COMPREHENSIVE TRANSPORTATION REVIEW

Z.C. CASE NO. 09-03F: SKYLAND TOWN CENTER MODIFICATION OF SIGNIFICANCE

WASHINGTON, DC

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EXECUTIVE SUMMARY

The following report is a Comprehensive Transportation Review (CTR) on behalf of Skyland Holdings LLC (Rappaport Companies), the applicant (the "Applicant") for a Modification of Significance to the approved Skyland Town Center PUD. Skyland Town Center is located at located at Square 5633 and Lot 22 in Southeast, Washington, DC (the "Site").

The modification (the "Project") consists of the development of a Medical Office Building (MOB) in Block 1, a grocery store, in-line retail, a fast-casual restaurant in Block 3, and a residential building with ground-floor retail in Block 4. Block 1 and Block 3 are being submitted as a Consolidated PUD and Block 4 is being submitted as a First-Stage PUD.

The approved PUD for Skyland Center was initially approved by the Zoning Commission (ZC) as part of ZC Case Number 09-03 in July of 2010. The Applicant has submitted subsequent modifications and extensions which have been approved by the ZC. Block 2, which was last approved under ZC 09-03D and is currently under construction, is not part of the application.

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

As part of the previous PUD approvals, significant infrastructure improvements have been recommended by DDOT and have been implemented by the Applicant that include:

- Installation of a new signalized intersection at Naylor Road and the project's Town Center Drive. *This signal has been installed and will be activated with the opening of Town Center Drive;*
- Pavement restriping on Naylor Road to increase capacity (Provide pavement re-striping to delineate two travel lanes along Naylor Road southbound along the site frontage). *This improvement is under construction and will be in place prior to the opening of Block 1 and Block 3;*
- Improvements to the existing intersection at Good Hope Road and Naylor Road/25th Street;
  - Provide pavement markings to delineate a separate left-turn lane and a shared through/right-turn lane along the northbound (25th Street) approach. *This improvement has been completed;*
  - Widen the southbound approach (Naylor Road) to provide double left-turn lanes and a shared through/right-turn lane. *This improvement has been completed;*
  - Provide signalization, pavement marking and other improvements to accommodate the above-noted lane configuration improvements. *These improvements have been completed and implemented;*
- Modification of the signalized intersection at Good Hope Road and Naylor Avenue/Block 2 access driveway. *The modified signal has been installed and will be activated with the opening of Block 2;*
- Modification of the signalized intersection at Alabama Avenue/Good Hope Road and Town Center Drive;
  - Provide signalization and pavement marking improvements to accommodate Main Street as the fifth leg to Alabama Avenue/Good Hope Road intersection. *The modified signal has been installed and will be activated with the opening of Town Center Drive;*
- Installation of a new signalized intersection at Alabama Avenue and the Block 3 Retail Driveway. *This signal has been installed and will be activated with the opening of Block 3;* and
- The creation of high visibility pedestrian crosswalks at intersections adjacent to the Subject Property and throughout the project's internal street system. *These improvements are under construction and will be completed prior to the opening of Block 1 and Block 3.*

Proposed Project

The Project modifies the previous approvals for Skyland Town Center development, located at the intersection of Naylor Road, Good Hope Road, and Alabama Avenue SE. The Site is bounded by Naylor Road to the west, Good Hope Road to the southwest, Alabama Avenue to the southeast, a residential area to the east, a wooded ravine to the east and northeast, and a residential area to the north. Block 2 is already under development. The remainder of the Property has been divided into Blocks 1, 3, and 4. Block 1, Block 3, and Block 4 of the

The Project will develop the Block 1 and Block 3 pursuant to the Consolidated PUD application with:

- Approximately 131,344 square feet (SF) medical office building with 465 garage parking spaces in Block 1;
- Approximately 28,954 SF grocery store in Block 3;

- Approximately 9,792 SF in-line retail in Block 3;
- Approximately 2,483 SF fast-casual restaurant in Block 3;
- Surface lot with 214 parking spaces serving Block 3.

The Project will develop Block 4 pursuant to the First-Stage PUD application with:

- Approximately 252 dwelling units;
- Approximately 7,140 SF ground-floor retail;
- Below-grade garage with 163 parking spaces serving Block 4.

Access to the Site will be available from a total of six (6) approved curb cuts. Two (2) curb cuts will provide access from Naylor Road SE, two (2) curb cuts will provide access from Good Hope Road SE, and two (2) curb cuts will provide access from Alabama Avenue SE.

Primary access/egress to the Project's parking facilities will be available from the internal street network (Town Center Drive). Access to the Block 3 surface lot will also be available from Alabama Avenue SE.

The Project will satisfy the 2016 zoning requirements for bicycle parking by including at least 30 short-term bicycle parking spaces and 123 long-term bicycle parking spaces. The Project will supply long-term bicycle parking in secure locations for each block and short-term bicycle parking within and along the perimeter of the Site. The vehicular and bicycle parking will also meet the practical needs of the Project's employees, residents, and patrons.

Multi-Modal Impacts and Recommendations

Trip Generation

The Project is transit-, pedestrian-, and bicycle-oriented. The proposed modification is expected to generate new trips on the surrounding transportation network across all modes during the morning peak hour and generate fewer trips on the surrounding transportation network across all modes during the afternoon peak hour as compared to the approved PUD. **Overall, the modified program results in a slight increase in inbound trips during the morning peak hour and reduction in trips during the afternoon peak hour and Saturday peak hour.**

The net AM peak hour trip generation is projected to include an additional 118 cars/hour (147 new inbound trips of 29 fewer outbound trips). The net PM peak hour trip generation is projected to include a reduction of 303 cars/hour (152 fewer inbound trips and 151 fewer outbound trips).

The proposed PUD modification generates an additional 57 non-auto trips/hour during the AM peak hour and reduces the PM trip generation by 67 non-auto trips/hour. The multi-modal trip generation for the proposed modified Block 1, Block 3, and Block 4 includes the following:

- 202 transit riders/hour in the AM peak hour and 335 transit riders/hour in the PM peak hour;
- 16 bicycle trips/hour in the AM peak hour and 27 bicycle trips/hour in the PM peak hour; and
- 16 walking trips/hour in the AM peak hour and 27 walking trips/hour in the PM peak hour.

Transit

The Site is well-served by transit services via Metrobus. The Site is located 1.2 miles from the Naylor Road Metrorail station with 12 Metrobus routes providing service to the immediate vicinity of the Site. These routes provide direct service to nearby Metrorail Stations and Downtown, Washington, D.C.

Although the Project will generate transit trips, existing facilities have enough capacity to accommodate the new trips.

Pedestrian

The Site is surrounded by an improving pedestrian network with sidewalk improvements related to the approved Skyland Town Center PUD under construction. Most roadways within a quarter-mile radius of the Site provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes along Good Hope Road and Alabama Avenue. Roadways that do not currently provide pedestrian facilities within the pedestrian study area are found in residential areas and are considered to be low-speed, low-volume roadways.

As consistent with the approved PUD, pedestrian facilities around the perimeter of the Site will be improved to meet DDOT and ADA standards.

The Project will generate a moderate number of pedestrian trips and the improved facilities will be able to handle the new trips. Notably, the Applicant will provide improved sidewalks along Naylor Road, Good Hope Road, and Alabama Avenue frontages.

Bicycle

The Site has access to nearby on-street bicycle facilities, including recently installed and proposed facilities. Existing on-street facilities consist of signed routes along Alabama Avenue, Good Hope Road, and Naylor Road. The Fort Circle Trail lies to the north and west of the Site and the Suitland Parkway Trail lies to the south of the Site.

The existing Capital Bikeshare station located adjacent to the Site at the Good Hope Road, Alabama Avenue, and Future Town Center Drive intersection was relocated by the Applicant to its current location as consistent with the approved PUD.

The Project will provide short-term bicycle parking within and along the perimeter of the Site. On-site secure long-term bicycle parking will be provided for each block. The amount of bicycle parking provided will satisfy 2016 zoning requirements.

The Project will generate a moderate number of new bicycle trips without burdening the existing facilities.

Vehicular

The Site is accessible from principal arterials such as Pennsylvania Avenue to the north and Branch Avenue to the east. The Site is also directly served by Alabama Avenue, Good Hope Road, and Naylor Road, all minor arterials providing a robust network of local and regional connectivity. These roadways connect the Site to Suitland Parkway and to DC-295, both of which provide access to the Capital Beltway (I-495), which surrounds Washington, DC and its inner suburbs, as well as providing connectivity to the District core.

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

Gorove Slade analysis concluded that three (3) intersections require mitigation as a result of the minor impacts to delay created by the modified development program. Mitigation measures are proposed as follows:

Good Hope Road & Naylor Road/25th Street

It should be noted this intersection experiences new delays due to the mitigations requested by DDOT in the previously approved PUD. The Naylor Road slip lane was requested to be closed for pedestrian safety, forcing more vehicles through the intersection of Good Hope Road and Naylor Road/25th Street. This mitigation measure of closing the slip lane is already in place.

Gorove Slade recommends implementing morning peak period parking restrictions on the Good Hope Road eastbound approach to create a second travel lane, consistent with the existing afternoon restrictions. A 125-foot lane that repurposes approximately five (5) parking spaces would improve eastbound delays considerably. Demand for the repurposed parking spaces would be offset by the Site's parking supply.

Gorove Slade also recommends signal timing adjustments be coordinated with DDOT in the morning peak hour to ensure the most efficient future operation, following construction of the Project by 2024. Signal timing adjustments would reduce the northbound delays on 25th Street SE.

Good Hope Road & Naylor Road/Block 2 Access

Gorove Slade recommends signal timing and phasing adjustments be coordinated with DDOT in the morning peak hour to ensure the most efficient future operation, following construction of the Project by 2024.

Naylor Road & Alabama Avenue

Gorove Slade recommends signal timing and phasing adjustments be coordinated with DDOT in the morning peak hour to ensure the most efficient future operation, following construction of the Project by 2024.

Safety

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

Gorove Slade analysis concluded that existing conditions will be improved at one (1) intersection that will further enhance the multi-modal network surrounding the Site. Improvements are planned as follows:

Alabama Avenue & Good Hope Road

Improvements at this intersection are planned at this intersection as part of Project-related improvements.

Improvements include completing sidewalks which meet DDOT/ADA standards and the installation of high-visibility crosswalks. These improvements will make pedestrians more visible near the intersection and allow for multimodal connectivity.

Transportation Demand Management (TDM)

Per the DDOT CTR guidelines, the goal of TDM measures is to reduce the number of single occupancy vehicles and vehicle ownership within the District. The promotion of various programs and existing infrastructure includes maximizing the use of transit, bicycle, and pedestrian facilities. The Applicant is committed to honoring the TDM commitments previously agreed to as part of the previously approved PUD.

Summary and Recommendations

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

The Project has several positive design elements that minimize potential transportation impacts, including:

- The Site's close proximity to transit;
- The inclusion of secure long-term bicycle parking that meet zoning requirements;
- The installation of short-term bicycle parking spaces within and along the frontage of the Site that meet zoning requirements;
- The creation of new pedestrian sidewalks that meet or exceed DDOT and ADA requirements, improving the existing pedestrian environment; and,
- A Transportation Management Program (TMP) 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 reduce peak-period deliveries and efficiently manage the loading facilities of Block 3, which is seeking zoning relief in the number of loading berths being provided.

INTRODUCTION

This report is a CTR reviewing the transportation aspects of the application for approval of a modification of significance of the Skyland Town Center development approved PUD under ZC 09-03A. The Site, shown in Figure 1 and Figure 2, is located at Square 5633 and Lot 22 in Southeast, Washington, DC. The Site is currently zoned MU-7 and RA-2. The Project's First-Stage PUD was approved under the 1958 Zoning Regulations; however, due to the proposed use modification, the modification of significance application is being evaluated under the 2016 Zoning Regulations.

PURPOSE OF STUDY

The purpose of this report is to:

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

PROJECT SUMMARY

The Project modifies Blocks 1, 3, and 4 of the approved Skyland Town Center development. The Skyland Town Center as approved under ZC 09-03A included five (5) blocks, of which Block 2 was subsequently modified and approved under ZC 09-03D. A comparison of the approved and modified land use quantities for the entire site is summarized in Table 1.

The Modified project will only include four Blocks, including Block 2 under construction. The Applicant is submitting a consolidated PUD for Block 1 and Block 3 with the following modifications:

- Block 1 is being modified to include a 131,344 SF Medical Office Building and a parking garage providing 465 parking spaces
- Block 3 is being modified to include a 28,954 SF anchor grocery store, a 2,483 SF fast-casual restaurant with a drive-thru, 9,792 SF of in-line retail, and 214 surface parking spaces

The Applicant is seeking First-Stage PUD status for Block 4 with the following proposed modifications:

- Approximately 252 residential units
- Approximately 7,140 SF of ground-floor retail
- Below-grade parking with 157 residential spaces and six (6) retail spaces

Block 2 is currently under construction with the following development program:

- 263 residential units
- 84,000 SF of ground-floor retail
- 447 garage parking spaces

Table 1: Approved and Proposed Land Uses

Land Use	Approved		Proposed	
	Development	Parking Spaces	Development	Parking Spaces
Residential	500 du; 20 townhomes	442	515 du	405
Retail	342,000 sf	964	132,369 sf	419
Medical Office Building	N/A	N/A	131,344 sf	465
	Total Parking	**1,406**		**1,289**

The proposed modification includes the following loading facilities for each block:

- Block 1 will provide two (2) 30-foot loading berths and one (1) 20-foot service/delivery space
- Block 3 will provide one (1) 55-foot loading berth for the grocery store and one (1) 36-foot parallel loading space for the in-line retail component
- Block 4 will provide four (4) 30-foot loading berths and one (1) 20-foot service/delivery space

The proposed loading facilities will accommodate the practical needs of the Project, maintain loading activity within private property, and provide loading circulation that ensures head-in/head-out truck movements are performed from the public roadway network.

Each block will provide pedestrian access from the internal street network. As part of the Project, pedestrian facilities surrounding the Site will be improved to meet DDOT and ADA

standards. New sidewalks will be installed along the frontage of the Site along Naylor Road, Good Hope Road, and Alabama Avenue SE, and such sidewalks will meet or exceed width requirements.

There are existing bicycle facilities near the Site. These include the Fort Circle Trail to the north and west of the Site, and the Suitland Parkway Trail to the south of the site. Additionally, the Project will meet zoning requirements and provide 123 long-term bicycle parking spaces and 30 short-term bicycle parking spaces. Consistent with the approved PUD, the Applicant has relocated the Capital Bikeshare station adjacent to the Site at the Good Hope Road and Alabama Avenue/Future Town Center Drive intersection.

CONTENTS OF STUDY

This report contains nine (9) chapters as follows:

Study Area Overview
This chapter reviews the area near and adjacent to the Project and includes an overview of the Site.

Project Design
This chapter reviews the transportation components of the Project, including the site plan and access. This chapter also contains the proposed Transportation Demand Management (TDM) plan and Loading Management Plan (LMP) for the Project.

Trip Generation
This chapter outlines the travel demand of the Project. It summarizes the proposed trip generation of the project.

Traffic Operations
This chapter provides a summary of the existing roadway facilities and an analysis of the existing and future roadway capacity in the study area. This section highlights the vehicular impacts of the project, including presenting mitigation measures for minimizing impacts as needed.

Transit
This chapter summarizes the existing and future transit service adjacent to the Site, reviews how the project's transit demand will be accommodated, outlines impacts, and presents recommendations as needed.

Pedestrian Facilities
This chapter summarizes existing and future pedestrian access to the Site, reviews walking routes to and from the Project, outlines impacts, and presents recommendations as needed.

Bicycle Facilities
This chapter summarizes existing and future bicycle access to the Site, reviews the quality of cycling routes to and from the Project, outlines impacts, and presents recommendations as needed.

Safety Analysis
This chapter summarizes the potential safety impacts of the project. This includes a qualitative review of existing and proposed safety features surrounding the Site.

Summary and Conclusions
This chapter presents a summary of the recommended mitigation measures by mode and presents overall report findings and conclusions.

