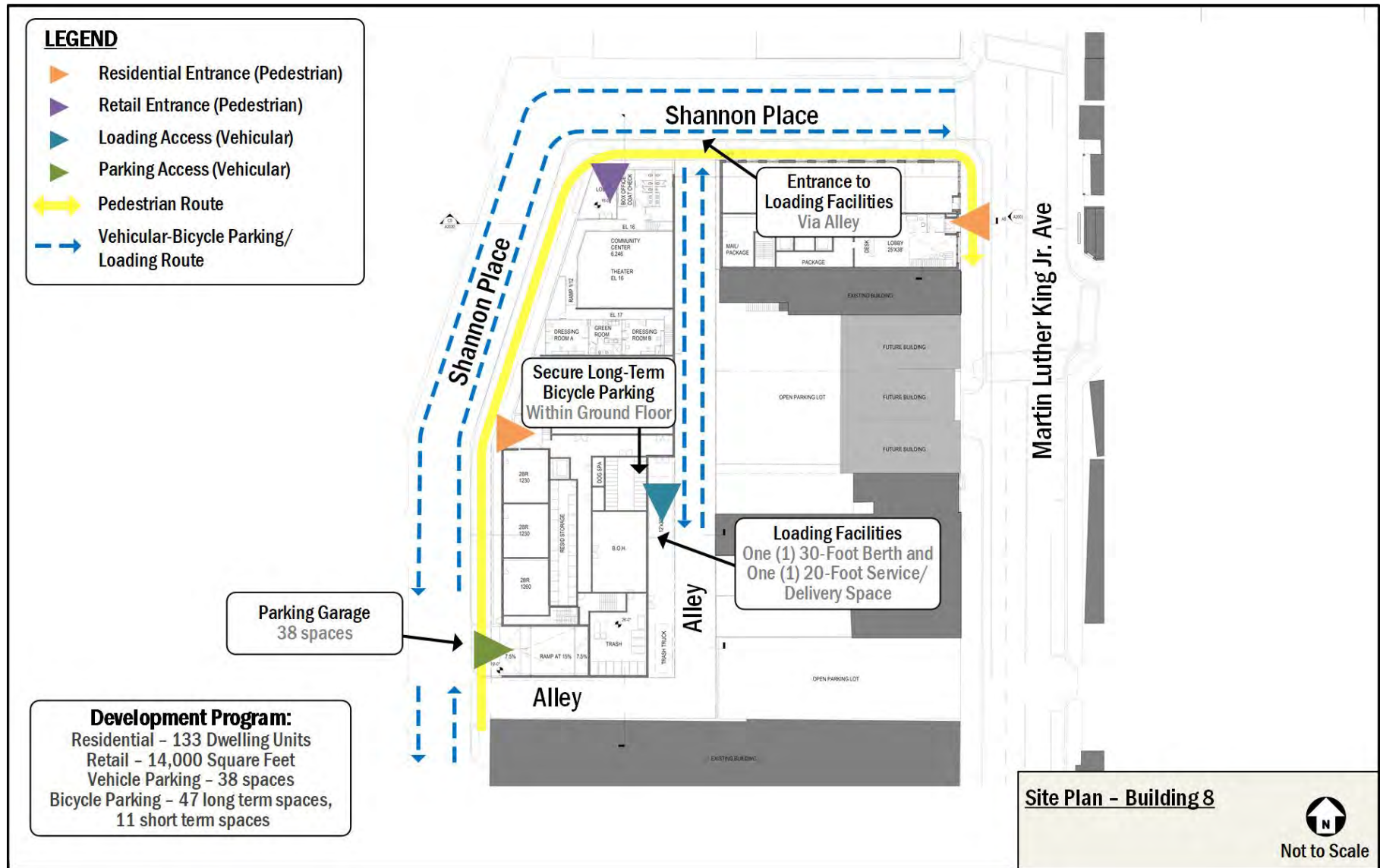


Figure 10: Building 8 Site Plan and Access



PARKING

The parking provided by the proposed development will accommodate all practical demand on site.

On-Site Parking

Per 1958 zoning regulations, proposed development is required to provide the following vehicular parking:

- Retail (Buildings 4 and 8): one (1) space per 300 square feet in excess of 3,000 square feet, for a total of 64 spaces.
- Office (Buildings 4 and 5): one (1) space per 600 square feet in excess of 2,000 square feet, for a total of 531 spaces.
- Residential (Building 8): one (1) space per every two (2) dwelling units, for a total of 67 spaces.
- Hotel (Building 5): one (1) space for every two (2) hotel rooms, for a total of 60 spaces.

The proposed development is required to provide a total of 722 spaces per zoning. Table 2 provides a breakdown of the proposed garage parking per building.

Table 2: Proposed Parking Supply

Building	No. of Spaces
Building 4	460 spaces (includes 136 tandem spaces)
Building 5	56 spaces
Building 8	38 spaces
Total	554 spaces

Although the amount of proposed parking does not meet the minimum zoning requirements established for ZR58, it meets the practical needs of the development, given the proposed development's proximity to plentiful public transit options, including the Anacostia Metrorail station. As part of the First Stage PUD approval for the entire Reunion Square Site, the Applicant was granted relief in providing the required parking supply, with the Zoning Commission agreeing that the flexibility in parking was in accordance with DC's Comprehensive Plan to encourage shared-use parking and reduce parking requirement where Transportation Demand Management (TDM) measures were implemented.

As a comparison, the proposed development would be required to provide the following number of spaces per 2016 Zoning Regulations:

- Retail (Buildings 4 and 8): 1.33 spaces per 1,000 square feet in excess of 3,000 square feet, for a total of 26 spaces.
- Office (Buildings 4 and 5): one (1) space per 2,000 square feet in excess of 3,000 square feet, for a total of 159 spaces.
- Residential (Building 8): one (1) space per every three (3) dwelling units in excess of four (4) units, for a total of 43 spaces.
- Hotel (Building 5): one (1) space for every 2,000 square feet in excess of 3,000 square feet, for a total of 36 spaces.

The proposed development would be required to provide 264 spaces, which may be reduced further given the Site's proximity to transit. The amount of parking proposed for the three (3) buildings would exceed current (ZR16) requirements.

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle Facilities

Per 1958 zoning regulations, the number of bicycle spaces required for each land use is equivalent to at least five (5) percent of the number of auto parking spaces required. As a result, the proposed development is required to provide 27 long-term spaces for the office use, three (3) long-term spaces for the residential use, three (3) long-term spaces for the hotel use, and six (6) long-term spaces for the retail use, for a total of 39 long-term bicycle spaces.

The amount of long-term parking spaces required under 1958 zoning regulations does not meet practical demands and runs contrary to DDOT's goals of promoting non-auto modes of transportation. Additionally, short-term parking spaces are not required or regulated under 1958 regulations, which would underserve potential bicycle usage by retail patrons. Therefore, the proposed bicycle parking supply will follow current 2016 Zoning Regulations (ZR16).

Per 2016 zoning regulations, the proposed development is required to providing the following long-term and short-term bicycle parking:

- Retail: one (1) long-term bicycle space per each 10,000 square feet of retail space and one (1) short-term space per each 3,500 square feet of retail space.



- Office: one (1) long-term bicycle space per each 3,500 square feet of office space and one (1) short-term space per each 40,000 square feet of office space.
- Hotel: one (1) long-term bicycle space per each 10,000 square feet of hotel space and one (1) short-term bicycle space per each 40,000 square feet of hotel space. The proposed hotel will have approximately 75,000 square feet of floor area.
- Residential: one (1) long-term bicycle space per every three (3) dwelling units and one (1) short-term bicycle space per every 20 dwelling units.

This results in 154 long-term spaces and 25 short-term spaces being required. A breakdown of the short-term and long-term bicycle parking supply is shown in Table 3 and Table 4, respectively.

Buildings 4 and 5 will provide long-term bicycle storage within the garage. Building 8 will provide long-term bicycle storage in a ground floor secure room. The short-term spaces will be placed along the perimeter of the buildings and will include inverted U-racks placed in high-visibility areas. The Applicant will work with DDOT to determine the exact location of bicycle racks in public space.

A reduction in the number of long-term spaces for the office use at Building 4 was applied, with any required number of spaces above 50 applied at half the rate, per Sub. C, Section 802.1 of the 2016 Zoning Regulations.

Table 3: Proposed Long-Term Bicycle Parking Supply

Building	No. of Long-Term Spaces (by Land Use)				Total
	Retail	Office	Hotel	Residential	
Building 4	1	81	--	--	82
Building 5	--	17	8	--	25
Building 8	2	--	--	45	47
Total	3	98	8	45	154

Table 4: Proposed Short-Term Bicycle Parking Supply

Building	No. of Short-Term Spaces (by Land Use)				Total
	Retail	Office	Hotel	Residential	
Building 4	3	7	--	--	10
Building 5	--	2	2	--	4
Building 8	4	--	--	7	11
Total	7	9	2	7	25

Per 2016 zoning regulations, a non-residential development that provides long-term bicycle parking spaces and occupies more than 25,000 square feet is required to provide a

minimum of two (2) showers, and an additional two (2) showers installed for every 50,000 square feet of gross floor area above the first 25,000 square feet, up to a maximum requirement of six (6) showers. The proposed development is providing six (6) showers in Building 4 and four (4) showers in Building 5.

Per zoning regulations, a non-residential development that provides long-term bicycle parking spaces and occupies more than 25,000 square feet is required to provide a minimum number of clothing lockers equal to six-tenths (0.6) times the minimum number of required long-term bicycle parking spaces. Each locker required by this subsection shall be a minimum of twelve inches (12 in.) wide, eighteen inches (18 in.) deep, and thirty-six inches (36 in.) high. The proposed development will meet these requirements by providing 49 lockers within Building 4 and 15 lockers within Building 5.

Pedestrian Facilities

As part of the proposed development, pedestrian facilities around the perimeter of the proposed development will be greatly improved such that they meet or exceed DDOT and ADA requirements and provide an improved pedestrian environment. Eight (8) existing curb cuts will be removed, including one (1) on Martin Luther King Jr. Avenue, five (5) along Shannon Place, and two (2) on W Street, eliminating vehicular-pedestrian conflicts. In addition, the installation of sidewalks, crosswalks, and curb ramps at locations that do not currently have facilities will greatly improve circulation throughout the proposed development, allowing more paths for pedestrians to reach major local destinations, such as the Martin Luther King Jr. Avenue business district, the Anacostia Riverwalk Trail, and the Anacostia Metrorail station.

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 Reunion Square development is based on DDOT expectations for TDM programs for developments of this type and size. As such, The Applicant proposes the following TDM measures:



Overall Proposed Development

- The Applicant will identify TDM Leaders (for planning, construction, and operations). The TDM Leaders will work with employees in the development to distribute and market various transportation alternatives and options.
- The Applicant will work with DDOT and goDCgo (DDOT's TDM program) to implement TDM measures at the proposed development.
- The Applicant will share the full contact information of the TDM coordinator for the proposed development with DDOT and goDCgo.
- The Applicant will provide a bicycle repair station to be located in the secure long-term bicycle storage rooms of each Building.
- The Applicant will meet ZR16 Zoning requirements to provide bicycle parking facilities at the proposed development. This includes 154 secure long-term parking spaces located within the buildings of the proposed development and a minimum of 25 short-term bicycle parking spaces around the perimeter of the buildings (in the form of 13 bicycle racks).
- The Applicant will install a Transportation Information Center Display (electronic screen) within the lobby of each building containing information related to local transportation alternatives.

Residential Measures

- The Applicant will provide TDM materials to new residents in the Residential Welcome Package materials.
- The Applicant will unbundle the cost of residential parking from the cost of lease or purchase.
For the first year following the Certificate of Occupancy for the residential building, each unit's incoming resident will be offered either a one-year membership to Capital Bikeshare or a one-year membership to a Carsharing service.

Retail/Office Measures

- The Applicant will provide retail employees who wish to carpool with detailed carpooling information and will be referred to other carpool matching services sponsored by the Metropolitan Washington Council of Governments (MWCOG).
- The Applicant will provide showers and changing facilities as required by ZR16 in the retail and office buildings for employees.

Hotel Measures

- The Applicant will include carshare spaces within the Building 5 garage exclusively to hotel guests.



TRIP GENERATION

This section outlines the transportation demand of the proposed Reunion Square 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 proposed development (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. As requested by DDOT, a Saturday Peak Hour trip generation is provided, with no additional analysis performed for this time period.

Residential trip generation was calculated based on ITE Land Use 221, Mid-Rise Multifamily Housing. Mode splits for the residential component were primarily based on census data for the residents that currently live near the proposed development and the proposed parking supply.

Table 5: Mode Split Assumptions

Land Use	Mode			
	Auto	Transit	Bike	Walk
Residential	45%	45%	3%	7%
Retail	40%	40%	3%	17%
Office	50%	40%	0%	10%
Hotel	55%	25%	3%	17%

Table 6: Multi-Modal Trip Generation Summary

Mode	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Auto (vehicles/hour)	182	56	238	78	194	272	121	103	224
Transit (people/hour)	167	54	221	85	190	275	124	109	233
Bike (people/hour)	3	2	5	6	5	11	8	7	15
Walk (people/hour)	48	17	65	30	57	87	49	42	91

Retail trip generation was calculated based on ITE Land Use 820, Shopping Center. Mode splits for the retail component were primarily based on data for retail sites from the WMATA Ridership Survey, influenced by census data for employees that travel to the site to take into account employees that will be arriving or departing during the peak hours. The vehicular mode split was then adjusted to reflect parking supply and the distance of nearby Metrorail stations.

Office trip generation was calculated based on ITE Land Use 710, General Office. Mode splits for the office component were primarily based on census data for employees that travel to the proposed development area to take into account employees that will be arriving or departing during the peak hours.

Hotel trip generation was calculated based on ITE Land Use 310, Hotel. Mode split for the hotel component was primarily based on data for hotel sites from the WMATA Ridership Survey, influenced by the proposed development's proximity to the Anacostia Metrorail Station.

The mode split assumptions are shown in Table 5. A summary of the multimodal trip generation for the development is provided in Table 6 for the morning, afternoon, and Saturday peak hours. Detailed calculations are included in the Technical Attachments.



TRAFFIC OPERATIONS

This section provides a summary of an analysis of the existing and future roadway capacity in the study area. Included is an analysis of potential vehicular impacts of Buildings 4, 5, & 8 as part of the Reunion Square 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.

The capacity analysis focuses on the morning and afternoon peak hours, as determined by the existing traffic volumes in the study area. The scope of the capacity analysis was developed based on DDOT guidelines and agreed to by DDOT staff.

The following conclusions are reached within this chapter:

- A majority of existing study area intersection approaches operate at an acceptable level of service during all analysis scenarios for both the morning and afternoon peak hours.
- Future areas of concern for roadway capacity are primarily focused along the heavily travelled commuter route of Martin Luther King Jr. Avenue.
- As is expected of developments of this size, the addition of site-generated traffic from the proposed buildings to intersections with little existing traffic pushes six (6) intersections past levels of service that require exploring mitigations.
- Mitigation measures were analyzed and discussed for these intersections, of which feasible solutions were recommended for implementation given DDOT approval.
- Overall, this report concludes that the project will not have a detrimental impact to the surrounding vehicular network, assuming implementation of the proposed mitigations.

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

Specifically, the roadway capacity analysis examined the following scenarios:

1. 2018 Existing Conditions
2. 2021 Future Conditions without the development (2021 Background)
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 proposed development access points, the following intersections were chosen and agreed upon by DDOT for analysis:



1. Martin Luther King Jr. Avenue & Good Hope Road
2. Martin Luther King Jr. Avenue & Shannon Place
3. Martin Luther King Jr. Avenue & U Street
4. Martin Luther King Jr. Avenue & V Street (north)
5. Martin Luther King Jr. Avenue & V Street (south)
6. Martin Luther King Jr. Avenue & W Street
7. Martin Luther King Jr. Avenue & Chicago Street
8. Martin Luther King Jr. Avenue & Morris Road
9. Martin Luther King Jr. Avenue & Talbert Street
10. Martin Luther King Jr. Avenue & Howard Road/Sheridan Road
11. Shannon Place & W Street
12. Shannon Place & Chicago Street

Figure 11 shows a map of the study area intersections.

Traffic Volume Assumptions

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

Existing Traffic Volumes

The existing traffic volumes are comprised of turning movement count data, which was collected on Wednesday, April 18, 2018. The results of the traffic counts are included in the Technical Attachments.

For all intersections, the morning and afternoon intersection peak hours were used. The existing peak hour traffic volumes are shown in Figure 13.

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 expected to be completed prior to the project (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, four (4) developments were included in the 2021 Background scenario: These developments are:

1. MLK Gateway
2. Maple View Flats
3. Poplar Point
4. Barry Farm

Existing transportation studies were available for the Poplar Point and Barry Farm developments, but for those with no existing studies, trip generation was calculated based on the Institute of Transportation Engineers' *Trip Generation Manual, 10th Edition*, with mode splits based on those used for Reunion Square. Trip distribution assumptions for the background developments were based on the distributions included in their respective studies or based on similar land uses determined for the Reunion Square development and altered where necessary based on anticipated travel patterns. Mode split and trip generation assumptions for the background developments are shown in Table 7. The volumes generated by the background developments are shown in Figure 14.

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 2016 and 2020 model scenarios as vetted and agreed to by DDOT. The growth rates observed in this model served as a basis for analysis assumptions, and where negative growth was observed, a conservative 0.10 percent annual growth rate was applied to the roadway. In addition, since the MWCOG model accounts for local and regional development, annual growth rates are capped at 1.0 percent per year in order to only account for regional growth. Local growth is accounted by including background developments, which was discussed above. This helps eliminate double-counting of local trips. The applied growth rates are shown in Table 8.

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 15.



2021 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 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. Trip distributions were vetted and agreed to by DDOT.

The retail trip distribution was mostly based on locations of other retail centers, with some influence by the CTPP TAZ flow data for drivers commuting to the proposed development's TAZ (representing retail employees that drive). The origin of outbound and destination of inbound retail vehicular trips was the below-grade parking garage of the development.

Based on this review and the access locations of each building, the site-generated trips were distributed through the study area intersections. A summary of trip distribution assumptions and specific routing is provided on Figure 16 and Figure 17 for outbound and inbound trips, respectively.

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

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 12.

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, no background improvements were included in background scenarios and the existing lane configurations and traffic control will remain in 2021.