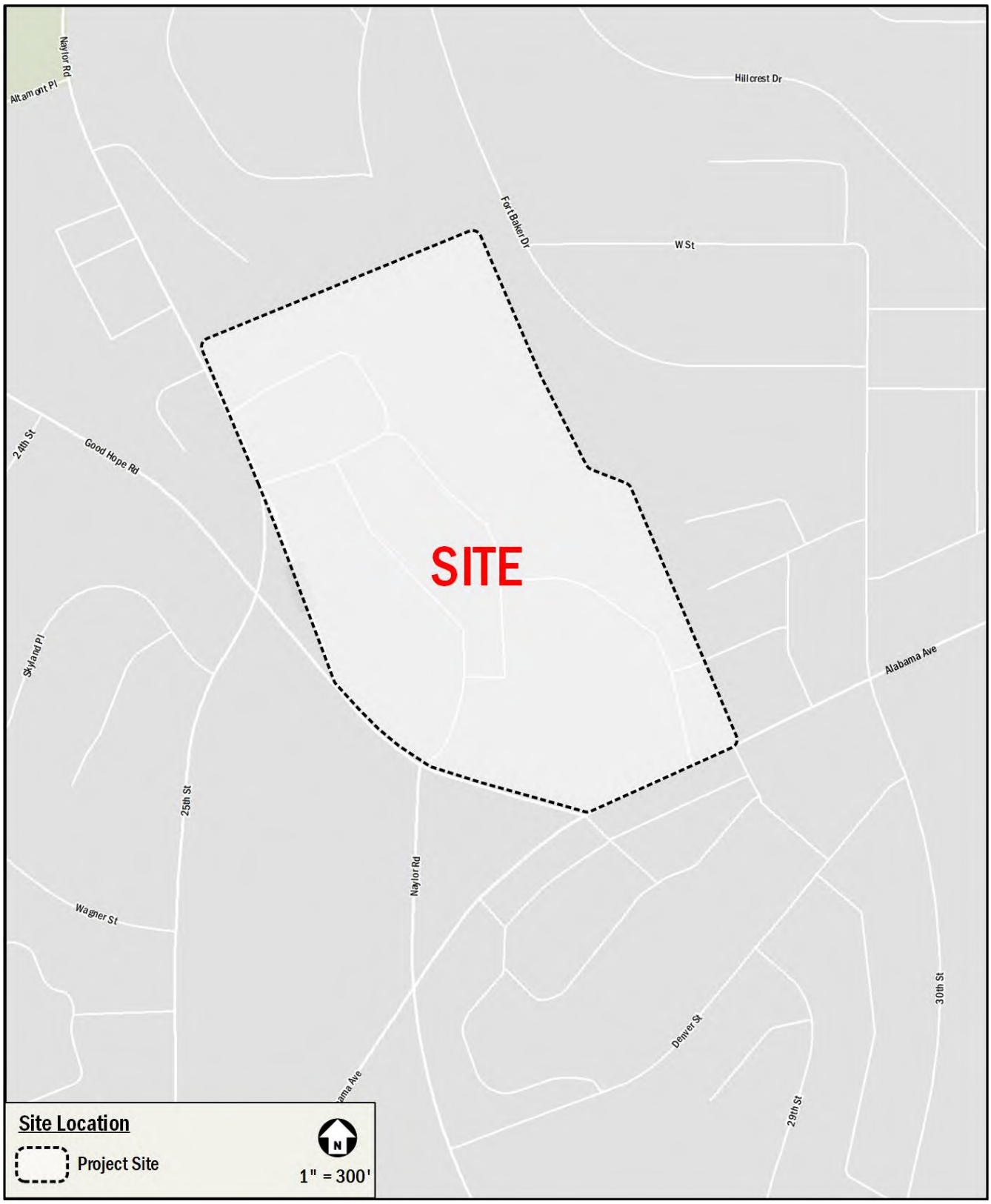

Figure 1: Site Location

Figure 2: Site Aerial

STUDY AREA OVERVIEW

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

This chapter concludes:

- The Site is surrounded by an extensive regional and local transportation system that will connect the Project's residents to the rest of the District and surrounding areas.
- The Site is served by public transportation with access to several local Metrobus routes. These routes provide direct service to all areas of Washington, D.C. and nearby Metrorail stations.
- There is bicycle infrastructure in the vicinity of the Site, with connectivity to east-west and north-south bicycle facilities.
- Pedestrian conditions are generally good, particularly along anticipated major walking routes. There are roadways northwest of the site that lack sidewalks. However, these are low-volume residential streets.

MAJOR TRANSPORTATION FEATURES

Overview of Regional Access

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

The Site is accessible from principal arterials such as Pennsylvania Avenue to the north and Branch Avenue to the east. These roadways connect the Site to Suitland Parkway and to DC-295, both of which provide access to the Capital Beltway (I-495), which surrounds Washington, DC and its inner suburbs, as well as providing connectivity to the District core.

The Site is located 1.2 miles from the Naylor Road Metrorail station in Prince George's County, MD, which is served by the Green Line. The Green Line travels south from Greenbelt, MD through Downtown DC to Suitland, MD while providing access to the District core. Connections can be made at the Metro Center and Gallery Place-Chinatown stations to access the five (5) other Metrorail lines, allowing access to points in Virginia and Montgomery County, Maryland.

Connections to other Metrorail Stations closer to the Downtown, DC area can be made using the bus lines traveling along Alabama Avenue. These buses provide service to stations including Benning Road on the Blue and Silver Lines and Minnesota Avenue on the Orange Line.

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 Naylor Road, Good Hope Road, and Alabama Avenue — all minor arterials supplemented by an existing network of connector and local roadways.

The Metrobus system provides extensive transit service in the vicinity of the Site, including connections to several neighborhoods within the District and additional Metrorail stations. As shown in Figure 5, there are 12 bus routes that service the Site. Multiple bus stops servicing the 12 routes are located within a two-minute walk of the Site. These bus routes connect the Site to many areas of Southeast, DC, including several Metrorail stations where transfers can be made to reach areas in the District, Virginia, and Maryland. A detailed review of bus routes and transit stops within a quarter mile walk of the Site is provided in a later chapter of this report.

The Site is located in an area with emerging on-street bicycle facilities. Existing on-street facilities consist of signed routes along Alabama Avenue and 25th Street. These facilities lead to the Fort Circle Trail to the north and the Suitland Parkway Trail to the south. Using the available connections along the on-street and off-street routes within the study area, bicyclists have access to a number of regional bicycle facilities. To accommodate bicyclists, the Site is planned to provide on-site bicycle facilities as discussed in detail in the Project Design Review section. A detailed review of existing and proposed bicycle facilities and connectivity is provided in a later chapter of the report.

Anticipated pedestrian routes, such as those to public transportation stops, schools, and community amenities, provide adequate pedestrian facilities; however, there are a few sidewalks, generally located several blocks northwest from

the Site, that do not meet DDOT standards due to narrow or missing buffer widths. All primary pedestrian destinations are accessible via routes with sidewalks, all of which met DDOT standards. No sidewalks within the study area limit connectivity. A detailed review of existing and proposed pedestrian access and infrastructure is provided in a later chapter of this report.

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

Carsharing

Two (2) carsharing companies provide service in the District: Zipcar and Free2Move. Both services are private companies that provide registered users access to a variety of automobiles. Of these, Zipcar has designated spaces for their vehicles. Currently, there are no Zipcar locations within a quarter-mile of the Site. The nearest Zipcar location is found close to the Naylor Road Metrorail station. The nearby locations and the number of available vehicles are listed in Table 2.

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

Table 2: Carshare Locations

Carshare Location	Number of Vehicles
Zipcar	
3131 Branch Avenue (Naylor Road Metrorail Station in Maryland)	1 Vehicle
1908 Savannah Terrace SE	1 Vehicle
1541 Alabama Avenue SE	3 Vehicles
Total	**5 vehicles**

Bikeshare and Scooter Share

The Capital Bikeshare program provides additional cycle options for visitors, employees, and visitors of the proposed development. The program has placed over 500 bikeshare stations across the Washington, DC metropolitan area with over 4,500 bicycles in the fleet. Consistent with the approved PUD, the Applicant relocated an 11-dock Capital Bikeshare to its current location at the intersection of Good Hope Road, Alabama Avenue, and the future Town Center Drive adjacent to the Site.

In addition to Capital Bikeshare, five (5) electric-assist scooter (e-scooter) and electric-assist bicycle (e-bike) companies provide Shared Mobility Device (SMD) service in the District: JUMP, Lyft, Skip, Spin, and Helbiz. These SMDs are provided by private companies that give registered users access to a variety of e-scooter and e-bike options. These devices are used through each company-specific mobile phone application. Many SMDs do not have designated stations where pick-up/drop-off activities occur like with Capital Bikeshare; instead, many SMDs are parked in public space, most commonly in the "furniture zone" (the portion of sidewalk between where people walk and the curb, often where you'll find other street signs, street furniture, trees, parking meters, etc.). At this time, SMD pilot/demonstration programs are underway in Arlington County, the District, Fairfax County, the City of Alexandria, and Montgomery County.

Walkscore

Walkscore.com is a website that provides scores and rankings for the walking, biking, and transit conditions within neighborhoods of the District. Based on this website, the Site is located in the Hillcrest - Fairfax Village neighborhood. The Site has a walk score of 54 (or "Somewhat Walkable"), a transit score of 57 (or "Good Transit"), and a bike score of 40 (or "Somewhat Bikeable"). Figure 3 shows the neighborhood borders in relation to the Site and displays a heat map for walkability and bikeability. The following conclusions can be made based on the data obtained from Walkscore.com:

- The Site is situated in an area with adequate walkability as some errands can be accomplished within walking distance;
- The Site is situated in an area with good transit scores due to its proximity to a high number of bus routes; and
- The Site is situated in an area with moderate bike scores due to its proximity to a limited number of bike facilities and varying topography.

Overall, the Site and surrounding neighborhood have pedestrian, transit, and bike accessibility. The addition of mixed-use developments in the area will help increase the walk, and bike scores in the neighborhood. The modified Skyland Town Center development will directly improve the neighborhood's and surrounding area's walkability and bike score by enhancing the pedestrian and bicycle network with the provision of improved pedestrian sidewalks, neighborhood-serving retail and services, and new short-term bicycle parking facilities.

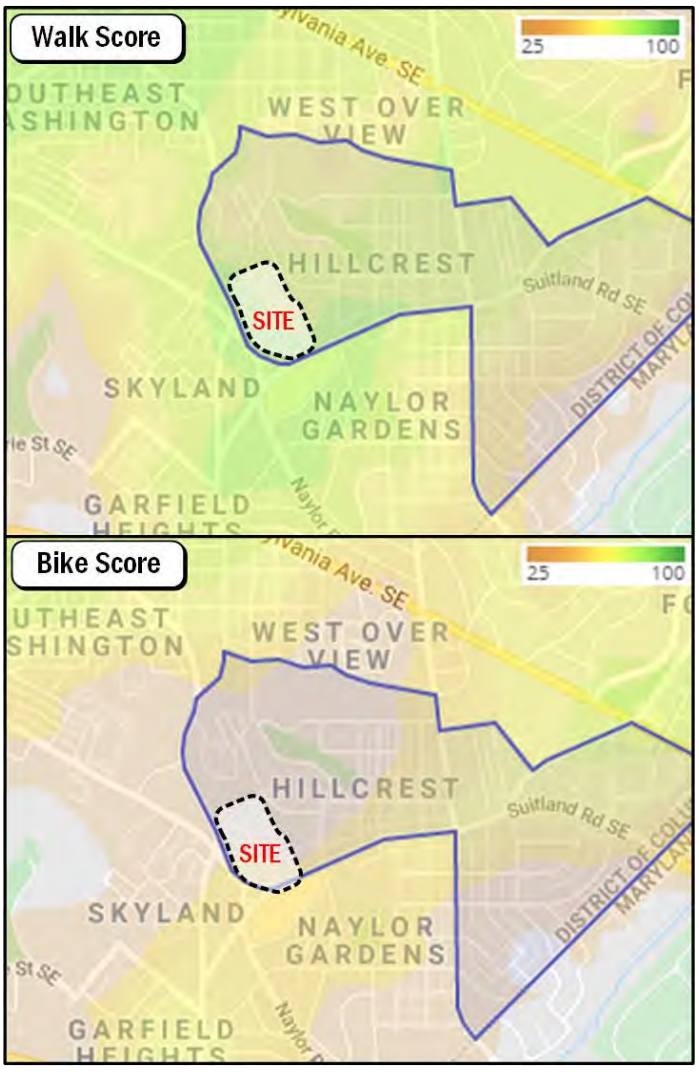

Figure 3: Summary of Site Walkscore and Bikescore

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

MoveDC: Multimodal Long-Range Transportation Plan

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

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

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

Adjacent to the Project, Good Hope Road and Alabama Avenue SE have each been recommended as streets to be redesigned to include a cycle track. These cycle tracks would create greater connectivity to other bicycle facilities throughout the District.

Near the Site along Alabama Avenue SE, a high-frequency local and regional bus corridor is proposed that will create connectivity from Congress Heights to Deanwood.

Alabama Avenue SE Corridor Safety Study

In 2017, DDOT published the findings of a safety study conducted along four-mile stretch of Alabama Avenue from Martin Luther King, Jr. Avenue to Ridge Road. The study identified existing deficiencies along the corridor that could be improved to promote non-auto travel and reduce the number of vehicle crashes.

In the vicinity of the Skyland Site, the study recommends retaining the four-lane cross section between 25th Street and 30th Street due to high traffic volumes. This section of Alabama Avenue will remain in its existing roadway configuration, with bicycle lanes to the west and shared lanes to the east of this section.

Far Southeast II Livability Study

In 2011, DDOT published a livability study for neighborhoods in Wards 7 and 8. The goal of the study was to guide the development of transportation solutions within the neighborhoods that improve the quality of life for people who live, work, and recreate there. The visions of the study include:

- Provide better access to social and economic opportunities by efficiently connecting major activity centers (employment centers, retails, education, recreation, and community facilities) within and around the study area.
- Strengthen connections to regional transportation network and park corridors.
- Provide a variety of transportation options by making walking, wheeling, bicycling, and transit use safe and convenient.
- Support existing communities in the study area by preserving and enhancing community characteristics.

In the vicinity of the study area, the livability study recommends a 13-foot shared used travel lane in each direction along Good Hope Road between 18th and 24th Streets, a 14-foot shared use travel lane in each direction along Naylor Road between Good Hope Road and Altamont Place, and 13-foot shared use lanes to be used by both vehicles and bicycles in both directions along Alabama Avenue between Branch Avenue and Pennsylvania Avenue. The study recommends bus stop amenity improvements in the form of enlarged landing pad areas, trash receptacles, transit information signs, and benches.

SustainableDC: Sustainable DC Plan

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

- Improving connectivity and accessibility through efficient, integrated, and affordable transit systems;
- Expanding provision of safe, secure infrastructure for cyclists and pedestrians;
- Reducing traffic congestion to improve mobility; and
- 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.

Planned Developments

There are four (4) potential development projects in the vicinity of the Site. For the purpose of this analysis and consistent with DDOT and industry standards, only approved developments expected to be completed prior to the planned development with an origin/destination within the study should be included. All four (4) projects were ultimately included given the proximity of the developments from the Site and site generated volumes of the planned developments impacting the study area intersections. The developments are described below.

The Shops at Penn Hill

The Shops at Penn Hill is a multi-use development located at 3200 Pennsylvania Avenue SE. This development was analyzed using the approved number of additional vehicle trips under ZC 17-11 for 380 dwelling units and 40,000 SF of retail space. As approved under ZC 17-11 the development would generate an additional 96 peak hour vehicle trips in the morning and 117 peak hour vehicles trips in the afternoon.

Ainger Place Apartments

Ainger Place Apartments is a residential development located at 2409 Ainger Place SE. The development includes 72 affordable dwelling units and would generate 12 peak hour trips in the morning and 14 peak hour trips in the afternoon.

2483-2491 Alabama Avenue SE

The residential development located at 2483-2491 Alabama Avenue SE was analyzed in a *Transportation Statement* prepared by Gorove Slade. The analyzed development program included 86 affordable residential units and is expected to generate 14 peak hour trips in the morning and 17 peak hour trips in the afternoon.

2495 Alabama Avenue SE

2495 Alabama Avenue SE is a residential development providing 30 affordable units. This development was analyzed using the ITE's *Trip Generation Manual*, 10th Edition and is expected to generate 5 peak hour trips in the morning and 6 peak hour trips in the afternoon.

Figure 6 shows the location of the developments considered in relation to the Project.

Figure 4: Major Regional Transportation Facilities

Figure 5: Major Local Transportation Facilities

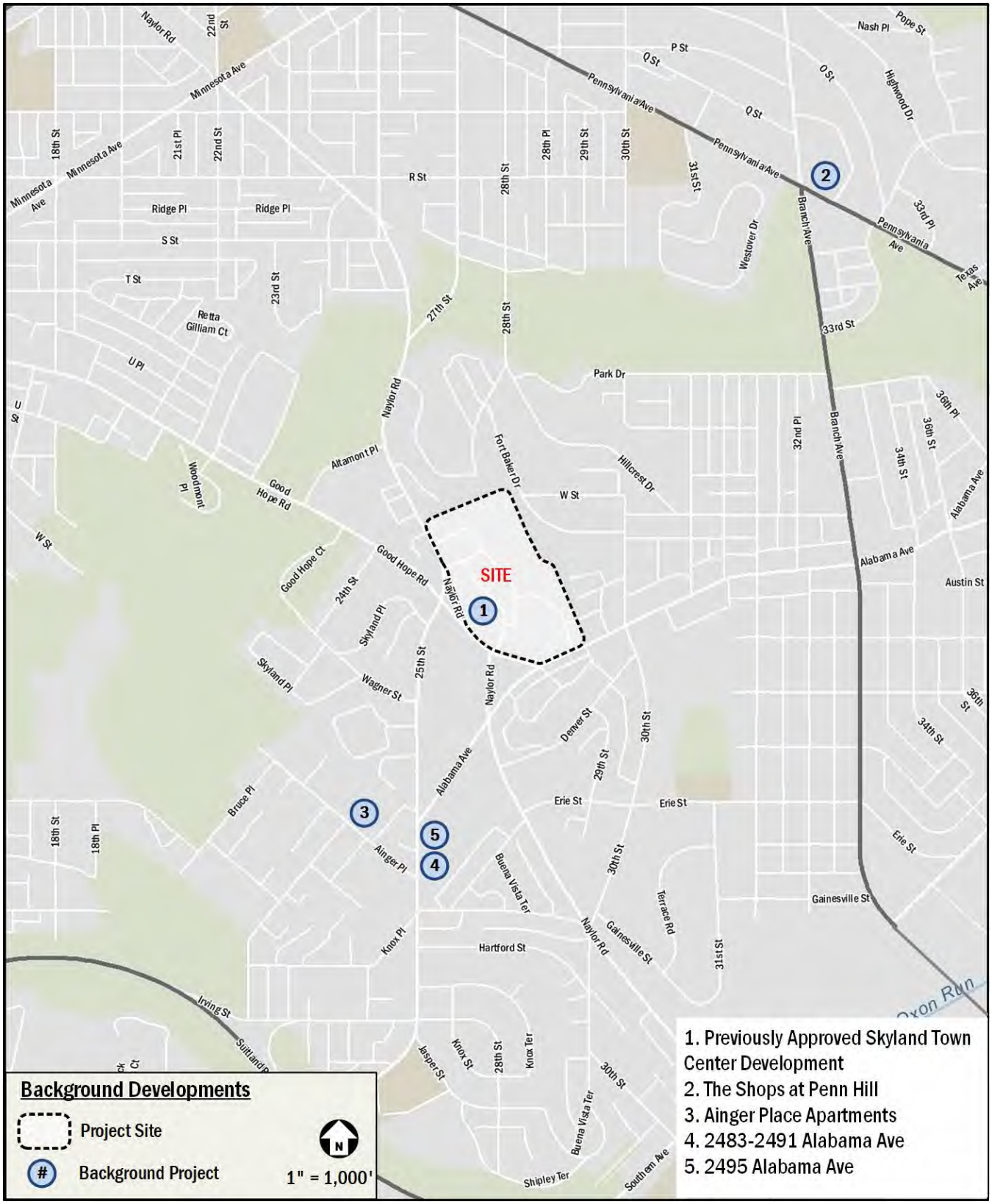

Figure 6: Background Developments

PROJECT DESIGN

This chapter reviews the transportation components of the Project, including the proposed site plan and access points. It includes descriptions of the Project's vehicular access, loading facilities, Loading Management Plan (LMP), parking, bicycle, and pedestrian facilities, and the proposed TDM plan.

The Project specifically modifies Block 1, Block 3, and Block 4 of the Skyland Town Center Development. Block 2 is currently under construction as approved under ZC 09-03D.

The Skyland Town Center Development is bordered by Naylor Road to the west, Naylor Road and Good Hope Road to the southwest, Alabama Avenue to the southeast, a residential area to the east, a wooded ravine to the east and northeast, and a residential area to the north. Blocks 1 and 3 are applying for Consolidated PUD status and Block 4 is seeking First-Stage PUD status.

Block 1 is located on the northwest portion of the Site and is proposed to include a 131,344 SF Medical Office Building with a garage structure with 465 parking spaces.

Block 3 is located on the southeast portion of the Site and is being modified to introduce a new anchor retail tenant for the approximately 28,954 square feet grocery component of the development. Block 3 will also feature 9,792 square feet of in-line retail space, and a separate 2,483 square feet space for a stand-alone fast-casual restaurant with a drive-thru. Block 3 is proposed to provide a surface parking lot with 214 spaces.

Block 4 is located on the northeast portion of the Site and is proposed to include 252 dwelling units, 7,140 square feet of ground-floor retail, and 163 parking spaces in a partially below-grade garage.

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

SITE ACCESS AND CIRCULATION

Pedestrian Access

Block 1

Pedestrian access will be available from the southwest corner of the medical office building, along Naylor Road SE, and from the internal Block 1 driveway.

Block 3

Entrances to the grocery store will be located along the front of the building accessible from the surface parking lot and Town Center Drive.

The in-line retail stores will feature pedestrian access points from both the west side of the building along Town Center Drive and from the surface lot to the east.

Access to the fast-casual restaurant will be available from Town Center Drive on the north and west sides of the building.

Block 4

Pedestrian access to both the residential and retail components of Block 4 will be available along the frontage of the building on the west side from Town Center Drive.

Pedestrian access to each of the Blocks on the Project Site is shown on Figure 8.

Vehicular and Loading Access

The Skyland Town Center development features six (6) curb cuts for the entire Site. Two (2) curb cuts, of which one (1) will be signalized, will provide full inbound and outbound access along Naylor Road SE. Two (2) curb cuts, of which one (1) will align with the Good Hope Road and Naylor Road signalized intersection, will provide right-in right-out along from Good Hope Road SE. Two (2) curb cuts along Alabama Avenue SE will provide signalized access to the Site. The locations of site access points are shown in Figure 9. The public space permits for these curb cuts are included in the Technical Attachments.

Block 1

Vehicular access to the Block 1 parking garage is available from Town Center Drive and the internal Block 1 driveway. Access to the loading facilities will be available from the internal driveway north of the building accessible from Naylor Road SE.

Block 3

Vehicular access to Block 3 is available from Alabama Avenue SE and two (2) internal access points from Town Center Drive. The grocery store loading facilities are located on the east side of the building and accessible from the surface lot and internal driveways. The loading area for the in-line retail will be available from the surface lot drive aisle.

Block 4
Vehicular access to the Block 4 parking garage is proposed from an internal street on the west side of the building. The residential building will have a loading area to the north and another to the south. Both areas will be accessible from internal driveways.

Figure 9 shows the location of parking garage access and loading facilities.

Curbside Management
The Town Center Drive streetscape will feature two (2) driving lanes and two (2) curbside parking lanes will be provided along the internal Town Center Drive. The Town Center Drive Streetscape is shown on Figure 10.

LOADING AND TRASH

Loading
The proposed loading facilities will accommodate all loading activity for the office, retail, and residential uses and delivery demand without any detrimental impact to the surrounding network. DDOT standards stipulate that truck movements for a site should be accommodated without back-in movements through public space. The Project has been designed to accommodate all loading activity and associated backing maneuvers within the Site. Truck turning diagrams using AutoTURN are provided in the Technical Attachments.

Block 1
Block 1 will provide two (2) 30-foot loading berths and one (1) 20-foot service/delivery space. The proposed loading facilities meet the 2016 Zoning Regulations loading requirements of two (2) 30-foot loading berths and one (1) 20-foot service/delivery space. The loading area will be located north of Block 1 accessible from an internal driveway.

Block 3
Block 3 will provide one (1) 55-foot loading berth for the grocery store and one (1) 36-foot parallel loading space for the in-line retail component. Under 2016 Zoning Regulations, the Project is required to provide three (3) 30-foot loading berths and one (1) 20-foot service/delivery space. The Applicant is seeking zoning relief from the loading requirements and is proposing a Loading Management Plan to ensure the Project's loading activity does not impact the surrounding transportation network. Access to Block 3 loading areas will be available from the Alabama Avenue SE access points.

Block 4
Block 4 will provide four (4) 30-foot loading berths and one (1) 20-foot service/delivery space. Under 2016 Zoning Regulations, the Project is required to provide one (1) 20-foot service/delivery space and two (2) 30-foot loading berths or one (1) 30-foot loading berth as long as internal access for all uses is provided. The proposed loading facilities satisfy the zoning requirements. Two (2) loading areas are proposed for Block 4, one (1) on the north side of the building and the other on the south side of the building. Access to both loading areas will be available from the internal driveway network.

The Site is expected to generate up to 42 total trips per day. Table 3 summarizes the Site's anticipated loading activity based on similar projects analyzed by Gorove Slade and truck trip generation methodology outlined in the newly released supplement to the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition.

Table 3: Site Loading Activity

Land Use/Truck Generator	Loading Trips
MOB	43
Grocer	2
Retail	26
Residential	2
General	3
Total	76
Total (Shared Office, Res and Retail Deliveries)	**42**

Notes:
1. Assumes 50% shared loading activity between medical office and retail uses

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

- Medical Office Building: based on ITE's average truck trip generation data that estimates 0.65 truck trips for every 1,000 SF for the Medical Office Building (land use code 720)
- Grocery (non-grocery): two (2) deliveries for the grocery store per operator information
- Retail (non-grocery): 26 retail deliveries; two (2) retail deliveries for each retailer with the following number of retailers assumed:
    - Block 2: 10 retailers
    - Block 3: two (2) retailers
    - Block 4: one (1) retailer

- Residential: two (2) residential loading trips, calculated based on an average unit turnover of 18 months
- Three (3) general deliveries consisting of trash removal, mail, and parcel delivery shared between the entire Site
- Shared loading activity of 50 percent between blocks for the medical office, residential, and retail uses (UPS, FedEx, Amazon)

Trash

Trash for the Project will be accommodated using trash receptacles within the loading areas for each block. No trash will be stored in public space.

Truck routing to and from the Site will be focused on designated primary truck routes, such as Alabama Avenue SE. Loading access and circulation is shown on Figure 11.

Based on the expected truck deliveries and loading management plan provided below, the loading facilities for the Project is adequate and will not adversely affect the local roadway network.

LOADING MANAGEMENT PLAN (LMP)

As previously noted, each block will provide loading facilities to ensure loading activity is contained within the Site. Block 1 and Block 4 meet the zoning loading requirements, and relief is requested for the loading requirements for Block 3.

Based on the proposed uses and layout of Block 3, it is anticipated that the 55-foot berth will meet the loading needs of the grocery store, and the 36-foot space will meet the needs of the in-line retail component.

To ensure the request for relief from the Block 3 loading requirements does not have detrimental impacts on the surrounding transportation network a Loading Management Plan has been proposed for Block 3. The goals of this plan are to maintain a safe environment for all users of the site, loading dock, streets, and nearby intersections; minimize undesirable impacts to pedestrians and to building tenants; reduce conflicts between truck traffic using the loading facilities and other street users; and ensure smooth operation of the loading facilities through appropriate levels of management and schedule operations. The components of the loading management plan that will be implement for the life of the project for each block as follows:

Block 3 – Grocery Store

- A loading manager will be designated by the grocery store who will be on duty during delivery hours. The dock manager will be responsible for coordinating with vendors to schedule deliveries and will work with the community and neighbors to resolve any conflicts should they arise.
- The loading manager will monitor inbound and outbound truck maneuvers and will ensure that trucks accessing the loading dock do not block vehicular, bike, or pedestrian traffic along the internal driveways except during those times when a truck is actively entering or exiting loading berth.
- The loading manager will schedule deliveries using the berths 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 at a later time when the berth will be available so as to not compromise safety or impede circulation through the Site.
- 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 goDCgo Motorcoach Operators Guide, and the primary access routes shown on the DDOT Truck and Bus Route Map (godcgo.com/freight).
- The loading manager will be responsible for disseminating suggested truck routing maps to the building's tenants and to drivers from delivery services that frequently utilize the development's loading dock as well as notifying all drivers of any access or egress restrictions. The dock manager will also distribute flyer materials, such as the Metropolitan Washington Council of Governments (MWCOG) Turn Your Engine Off brochure, to drivers as needed to encourage compliance with idling laws. The dock manager will also post these materials and other relevant notices in a prominent location within the loading area.

Block 3 – In-Line Retail

- A loading manager will be designated by property management who will be reachable during delivery hours. The loading manager will be responsible for coordinating with retail tenants to ensure scheduled deliveries do not exceed loading area capacity and will work with the

community and neighbors to resolve any conflicts should they arise.

- The loading manager will ensure truck maneuvers are monitored and vehicular, bike, or pedestrian traffic within the surface lot is not blocked except during those times when a truck is actively entering or exiting the loading area.
- All retail tenants will be required to coordinate and schedule deliveries that utilize the loading area (any loading operation conducted using a truck 20-feet in length or larger).
- In the event that an unscheduled delivery vehicle arrives while the loading space is occupied, that driver will be directed to return at a later time when the space will be available so as to not compromise safety or impede circulation.
- Trucks using the loading area will not be allowed to idle and must follow all District guidelines for heavy vehicle operation including but not limited to DCMR 20 – Chapter 9, Section 900 (Engine Idling), the goDCgo Motorcoach Operators Guide, and the primary access routes shown on the DDOT Truck and Bus Route Map (godcgo.com/freight).
- The loading manager will be responsible for disseminating suggested truck routing maps to the retail tenants as well as notifying all retail tenants of any access or egress restrictions. The loading manager will also post MWCOG's Turn Your Engine Off information and other relevant notices in a prominent location available to retail tenants overseeing deliveries.

PARKING

The approved PUD includes a parking supply of 1,406 spaces. **The proposed modification reduces the Site's total parking to 1,289 spaces, a reduction of 117 spaces.** The proposed parking is consistent with the approved PUD and will accommodate all parking needs on-site. The Project's parking includes required parking for the grocery store anchor tenant and will prevent spill over from the Site to the adjacent properties and neighborhood streets as required in the previously approve PUD. Table 4 summarizes the approved and proposed parking program for the Site land uses.

In addition to the proposed Block 1, Block 3, and Block 4 parking supply, the Project includes 42 internal street parking spaces. The modified Skyland Town Center development parking supply will total 1,289 spaces with the proposed modification and the approved Block 2 parking supply of 447 spaces.

Table 4: Approved and Proposed Parking Program

Land Use	Approved Spaces	Proposed Spaces
Residential	442	405
Retail	964	419
Medical Office Building	N/A	465
Total	1,406	1,289
Reduction in parking between Approved and Modified Parking Supply		***-117***

Access control will be installed for all parking facilities with varying time restrictions as determined by the Applicant. Additionally, the Applicant continues to explore the possibility of installing electric vehicle charging stations and carshare spaces throughout the Site. The Applicant will provide a final determination on the provision of electric vehicle charging stations and carshare spaces in advance of the public hearing in this case.

Block 1

Based on the Zoning Regulations' requirements for the proposed office use, the medical office building is required to provide one (1) parking space for every 1,000 SF in excess of 3,000 SF. Based on the size of the proposed medical office building, the Project is required to provide 128 parking spaces for Block 1. The proposed Block 1 modification includes a parking garage with 465 spaces to meet the parking needs of the Medical Office Building.

Block 3

Based on the Zoning Regulations' requirements for the proposed retail uses, the Project is required to provide 1.33 parking spaces for every 1,000 SF in excess of 3,000 SF. Based on the proposed Block 3 development program, the Project is required to provide 36 parking spaces for the grocery store, 12 spaces for the in-line retail component, and one (1) space for the fast-casual restaurant, totaling 49 required spaces for Block 3. The proposed Block 3 modification includes a surface parking lot with 214 spaces. The proposed Block 3 parking is required to meet the parking needs of the grocery store tenant. As approved, the anchor retail store was previously located in Block 1 and included 412 garage parking spaces.

Block 4

Based on the Zoning Regulations' requirements for the, the Project is required to provide one (1) parking space for every three (3) dwelling units in excess of four (4) units for the residential use and 1.33 parking spaces for every 1,000 SF in excess of 3,000 SF for the retail use. Based on the proposed Block 4 development program, the Project is required to provide 83 residential parking spaces and six (6) retail parking spaces. The proposed Block 4 includes 157 residential parking spaces and six (6) retail spaces all located in a partially below-grade garage. The proposed parking will meet the parking needs of the proposed Block 4 uses.

The required parking calculations and proposed parking supply for each block are detailed in Table 5. The Project meets the required parking supply and is proposing a total of 842 parking spaces for Block 1, Block 3, and Block 4.

Shared Parking Analysis

Per DDOT's request, shared parking demand was reviewed using temporal distributions for the Block 1, Block 3, and Block 4 land uses. The parking demand for each block was analyzed based on the Urban Land Institute's (ULI) *Shared Parking*, Third Edition parking demand ratios for the proposed land uses. The analyzed demand parking ratios are provided in Table 6. These were combined with temporal demand distributions for each use based on visitors, employees, and resident demand to determine the peak demand and available parking during a typical weekday. The detailed parking demand for each block is included in the Technical Attachments. Table 7 summarizes the parking demand for Block 1, Block 3, and Block 4.

As shown on Table 7, the site exceeds the practical shared parking demand by 30 spaces, less than four (4) percent. Peak demand for the combined uses would occur at 2:00 PM with a total demand of 812 parking spaces and 30 spaces available to accommodate parking turnover throughout the Site for visitors. Retail demand from Block 4 is offset by available parking in the adjacent blocks. Opportunities for additional parking synergy between the blocks may become available as the Block 4 design is refined.