2021 Future Geometry and Operations Assumptions

The geometry and operations assumed in the future conditions scenario were based on the existing conditions with the following improvements:

- The new building site driveways on Shannon Place, V Street, and Railroad Avenue.
- The closure of existing curb cuts along Martin Luther King Jr. Avenue, Shannon Place, and W Street.

The lane configuration and traffic controls for the future conditions however will remain the same at the study area intersections, as shown in Figure 12.

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 9 shows the results of the capacity analyses in 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 21 for the morning peak hour and Figure 22 for the afternoon peak hour.

The majority of study area intersections operate at acceptable conditions during the morning and afternoon peak hours for the 2018 Existing, 2021 Background, and 2021 Future scenarios; however, six (6) intersections operate at levels beyond acceptable thresholds as a result of site-generated trips:

- *Martin Luther King Jr. Avenue and Good Hope Road, SE*
During the morning peak hour, the westbound approach of Good Hope Road is projected to operate under LOS F for 2018 Existing, 2021 Background and Future Conditions. During the afternoon peak hour, the northbound approach of Martin Luther King Jr. Avenue is projected to degrade from LOS D in 2021 Background Conditions to LOS E for 2021 Future Conditions. This can be attributed to saturated volumes at the intersection during the morning peak hour and the addition of outbound site-generated traffic continuing northbound on Martin Luther King Jr. Avenue during the afternoon peak hour. Mitigation measures at this intersection are proposed in the next section.
- *Martin Luther King Jr. Avenue and Shannon Place, SE*
The eastbound approach of Shannon Place is projected to degrade from LOS E in 2021 Background Conditions to LOS F for 2021 Future Conditions in the morning peak hour and

degrade from LOS A in 2021 Background Conditions to LOS F for 2021 Future Conditions in the afternoon peak hour. This can be attributed to the amount of site-generated eastbound left turns onto Martin Luther King Jr. Avenue during both peak hours. As scoped with DDOT, a majority of building site trips utilize Shannon Place and Chicago Street from Martin Luther King Jr. Avenue to access the Reunion Square Site. As this is an unsignalized intersection, a signal warrant was performed to investigate potential mitigation measures, which are proposed in the next section.

- *Martin Luther King Jr. Avenue and V Street/Parking Lot, SE*
The westbound approach of V Street is projected to operate under LOS F for 2021 Background and Future Conditions in the morning peak hour, compared to LOS E in 2018 Existing Conditions and degrade from LOS E in 2021 Background Conditions to LOS F in 2021 Future Conditions during the afternoon peak hour. This can be attributed to the lack of sufficient gap for vehicles turning left onto southbound Martin Luther King Jr. Avenue. It was observed that vehicles were making illegal turns onto eastbound V Street from Martin Luther King Jr. Avenue, traffic is prohibited from entering V Street during both peak hours. Mitigation measures at this intersection are proposed in the next section.
- *Martin Luther King Jr. Avenue and V Street (South)*
The eastbound approach of V Street is projected to degrade from LOS E in 2021 Background Conditions to LOS F during the afternoon peak hour for the 2021 Future Conditions. The addition of 10 eastbound left site-generated trips onto northbound Martin Luther King Jr. add to an already saturated condition at this approach of the unsignalized intersection. Mitigation measures at this intersection are proposed in the next section.
- *Martin Luther King Jr. Avenue and W Street, SE*
The eastbound approach of W Street is projected to degrade from LOS D in 2021 Background Conditions to LOS F for 2021 Future Conditions in the afternoon peak hour. This can be attributed to the amount of outbound site-generated eastbound left turns onto Martin Luther King Jr. Avenue during the afternoon peak hour. Given W Street is the closest signalized intersection for site-generated vehicles to travel north, a significant amount of vehicles is expected to utilize this eastbound left maneuver.



Mitigations at this intersection are proposed in the next section.

- **Martin Luther King Jr. Avenue and Morris Road**
The westbound approach of Morris Road is projected to degrade from LOS E in 2021 Background Conditions to LOS F for the 2021 Future Conditions in the morning peak hour and operated under LOS F for 2021 Background and Future Conditions in the afternoon peak hour. The delay increases by more than 5 percent when compared to the 2021 Background Conditions in the afternoon peak hour This can be attributed to saturated volumes at the intersection during both peak hours and the addition of inbound site-generated traffic making an eastbound right onto northbound Martin Luther King Jr. Avenue. Mitigation measures are proposed in the next section.

A seventh intersection was found to operate above capacity in all approaches during the 2021 Background and Future Conditions:

- **Martin Luther King Jr. Avenue and Howard Road/Sheridan Road, SE**
This five-legged signalized intersection operates above capacity in all approaches during 2021 Background and Future Conditions. This is a result of saturated conditions along all approaches, with traffic utilizing Howard Road and Martin Luther King Jr. Avenue for access to the Anacostia Metrorail station. Site-generated traffic through this intersection is limited, with only 8% of outbound traffic traveling through. This intersection does not exceed the standards set for mitigation measures and will not be evaluated.

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 10 and Table 11 show the queuing results for the study area intersections during the morning and afternoon peak hours, respectively. There are four (4) study intersections which have a lane group that exceeds its storage length during at least one peak hour in all of the study scenarios.

Mitigations

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 impacts to six (6) intersections as a result of the development. Mitigation measures were tested at these intersections, with results shown on Table 12 with detailed Synchro reports included in the Technical Attachments. The following conclusions were made:

- **Martin Luther King Jr. Avenue and Good Hope Road**
During the afternoon peak hour, the northbound approach of Martin Luther King Jr. Avenue is projected to degrade from LOS D in in 2021 Background Conditions to LOS E for 2021 Future conditions; therefore, mitigation measures were evaluated. The primary factor for the delay along the northbound approach of Martin Luther King Jr. Avenue is its function as a commuter route to reach the 11th Street Bridges, an increase of traffic across this approach reaching saturation results in poor level of service.

It was determined that this intersection approach can be improved in the afternoon by the reallocation of five (5) seconds green time to the concurrent northbound-southbound phase from the concurrent westbound through-westbound left phase that have less capacity constraints. In further optimizing the signal, the offset was



adjusted from 106 seconds to 50 seconds in the afternoon peak hour. The signal timing adjustments decrease delay by 30 seconds to LOS D in the northbound approach during the afternoon peak hour, as shown in Table 12.

The proposed signal timing plans for this intersection can be found in the Technical Attachments.

- *Martin Luther King Jr. Avenue and Shannon Place*

The eastbound approach of Shannon Place is projected to operate under LOS F during the morning and afternoon peak hours for the 2021 Future Conditions; therefore, mitigation measures were evaluated. Under existing conditions, the intersection operates as an unsignalized intersection with low-volume traffic entering and exiting Shannon Place. As most of the site-generated traffic of the proposed development entering and exiting from points north will be utilizing the intersection, the eastbound left turns are creating this degradation. As requested by DDOT, most of the site traffic will utilize this intersection and the routing of site traffic represents a conservative measure of the impacts observed. Due to the high volume of site-generated trips, a signal warrant was conducted to gauge feasibility of accommodating eastbound left turns. The results of the warrant, shown in Figure 20, indicate that a signal is warranted.

The conversion of the intersection improves the operations for eastbound traffic exiting the proposed development. The intersection was analyzed to be mitigated with a signal with a 120-second cycle length. As seen in Table 12, delays along the eastbound approach significantly decrease, with minor increases observed in delay along Martin Luther King Jr. Avenue. The signal timing plans for this intersection can be found in the Technical Attachments.

This report defers to DDOT on whether this mitigation measure is acceptable. An alternative measure to a signal is to reroute the proposed development site-generated trips to other intersections along Martin Luther King Jr. Avenue, including greater usage of outbound trips to the north at W Street, which is already over capacity.

- *Martin Luther King Jr. Avenue and V Street/Parking Lot Entrance*

During the morning and afternoon peak hours, the westbound approach of V Street is projected to operate at LOS F for the 2021 Future Conditions. The delay increases

by more than 5 percent when compared to the 2021 Background Conditions in the morning peak period and the delay is projected to degrade from LOS E to F in the afternoon peak hour; therefore, mitigation measures were warranted. In neither peak period is site-generated traffic routed on the westbound approach, with only through traffic routed along Martin Luther King Jr. Avenue.

During existing conditions, it was observed that vehicles were making illegal turns onto eastbound V Street from Martin Luther King Jr. Avenue. During the morning and afternoon peak hours, eastbound traffic is prohibited from entering V Street but is ignored by drivers. As a mitigation measure, strict enforcement of the turn restrictions onto eastbound V Street is suggested to reduce delays on the westbound approach to levels closer to what was observed during the 2021 Background conditions, with illegal turning trips rerouted as through volumes along Martin Luther King Jr. Avenue.

A benefit of the proposed signal at Martin Luther King Jr. Avenue and Shannon Place is the creation of gaps in mainline traffic to allow westbound traffic to make turns, reducing delays in both peak periods to acceptable levels. These results are shown in Table 12.

- *Martin Luther King Jr. Avenue and V Street (South)*

The eastbound approach of V Street is projected to degrade from LOS E to LOS F during the afternoon peak hour for the 2021 Future Conditions; therefore, mitigation measures were evaluated. The addition of 10 eastbound left site-generated trips onto northbound Martin Luther King Jr. add to an already saturated condition at this approach of the unsignalized intersection.

The mitigation of signaling Martin Luther King Jr. Avenue and Shannon Place creates the added benefit of providing more gap for vehicles to turn on the eastbound approach of V Street, reducing delays during the afternoon peak hour to levels seen in the 2021 Background conditions. As with the Martin Luther King Jr. Avenue/Shannon Place intersection, this report defers to DDOT in seeking acceptable mitigation measures at this intersection.

- *Martin Luther King Jr. Avenue and W Street*

During the afternoon peak period, the eastbound approach of W Street is projected to degrade from LOS D to LOF E for the 2021 Future Conditions; therefore, mitigation



measures were warranted. The existing lane configuration of this approach consists of a single lane facilitating left, thru, and right turn movements. Therefore, delays may be exacerbated due to capacity constraints at this signalized intersection. Introduction of eastbound left site-generated trips contributes to the degradation of the approach.

Mitigation measures were tested at this approach in the form of signal timing adjustments to allow more green time to the eastbound approach. It was found that the reallocation of green time to the westbound phase from the concurrent northbound-southbound phase by nine (9) seconds reduced delays on the eastbound approach to those observed in the 2021 Background conditions. The proposed signal timing adjustments are provided in the Technical Attachments.

▪ *Martin Luther King Jr. Avenue and Morris Road*

During the morning and afternoon peak hours, the westbound approach of Morris Road is projected to operate under LOS F for the 2021 Future Conditions. The delay increases by more than 5 percent when compared to the 2021 Background Conditions in the afternoon peak period and the delay is projected to degrade from LOS E to F in the morning peak period; therefore, mitigation measures were warranted. The addition of 22 and 10 inbound site-generated trips during the morning and afternoon peak hours, respectively compound the already saturated conditions observed at this signalized intersection during the morning and peak hours. Therefore, even minor increases to traffic along this approach results in poor level of service.

Signal timing adjustments were tested at this intersection to allow more green time in the westbound phase, as significant capacity exists in the northbound and southbound phases. It was found that the reallocation of green time to the westbound phase from the concurrent northbound-southbound phase by two (2) seconds in the morning peak hour and one (1) second in the afternoon peak hour reduced delays on the eastbound approach to those observed in the 2021 Background conditions. Due to the close proximity of Chicago Street and Morris Road, the signals must operate at a split phase under one controller. The proposed signal timing improvements do not degrade operations at Chicago Street in either peak hour. The

proposed signal timing adjustments are provided in the Technical Attachments.

The proposed mitigations included in this report will improve the transportation network in the immediate area of the proposed development and will provide the necessary infrastructure to accommodate the currently proposed and future buildings associated with the Reunion Square PUD.

This report recommends that the Applicant coordinate the implementation of the recommended mitigation measures with DDOT. Given DDOT's edict to route a majority of site-generated trips at Shannon Place and Martin Luther King Jr. Avenue, an alternative to proposing a signal at this intersection is to reroute site-generated trips along other intersections along Martin Luther King Jr. Avenue, including greater usage of outbound trips to the north at the signalized intersection at W Street.



Table 7: Summary of Background Development Trip Generation

Background Development	ITE Land Use Code		Quantity	AM Peak Hour			PM Peak Hour			
	Trip Generation, 10th Ed.			In	Out	Total	In	Out	Total	
1. MLK Gateway										
Office Component	710	General Office Building	28,500	SF	46	7	53	6	29	35
50% Auto Reduction					-23	-3	-26	-3	-14	-17
Retail Component	820	Shopping Center	22,000	SF	23	14	37	71	78	149
60% Auto Reduction					-18	-11	-29	-55	-60	-115
Total Vehicle Trips					28	7	35	19	33	52
2. Maple View Flats										
Residential Component	221	Mid-Rise Apartments	114	DU	10	29	39	31	19	50
55% Auto Reduction					-5	-16	-21	-17	-10	-27
Retail Component	820	Shopping Center	15,000	SF	9	5	14	27	30	57
60% Auto Reduction					-5	-3	-8	-16	-18	-34
Total Vehicle Trips					9	15	24	25	21	46
3. Poplar Point (Wells+Associates Study from August 2017)*										
Residential Component	220	Apartment	710	DU	70	282	352	265	143	408
55% Auto Reduction					-39	155	-194	146	-79	-225
Retail Component	820	Shopping Center	49,980	SF	63	39	102	181	195	376
30% Auto Reduction					-19	-12	-31	-54	-59	-113
Office Component	710	General Office Building	1,679,510	SF	1,609	219	1,828	333	1,627	1,960
30% Auto Reduction					-483	-66	-549	100	-488	-588
Total Vehicle Trips					1,201	307	1,508	479	1,339	1,818
4. Barry Farm (CH2MHill/Symmetra Study from May 2014)*										
Residential Component	220	Apartment	1,897	DU	279	641	920	566	460	1,026
Retail Component	820	Shopping Center	58,730	SF	36	23	59	70	89	159
Auto Reduction (45% AM in/PM out; 40% AM out/PM in)					-221	393	-614	365	-380	-745
Total Vehicle Trips					94	271	365	271	169	440
Net Vehicular Trips					1,332	600	1,932	794	1,562	2,356

*ITE Trip Generation 9th Edition values utilized for study

Table 8: Applied Annual and Total Growth Rates

Road – Direction of Travel	Annual Growth Rate		Total Growth between 2018 and 2021	
	AM Peak	PM Peak	AM Peak	PM Peak
Martin Luther King Jr. Avenue – NB	0.10%	1.00%	0.30%	3.00%
Martin Luther King Jr. Avenue – SB	1.00%	0.10%	3.00%	0.30%