Table 5: Required and Proposed Parking

Land Use	Size	ZR16 Parking Ratio	Calculation Details	Spaces Required	Spaces Proposed
Block 1 Medical Office	131,334 sf	1/1ksf in excess of 3ksf	=(131,334-3,000)/1,000)	128	465
Block 3 - Grocery	28,954 sf	1.33/1ksf of 3ksf	=1.33*(48,369-2,242)/1,000)	36	
Block 3 - In-Line Retail	9,792 sf	1.33/1ksf of 3ksf	=1.33*(48,369-758)/1,000)	12	214
Block 3 - Stand Alone Retail	2,483 sf	1.33/1ksf of 3ksf	N/A; 1 min.	1	
Block 4 - Residential	252 du	1 space/3 units in excess of 4 units	=(252-4)/3	83	157
Block 4 - Retail	7,140 sf	1.33/1ksf of 3ksf	=1.33*(48,369-3,000)/1,000)	6	6
			Blocks 1, 3, and 4 Total	**266**	**842**

Table 6: Parking Demand and Proposed Supply by Land Use

Land Use	Size	Demand Ratio[1]	Demand by Use	Adjusted Demand[2] by Use	Proposed Supply by Use
Block 1					
Medical Office Building Visitors	131.3 ksf	3.00/ksf	394 spaces	276 spaces	465 spaces
Medical Office Building Staff	131.3 ksf	1.60/ksf	210 spaces	147 spaces	
Block 1 Total			**604 spaces**	**423 spaces**	**465 spaces**
Block 3					
Grocery Store Visitors	29.0 ksf	4.00/ksf	116 spaces	81 spaces	214 spaces
Grocery Store Staff	29.0 ksf	0.75/ksf	22 spaces	15 spaces	
In-Line Retail Visitors	9.8 ksf	2.90/ksf	28 spaces	20 spaces	
In-Line Retail Staff	9.8 ksf	0.70/ksf	7 spaces	5 spaces	
Fast Casual/Fast-Food Visitors	2.5 ksf	12.40/ksf	31 spaces	22 spaces	
Fast Casual/Fast-Food Staff	2.5 ksf	2.00/ksf	5 spaces	4 spaces	
Block 3 Total			**209 spaces**	**146 spaces**	**214 spaces**
Block 4					
Residential	252 du	1.31[3]/du	330 spaces	231 spaces	157 spaces
Retail Visitor	7.1 ksf	2.90/ksf	21 spaces	15 spaces	6 spaces
Retail Staff	7.1 ksf	0.70/ksf	5 spaces	4 spaces	
Block 4 Total			**356 spaces**	**249 spaces**	**163 spaces**
Total			**1,169 spaces**	**818 spaces**	**842 spaces**

Notes:

1. Presented demand ratios based Urban Land Institute's (ULI) *Shared Parking*, Third Edition.
2. Parking demand adjusted after 30% non-auto mode split reduction applied.
3. ULI residential parking demand ratios based on unit mix based on number of bedrooms, ITE's *Parking Generation Manual*, 5th Edition rate for land use code 221 (mid-rise multifamily housing) used instead.

Table 7: Block 1, Block 3, and Block 4 Combined Parking Demand

Time of Day	Block 1		Block 3		Block 4		Combined Total	
	Demand	Available	Demand	Available	Demand	Available	Demand	Available
6:00 AM	0	465	10	204	232	-69	241	601
7:00 AM	29	436	25	189	232	-69	287	555
8:00 AM	395	70	40	174	234	-71	670	172
9:00 AM	395	70	70	144	238	-75	703	139
10:00 AM	423	42	93	121	243	-80	759	83
11:00 AM	423	42	112	102	246	-83	781	61
12:00 PM	230	235	135	79	250	-87	615	227
1:00 PM	395	70	139	75	250	-87	784	58
2:00 PM	**423**	**42**	**140**	**74**	**249**	**-86**	**812**	**30**
3:00 PM	423	42	132	82	248	-85	802	40
4:00 PM	395	70	133	82	248	-85	776	66
5:00 PM	368	97	134	80	248	-85	750	92
6:00 PM	283	182	138	76	249	-86	670	172
7:00 PM	127	338	119	95	247	-84	492	350
8:00 PM	63	402	81	133	244	-81	389	454
9:00 PM	0	465	52	162	240	-77	292	550
10:00 PM	0	465	30	184	235	-72	265	577
11:00 PM	0	465	12	202	233	-70	245	597
12:00 AM	0	465	9	205	231	-68	240	602

Drive-Thru Queueing Analysis

Per DDOT's request, queueing analysis was conducted in order to ensure the proposed Block 3 fast-casual restaurant with a drive-thru, currently proposed as a Starbucks, provide enough space for vehicles to queue without "spill back" into public space. The queueing calculations are based on the inbound peak hour trip generation, the percentage of trips utilizing the drive-thru, and the service time per drive-thru customer.

Based on the site plan shown in Figure 7, the drive-thru lane includes a stacking capacity of approximately eight (8) vehicles. Given the proposed layout, the queue would have to extend beyond an additional nine (9) vehicles before impeding traffic at the Alabama Avenue and Block 3 driveway intersection.

The site trips for the queuing analysis were calculated using a 70% auto mode split and ITE land use 937, *Coffee/Donut Shop with Drive-Through Window*, and are summarized in Table 8 for the morning and afternoon peak hours. The morning peak hour inbound trips were then used as the arrival rate in the queueing analysis. Detailed trip generation calculations for the fast-food casual restaurant are included in the Technical Attachments.

Table 8: Starbucks Trip Generation

Land Use	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)		
	In	Out	Total	In	Out	Total
Coffee/Donut Shop with Drive-Through	79	75	154	38	37	75

Based on previous studies performed by Gorove Slade for restaurants with drive-thru windows a 55 percent drive-thru utilization rate was assumed for a Starbucks in the City of Roanoke, VA and a 67 percent drive-thru utilization rate was observed during the Friday morning peak hour in a fast-food chain restaurant with a full breakfast menu in Olney, MD, a morning peak hour drive-thru utilization rate of 60 percent was assumed for the proposed Starbucks in the Skyland Town Center. These studies also assumed an average 30 second service time per drive-thru customer. Queuing analysis for the proposed Starbucks was performed with a 30 and 60 second service time per customer.

The results of the queueing analysis are summarized in Table 9. Based on the analysis results, the average queue rate does not exceed four (4) vehicles even in the longer service rate scenario. As shown in Table 9 the 90th and 95th percentile queues for both the 30 and 60 second services rates are well within the maximum stacking capacity of 17 vehicles before reaching public space. Detailed queue length calculation sheets for both scenarios are included in the Technical Attachments.

Table 9: Queueing Analysis Results

Scenario	30s Service Rate	60s Service Rate
Total Inbound Trips	79 veh/hr	79 veh/hr
Drive-Thru Arrival Rate[1]	47 veh/hr	47 veh/hr
Service Rate	30 s/veh	60 s/veh
Average Queue[2]	1 veh	4 veh
90th Percentile Queue[2]	2 veh	9 veh
95th Percentile Queue[2]	3 veh	12 veh

Notes:

1. Drive-thru arrival rate based on a 60% drive-thru utilization rate
2. Average, 90th, and 95th percentile queues in system with using single-channel queueing theory equations

While queueing analysis results indicate "spill back" into public space is not expected to occur during typical peak hours of the proposed development, additional measures not factored into the analysis, such as mobile orders and outside personnel collecting orders and payments, greatly decrease drive-thru service times to manage queues on-site and limit the likelihood of excessive queues spilling back into public space.

Bicycle and Pedestrian Facilities

Bicycle Facilities

Per the Zoning Regulations, the Project is required to supply the following bicycle parking spaces per Block:

Block 1

- Long Term (51 spaces required)
  - Office: One (1) space for every 2,500 SF applied at 50% after the first 50 spaces; 51 spaces are required.
- Short Term (3 spaces required)
  - Office: One (1) space for every 40,000 SF; three (3) spaces are required.
- Showers and Lockers
  - Office: Two (2) minimum showers required with two (2) additional showers for every 50,000 SF in excess of 25,000 SF; six (6) total showers are required.
  - Office: 0.6 lockers for every long-term bicycle parking space required; 31 lockers required.

Block 3

- Long Term (4 spaces required)
  - Grocery store: One (1) space for every 10,000 SF; three (3) spaces are required.
  - In-line retail: One (1) space for every 10,000 SF; one (1) space is required.
  - Fast-casual restaurant: One (1) space for every 10,000 SF; none required (below 4,000 SF minimum GFA).
- Short Term (12 spaces required)
  - Grocery store: One (1) space for every 3,500 SF; eight (8) spaces are required.
  - In-line retail: One (1) space for every 3,500 SF; three (3) spaces are required.
  - Fast-casual restaurant: One (1) space for every 3,500 SF; none required (below 4,000 SF minimum GFA).
- Showers and Lockers
  - Grocery store showers: Two (2) minimum showers required with two (2) additional showers for every 50,000 SF in excess of 25,000 SF; two (2) total showers are required.
  - Grocery store lockers: 0.6 lockers for every long-term bicycle parking space required; two (2) lockers required.
  - In-line retail and fast-casual restaurant showers and lockers: none required (below 25,000 SF minimum GFA)

Block 4

- Long Term (68 spaces required)
  - Residential: One (1) space for every three (3) dwelling units applied at 50% after first 50 spaces; 67 spaces are required.
  - Retail: One (1) space for every 10,000 SF; one (1) space is required.
- Short Term (15 spaces required)
  - Residential: One (1) space for 20 dwelling units;
  - 13 spaces are required.
  - Retail: One (1) space for every 3,500 SF; two (2) spaces are required.
- Showers and Lockers (none required)

The Project will meet bicycle parking requirements by providing facilities that meet the zoning requirements. Short-term bicycle parking spaces will be provided throughout the site in highly accessible areas to meet the different proposed uses on each block. Furthermore, long-term bicycle parking will be provided for Block 1, the Block 3 grocery component, and Block 4.

The development will also supply the appropriate number of showers and lockers as required by ZR16.

Pedestrian Facilities

As part consistent with the approved PUD, the Project will provide improved pedestrian facilities around the perimeter of the Site that meet DDOT and ADA standards. New sidewalks will be installed around the perimeter of the Site that will meet or exceed the width requirements, as well as curb ramps with detectable warnings and crosswalks at the new site entrance as needed.

High visibility pedestrian crosswalks at intersections adjacent to the Site and throughout the project's internal street system will also be provided.

TRANSPORTATION DEMAND MANAGEMENT (TDM)

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

Consistent with the approved PUD, the Applicant will implement the TDM measures outlined in the Transportation Management Program (TMP) the Skyland Town Center committed to as part of ZC 09-03 and ZC 09-03A. **The approved TMP measures meet the new TDM guidelines requirements set forth in DDOT's CTR Guidelines.**

The Applicant will honor the approved PUD'S TDM measures included in the approved TMP. The approved TMP applies to the entire site and will be included in the Second-Stage application for Block 4. A comparison of the approved Skyland Town Center TMP and DDOT's required TDM plan by the block is outlined in Table 10.

Table 10: Approved TMP and DDOT's Baseline TDM Plan Requirements

Category	Approved TMP	Block 1 Baseline TDM	Block 3 Baseline TDM
Parking	None	Unbundle the cost of parking from the cost to lease an office unit and only hourly, daily, or weekly rates will be charged. Free parking, validation, or discounted rates will not be offered.	Unbundle the cost of parking from the cost to lease retail space and only hourly, daily, or weekly rates will be charged. Free parking, validation, or discounted rates will not be offered.
Transportation Coordinator	A transportation services coordinator, through the property management office, who will develop and administer the TMP strategies.	Identify Transportation Coordinators for the planning, construction, and operations phases of development. There will be a Transportation Coordinator for each tenant and the entire site. The Transportation Coordinators will act as points of contact with DDOT, goDCgo, and Zoning Enforcement.	Identify Transportation Coordinators for the planning, construction, and operations phases of development. The Transportation Coordinators will act as points of contact with DDOT, goDCgo, and Zoning Enforcement. There will be a Transportation Coordinator for each tenant and the entire site. The Transportation Coordinators will act as points of contact with DDOT, goDCgo, and Zoning Enforcement.
	Monitor and regularly evaluate the TMP. The approved Monitoring Program is included in the Technical Attachments.	Will provide Transportation Coordinators' contact information to goDCgo, conduct an annual commuter survey of employees on-site, and report TDM activities and data collection efforts to goDCgo once per year. All employer tenants must survey their employees and report back to the Transportation Coordinator.	Will provide Transportation Coordinators' contact information to goDCgo, conduct an annual commuter survey of employees on-site, and report TDM activities and data collection efforts to goDCgo once per year.
		Transportation Coordinators will develop, distribute, and market various transportation alternatives and options to the employees, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on property website and in any internal building newsletters or communications.	Transportation Coordinators will develop, distribute, and market various transportation alternatives and options to employees and customers, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on property website and in any internal building newsletters or communications.
		Transportation Coordinators will receive TDM training from goDCgo to learn about the TDM conditions for this project and available options for implementing the TDM Plan.	Transportation Coordinators will receive TDM training from goDCgo to learn about the TDM conditions for this project and available options for implementing the TDM Plan.
		Will notify goDCgo each time a new office tenant moves in and provide TDM information to each tenant as they move in. Will provide links to CommuterConnections.com and goDCgo.com on property websites.	
		Transportation Coordinator will demonstrate to goDCgo that tenants with 20 or more employees are in compliance with the Transportation Benefits Equity Amendment ACT of 2020 and the DC Commuter Benefits Law, and participate in at least one of the three transportation benefits outlined in the law (employee-paid pre-tax benefit, employer-paid direct benefit, or shuttle service), as well as any other commuter benefits related laws that may be implemented in the future.	Transportation Coordinator will demonstrate to goDCgo that tenants with 20 or more employees are in compliance with the Transportation Benefits Equity Amendment ACT of 2020 and the DC Commuter Benefits Law, and participate in one of the three transportation benefits outlined in the law (employee-paid pre-tax benefit, employer-paid direct benefit, or shuttle service), as well as any other commuter benefits related laws that may be implemented in the future.

Category	Approved TMP	Block 1 Baseline TDM	Block 3 Baseline TDM
SmartTrip Benefits	Request employers at Skyland Town Center to provide employees with Metrochecks or Smart Trip cards. The applicant will require site employers to provide employee with a Metrocheck or SmartTrip Card with the value of $20.00, and rental tenants who sin a one-year lease would receive a similar subsidy to encourage the use of transit.	Provide a free SmarTrip card and one (1) complimentary Capital Bikeshare coupon good for a free ride to each new employee.	Provide a free SmarTrip card and one (1) complimentary Capital Bikeshare coupon good for a free ride to each new employee.
Carpooling	The applicant also will provide reserved parking locations for carshare and carpool vehicles, establish a ride-matching program, and implement strategies to evaluate the effectiveness of the transportation management program (TMP). Establish and maintain a ridesharing and ride-matching program for residents and employees of the Skyland Town Center.	Designate a minimum of [insert number] preferential carpooling spaces and [insert number] preferential vanpooling spaces in a convenient location within the parking garage for employee use. Distribute information on the Commuter Connections Guaranteed Ride Home (GRH) program, which provides commuters who regularly carpool, vanpool, bike, walk, or take transit to work with a free and reliable ride home in an emergency. Transportation Coordinator will implement a carpooling system such that individuals working in the building who wish to carpool can easily locate other employees who live nearby. Provide 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) or other comparable service if MWCOG does not offer this in the future.	Provide 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) or other comparable service if MWCOG does not offer this in the future.
Carshare	Provide designate parking locations along the internal street system for shared vehicles (i.e. ZipCar). The number of cars and locations will be determined by the Applicant and the shared vehicle company.		
Bike Parking	Provide bicycle parking in the amount of at least five percent of the required off-street parking (the amount required by DDOT).	Will meet ZR16 requirements for showers and lockers for use by employees. Six (6) showers and 31 lockers are required. Will meet ZR16 short- and long-term bicycle parking requirements. Long-term bicycle parking will be provided free of charge to all employees. Three (3) short-term and 51 long-term bicycle spaces are required and will be provided. Long-term bicycle storage rooms will accommodate non-traditional sized bikes including cargo and tandem bikes.	Will meet ZR16 requirements for showers and lockers for use by employees. Two (2) showers and two (2) lockers are required for the grocery component, none for the other Block 3 retail spaces. Will meet ZR16 short- and long-term bicycle parking requirements. Long-term bicycle parking will be provided free of charge to all employees. Block 3 requires 12 short-term and four (4) long-term spaces.
Ped and Bike Paths	Provide landscaped and lit shared pedestrian and bicycle paths between key locations within the project and Metrobus stops.		
Metro	Rerouting of Metrobuses, placement of bus stops at more convenient locations, and enhancement of passenger access and safety to encourage the use of public transit. This shall be done in collaboration with DDOT and WMATA.		