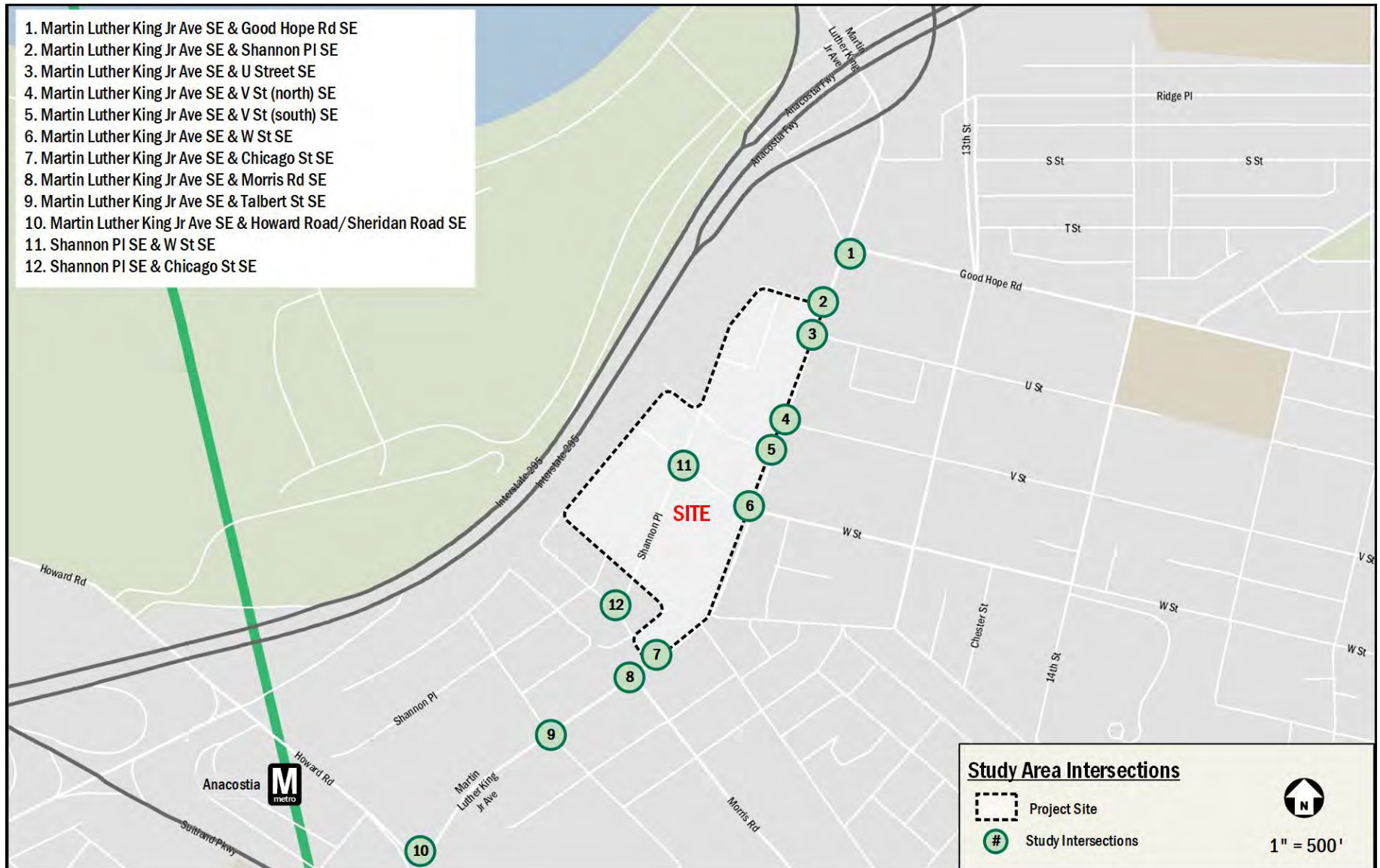


Figure 11: Study Area Intersections

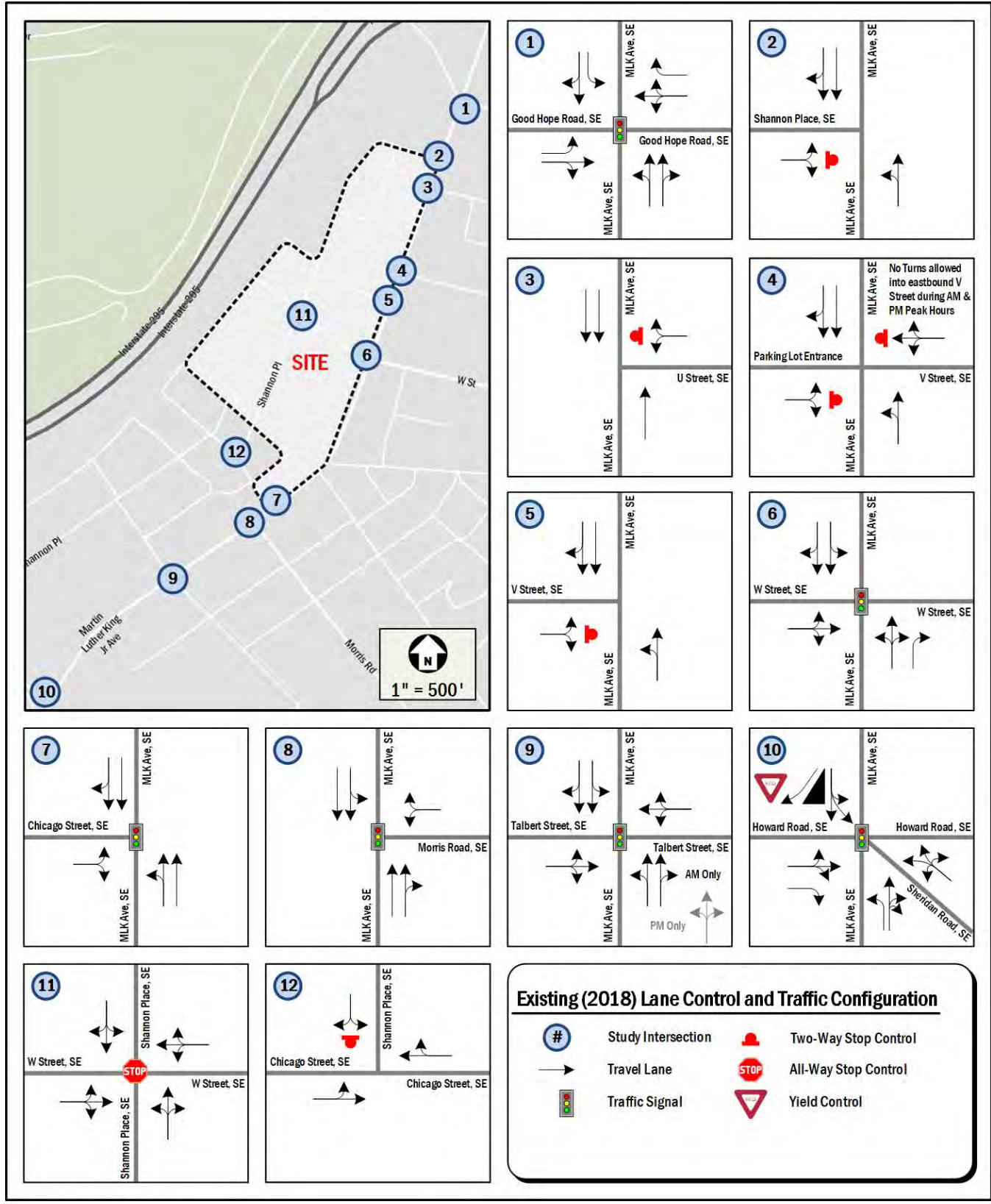


Figure 12: Existing Lane Configuration and Traffic Control

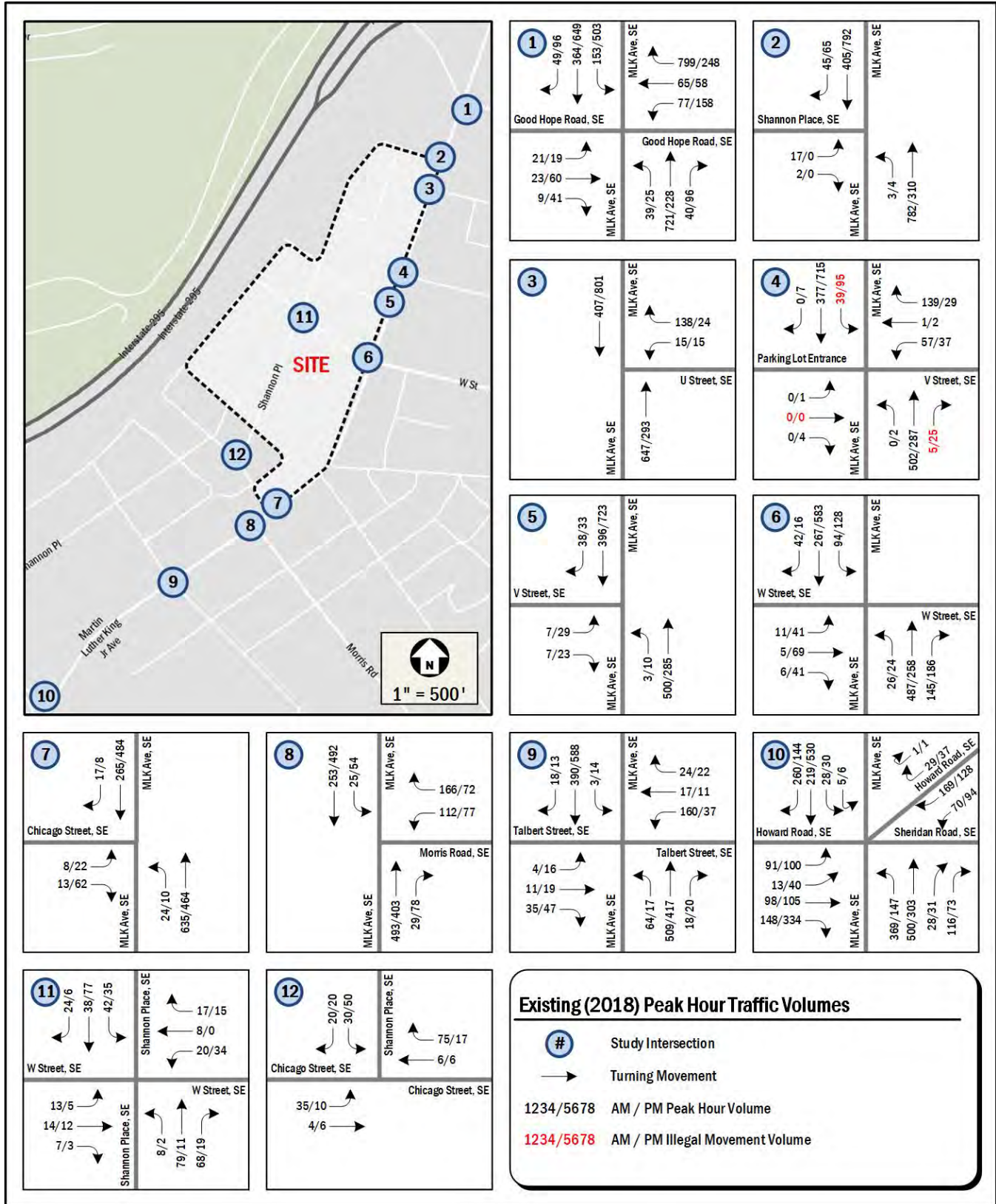


Figure 13: Existing (2018) Peak Hour Traffic Volumes

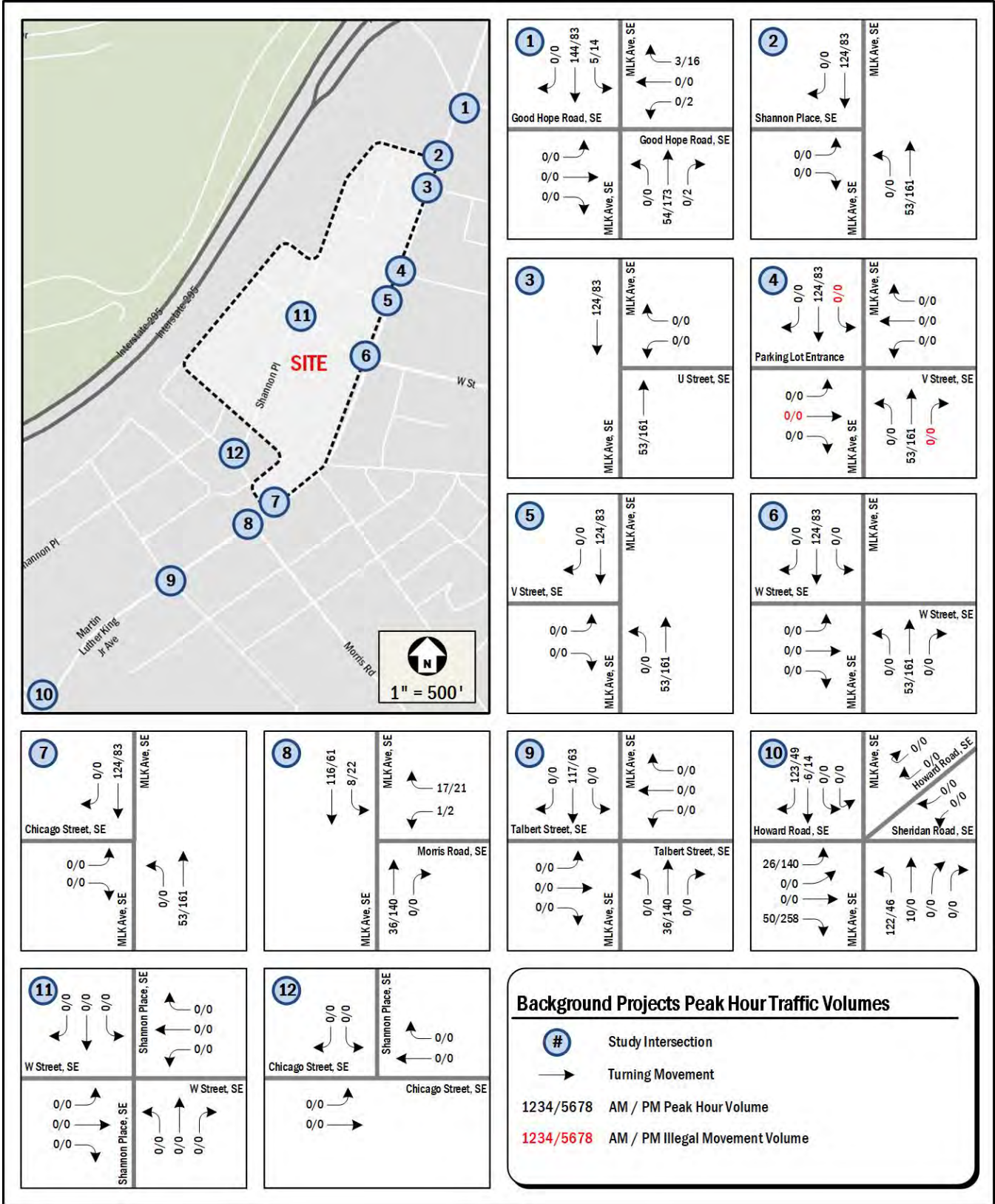


Figure 14: Background Projects Peak Hour Traffic Volumes

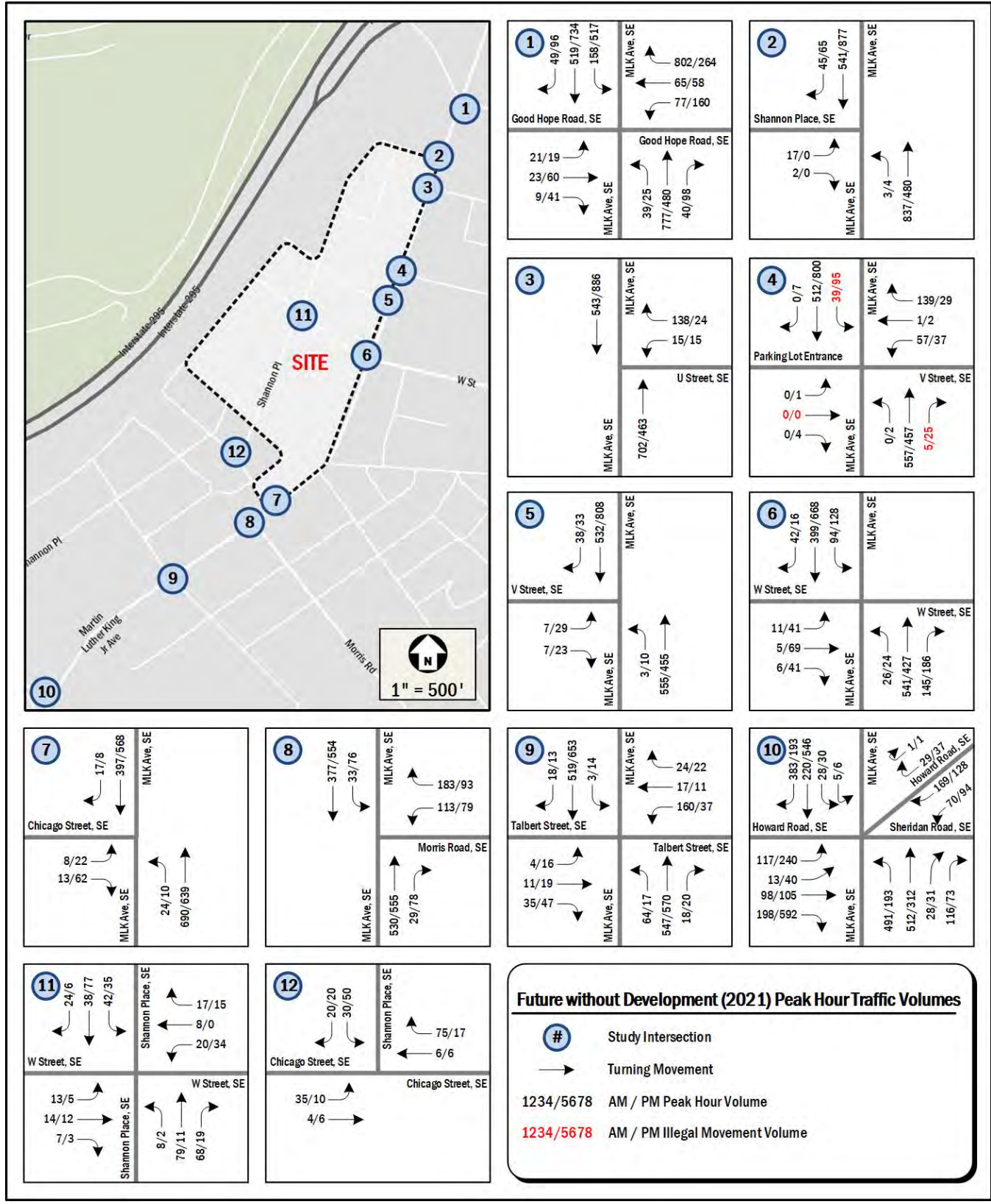


Figure 15: Future without Development (2021) Peak Hour Traffic Volumes

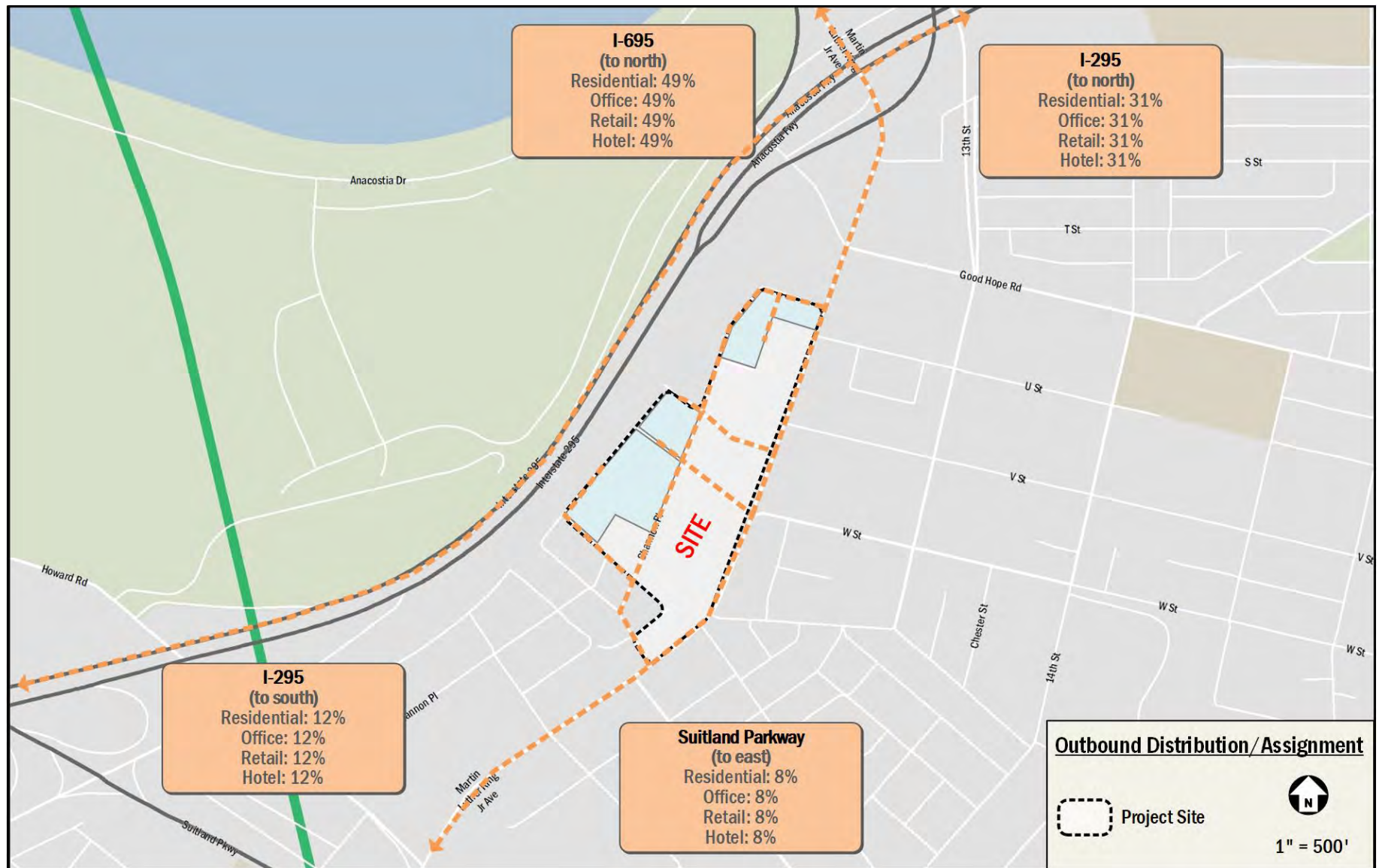


Figure 16: Outbound Trip Distribution and Routing

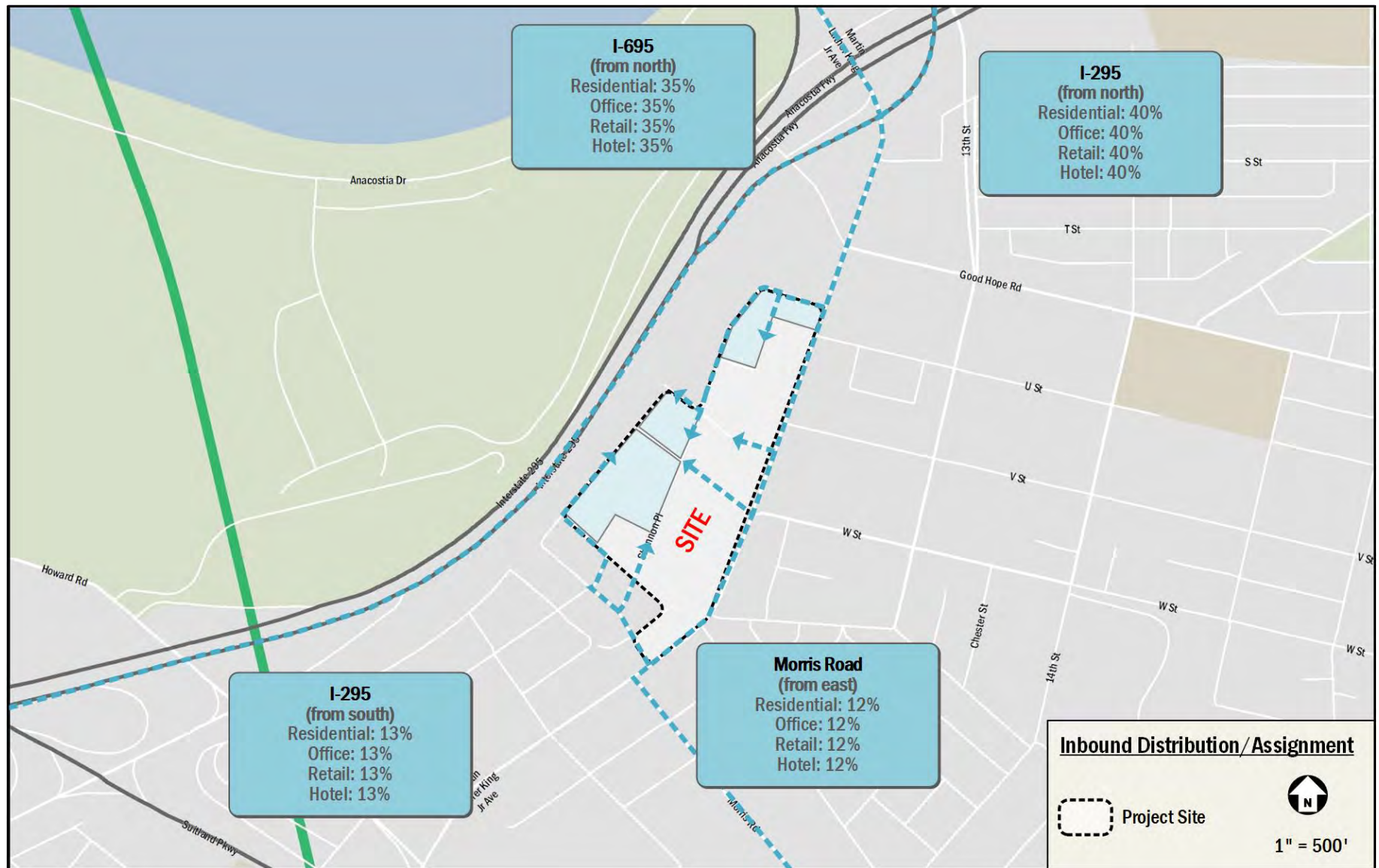


Figure 17: Inbound Trip Distribution and Routing

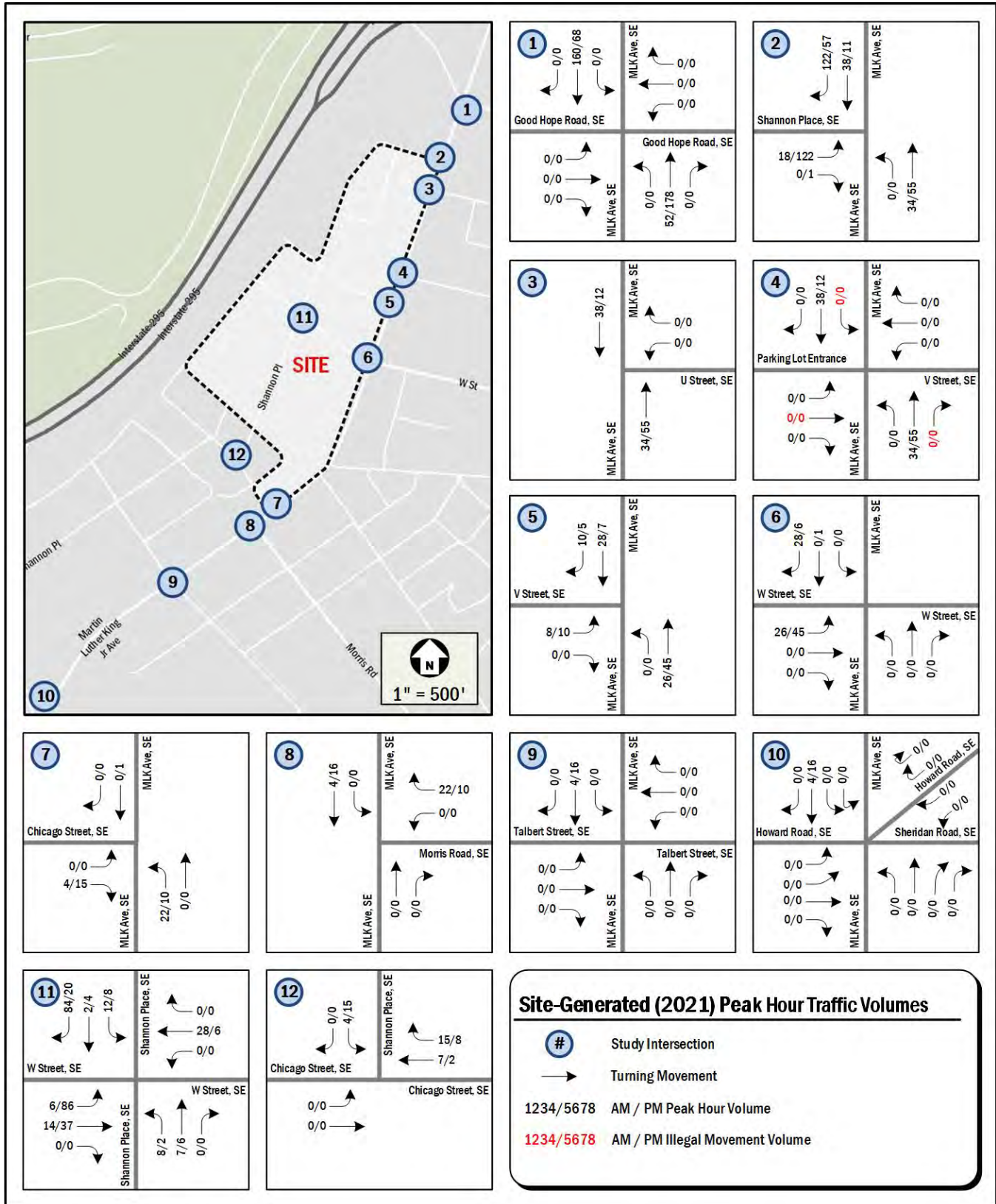


Figure 18: Site-Generated Peak Hour Traffic Volumes

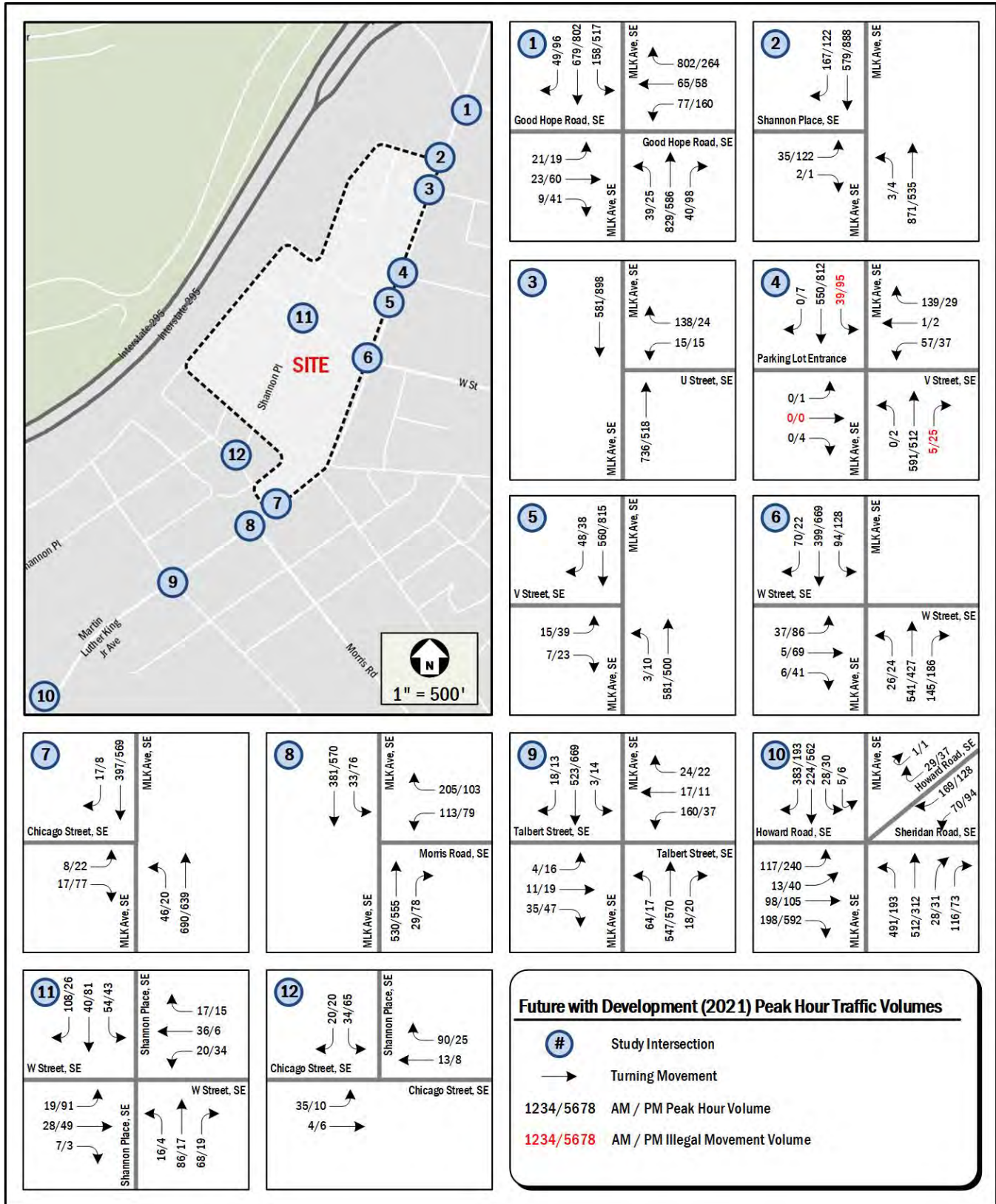


Figure 19: Future with Development (2021) Peak Hour Traffic Volumes



Table 9: LOS Results

Intersection	Approach	Existing Conditions (2018)				Future Without Development Conditions (2021)				Future With Development Conditions (2021)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
MLK Avenue & Good Hope Road	Overall	56.2	E	35.0	C	55.3	E	36.7	D	54.8	D	46.8	D
	Eastbound	31.4	C	36.7	D	31.4	C	36.3	D	31.4	C	36.3	D
	Westbound	93.6	F	40.9	D	94.0	F	40.6	D	94.0	F	40.6	D
	Northbound	19.1	B	37.5	D	21.1	C	43.7	D	23.4	C	77.3	E
	Southbound	42.4	D	31.8	C	41.7	D	32.4	C	42.2	D	33.4	C
MLK Avenue & Shannon Place	Eastbound	33.5	D	0.0	A	49.4	E	0.0	A	99.2	F	505.6	F
	Northbound	0.1	A	0.2	A	0.1	A	0.2	A	0.1	A	0.2	A
	Southbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
MLK Avenue & U Street	Westbound	23.7	C	14.2	B	28.2	D	18.3	C	31.7	D	20.1	C
	Northbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Southbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
MLK Avenue & V Street/Parking Lot Entrance	Eastbound	0.0	A	18.7	C	0.0	A	26.5	D	0.0	A	29.3	D