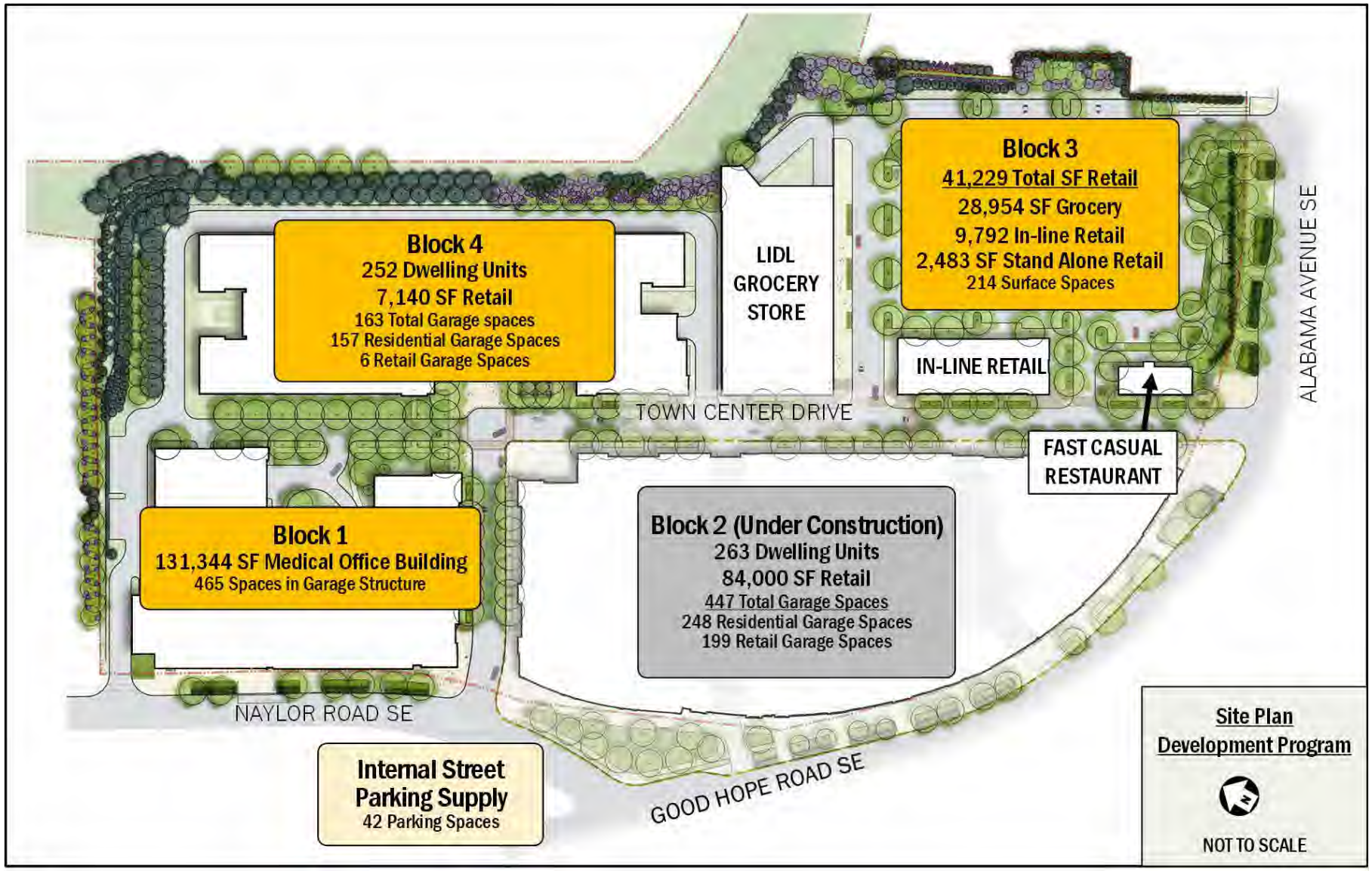

Figure 7: Site Plan

Figure 8: Pedestrian Access and Circulation

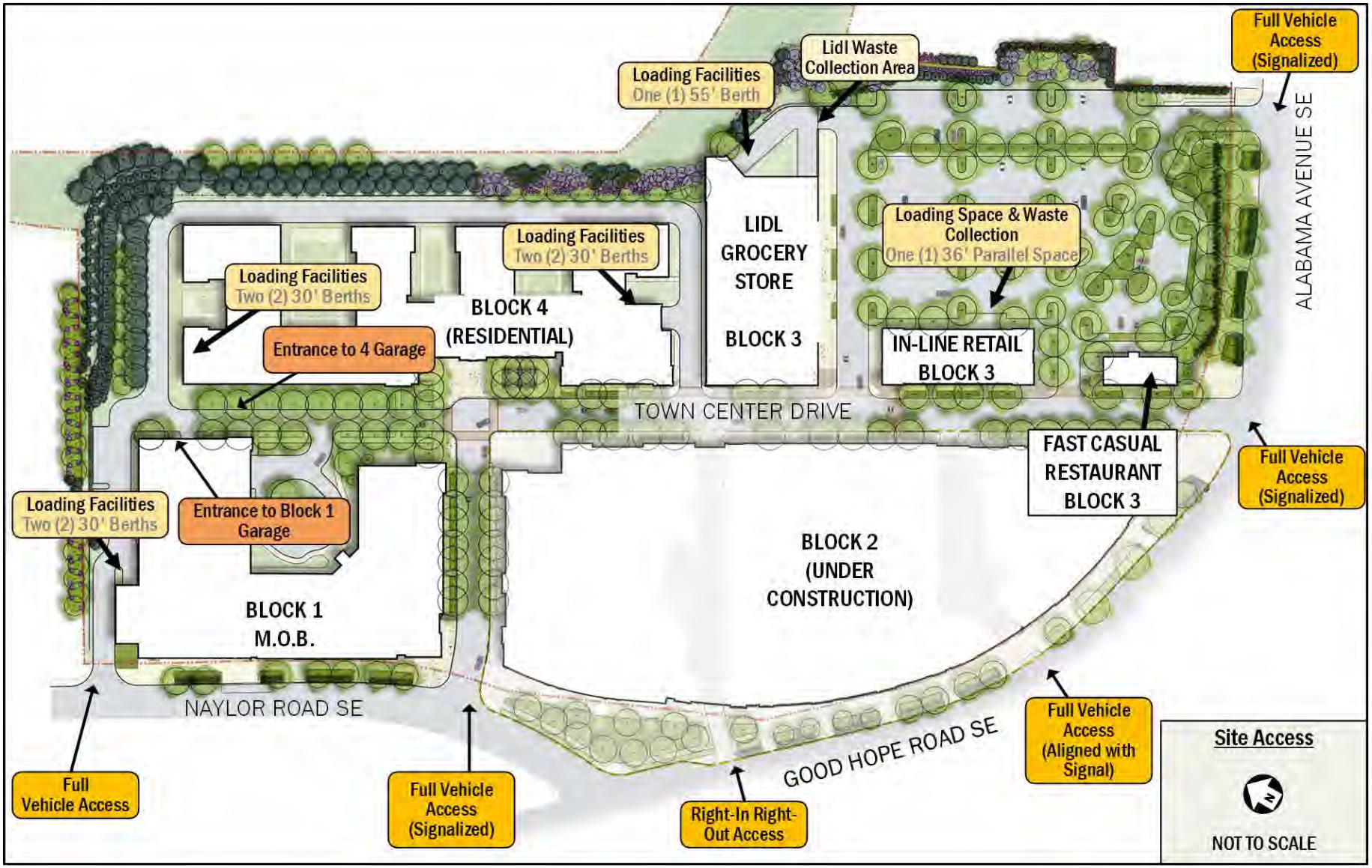

Figure 9: Site Access

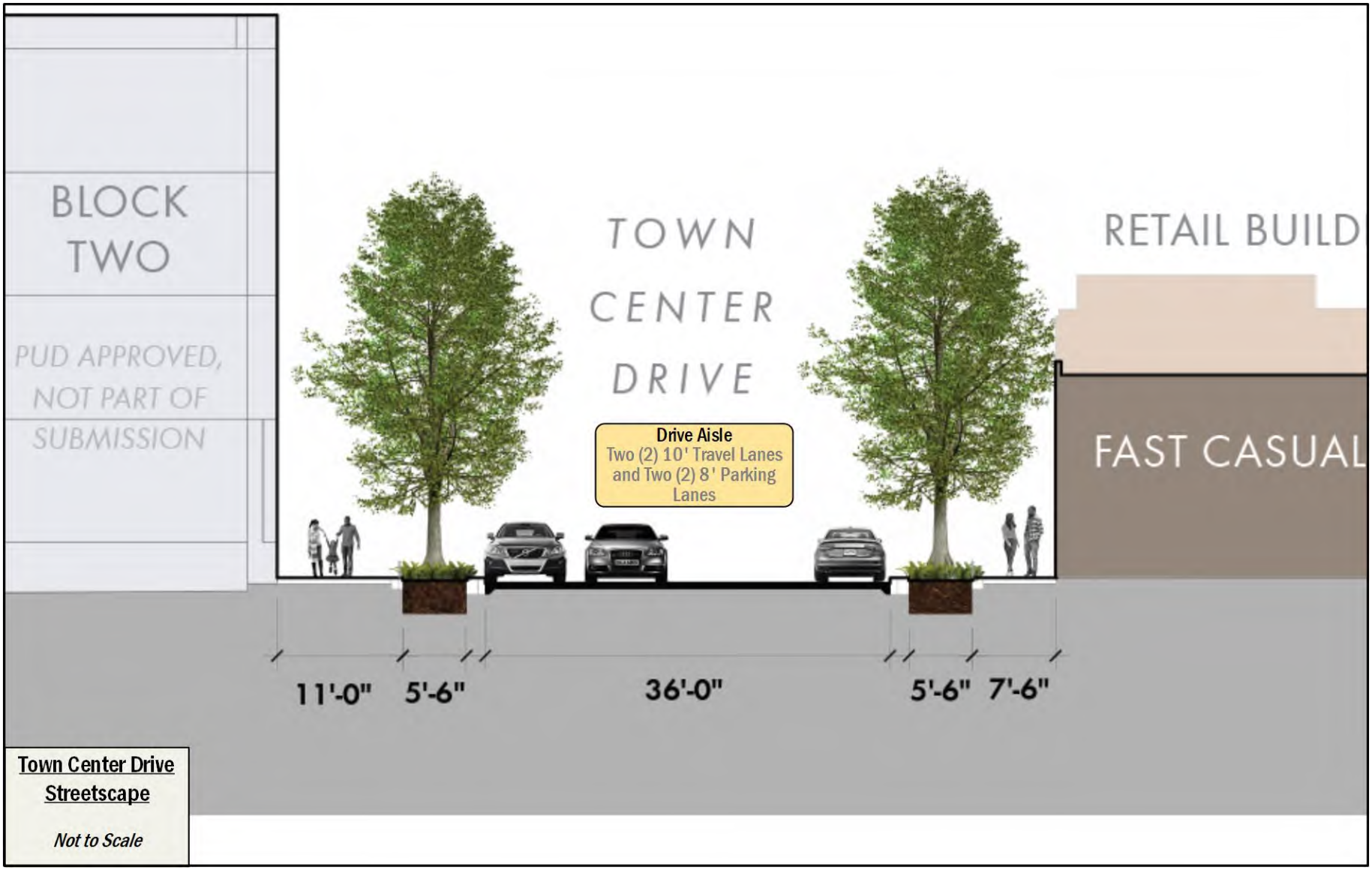

Figure 10: Town Center Drive Streetscape

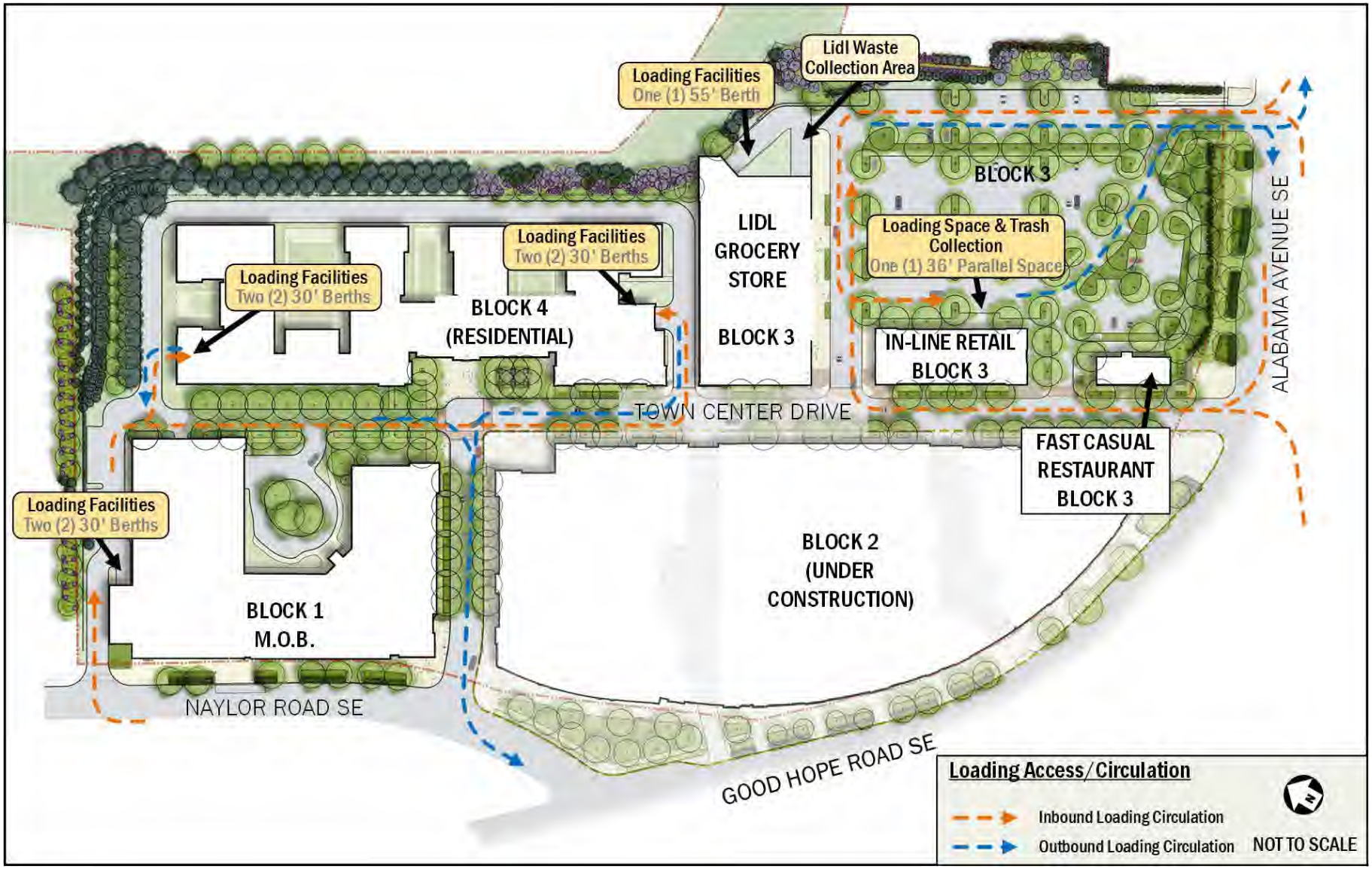

Figure 11: Loading Circulation

TRIP GENERATION

This chapter outlines the Project's transportation demand. It summarizes the projected trip generation of the Project by mode, which forms the basis for the chapters that follow. These assumptions were vetted and approved by DDOT as a part of the scoping process for the study.

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

Trip generation for the medical office building was calculated based on ITE land use 720, *Medical Office Building*. Trip generation for the retail components of the site was calculated based on ITE land use 820, *Shopping Center*. Trip generation for the grocery store was calculated based on ITE land use 850, *Supermarket*. Trip generation for the residential component was calculated based on ITE land use 221, *Multifamily Housing (Mid-Rise)*.

Trips were split into different modes using assumptions from the traffic study submitted for the approved PUD, assumptions derived from census data for the residents that currently live near the Site, WMATA ridership survey data, and the proposed parking supply. A summary of the mode split assumptions is provided in Table 11, and a summary of the multimodal trip generation for the proposed modified Block 1, Block 3, and Block 4, based on ITE, is provided in Table 12 for the morning, afternoon, and Saturday peak hours. Table 13 presents the multimodal trip generation for the entire site with the proposed modifications and the approved Block 2. Detailed calculations are included in the Technical Attachments, including the approved PUD trip generation and methodology.

Table 11: Skyland Town Center Mode Split Assumptions

Land Use	Mode			
	Drive	Transit	Bike	Walk
Residential	70%	26%	2%	2%
Office	70%	26%	2%	2%
Retail	70%	26%	2%	2%
2009 Study	70%	30% Non-Auto		

As shown on Table 13, the modified Skyland Town Center is expected to generate trips on the surrounding transportation network across all modes. The AM peak hour trip generation is projected to include 531 vehicles/hour, 268 transit riders/hour, 21 bicycle trips/hour, and 21 walking trips/hour. The PM peak hour trip generation is projected to include 941 vehicles/hour, 522 transit riders/hour, 40 bicycle trips/hour, and 40 walking trips/hour.

A comparison of the vehicle trip generation between the approved PUD and the modified Skyland Town Center is presented in Table 14. As shown on Table 14, the proposed modification result in 118 additional vehicle trips during the morning peak hour and a **reduction of 123 and 303 in vehicle trips during the afternoon and Saturday peak hours, respectively.** The approved PUD did not analyze non-auto modes by specific use; however, the proposed modification generates an additional 57 non-auto trips/hour during the AM peak hour and reduces the PM trip generation by 67 non-auto trips/hour.