	Westbound	36.1	E	26.9	D	57.6	F	49.1	E	76.8	F	61.3	F
	Northbound	0.0	A	0.1	A	0.0	A	0.1	A	0.0	A	0.1	A
	Southbound	1.1	A	1.4	A	0.9	A	1.5	A	0.9	A	1.6	A
MLK Avenue & V Street (South)	Eastbound	18.3	C	24.2	C	23.9	C	40.1	E	34.5	D	59.2	F
	Northbound	0.1	A	0.5	A	0.1	A	0.4	A	0.1	A	0.4	A
	Southbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
MLK Avenue & W Street	Overall	6.0	A	11.2	B	6.1	A	11.0	B	7.0	A	13.9	B
	Eastbound	47.0	D	52.3	D	47.0	D	52.3	D	50.3	D	64.1	E
	Northbound	6.8	A	2.0	A	7.7	A	2.6	A	8.0	A	2.6	A
	Southbound	2.2	A	8.0	A	2.0	A	9.4	A	1.7	A	9.9	A
MLK Avenue & Chicago Street	Overall	10.3	B	10.6	B	13.3	B	9.3	A	13.1	B	9.6	A
	Eastbound	50.7	D	55.3	E	50.7	D	55.3	E	50.8	D	55.7	E
	Northbound	0.9	A	0.4	A	1.0	A	0.6	A	1.3	A	0.6	A
MLK Avenue & Morris Road	Southbound	30.9	C	12.0	B	34.4	C	11.7	B	33.4	C	11.2	B
	Overall	23.0	C	13.7	B	24.1	C	17.7	B	28.8	C	19.8	B
	Westbound	66.2	E	79.6	E	74.7	E	101.7	F	90.0	F	114.5	F
	Northbound	10.5	B	6.3	A	11.4	B	9.4	A	11.4	B	9.4	A
MLK Avenue & Talbert Street	Southbound	1.8	A	1.5	A	3.5	A	2.3	A	3.7	A	2.3	A
	Overall	30.9	C	15.9	B	28.0	C	15.5	B	28.0	C	15.4	B
	Eastbound	43.6	D	41.1	D	43.6	D	41.1	D	43.6	D	41.1	D
	Westbound	125.9	F	42.4	D	125.9	F	42.4	D	125.9	F	42.4	D
MLK Avenue & Howard Road/Sheridan Road	Northbound	13.2	B	17.1	B	13.2	B	17.7	B	13.2	B	17.7	B
	Southbound	7.8	A	8.0	A	7.0	A	7.2	A	7.2	A	7.1	A
	Overall	65.4	E	88.3	F	107.4	F	193.5	F	107.8	F	193.0	F
	Eastbound	107.7	F	144.5	F	133.1	F	373.2	F	133.1	F	373.6	F
Shannon Place & W Street	Northwestbound	131.9	F	99.3	F	131.9	F	99.3	F	131.9	F	99.3	F
	Northbound	47.4	D	43.7	D	106.1	F	78.5	E	106.1	F	78.5	E
	Southbound	40.2	D	68.6	E	84.9	F	66.1	E	86.5	F	66.4	E
Chicago Street & Shannon Place	Eastbound	7.8	A	7.5	A	7.8	A	7.5	A	8.5	A	9.1	A
	Westbound	7.8	A	7.6	A	7.8	A	7.6	A	8.6	A	8.1	A
	Northbound	8.0	A	7.1	A	8.0	A	7.1	A	8.7	A	7.7	A
	Southbound	8.0	A	8.0	A	8.0	A	8.0	A	9.0	A	8.8	A



Table 10: AM Queuing Results (in Feet)

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2018)		Future without Development Conditions (2021)		Future with Development Conditions (2021)	
			AM Peak Hour		AM Peak Hour		AM Peak Hour	
			50th %	95th %	50th %	95th %	50th %	95th %
MLK Avenue & Good Hope Road	Eastbound Left	60	15	#48	15	#48	15	#48
	Eastbound TR	865	14	37	14	37	14	37
	Westbound LTR	360	~544	#733	~545	#735	~545	#735
	Westbound Right	360	346	#516	349	#523	349	#523
	Northbound LTR	150	133	198	143	252	164	317
	Southbound Left	370	128	#267	132	#278	132	#278
	Southbound TR	380	179	256	284	398	427	601
MLK Avenue & Shannon Place	Eastbound LR	650	--	13	--	19	--	60
	Northbound LT	50	--	0	--	0	--	0
	Southbound TR	150	--	0	--	0	--	0
MLK Avenue & U Street	Westbound LR	420	--	64	--	77	--	86
	Northbound Thru	250	--	0	--	0	--	0
	Southbound Thru	50	--	0	--	0	--	0
MLK Avenue & V Street/Parking Lot Entrance	Eastbound LTR	175	--	0	--	0	--	0
	Westbound LTR	460	--	121	--	168	--	199
	Northbound LT	50	--	0	--	0	--	0
	Southbound TR	250	--	4	--	4	--	4
MLK Avenue & V Street (South)	Eastbound LR	215	--	4	--	6	--	15
	Northbound LT	150	--	0	--	0	--	0
	Southbound TR	50	--	0	--	0	--	0
MLK Avenue & W Street	Eastbound LTR	240	13	38	13	38	37	74
	Northbound LTR	310	235	297	272	356	283	368
	Northbound Right	310	30	48	31	49	32	53
	Southbound LTR	160	20	m26	23	m28	18	m24
MLK Avenue & Chicago Street	Eastbound LR	150	6	32	6	32	7	34
	Northbound LT	20	3	12	3	m12	3	m12
	Southbound TR	150	92	129	153	196	157	203
MLK Avenue & Morris Road	Westbound LR	260	244	#367	264	#403	291	#447
	Northbound TR	280	73	m84	84	m107	84	m107
	Southbound LT	20	7	15	34	46	37	49
MLK Avenue & Talbert Street	Eastbound LTR	270	12	47	12	47	12	47
	Westbound LTR	305	~189	#340	~189	#340	~189	#340
	Northbound LTR	570	177	m215	186	m216	186	m216
	Southbound LTR	280	126	m125	123	m118	130	m116
MLK Avenue & Howard Road/Sheridan Road	Eastbound LTR	195	~224	#398	~277	#461	~277	#461
	Eastbound Right (to MLK)	190	10	35	25	61	26	62
	Northbound Left	110	~309	#512	~525	#739	~525	#739
	Northbound TR	770	159	207	164	212	164	212
	Southbound LT	570	74	m104	86	m118	89	m121
	S'Bound Right (to Howard)	570	50	m79	~141	m#327	~151	m#329
	Northwestbound LTR	800	~132	#308	~132	#308	~132	#308
Shannon Place & W Street	Eastbound LTR	850	--	--	--	--	--	--
	Westbound LTR	240	--	--	--	--	--	--
	Northbound LTR	550	--	--	--	--	--	--
	Southbound LTR	145	--	--	--	--	--	--
Chicago Street & Shannon Place	Eastbound LT	70	--	4	--	4	--	4
	Westbound TR	900	--	0	--	0	--	0
	Southbound LR	340	--	9	--	9	--	11

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



Table 11: PM Queuing Results (in Feet)

Intersection	Lane Group	Storage Length (ft)	Existing Conditions (2018)		Future without Development Conditions (2021)		Future with Development Conditions (2021)	
			PM Peak Hour		PM Peak Hour		PM Peak Hour	
			50th %	95th %	50th %	95th %	50th %	95th %
MLK Avenue & Good Hope Road	Eastbound Left	60	13	32	13	32	13	32
	Eastbound TR	865	55	93	55	93	55	93
	Westbound LTR	360	190	281	195	#294	195	#294
	Westbound Right	360	70	110	74	115	74	115
	Northbound LTR	150	136	189	240	306	365	#485
	Southbound Left	370	372	#631	391	#657	391	#657
	Southbound TR	380	337	550	421	679	492	#827
MLK Avenue & Shannon Place	Eastbound LR	650	--	0	--	0	--	314
	Northbound LT	50	--	1	--	1	--	1
	Southbound TR	150	--	0	--	0	--	0
MLK Avenue & U Street	Westbound LR	420	--	8	--	12	--	14
	Northbound Thru	250	--	0	--	0	--	0
	Southbound Thru	50	--	0	--	0	--	0
MLK Avenue & V Street/Parking Lot Entrance	Eastbound LTR	175	--	2	--	3	--	3
	Westbound LTR	460	--	34	--	61	--	73
	Northbound LT	50	--	0	--	0	--	0
	Southbound TR	250	--	7	--	9	--	9
MLK Avenue & V Street (South)	Eastbound LR	215	--	23	--	39	--	64
	Northbound LT	150	--	1	--	1	--	1
	Southbound TR	50	--	0	--	0	--	0
MLK Avenue & W Street	Eastbound LTR	240	113	183	113	183	159	#266
	Northbound LTR	310	14	34	20	58	20	63
	Northbound Right	310	8	23	6	21	5	22
	Southbound LTR	160	98	193	143	245	158	251
MLK Avenue & Chicago Street	Eastbound LR	150	19	67	19	67	19	70
	Northbound LT	20	0	m5	0	m8	0	m7
	Southbound TR	150	104	98	114	107	106	m105
MLK Avenue & Morris Road	Westbound LR	260	132	#237	154	#287	164	#307
	Northbound TR	280	54	66	107	151	107	151
	Southbound LT	20	13	9	26	20	22	18
MLK Avenue & Talbert Street	Eastbound LTR	270	29	71	29	71	29	71
	Westbound LTR	305	43	85	43	85	43	85
	Northbound LTR	570	278	m312	348	m289	348	m290
	Southbound LTR	280	150	156	155	m160	154	m158
MLK Avenue & Howard Road/Sheridan Road	Eastbound LTR	195	~381	#538	~787	#954	~787	#954
	Eastbound Right (to MLK)	190	130	201	363	#577	366	#581
	Northbound Left	110	124	#258	~200	#355	~200	#355
	Northbound TR	770	98	135	101	138	101	138
	Southbound LT	570	228	292	238	302	246	311
	S'Bound Right (to Howard)	570	40	88	74	134	74	134
	Northwestbound LTR	800	119	#296	119	#296	119	#296
Shannon Place & W Street	Eastbound LTR	850	--	--	--	--	--	--
	Westbound LTR	240	--	--	--	--	--	--
	Northbound LTR	550	--	--	--	--	--	--
	Southbound LTR	145	--	--	--	--	--	--
Chicago Street & Shannon Place	Eastbound LT	70	--	1	--	1	--	1
	Westbound TR	900	--	0	--	0	--	0
	Southbound LR	340	--	11	--	11	--	15

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



Table 12: LOS Results, with Mitigations

Intersection	Approach	Future Without Development Conditions (2021)				Future With Development Conditions (2021)				Future With Development Conditions (2021), with Mitigations			
		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
MLK Avenue & Good Hope Road	Overall	55.3	E	36.7	D	54.8	D	46.8	D	--	--	41.5	D
	Eastbound	31.4	C	36.3	D	31.4	C	36.3	D	--	--	37.2	D
	Westbound	94.0	F	40.6	D	94.0	F	40.6	D	--	--	45.7	D
	Northbound	21.1	C	43.7	D	23.4	C	77.3	E	--	--	47.3	D
	Southbound	41.7	D	32.4	C	42.2	D	33.4	C	--	--	37.3	D
MLK Avenue & Shannon Place	Eastbound	49.4	E	0.0	A	99.2	F	505.6	F	47.8	D	53.0	D
	Northbound	0.1	A	0.2	A	0.1	A	0.2	A	3.4	A	4.3	A
	Southbound	0.0	A	0.0	A	0.0	A	0.0	A	0.9	A	3.1	A
MLK Avenue & V Street/Parking Lot Entrance	Eastbound	0.0	A	26.5	D	0.0	A	29.3	D	0.0	A	18.8	C
	Westbound	57.6	F	49.1	E	76.8	F	61.3	F	64.2	F	28.3	D
	Northbound	0.0	A	0.1	A	0.0	A	0.1	A	0.0	A	0.1	A
	Southbound	0.9	A	1.5	A	0.9	A	1.6	A	0.9	A	1.6	A
MLK Avenue & V Street (South)	Eastbound	23.9	C	40.1	E	34.5	D	59.2	F	--	--	35.6	E
	Northbound	0.1	A	0.4	A	0.1	A	0.4	A	--	--	0.4	A
	Southbound	0.0	A	0.0	A	0.0	A	0.0	A	--	--	0.0	A
MLK Avenue & W Street	Overall	6.1	A	11.0	B	7.0	A	13.9	B	--	--	10.9	B
	Eastbound	47.0	D	52.3	D	50.3	D	64.1	E	--	--	43.6	D
	Northbound	7.7	A	2.6	A	8.0	A	2.6	A	--	--	3.3	A
	Southbound	2.0	A	9.4	A	1.7	A	9.9	A	--	--	8.4	A
MLK Avenue & Morris Road	Overall	24.1	C	17.7	B	28.8	C	19.8	B	25.5	C	17.8	B
	Westbound	74.7	E	101.7	F	90.0	F	114.5	F	73.1	E	98.2	F
	Northbound	11.4	B	9.4	A	11.4	B	9.4	A	13.2	B	9.7	A
	Southbound	3.5	A	2.3	A	3.7	A	2.2	A	4.2	A	2.3	A



Figure 4C-3. Warrant 3, Peak Hour, MLK Ave & Shannon Place

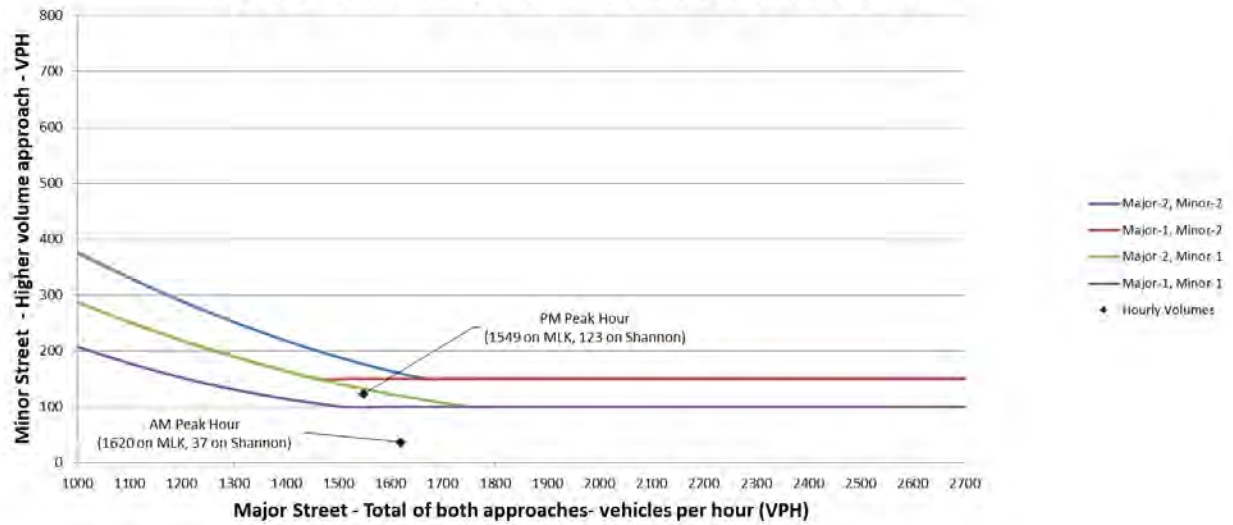


Figure 20: Signal Warrant at Martin Luther King Jr. Avenue/Shannon Place Intersection

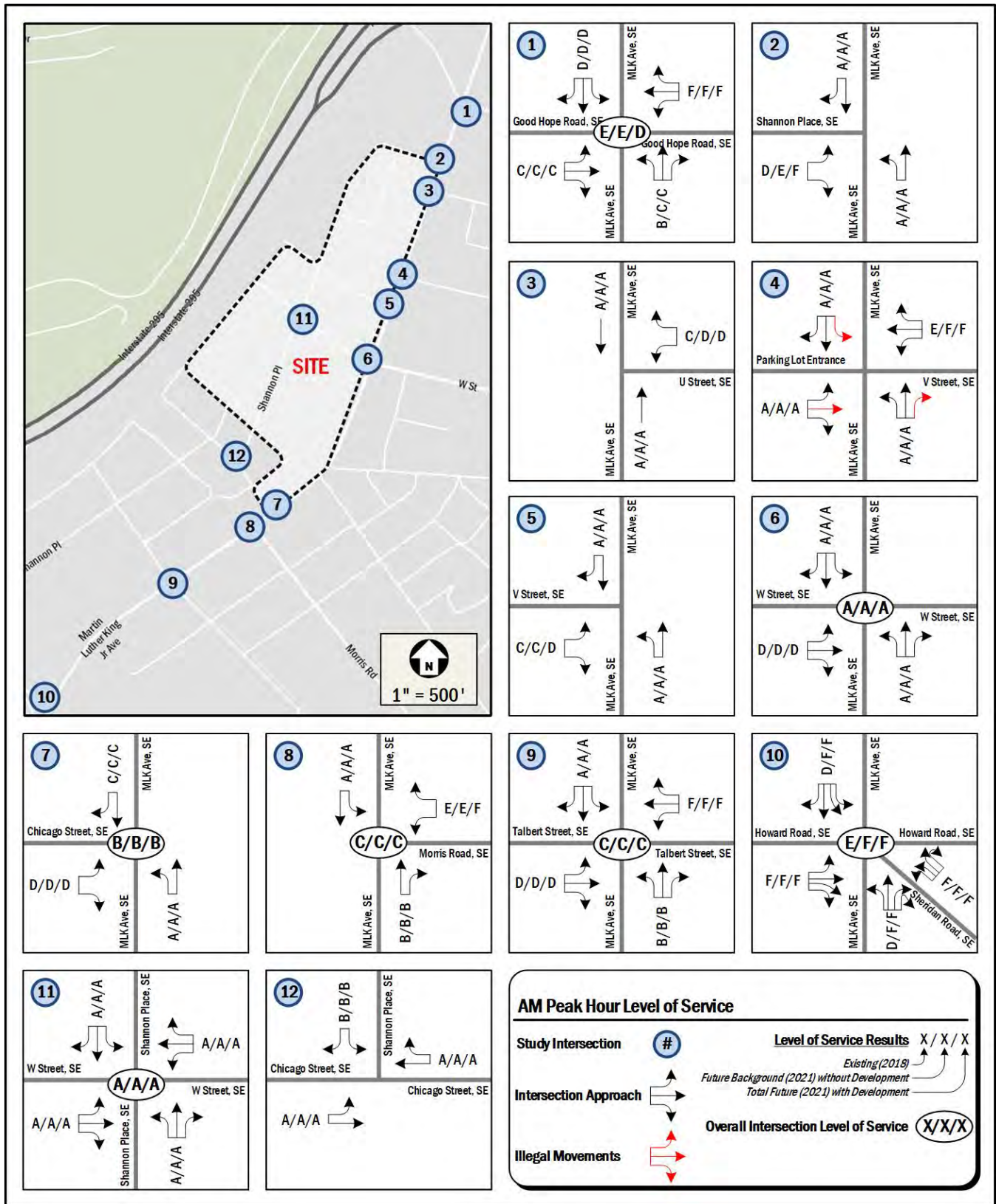


Figure 21: AM Peak Hour Level of Service Results

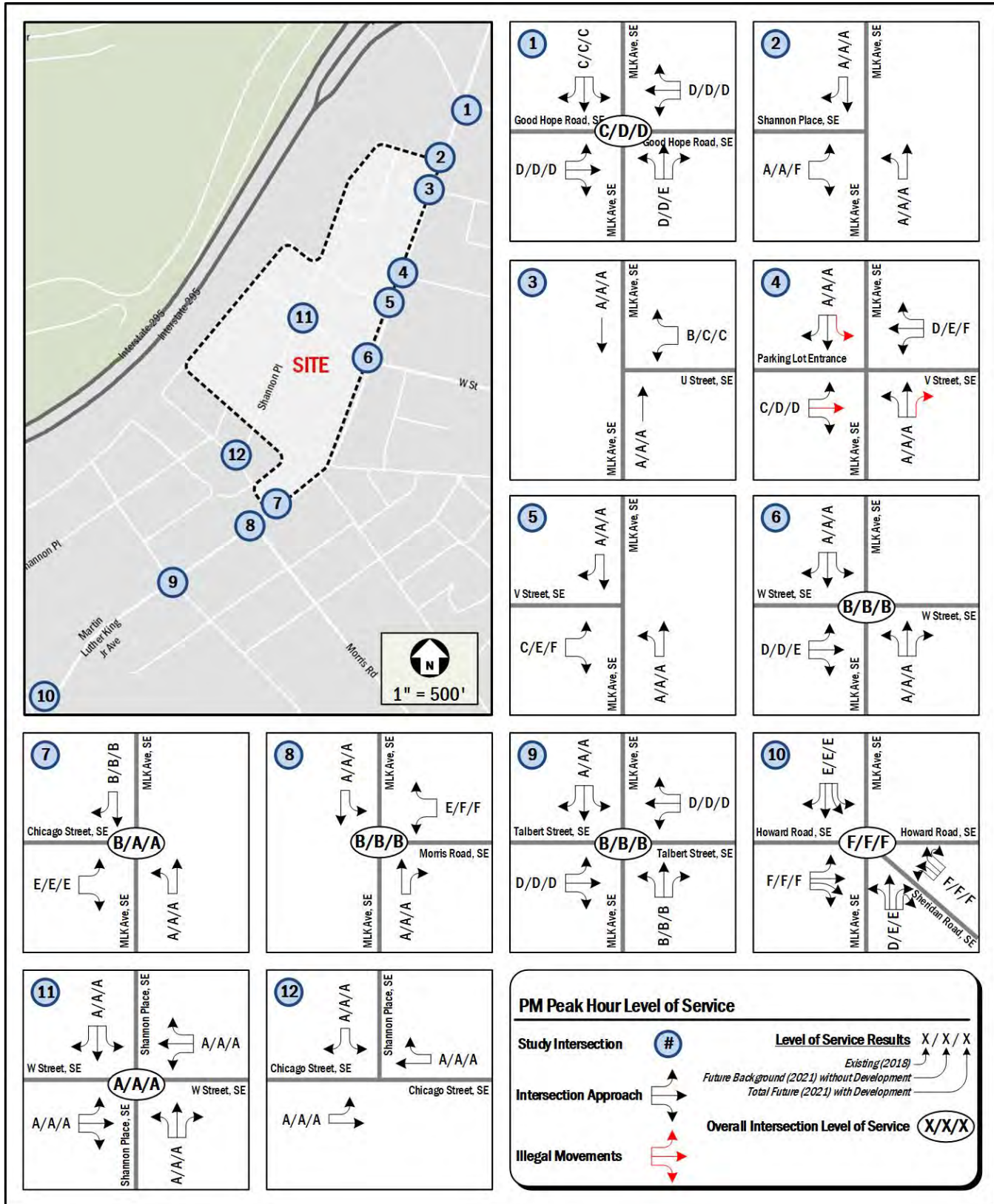


Figure 22: PM Peak Hour Level of Service Results



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 proposed development.

The following conclusions are reached within this chapter:

- The proposed development has excellent access to transit.
- The proposed development is located 0.3 miles from the Anacostia Metrorail station.
- The proposed development is in the vicinity of 13 Metrobus and DC Circulator routes that travel along multiple primary corridors.
- The proposed 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 Site is well served by Metrobus, which provides direct 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. Figure 23 identifies the major transit routes, stations, and stops in the study area.