Table 12: ITE Multi-Modal Trip Generation Summary for Block 1, Block 3, and Block 4

Mode	AM Peak Hour			PM Peak Hour			Sat Peak Hour		
	In	*Out*	*Total*	*In*	*Out*	*Total*	*In*	*Out*	*Total*
Auto	271 veh/hr	139 veh/hr	410 veh/hr	257 veh/hr	379 veh/hr	636 veh/hr	369 veh/hr	323 veh/hr	692 veh/hr
Transit	131 ppl/hr	71 ppl/hr	202 ppl/hr	142 ppl/hr	193 ppl/hr	335 ppl/hr	200 ppl/hr	181 ppl/hr	381 ppl/hr
Bike	10 ppl/hr	6 ppl/hr	16 ppl/hr	11 ppl/hr	16 ppl/hr	27 ppl/hr	15 ppl/hr	15 ppl/hr	30 ppl/hr
Walk	10 ppl/hr	6 ppl/hr	16 ppl/hr	11 ppl/hr	16 ppl/hr	27 ppl/hr	15 ppl/hr	15 ppl/hr	30 ppl/hr

Table 13: ITE Multi-Modal Trip Generation Summary for the Modified Skyland Town Center (Approved Block 2 and Modified Block 1, Block 3, and Block 4)

Mode	AM Peak Hour			PM Peak Hour			Sat Peak Hour		
	In	*Out*	*Total*	*In*	*Out*	*Total*	*In*	*Out*	*Total*
Auto	322 veh/hr	209 veh/hr	531 veh/hr	414 veh/hr	527 veh/hr	941 veh/hr	569 veh/hr	527 veh/hr	1,096 veh/hr
Transit	162 ppl/hr	106 ppl/hr	268 ppl/hr	235 ppl/hr	287 ppl/hr	522 ppl/hr	328 ppl/hr	307 ppl/hr	635 ppl/hr
Bike	12 ppl/hr	9 ppl/hr	21 ppl/hr	18 ppl/hr	22 ppl/hr	40 ppl/hr	26 ppl/hr	23 ppl/hr	49 ppl/hr
Walk	12 ppl/hr	9 ppl/hr	21 ppl/hr	18 ppl/hr	22 ppl/hr	40 ppl/hr	26 ppl/hr	23 ppl/hr	49 ppl/hr

Table 14: Vehicle Trip Generation Comparison Between Approved PUD and Modified Skyland Town Center

Scenario	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)			Sat Peak Hour (veh/hr)		
	In	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Approved Trips									
Approved PUD	175	238	413	544	520	1,064	721	678	1,399
Proposed Modification Trip Generation (Blocks 1, 3, 4) + Approved Block 2									
Proposed Modification Program	322	209	531	414	527	941	569	527	1,096
Net New Trips	**147**	**-29**	**118**	**-130**	**7**	**-123**	**-152**	**-151**	**-303**

TRAFFIC OPERATIONS

This chapter provides a summary of an analysis of the existing and future roadway capacity surrounding the Site. Included is an analysis of potential vehicular impacts of the Project and a discussion of potential improvements.

The purpose of the capacity analysis is to:

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

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

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

This chapter concludes:

- Under Existing Conditions, five (5) study intersections operate at unacceptable levels of service, indicating areas of concern along Naylor Road and Alabama Avenue.
- The addition of site generated trips does not significantly affect the delays or queuing at most intersections.
- Three (3) intersections meet DDOT's threshold for mitigation measures as a result of minor impacts to delay created by the Project.
- Mitigations in the form of signal timing adjustments and peak-period parking restrictions are recommended at selected intersections.
- The Project will not have a detrimental impact to the surrounding vehicular network, with the implementation of all site design elements and mitigation measures.

STUDY AREA, SCOPE, & METHODOLOGY

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

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

Capacity Analysis Scenarios

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

Specifically, the roadway capacity analysis examined the following scenarios:

1. Existing Conditions (Existing Conditions);
2. 2024 Future Conditions without the Project (2024 Background Conditions); and
3. 2024 Future Conditions with the Project (2024 Total 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 Project. Although it is possible that impacts will occur outside of the study area, those impacts are neither significant enough to be considered a material adverse impact nor worthy of mitigation measures.

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

1. Naylor Road/Future Site Access (MOB Driveway), SE
2. Naylor Road/Future Site Access (Town Center Drive), SE
3. Good Hope Road/Naylor Road/25th Street, SE
4. Good Hope Road/Future Site Access (Block 2 Access), SE
5. Naylor Road/Good Hope Road/Future Site (Block 2 Access), SE
6. Alabama Avenue/Naylor Road, SE
7. Good Hope Road/Alabama Avenue/Future Site Access (Town Center Drive), SE
8. Alabama Avenue/Future Site Access (Block 3 Access)/Shopping Center Drive, SE

Figure 12 shows a map of the study area intersections.

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

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

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

2024 Background/Total Future Geometry and Operations Assumptions
Following national and DDOT methodologies, a background improvement must meet the following criteria to be incorporated into the analysis:

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

Based on these criteria, the following improvements associated with the approved PUD for the Skyland Town Center were assumed:

- Installation of a new signalized intersection at Naylor Road and the Site's Town Center Drive;
- Pavement restriping on Naylor Road to increase capacity (Provide pavement re-striping to delineate two travel lanes along Naylor Road southbound along the site frontage);
- Improvements to the existing intersection at Good Hope Road and Naylor Road/25th Street (these improvements are present in existing conditions);
    - Provide pavement markings to delineate a separate left-turn lane and a shared through/right-turn lane along the northbound (25th Street) approach.
    - Widen the southbound approach (Naylor Road) to provide double left-turn lanes and a shared through/right-turn lane.
    - Provide signalization, pavement marking and other improvements to accommodate the above-noted lane configuration improvements
- Modification of the signalized intersection at Alabama Avenue/Good Hope Road and Main Street;
    - Provide signalization and pavement marking improvements to accommodate Town Center Drive as the fifth leg to Alabama Avenue/Good Hope Road intersection.
- Installation of a new signalized intersection at Alabama Avenue and the New Grocery Store/Retail Access.

The lane configurations and traffic controls for the 2024 Background Geometry is presented in Figure 14.

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

Existing Traffic Volumes
Data collection was not possible during Spring 2020 as traffic volumes were not representative of typical traffic conditions due to City-wide restrictions in response to the COVID-19 public health crisis. DDOT's Traffic Engineering and Signals Division (TESD) collected turning movement counts in the vicinity of the Skyland Town Center development over a 10-month period between 2017 and 2018 for traffic signal timing optimization purposes. The system morning and afternoon peak hour volumes were provided to Gorove Slade and these were used as existing volumes in the analysis to establish baseline conditions. The system peak volumes as provided by TESD are consistent with turning movement counts conducted by Gorove Slade for the previously submitted CTR for the approved PUD and 2016 DDOT turning movement counts conducted at a number of study intersections. These turning movement counts are provided in the Technical Attachments for reference. The existing system peak hour traffic volumes are shown in Figure 15. The collected volumes include site volumes associated with construction traffic and the existing site retail traffic. These trips were removed from the network as shown in Figure 16 and Figure 17 presents the existing peak hour volumes after existing site trip removal.

2024 Background Traffic Volumes (without the Project)
The traffic projections for the 2024 Background Conditions consist of the existing volumes with four (4) additions:

- Site trip removals related to construction traffic and existing retail traffic at the time of data collection,
- Inherent growth on the roadway (representing regional traffic growth),

- Traffic generated by developments expected to be completed prior to the Project (known as background developments), and
- Traffic generated by the Skyland Town Center development as Approved (without the proposed modifications to Block 1, Block 3, and Block 4).

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 future analysis year of 2024.

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

- The Shops at Penn Hill
- Ainger Place Apartments
- 2483-2491 Alabama Avenue
- 2495 Alabama Ave

Trip generation for The Shops at Penn Hill is based on DDOT's report documented under ZC 17-11. Trip generation, mode split, and trip distribution assumptions for the 2483-2491 Alabama Avenue project were primarily obtained from the Transportation Impact Statement performed by Gorove Slade dated August 5, 2019.

Trip generation for the Ainger Place Apartments and the 2945 Alabama Avenue projects was calculated using *ITE Trip Generation 10th Edition* with mode splits assumptions made in the 2483-2491 Alabama Avenue analysis. Trip distribution is based on the distribution assumptions made for the residential component of the proposed modified Skyland Town Center project.

A summary of the trip generation for the background developments is shown in Table 15 and the combined background projects peak hour volumes are shown in Figure 18. Detailed mode split and trip generation information is included in the Technical Attachments.

The approved Skyland Town Center PUD was analyzed as part of the background conditions to capture the impact of the proposed Project. The trip generation methodology applied in the initial PUD submission was used along with the approved PUD development program of:

- 500 residential units
- 20 townhomes
- 342,000 SF retail

The peak hour volumes for the entire Skyland Town Center development as approved are shown in Figure 19. Detailed calculations are included in the Technical Attachments.

While the background developments represent local traffic changes, regional traffic growth is typically accounted for using growth rates. The growth rates used in this analysis are derived using the Metropolitan Washington Council of Government's (MWCOG) currently adopted regional transportation model, comparing the difference between the year 2018 and 2024 model scenarios as vetted and agreed to by DDOT. The growth rates observed in this model served as a basis for analysis assumptions. The applied growth rates are shown in Table 16. The traffic volumes generated by the inherent growth along the network, shown Figure 20.

Table 15: Summary of Background Trip Generation

Background Development	Trip Generation Source	AM Peak Hour (veh/hr)			PM Peak Hour (veh/hr)		
		In	Out	Total	In	Out	Total
The Shops at Penn Hill	ZC 17-11 DDOT Report	22	74	96	74	43	117
Ainger Place Apartments	ITE Trip Gen 10th Ed.	3	9	12	9	5	14
2483-2491 Alabama Avenue NE	Gorove Slade Study	3	11	14	10	7	17
2495 Alabama Avenue NE	ITE Trip Gen 10th Ed.	2	3	5	3	3	6
	Total	**30**	**97**	**127**	**96**	**58**	**154**

Table 16: Applied Annual and Total Growth Rates

Road & Direction	Annual Growth Rate		Growth between 2018 and 2024	
	AM Peak	PM Peak	AM Peak	PM Peak
EB Alabama Ave	0.10%	0.10%	0.60%	0.60%
WB Alabama Ave	0.10%	0.39%	0.60%	2.36%
EB Good Hope Rd	0.44%	0.45%	2.67%	2.73%
WB Good Hope Rd	0.10%	0.10%	0.60%	0.60%
NB Naylor Rd	0.10%	0.10%	0.60%	0.60%
SB Naylor Rd	0.10%	0.10%	0.60%	0.60%
All Other Roadways	0.10%	0.10%	0.60%	0.60%

The existing peak hour volumes, presented in Figure 17, were combined with the background projects' peak hour volumes, shown in Figure 18, the approved Skyland Town Center development traffic volumes, shown in Figure 19, and background growth peak hour volumes, Figure 20, in order to establish the 2024 Background traffic volumes. The traffic volumes for the 2024 Background conditions are shown in Figure 21.

2024 Total Future Traffic Volumes (with the Project)

The 2024 Total Future traffic volumes consist of the following:

- Existing volumes, shown in Figure 17;
- Background developments, shown in Figure 18;
- Inherent growth on the study area roadways, shown in Figure 20; and
- The modified Skyland Town Center development (approved Block 2 and modified Block 1, Block 3, and Block 4), shown in Figure 22.

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.

Based on this review and the Site access locations, the Project-generated trips were distributed through the study area intersections. Trip distribution assumptions and specific routing was analyzed by land use for inbound and outbound trips. Medical office building distribution assumptions are provided in Figure 23 and Figure 24 for inbound and outbound trips, respectively. The grocery store distribution assumptions are provided in Figure 25 and Figure 26. Retail distribution assumptions are provided in Figure 27 and Figure 28. Residential distribution assumptions are provided in Figure 29 and Figure 30.

The 2024 Total Future traffic volumes are shown on Figure 31.

Vehicular Analysis Results

Intersection Capacity Analysis

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

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

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

Table 17 shows the results of the capacity analyses, including LOS and average delay per vehicle (in seconds) for the Existing, 2024 Background, and 2024 Total Future scenarios. Table 18 shows a comparison of the volume to capacity (v/c) ratios for each scenario.

During the scoping process, DDOT requested a comparison of the analyzed scenarios in this report to the capacity analysis results of the previously approved CTR. The LOS results of the approved CTR and analyses conducted as part of subsequent modifications of the approved PUD are included in the Technical Attachments for reference. A tabular comparison of

results between the previous analyses and the analysis conducted in this report is not presented for the following reasons:

- Site access configurations
  - 2009 Study analyzed four (4) out of five (5) site access points
  - 2013 Block 2 access analysis analyzed two (2) out of six (6) site access points with the removal of the Naylor Road spur
- Different development programs
- Different site/block configuration with different trip distributions at the site driveways based on the location of the project's different land uses
- Different analysis software versions
  - 2009 Study presented Synchro 6 and Synchro 7 results
  - 2013 Block 2 access analysis presented Synchro 7 results
- Different design years
  - 2009 Study analyzed 2011 and the project design year
  - 2013 Block 2 access analysis presented 2018 as the project design year
- Signal timings optimized for analysis volumes

Considering the differences listed above, a review of the previously submitted capacity analysis results indicate the proposed modification is consistent with the approved PUD.

As shown in Table 17, five (5) of the study intersections operate at unacceptable conditions or have one or more approaches operating at unacceptable levels during the existing conditions:

- Naylor Road & Town Center Drive
  - Westbound (AM/PM)

- Good Hope Road & Naylor Road/25th Street
  - Northbound (AM/PM)

- Good Hope Road & Naylor Road/Block 2 Access
  - Overall (AM)
  - Northbound (AM/PM)
  - Southbound (AM)

- Naylor Road & Alabama Avenue
  - Overall (AM)
  - Eastbound (AM/PM)
  - Westbound (AM)
  - Northbound (AM)

- Alabama Avenue & Good Hope Road
  - Southwestbound (AM)

The introduction of trips from background developments and improvements results in four (4) study intersections that operate at unacceptable conditions or have one or more approaches operating at unacceptable levels during the background conditions:

- Naylor Road & Town Center Drive
  - Westbound (PM)

- Good Hope Road & Naylor Road/25th Street
  - Overall (PM)
  - Eastbound (AM/PM)
  - Northbound (AM/PM)
  - Southbound (PM)

- Good Hope Road & Naylor Road/Block 2 Access
  - Overall (AM)
  - Northbound (AM/PM)
  - Southbound (AM)

- Naylor Road & Alabama Avenue
  - Overall (AM)
  - Eastbound (AM)
  - Westbound (AM)
  - Northbound (AM)

The introduction of the modified site-generated trips results in additional delays that meet DDOT's mitigation threshold at three (3) study intersections where an approach delay was increased to unacceptable levels or an unacceptable delay increased by over five (5) percent as compared to background conditions:

- Good Hope Road & Naylor Road/25th Street
  - Overall (AM)
  - Eastbound (AM)
  - Northbound (AM)

- Good Hope Road & Naylor Road/Block 2 Access
  - Northbound (AM)

- Naylor Road & Alabama Avenue

- Northbound (AM)

As shown in Table 17, the study intersections' level of service improves with reduced delays during the afternoon peak hour due to the reduction of vehicle trips resulting from the modified program development.

Queuing Analysis

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

Table 19 shows the queuing results for the study area intersections. Five (5) of the study intersections exhibit one or more lane group that exceeds the given storage length during the existing conditions:

- Naylor Road & Town Center Drive
  - Westbound (AM)
- Good Hope Road & Naylor Road/25th Street
  - Westbound Right (AM)
  - Northbound (AM/PM)
  - Southbound (AM/PM)
- Good Hope Road & Naylor Road/Block 2 Access
  - Eastbound (PM)
  - Westbound (AM)
  - Northbound Left (AM/PM)
  - Southbound (PM)
- Naylor Road & Alabama Avenue
  - Westbound (AM)
  - Northbound (AM)
  - Southbound (PM)
- Alabama Avenue & Good Hope Road
  - Southeastbound (PM)
  - Northwestbound Thru (AM/PM)
  - Southwestbound Thru (AM)
  - Southwestbound Right (AM/PM)

The introduction of trips from background developments and improvements results in five (5) study intersections that exhibit one or more lane group that exceeds the given storage length:

- Naylor Road & Town Center Drive
  - Westbound (PM)
  - Northbound (AM/PM)
- Good Hope Road & Naylor Road/25th Street
  - Eastbound (PM)
  - Westbound Right (AM)
  - Northbound (AM/PM)
  - Southbound Left (PM)
  - Southbound Thru (AM/PM)
- Good Hope Road & Naylor Road/Block 2 Access
  - Northbound Left (AM/PM)
  - Southbound (PM)
- Naylor Road & Alabama Avenue
  - Westbound (AM)
  - Northbound (AM)
  - Southbound (PM)
- Alabama Avenue & Good Hope Road
  - Southeastbound (PM)
  - Southwestbound Thru (AM)
  - Southwestbound Right (AM/PM)

The introduction of the modified site-generated trips results in one (1) additional study intersections exhibiting a queue which exceeds the storage length or increases a queue exceeding storage in the background scenario by 150 feet:

- Good Hope Road & Naylor Road/25th Street
  - Eastbound (AM)
  - Westbound Right (AM)

As shown in Table 19, the study intersections' queues are reduced during the afternoon peak hour due to the reduction of vehicle trips resulting from the modified program development.

Mitigation Measures

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

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

Based on these criteria, the following intersections are impacted by the Project:

- Good Hope Road & Naylor Road/25th Street
- Good Hope Road & Naylor Road/Block 2 Access
- Naylor Road & Alabama Avenue

Project Impact and Recommendations

This section summarizes the results of the capacity analyses for the intersections with movements or approaches that operate at unacceptable conditions and lists the scenarios for which this occurs. Impact associated with the modified Skyland Town Center is noted where delays for failing approaches or intersections increase by five percent or more or where an intersection or approach go from an acceptable LOS to an unacceptable one as compared between Background and Total Future conditions. Finally, recommendations for improvements at each intersection are discussed.

Good Hope Road & Naylor Road/25th Street

It should be noted this intersection experiences new delays due to the mitigations requested by DDOT in the previously approved PUD. The Naylor Road slip lane was requested to be closed for pedestrian safety, forcing more vehicles through the intersection of Good Hope Road and Naylor Road/25th Street. This mitigation measure is already in place.

During the morning peak hour, the eastbound and northbound approaches experience unacceptable delays in the Background and Total Future conditions. The eastbound and northbound delays increase between Background and Total Future conditions as a result of the Project's traffic volumes by more than DDOT's five (5) percent mitigation threshold.

Delays in the eastbound direction can be considerably reduced with the addition of a second travel lane in the eastbound direction for thru travel and right-turns. Implementing peak period parking restrictions, consistent with the existing afternoon parking restrictions, would allow the eastbound approach to operate with two (2) travel lanes. Approximately five (5) on-street parking spaces would be repurposed for the additional 125-foot lane. Demand for the repurposed parking spaces would be offset by the Site's parking supply.

Delays in the northbound direction can be decreased to levels below those experienced in existing conditions through minor signal timing adjustments to increase the green time for the northbound phase. This report recommends coordination with DDOT to optimize signal timings at this intersection to ensure the most efficient operation in the future following the construction of the modified Skyland Town Center.

Good Hope Road & Naylor Road/Block 2 Access

During the morning peak hour, the northbound approach experiences unacceptable delays in the Existing, Background, and Total Future conditions. The northbound delay increases by over five (5) percent between Background and Total Future conditions as a result of the Project's traffic volumes.

Overall intersection delays and delays in the northbound direction can be reduced to levels comparable to those seen in existing conditions for the through minor signal timing adjustments to increase the green time for the northbound phase. This report recommends coordination with DDOT to optimize signal timings at this intersection to ensure the most efficient operation in the future following the construction of the modified Skyland Town Center.

Naylor Road & Alabama Avenue

During the morning peak hour, the eastbound, westbound, and northbound approaches experience unacceptable delays in the Existing, Background, and Total Future study conditions. The northbound delay increases by more than DDOT's five (5) percent mitigation threshold between Background and Total Future conditions as a result of the Project's traffic volumes.

Slight signal timing adjustments were found to improve conditions at this intersection within five (5) percent of background delays. Delays in the northbound direction can be reduced by increasing the green time for the northbound and southbound phase. This report recommends coordination with DDOT to optimize signal timings at this intersection to ensure the most efficient operation in the future following the construction of the modified Skyland Town Center.