The Site is located approximately 0.3 miles from the Anacostia Metrorail station. The station is serviced by the Green Line, which provides direct connections to areas in the District and Prince George’s County, Maryland. The Green Line travels south from Greenbelt, travels through Downtown DC, and continues across the Anacostia River to Southeast DC, and terminates at Branch Avenue in Suitland. Green Line trains run every eight (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, approximately every 12 minutes during the weekday midday hours from 9:30 AM to 3:00 PM, approximately every 12 minutes during the weekday evening hours from 7:00 PM to 9:30 PM, and every 12 to 20 minutes during the weekday off-peak periods and on weekends. At Gallery-Place Chinatown, a transfer can be made to the Red Line, which provides direct service to Union Station where

transfers can be made to MARC, VRE, DC Streetcar, and Amtrak services.

The Site is directly serviced by seven (7) Metrobus routes, including five (5) local routes, one (1) MetroExtra route, and one (1) DC Circulator route, providing the Site with additional connectivity to nearby Metrorail stations, where transfers can be made to other bus routes and the Metrorail lines. An additional six (6) routes are within a five-minute walk of the Site. The A9 MetroExtra route provides direct commuter service from the Site to Metrorail stations in Downtown, DC. Together, all of these routes provide connectivity to the downtown core and other areas of the District, Maryland, and Virginia. Table 13 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 23 shows a detailed inventory of the existing Metrobus stops within a quarter-mile walkshed of the Site. Each stop is evaluated based on the guidelines set forth by WMATA’s *Guidelines for the Design and Placement of Transit Stops*, as shown in Table 14. A detailed breakdown of individual bus stop amenities and criteria for standards is included in the Technical Attachments.

PLANNED 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

As part of the 2-year outline plan, the MoveDC report outlines the need for a high frequency local and regional bus corridor along Martin Luther King Jr. Avenue from the 11th Street Bridges to the Anacostia Metrorail Station. These recommendations would create additional multi-modal capacity and connectivity to the Site.



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, 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 Anacostia Metrorail 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, none of the Metrobus routes that travel near the Site operate at a load factor that is above capacity during any part of the day.

The *DC Circulator 2017 Transit Development Plan Update*, published by DDOT in December 2017, reviewed performance and customer data of existing DC Circulator routes. The findings stated that the Potomac Avenue Metro-Skyland route, which passes by the Site along Martin Luther King Jr. Avenue, could be optimized in terms of route and frequency in order to serve local customers more efficiently. Effective June 24, 2018, The Potomac Avenue-Skyland route will be renamed the Congress Heights-Union Station route. This new route will no longer terminate at either Potomac Avenue Metrorail station or Skyland, but rather travel from the Congress Heights Metrorail station to Union Station via Barracks Row. The new service will run weekdays from 6:00 AM-9:00 AM and on weekends from 7:00 AM-9:00 PM at all times of the year. The new route will allow residents, employees, hotel guests, and retail patrons for the Reunion Square Site a one-seat ride to Union Station. Additional service will be provided on the 92 route to provide service on Good Hope Road.

The future alignment of the Congress Heights-Union Station Circulator route is presented in Figure 24.

SITE IMPACTS

Transit Trip Generation

The proposed development is projected to generate 221 transit trips (167 inbound, 54 outbound) during the morning peak hour and 275 transit trips (85 inbound, 190 outbound) during the afternoon peak hour.

US Census data was used to determine the distribution of those taking Metrorail and those taking Metrobus. The proposed development lies in TAZ 20352 and data shows that approximately 51 percent of transit riders used Metrobus and the remainder use Metrorail. That said, approximately 108 people will use Metrorail and 113 will use Metrobus during the morning peak hour and approximately 135 people will use Metrorail and 140 will use Metrobus during the afternoon peak hour.



Table 13: Metro Bus Route Information

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
90	U Street-Garfield Line	Weekdays: 5:28AM – 4:35 AM Weekends: 5:07AM – 4:30 AM	15-30 minutes	<0.1 miles, 1 minute
92	U Street-Garfield Line	Weekdays: 5:05AM – 3:11 AM Weekends: 4:02AM – 3:00 AM	15-30 minutes	0.3 miles, 5 minutes
A9	Martin Luther King Jr. Ave. Limited Line	Weekdays: 6:12AM – 7:22PM	10-30 minutes	<0.1 miles, 1 minute
A33	Minnesota Ave-Anacostia Line	Weekdays: 3:36 PM	15 minutes	<0.1 miles, 1 minute
B2	Bladensburg Road-Anacostia Line	Weekdays: 4:54AM – 2:27 AM Weekends: 4:53AM – 1:45 AM	10-30 minutes	<0.1 miles, 1 minute
P6	Anacostia-Eckington Line	Weekdays: 4:30AM – 3:35 AM Weekends: 4:20AM – 2:20 AM	10-30 minutes	<0.1 miles, 1 minute
V2	Capitol Heights-Minnesota Avenue Line	Weekdays: 6:17AM – 2:35 AM Weekends: 6:28AM – 10:22 PM	15-30 minutes	<0.1 miles, 1 minute
V5	Fairfax Village-L'Enfant Plaza Line	Weekdays: 6:28AM – 7:07 PM	20-30 minutes	0.3 miles, 5 minutes
W2	United Medical Center-Anacostia Line	Weekdays: 5:42AM – 1:32 AM Weekends: 6:06AM – 1:18 AM	20-35 minutes	0.2 miles, 4 minutes
W3	United Medical Center-Anacostia Line	Weekdays: 9:43AM – 3:19 PM Weekends: 9:21AM – 2:28 PM	30 minutes	0.2 miles, 4 minutes
W6	Garfield-Anacostia Loop Line	Weekdays: 6:06AM – 2:10 AM Weekends: 6:00AM – 2:10 AM	15-40 minutes	0.2 miles, 4 minutes
W8	Garfield-Anacostia Loop Line	Weekdays: 5:52AM – 1:55 AM Weekends: 5:20AM – 1:55 AM	15-40 minutes	0.2 miles, 4 minutes
DC Circulator (Existing)	Potomac Ave Metro-Skyland via Barracks Row Route	Weekdays: 6:00AM – 9:00 PM Weekends: 7:00AM – 9:00 PM	10 minutes	<0.1 miles, 1 minute
<i>DC Circulator (Future, as of June 24, 2018)</i>	<i>Congress Heights-Union Station Route</i>	<i>Weekdays: 6:00AM – 9:00 PM Weekends: 7:00AM – 9:00 PM</i>	<i>10 minutes</i>	<i><0.1 miles, 1 minute</i>



Table 14: Transit Stop Requirements

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

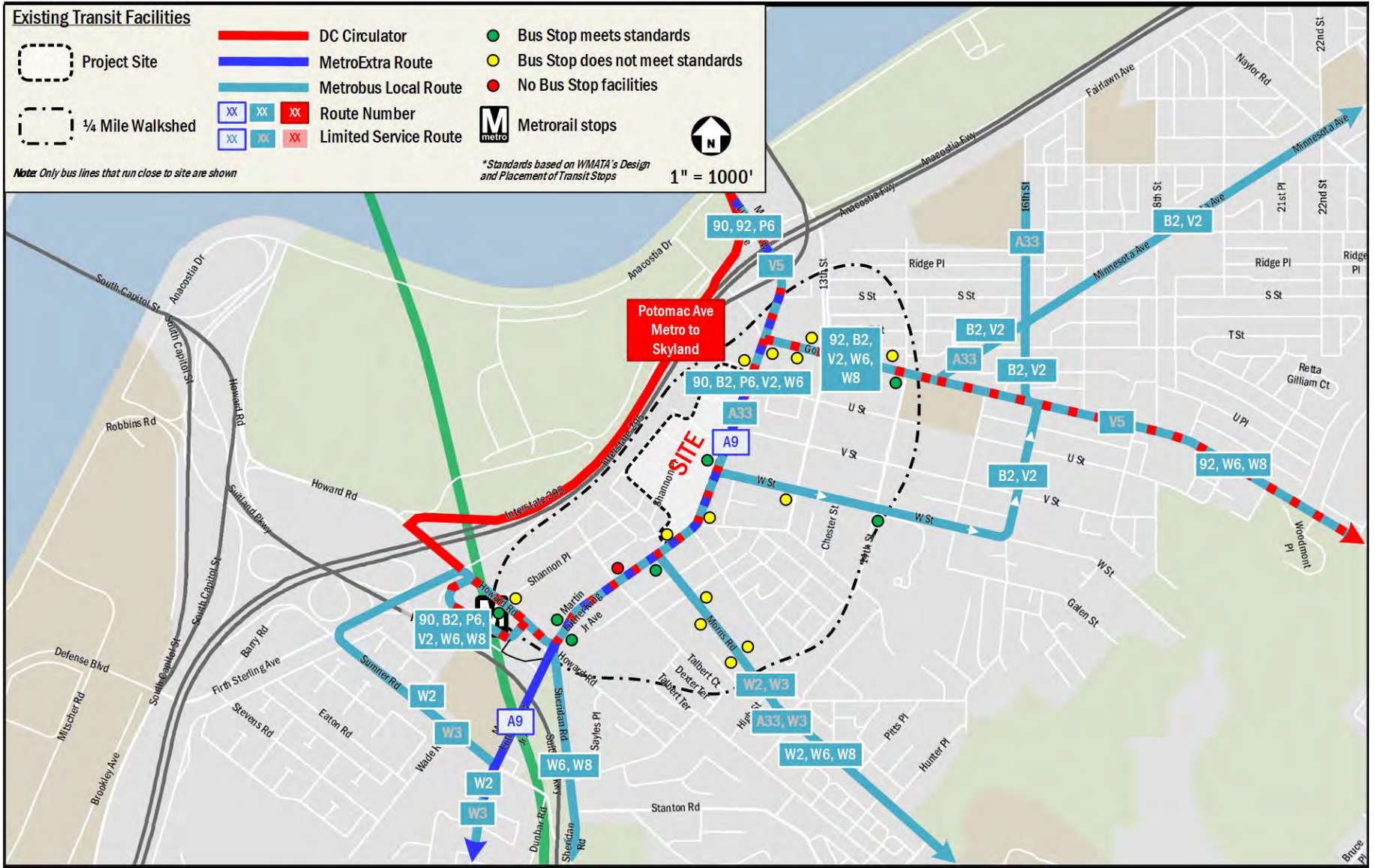


Figure 23: Existing Transit Facilities

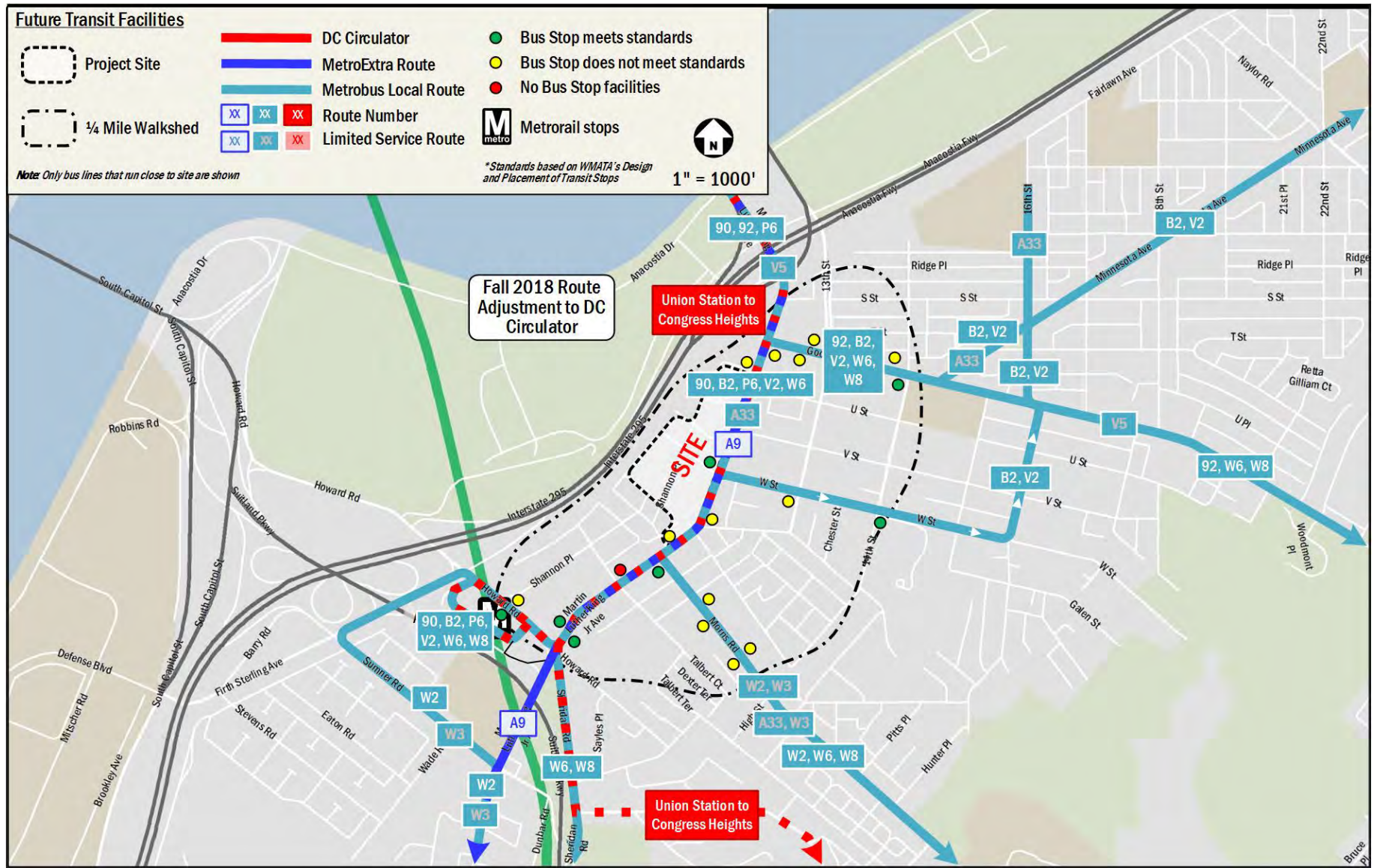


Figure 24: Future Transit Facilities



PEDESTRIAN FACILITIES

This section summarizes the existing and future pedestrian development access 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 to the west and north.
- The proposed development is expected to generate a manageable amount of pedestrian trips; however, the pedestrian trips generated walking to and from transit stops will be more substantial, particularly to several nearby bus stops.
- Improvements to the pedestrian infrastructure surrounding the proposed development will improve pedestrian comfort and connectivity.

PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the overall Reunion Square Site were evaluated as well as routes to nearby transit facilities and prominent retail and neighborhood destinations, including the Anacostia Metrorail Station and businesses along Martin Luther King Jr. Avenue. The eastern perimeter of the Site is easily accessible to transit options such as bus stops along Martin Luther King Jr. Avenue. There are some areas of concern within the study area that negatively impact the quality of and attractiveness of the walking environment. These areas include construction on area roadways that reduce the quality of walking conditions, narrow or nonexistent sidewalks, and incomplete or insufficient crossings at busy intersections. Figure 25 shows suggested pedestrian pathways, walking time and distances, and barriers and areas of concern.

PEDESTRIAN INFRASTRUCTURE

Table 15: Sidewalk Requirements

Street Type	Min. Buffer Width	Min. Sidewalk Unobstructed Width	Total Min. Sidewalk Width
Low- to Moderate-Density Residential	4-6 ft	6 ft	10 ft
High-Density Residential	4-8 ft	8 ft	13 ft
Central DC and Commercial Areas	4-10 ft	10 ft	16 ft

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 few facilities meet DDOT standards, resulting in an adequate walking environment. Figure 26 shows a detailed inventory of the existing pedestrian infrastructure surrounding the Site. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by DDOT's *Design and Engineering Manual* in addition to ADA standards. Sidewalk widths and requirements for the District are shown below in Table 15.

Within the area shown, the majority of roadways east of Martin Luther King Jr. Avenue are residential, with retail areas along Martin Luther King Jr. Avenue and Good Hope Road. Although some of the sidewalks surrounding the Site (particularly along Martin Luther King Jr. Avenue, Talbert Street, Morris Road, and Maple View Place) do not meet DDOT standards, this is a consequence of insufficient sidewalk and buffer widths rather than sidewalks of poor quality. All areas of Railroad Avenue in the Site vicinity lack sidewalks. All primary pedestrian destinations are accessible via routes with sidewalks, some of which met DDOT standards.

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 25, under existing conditions crosswalks and curb ramps with detectable warnings are generally present within a 0.25 mile walk of the Site, with minor exceptions along Maple View Place and Good Hope Road.

Pedestrian Infrastructure Improvements

As a result of the development, pedestrian facilities around the perimeter of the proposed buildings will be improved to meet DDOT and ADA standards. This includes the removal of curb



cuts and reconstruction of frontage sidewalks along Shannon Place and W Street near Building 4 and along Martin Luther King Jr. Avenue and Shannon Place near Building 8 so that they will meet or exceed requirements. In addition, within the proposed development, crosswalks at all necessary site driveway locations, and curb ramps with detectable warnings will be installed. Additional design elements such as plantings, streetscaping, and a widening of W Street to accommodate wider sidewalks will result in further improvements compared to existing conditions.

Additionally, improvements made to the pedestrian streetscape as a result of the MLK Great Street project along Martin Luther King Jr. Avenue will further enhance pedestrian comfort in the vicinity of the proposed development.

The future pedestrian facilities included with the proposed development and improvements from other developments are shown in Figure 27.

SITE IMPACTS

Pedestrian Trip Generation

The proposed development is expected to generate 65 walking trips (48 inbound, 17 outbound) during the morning peak hour and 87 walking trips (30 inbound, 57 outbound) during the afternoon peak hour. The origins and destinations of these trips are likely to be:

- The residential homes of the proposed development residents or employees;
- Retail locations outside of the proposed development; and
- Neighborhood destinations such as schools, libraries, and parks in the vicinity of the proposed development.

In addition to these trips, the transit trips generated by the proposed development will also generate pedestrian demand between the development and the Anacostia Metrorail Station and bus stops within a five (5) minute walk. The pedestrian network will have the capacity to absorb the newly generated trips from the proposed development.

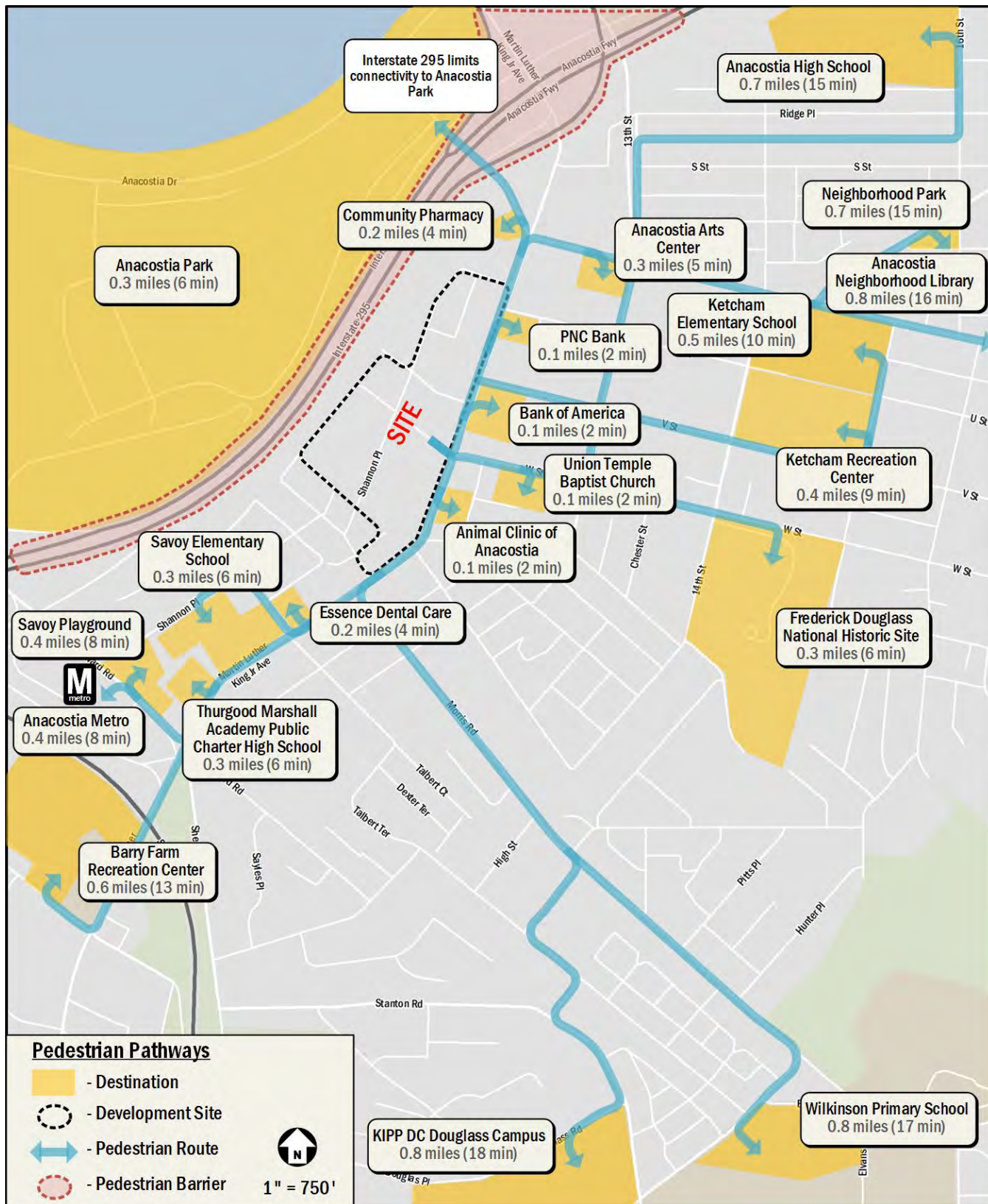


Figure 25: Pedestrian Pathways

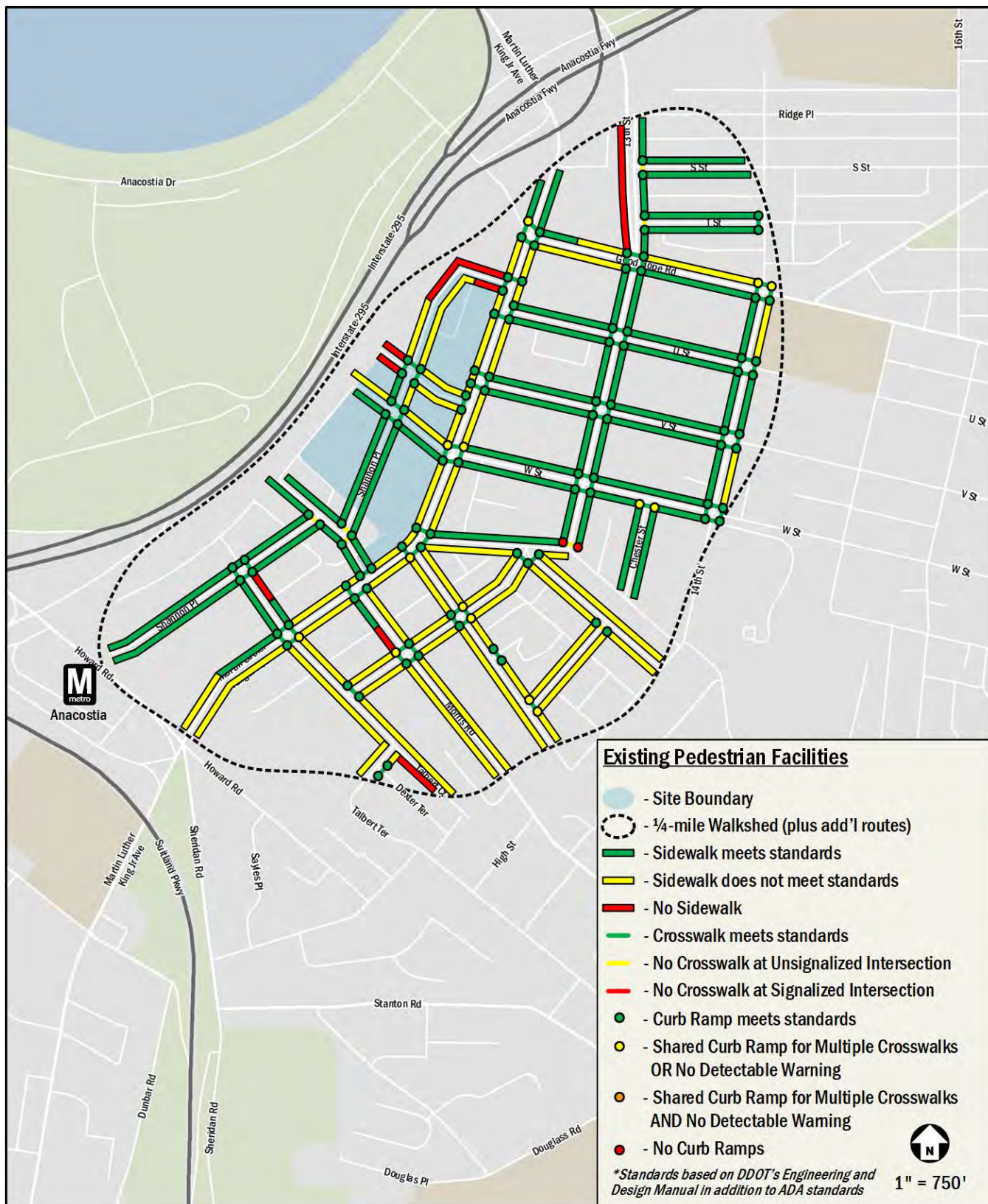


Figure 26: Existing Pedestrian Facilities

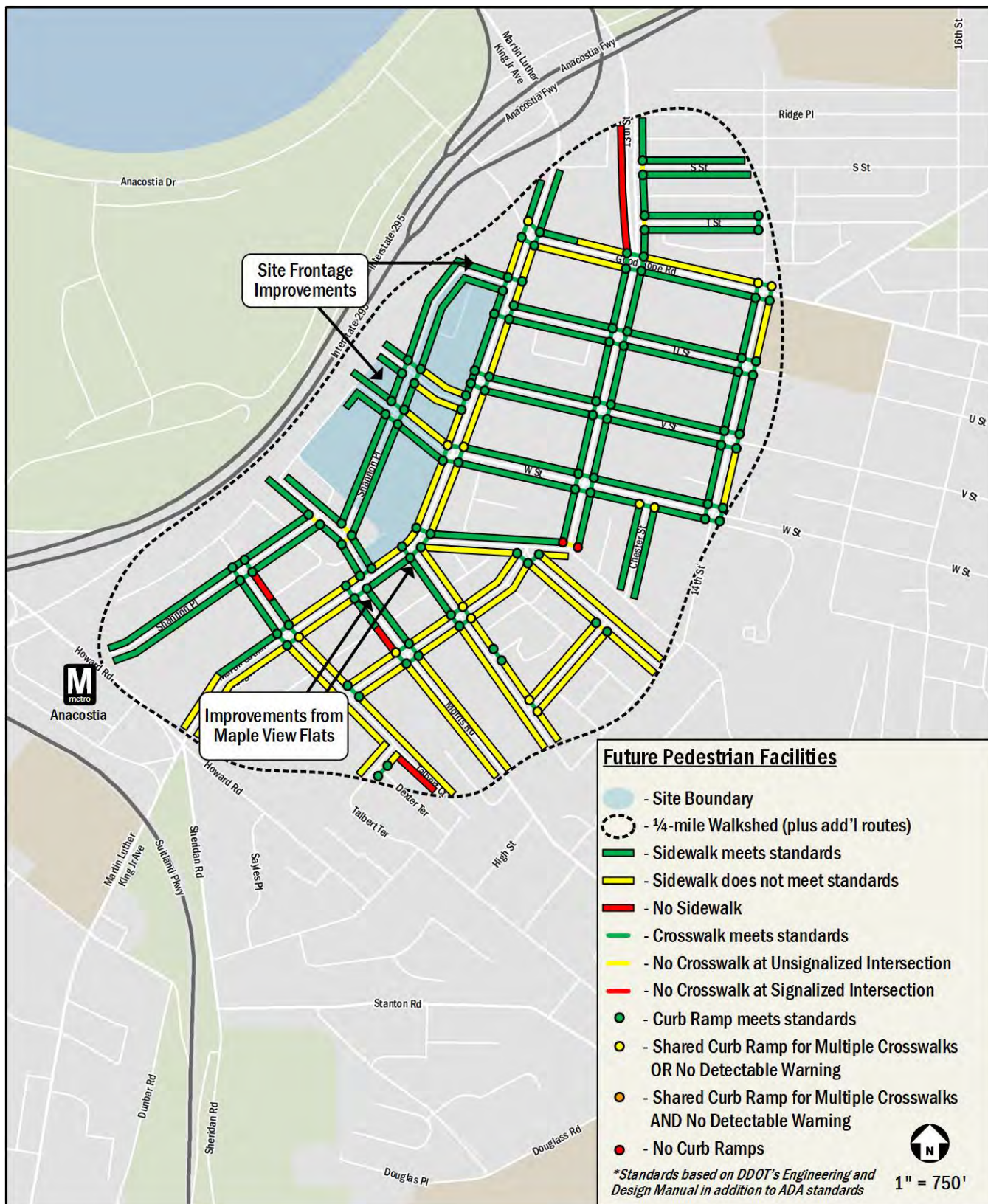


Figure 27: Future Pedestrian Facilities



BICYCLE FACILITIES

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

The following conclusions are reached within this chapter:

- The Site has access to nearby bicycle facilities on Martin Luther King Jr. Avenue.
- The proposed development is not expected to generate a significant number of bicycle trips; therefore, all site-generated bike trips can be accommodated on existing infrastructure.
- Future plans in the vicinity of the Site include the opening of the Shepherd Branch Trail, which will pass along the western frontage of the Site.
- The proposed development will include secure long-term bicycle parking, within each building of the proposed development.
- The proposed development will include short-term bicycle racks along the perimeter of the buildings.

EXISTING BICYCLE FACILITIES

The Site has north-south connectivity to existing on- and off-street bicycle facilities. Immediately east of the site lies a signed route along Martin Luther King Jr. Avenue. This route connects the Site with signed routes on Good Hope Road to the north and Howard Road/Sheridan Road to the south. Traveling on the Good Hope Road signed route connects users with the Anacostia Riverwalk Trail, which travels north-south on both banks of the Anacostia River and connects Anacostia with the National Mall Trails system.

In addition to personal bicycles, 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 4,400 bicycles provided. There is one (1) existing Capital Bikeshare stations with 11 available bicycle docks immediately east of the Site at Martin Luther King Jr. Avenue & Pleasant Street. Additional Bikeshare stations are located north of the Site along Good Hope Road and south of the Site near the Anacostia Metrorail Station.

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 proposed development.

PLANNED 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 is no Tier 1 additions in the vicinity of 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 (2) Tier 2 additions which will that will positively affect bicycle connectivity to and from the Site. A bicycle lane is planned along 13th Street from Good Hope Road to Pleasant Street, providing a north-south route parallel to Martin Luther King Jr. Avenue. The second addition is a 3.4 mile rail trail linking South Capitol Street to East Capitol Street. This rail trail has evolved into the Shepherd Branch Trail, which will be described in more detail in the following section.

- 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 analysis.

Shepherd Branch Trail

The Shepherd Branch is a former freight rail spur which has been inactive since 2001. The branch starts near the intersection of 33rd Street & C Street, SE from the main CSX freight line and parallels the Anacostia Freeway south to the Anacostia Metrorail station. The proposed rail trail would convert portions of the spur to be used by the public as an additional north-south bicycle route in Ward 8. The trail will pass by the western frontage of the Site, including by Buildings 4 and 5. Although no date has been set for completion of the trail, the design of the proposed development circulation will take into account future bicycle and pedestrian connections along W Street.

On-Site Bicycle Elements

Per 1958 zoning regulations, the number of bicycle spaces required for each land use is equivalent to at least five (5) percent of the number of auto parking spaces required. As a result, the proposed development is required to provide 27 long-term spaces for the office use, three (3) long-term spaces for the residential use, three (3) long-term spaces for the hotel use, and six (6) long-term spaces for the retail use, for a total of 39 long-term bicycle spaces.

The amount of long-term parking spaces required under 1958 zoning regulations does not meet practical demands and runs contrary to DDOT's goals of promoting non-auto modes of transportation. Additionally, short-term parking spaces are not required or regulated under 1958 regulations, which would underserve potential bicycle usage for retail patrons. Therefore, the proposed bicycle parking supply will follow current 2016 Zoning Regulations (ZR16). Under ZR16, the proposed development is required to provide 154 long-term spaces and 25 short-term spaces.

The proposed development will meet these current requirements by providing the required amount of bicycle spaces within each Building's long-term bicycle storage room. Short-term spaces will be placed along the perimeter of Buildings 4, 5, and 8, and will include inverted U-racks placed in high-visibility areas. The Applicant will work with DDOT to determine the exact location of bicycle racks in public space.

SITE IMPACTS

Bicycle Trip Generation

The proposed development is expected to generate five (5) bicycle trips (3 inbound, 2 outbound) during the morning peak hour and 11 bicycle trips (6 inbound, 5 outbound) during the afternoon peak hour. Despite the relatively low number of anticipated bicycle site-generated trips, bicycling will be an important mode getting to and from the proposed development, particularly with the planned Shepherd Branch Trail along the western perimeter of Buildings 4 and 5. With significant facilities located on-site and existing/proposed routes to and from the Site, the impacts from bicycling will be relatively less than other modes.

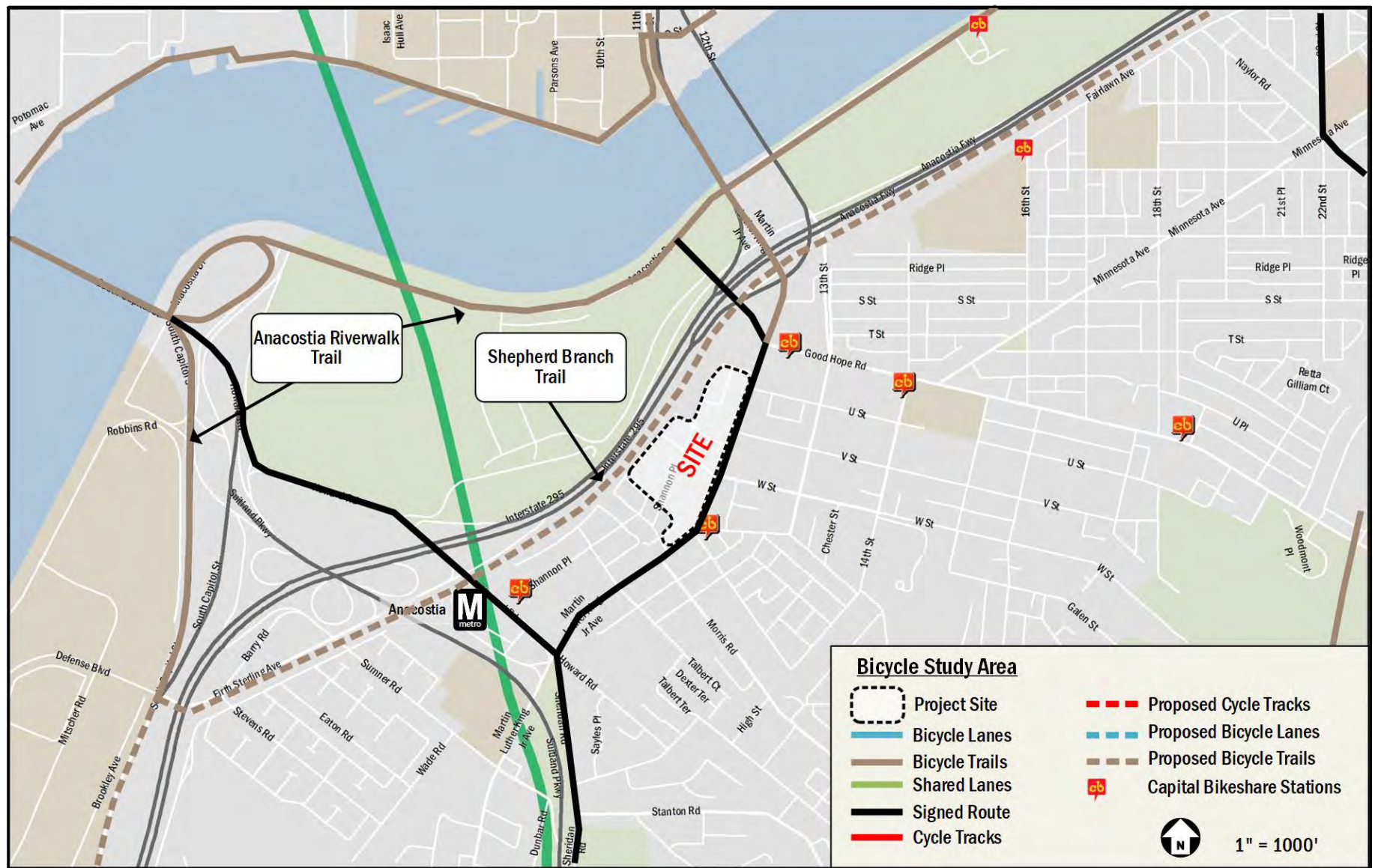


Figure 28: Existing Bicycle Facilities



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 16. Detailed crash report data is presented in the Technical Attachments.

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. Nine (9) of the 12 intersections in this study area meet this criterion (as shown in Table 16 and detailed in Table 17). The Reunion Square development should be developed in a manner to help alleviate, or at minimum not add to, the conflicts at these intersections.

A rate over 1.0 does not necessarily mean there is a significant problem at an intersection, but rather it is a threshold used to identify which intersections may have higher crash rates due to

operational, geometric, or other 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 17 contains a breakdown of crash types reported for the nine (9) intersections with a crash rate over 1.0 per MEV.

POTENTIAL IMPACTS

This section reviews the nine (9) locations with existing crash rates over 1.0 MEV and reviews potential impacts of the proposed development.

- *Martin Luther King Jr. Avenue and Good Hope Road, SE*
This intersection was found to have a crash rate of 2.51 crashes per MEV (81 crashes) over the course of the three-year study period. Of the 81 crashes recorded, 60 were classified under a specific reason. Of these 60, the majority of crashes specified at this intersection were side-swiped vehicle crashes (40 crashes).

Table 16: Intersection Crash Rates

Intersection [^]	Total Crashes	Ped Crashes	Bike Crashes	Rate per MEV*
1. MLK Avenue and Good Hope Road, SE	81	0	0	2.51
2. MLK Avenue and Shannon Place, SE [^]	--	--	--	--
3. MLK Avenue and U Street, SE [^]	--	--	--	--
4. MLK Avenue and V Street/Parking Lot Entrance, SE	27	4	1	1.63
5. MLK Avenue and V Street, SE	27	4	0	1.85
6. MLK Avenue and W Street, SE	35	1	0	2.02
7. MLK Avenue and Chicago Street, SE	12	1	0	0.84
8. MLK Avenue and Morris Road, SE	29	3	0	1.81
9. MLK Avenue and Talbert Street, SE	56	4	0	3.18
10. MLK Avenue and Howard Road/Sheridan Road, SE	74	8	1	2.45
11. Shannon Place and W Street, SE	8	0	0	2.02
12. Chicago Street and Shannon Place, SE	3	0	0	1.51

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

[^] - Crash Data Unavailable for Intersection



Table 17: 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
MLK Ave/Good Hope Rd SE	2.51	1 1%	6 7%	4 5%	3 4%	40 49%	1 1%	3 4%	1 1%	1 1%	0 0%	0 0%	0 0%	0 0%	21 26%	81
MLK Ave & V St/Parking Lot Entrance SE	1.63	0 0%	0 0%	0 0%	0 0%	14 52%	0 0%	3 11%	1 4%	0 0%	2 7%	0 0%	0 0%	0 0%	7 26%	27
MLK Ave & V St SE	1.85	0 0%	0 0%	0 0%	0 0%	14 52%	0 0%	3 11%	1 4%	0 0%	2 7%	0 0%	0 0%	0 0%	7 26%	27
MLK Ave & W St SE	2.02	0 0%	0 0%	0 0%	0 0%	21 60%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	14 40%	35
MLK Ave & Morris Rd SE	1.81	0 0%	1 3%	0 0%	3 10%	7 24%	0 0%	1 3%	0 0%	0 0%	0 0%	1 3%	0 0%	0 0%	16 55%	29
MLK Ave & Talbert St SE	3.18	0 0%	1 2%	1 2%	2 4%	20 36%	0 0%	2 4%	0 0%	0 0%	0 0%	0 0%	2 4%	0 0%	28 50%	56
MLK Ave & Howard Rd/Sheridan Rd SE	2.45	0 0%	0 0%	0 0%	7 9%	24 32%	0 0%	3 4%	0 0%	0 0%	2 3%	0 0%	0 0%	0 0%	38 51%	74
Shannon Pl & W St SE	2.02	0 0%	0 0%	0 0%	0 0%	4 50%	0 0%	3 38%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 13%	8
Chicago St & Shannon Pl SE	1.51	0 0%	0 0%	0 0%	0 0%	1 33%	0 0%	1 33%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 33%	3

Side-swipe crashes may occur at this signalized intersection due to the conflicts presented when vehicles turn onto westbound Good Hope Road. On-street parking on westbound Good Hope Road begins approximately 25 feet west of the crosswalk at the intersection. Additional conflicts exist at the westbound approach, which utilizes a left-thru-right lane and a right-turn only lane. This atypical lane configuration is due to the high volume of westbound right turns made to access the 11th Street Bridge. Sideswipes may occur when vehicles making a right turn from the inside lane veer into the path of right-turning vehicles from the exclusive lane. Strict enforcement of the on-street parking restrictions and the introduction of markings on the pavement (“puppy tracks”) to show the westbound right turning paths may reduce the frequency of side-swiped vehicles.

Classified as one of five “high crash” intersections in 2017, VHB conducted a review of this intersection for DDOT. Reasons for why the intersection observed a high figure of crashes included difficulty for drivers in seeing the far-right signal head on the westbound approach. It was also observed that drivers on this

approach could not view the “No Turn on Red” sign on the signal mast arm. A tight turning radius was also identified, making it difficult for heavy vehicles and buses to maneuver and turn simultaneously. Difficulty was also encountered at the southbound left movement, where vehicles were observed making the turn at higher speeds following passage across the Anacostia River on the 11th Street bridge. The addition of heavy pedestrian traffic makes it even more difficult to navigate this turn.

Proposed recommendations from this intersection review include more active enforcement of on-street parking restrictions during the peak hour on Good Hope Road, installation of speed limit signs on the southbound approach of Martin Luther King Jr. Avenue upstream of the intersection, installation of “puppy tracks” to guide southbound left turns, and the installation of “No Turn on Red” signs on lampposts that are visible for drivers on the westbound approach of the intersection.



▪ *Martin Luther King Jr. Avenue & V Street/Parking Lot Entrance, SE*

This intersection was found to have a crash rate of 1.63 crashes per MEV over the course of the three-year study period. Of the 27 crashes recorded over this period, 20 were classified for a specific reason. Of these 20, the majority of crashes specified were side-swiped vehicles (14 crashes). Side-swiped vehicles may be elevated at this intersection due to the close proximity of the Martin Luther King Jr. Avenue/V Street (south) intersection immediately south and the potential of vehicles to quickly change lanes to turn or avoid vehicular backup. Additionally, on-street parking along both sides of westbound V Street begins approximately 25 feet east of the crosswalk. Although peak hour restrictions prohibiting turns into eastbound V Street are signed, this restriction is disregarded by drivers, creating a higher rate of exposure to parked vehicles. Enforcement of peak-hour turn restrictions may help reduce side-swipe crashes.

▪ *Martin Luther King Jr. Avenue & W Street, SE*

This intersection was found to have a high crash rate of 2.02 crashes per MEV over the course of the three-year study period. Of the 35 crashes recorded over this period, 21 were classified for a specific reason. All 21 crashes specified were side-swiped vehicles. Similar to the preceding intersection, this crash rate can be attributed to the potential of vehicles making a last-second lane change to pass a vehicle waiting for a gap to make a left turn from shared through/left lane. The northbound approach of this intersection utilizes the identical lane configuration as the westbound approach at MLK Avenue and Good Hope Road, where sideswipes may occur due to vehicles making a northbound right turn from the inside lane veering into the path of right-turning vehicles from the exclusive lane. The introduction of pavement markings (“puppy tracks”) to show the northbound right turning paths are recommended to reduce the frequency of side-swipes.

▪ *Martin Luther King Jr. Avenue & Morris Road, SE*

This intersection was found to have a crash rate of 1.81 crashes per MEV over the course of the three-year study period. Of the 29 crashes recorded over this period, 13 were classified for a specific reason. Of these 13, the majority of crashes specified were side-swiped vehicles (7 crashes). Side-swiped vehicles may be elevated at this intersection due to the close proximity of the Martin Luther King Jr. Avenue/Chicago Street intersection immediately north and the potential of vehicles to quickly change lanes either to turn or avoid vehicular backup.

Additionally, construction of Maple View Flats at the northeast corner of the intersection in 2017 resulted in traffic pattern shifts which may have inflated side-swipe rates.

▪ *Martin Luther King Jr. Avenue & Talbert Street, SE*

This intersection was found to have a crash rate of 3.18 crashes per MEV over the course of the three-year study period. Of the 56 crashes recorded over this period, 28 were classified for a specific reason. Of these 28, the majority of crashes specified were side-swiped vehicles (20 crashes). Side-swiped vehicles may be elevated at this intersection due to the potential of vehicles to quickly change lanes either to turn or avoid vehicular backup. Additionally, the northern approach of Martin Luther King Jr. Avenue allows on-street parking in the afternoon peak hour, creating potential conflicts with vehicles making a northbound right to Talbert Street. Vehicles were observed parking on northbound Martin Luther King Jr. Avenue right up to the stop bar. Proper signage enforcing no parking from 25 feet from the intersection is recommended to prevent illegal parking and reduce the exposure of side-swipes.

▪ *Martin Luther King Jr. Avenue & Howard Road/Sheridan Road, SE*

This five-legged intersection was found to have a crash rate of 2.45 crashes per MEV over the course of the three-year study period. Of the 74 crashes recorded over this period, 36 were classified for a specific reason. Of these 36, the majority of crashes specified were side-swiped vehicles (24 crashes). Side-swiped vehicles may be elevated at this intersection due to the lane configuration of the approaches at this five-legged intersection. East of the intersection, Howard Road is one-way eastbound, with on-street parking permitted on the south side of the street starting 25 feet east of the intersection crosswalk. Particularly for vehicles making a hard right turn from northwestbound Sheridan Road, the close proximity of the start of on-street parking to the intersection creates a potential for vehicles turning to conflict with parked vehicles.

▪ *Shannon Place and W Street, SE*

This intersection was found to have a crash rate of 2.02 crashes per MEV over the course of the three-year study period. Of the eight (8) crashes recorded over this period, seven (7) were classified for a specific reason. Of these 7, the majority of crashes specified were side-swiped vehicles (4 crashes) and parked vehicles (3). Side-swiped vehicles may be elevated at this intersection due to presence of on-street parking at all intersection approaches. Given the number of site-generated



vehicle trips that will pass through this intersection, the Applicant will work with DDOT to strictly enforce on-street parking restrictions, particularly vehicles parked in illegal spaces near the intersection.

- Chicago Street and Shannon Place, SE

This intersection was found to have a crash rate of 1.51 crashes per MEV over the course of the three-year study period; however, there were only three (3) crashes recorded over the course of the study period, with two (2) were classified for a specific reason. The elevated crash rate is more likely generated by the low volume at the intersection. Overall, the distribution of crash types at this intersection does not likely lead to a safety issue.



SUMMARY AND CONCLUSIONS

This report is a Comprehensive Transportation Review (CTR) for the Reunion Square development. This report reviews the transportation aspects of the project's Stage 2 Planned Unit Development (PUD) Application (Zoning Commission Order 08-07C). The project falls within the C-3-A Zone and is subject to 1958 Zoning Regulations (ZR58). This report concludes that **the project will not have a detrimental impact** on the surrounding transportation network assuming that all planned site design elements and mitigation measures are implemented

Proposed Project

The overall Reunion Square development is located along Martin Luther King (MLK) Jr. Avenue in Southeast, Washington, D.C. The overall PUD site ("Site") is bordered by Shannon Place to the north, MLK Avenue to the east, Chicago Street and residential buildings to the south, and Railroad Avenue to the west. The proposed development subject to this CTR consists of three (3) mixed-use buildings within the overall Reunion Square development and are currently occupied by surface parking lots and various office and industrial buildings. The development plan for the Stage 2 PUD application proposes to replace these existing uses with three (3) mixed-use buildings ("proposed development"):

- Building 4 consists of 8,000 square feet of retail, 280,000 square feet of office space, and 324 parking spaces, with an additional 136 tandem spaces.
- Building 5 consists of a 119 room hotel, approximately 41,000 square feet of office space, and 56 proposed parking spaces.
- Building 8 consists of 133 residential, 14,000 square feet of retail, and 38 parking spaces.

Although the associated Zoning Commission application consists of a Stage 2 PUD application for Building 4 only, this CTR will address the proposed development associated with the Stage 2 PUD application for Buildings 5 and 8 as they are anticipated to be filed imminently.

The buildings analyzed as part of this CTR comprise part of the Reunion Square PUD, a vibrant, urban mixed use development along Martin Luther King, Jr. Avenue in the Anacostia neighborhood of Southeast, DC. The entire Reunion Square

development has Stage 1 PUD approval, with Building 1 receiving Stage 2 approval in March, 2015.

As part of the proposed development, sections of the roadway network surrounding the proposed buildings will be improved. Pedestrian facilities along the perimeter of the three (3) buildings proposed will be improved so that they meet or exceed DDOT and ADA standards. This includes sidewalks that meet or exceed width requirements, crosswalks at all necessary locations, and curb ramps with detectable warnings. In addition, eight (8) existing curb cuts will be removed, including one (1) on Martin Luther King Jr. Avenue, five (5) along Shannon Place, and two (2) on W Street.

The proposed amount of parking for the three (3) buildings meets the practical needs of the development. Although the development does not meet the 1958 minimum requirements, it exceeds current 2016 minimum requirements, and is in accordance with the DC Comprehensive Plan recommendations to reduce parking requirements when efficient Transportation Demand Management measures are implemented.

The proposed development will include the following loading facilities:

- Building 4 will include three (3) 30-foot loading berths.
- Building 5 will include one (1) 30-foot loading berth and one (1) 20-foot service/delivery space.
- Building 8 will include one (1) 30-foot loading berth and one (1) 20-foot service/delivery space.

Access to the loading facilities within each proposed building will primarily be via Railroad Avenue for Building 4, W Street for Building 5, and the public alley for Building 8. These loading facilities will be sufficient to accommodate the practical needs of each proposed building.

The proposed development will meet the zoning requirements for bicycle parking by including 25 short-term bicycle parking spaces and 154 long-term bicycle parking spaces, as well as 10 showers and 64 lockers. This amount of bicycle parking, showers, and lockers 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 0.3 miles from the Anacostia Metrorail station. There are numerous Metrobus stops that service six (6) WMATA bus routes and one (1) DC Circulator route located adjacent to the Site along MLK Avenue.

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 well-connected pedestrian network. Most roadways within a quarter-mile radius provide sidewalks and curb ramps, particularly along the primary walking routes. There are areas to west and north of the Site which lack buffers, curb ramps, or crosswalks that meet DDOT and ADA standards. In addition, there are areas along Railroad Avenue that lack sidewalks all together.

The MLK Great Streets Project and other planned developments in the study area are expected to improve pedestrian facilities that currently do not meet DDOT and ADA standards.

As a result of the proposed development, pedestrian facilities along the perimeter of the proposed buildings will be improved such that they meet or exceed DDOT requirements and provide an improved pedestrian environment. Eight (8) existing curb cuts will be removed, including one (1) on Martin Luther King Jr. Avenue, five (5) on Shannon Place, and two (2) on W Street.

Bicycle

Bicycle infrastructure in the vicinity of the proposed development is suitable for commuting to and from entire Reunion Square development. The Site is immediately adjacent to the nearest designated bicycle facility, which is a signed route on Martin Luther King Jr. Avenue. This signed route connects with the Good Hope Road signed route, providing a direct route to the Anacostia Riverwalk Trail.

The Shepherd Branch Trail Project will add substantial bicycle infrastructure in the vicinity of the Site, providing a direct connection to the Anacostia Riverwalk Trail upon completion.

Although 1958 zoning regulations do not require short-term bicycle parking, the proposed development will provide short-term bicycle parking along the perimeter of the three (3) buildings for patrons of the development. On-site secure long-term bicycle parking will be provided within each proposed building. The amount of bicycle parking provided will meet current (ZR16) zoning requirements.

Vehicular

The proposed development is well connected to regional roadways, such as the Suitland Parkway and the Anacostia Freeway (Interstate 295), primary and minor arterials such as Martin Luther King Jr. Avenue and South Capitol Street, as well as an existing network of collector and local roadways.

In order to determine the potential impacts of the proposed development on the transportation network, this report projects future conditions with and without development of the three (3) buildings and performs analyses of intersection delays and queues. These capacity analysis results were compared to the acceptable levels of delay set by DDOT standards, as well as existing queues, to determine if the proposed development will negatively impact the study area. The analysis concluded that six (6) intersections would require mitigations.

After exploring options for mitigating impacts at these intersections, this report is recommending improvements be considered for implementation. The analyses contained in the report demonstrate that a combination of enforcing existing turning restrictions, reallocating green time at signalized intersections, and proposing a signal at the intersection of Martin Luther King Jr. Avenue and Shannon Place can reduce delays that meet DDOT's requirements. The proposed mitigations recommended will improve the transportation network in the immediate area of the proposed development and will provide the necessary infrastructure to accommodate the currently proposed and future buildings associated with the Reunion Square PUD.

This report recommends that the Applicant coordinate with DDOT on the implementation of all mitigation measures.

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 mitigations are implemented.

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

- The Site's close proximity to Metrorail.
- The removal of eight (8) existing curb cuts on study area roadways, reducing vehicular-pedestrian conflicts.
- The inclusion of secure long-term bicycle parking spaces within the development that meet or exceed zoning requirements.
- The installation of short-term bicycle parking spaces around the perimeter of the three (3) buildings that exceed current (ZR16) zoning requirements.
- The creation of new pedestrian sidewalks that meet or exceed DDOT and ADA requirements.
- 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.
- A loading management plan designed to offset any potential impacts the loading activities of the proposed development might have on the surrounding intersections and neighborhood.
- The combination of enforcing existing turning restrictions, reallocating green time at signalized intersections, and a signal at the intersection of Martin Luther King Jr. Avenue and Shannon Place will improve the transportation network in the immediate area of the proposed development and will provide the necessary infrastructure to accommodate the currently proposed and future buildings associated with the Reunion Square PUD.