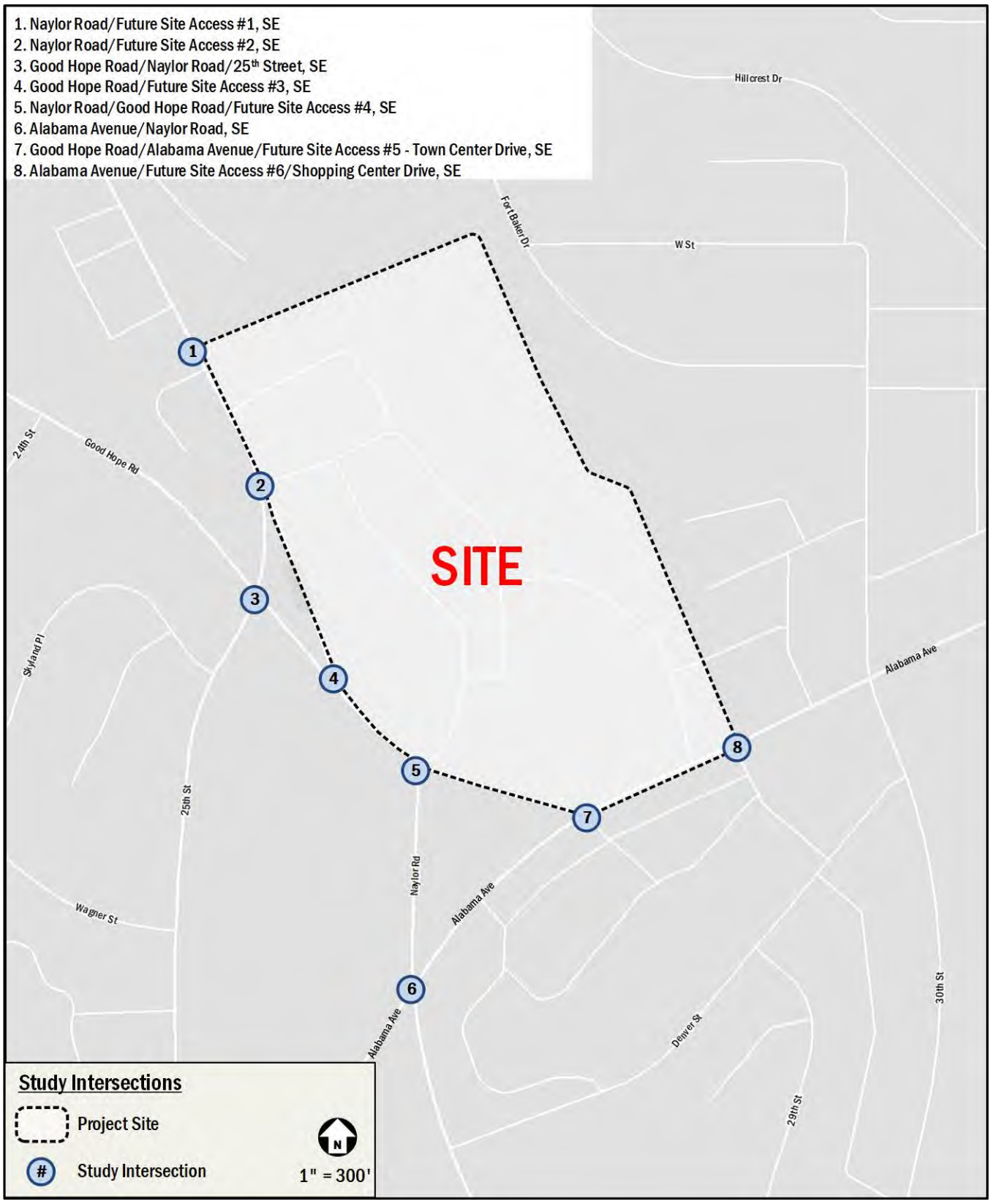

Figure 12: Study Area Intersections

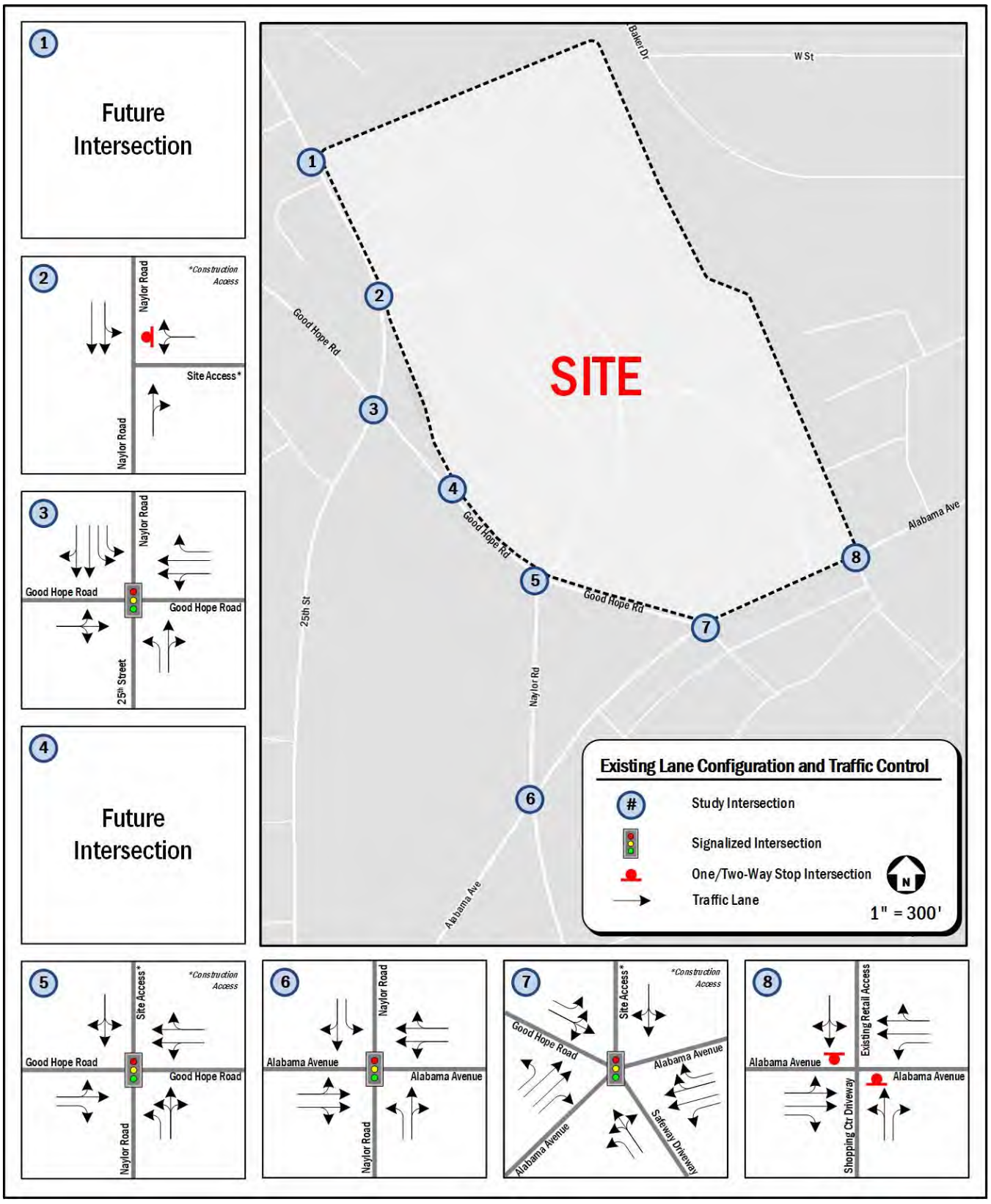

Figure 13: Existing Lane Configuration and Traffic Control

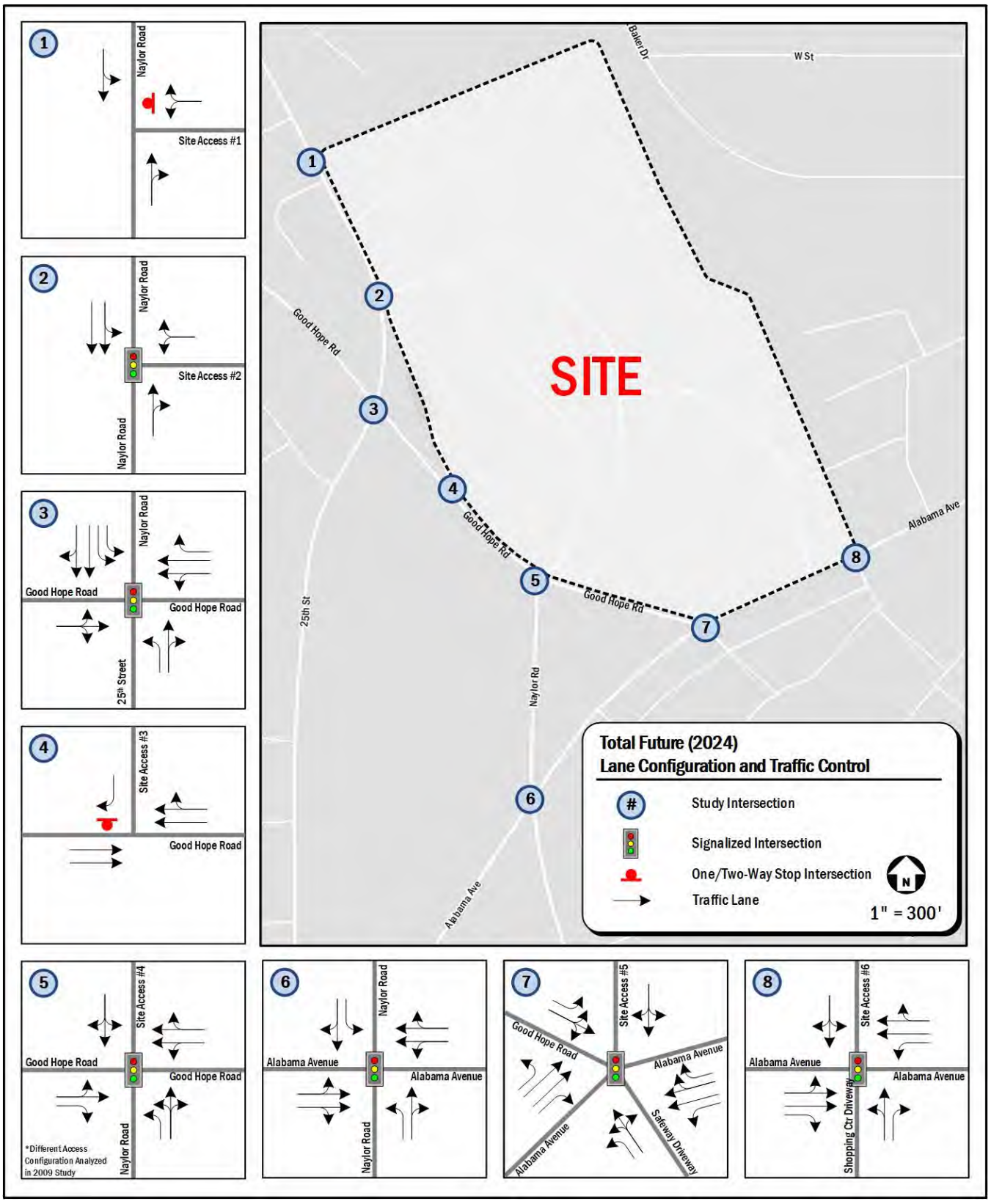

Figure 14: Total Future Lane Configuration and Traffic Control

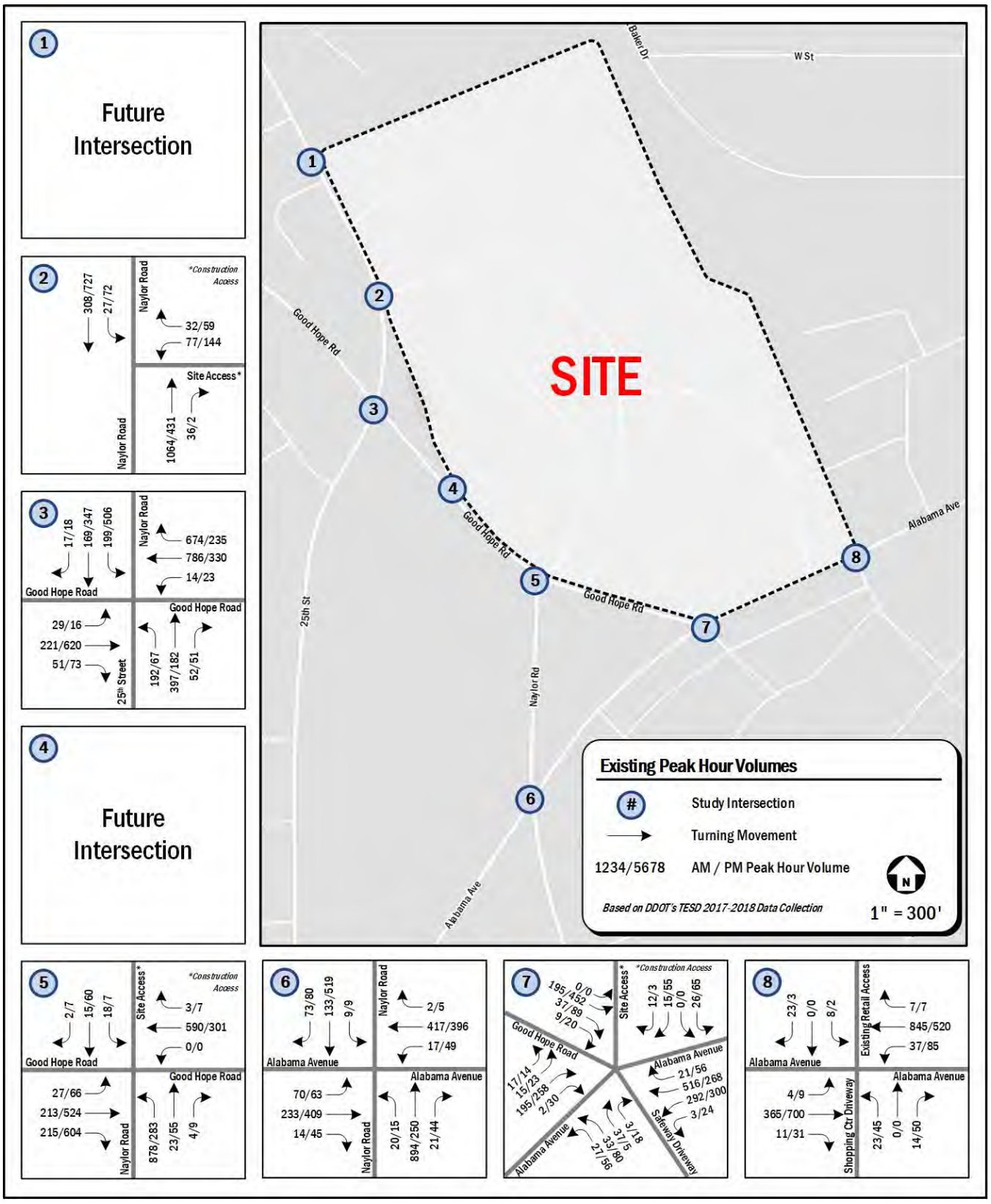

Figure 15: Existing Peak Hour Traffic Volumes

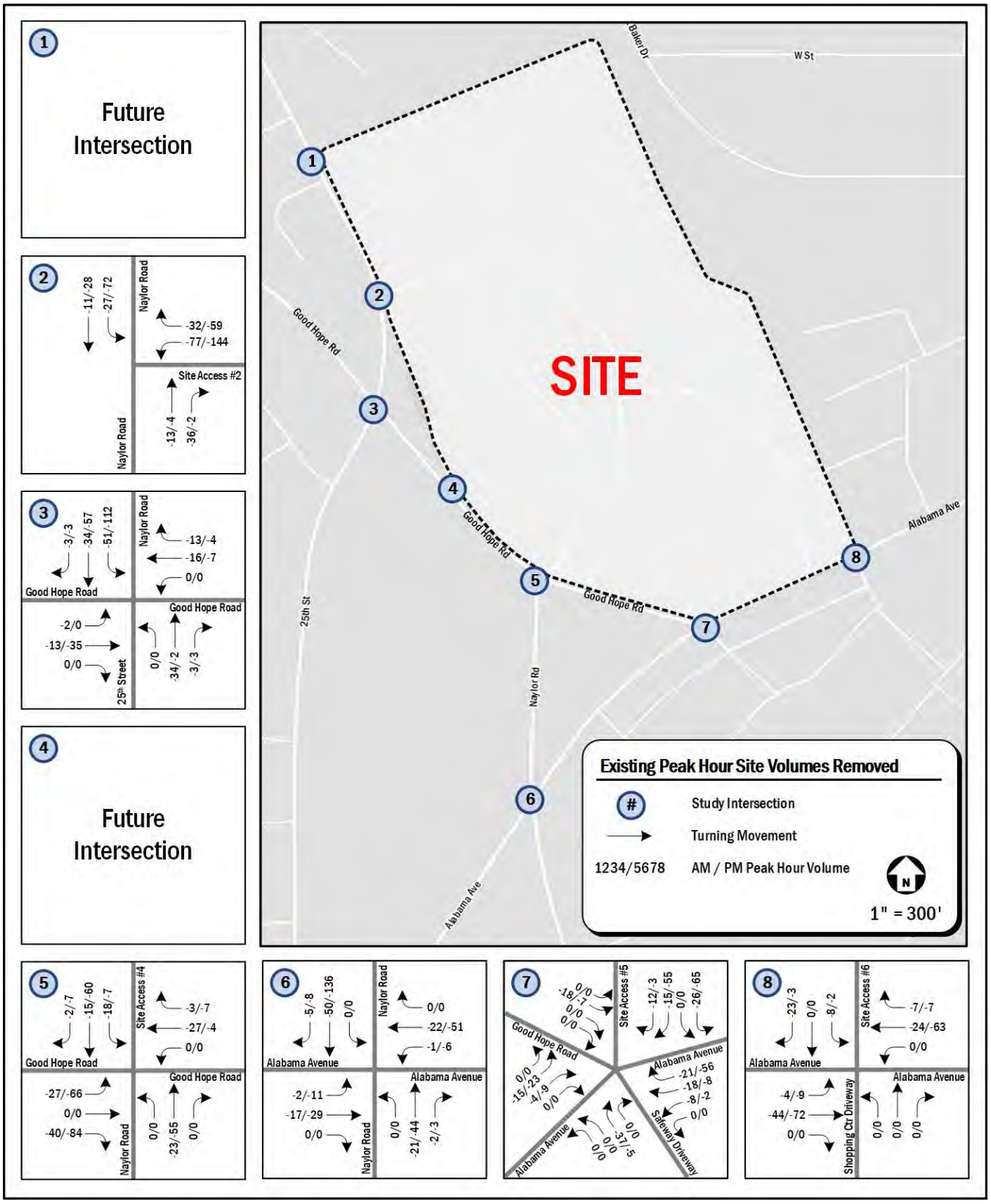

Figure 16: Removal of Existing Site Volumes

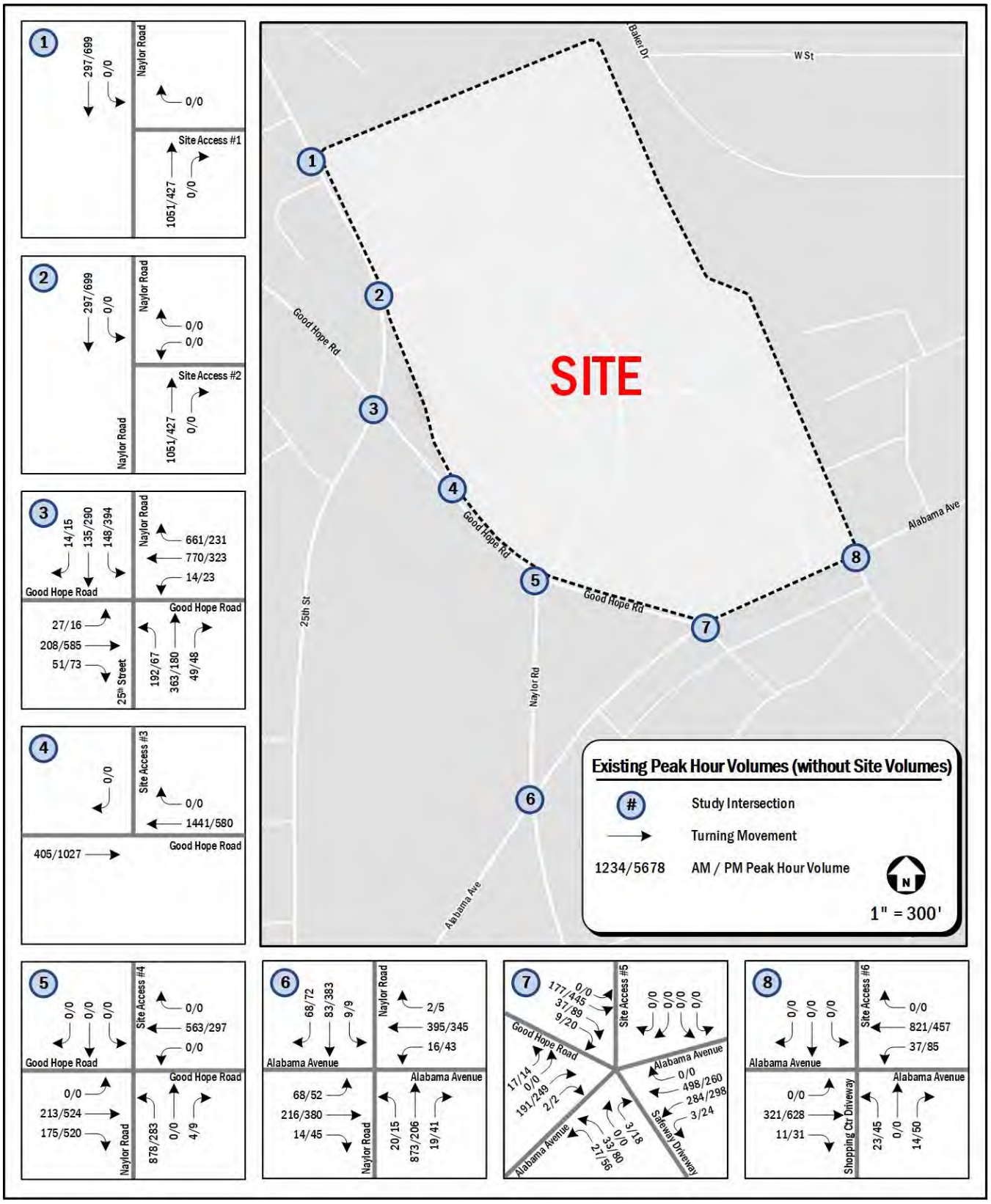

Figure 17: Existing Peak Hour Volumes (without Existing Site Volumes)

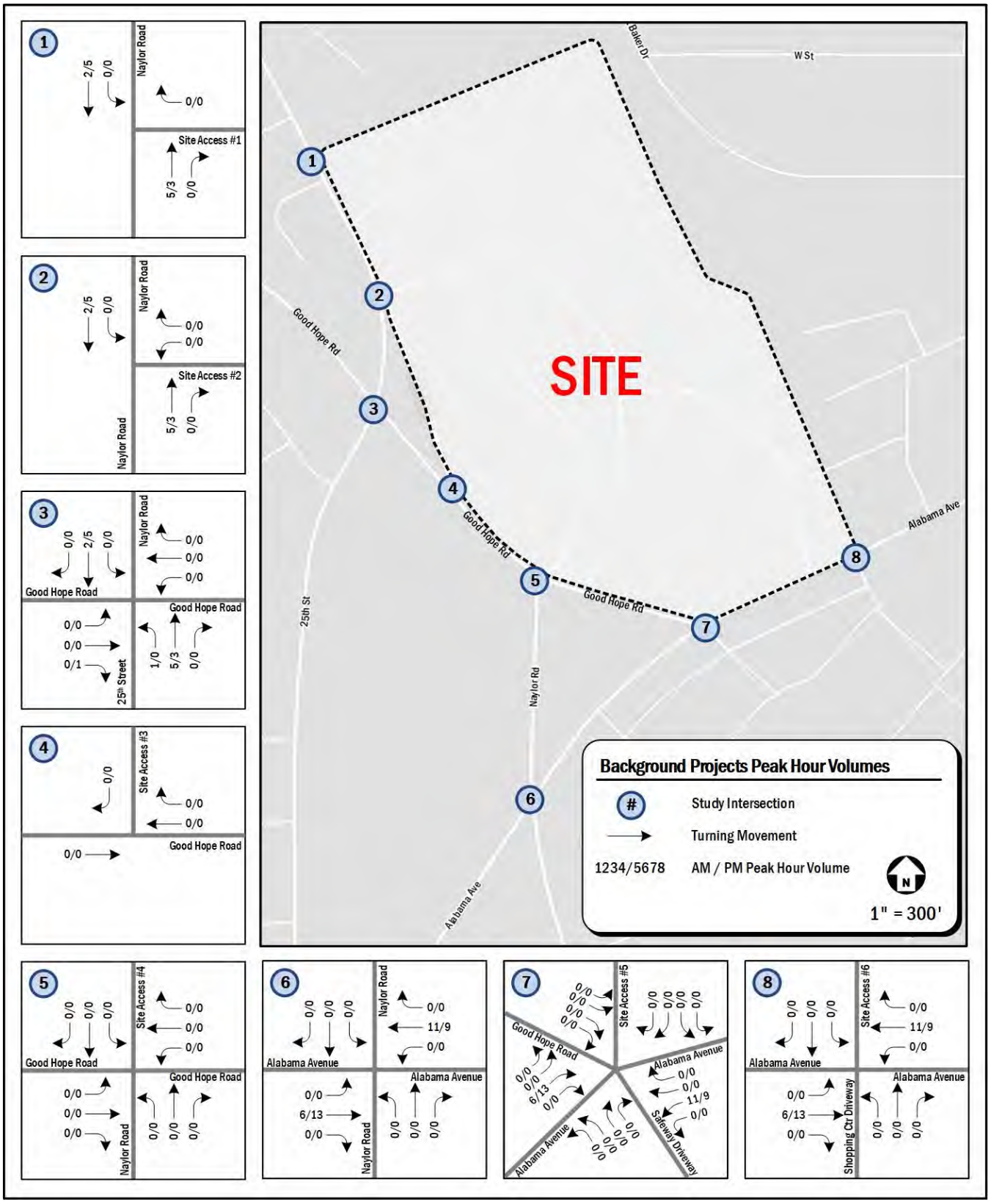

Figure 18: Background Projects Peak Hour Volumes

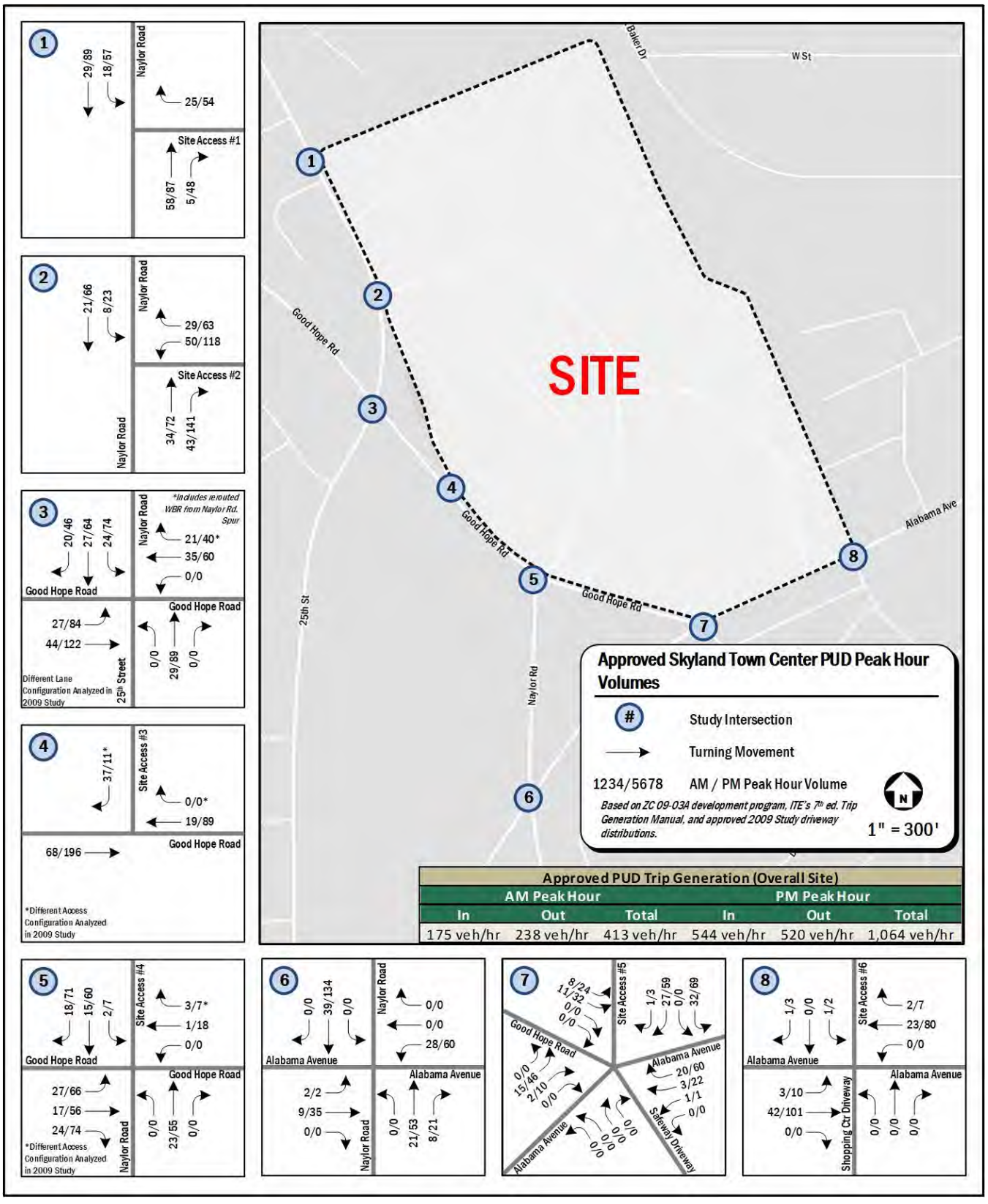

Figure 19: Approved Skyland Town Center PUD Peak Hour Volumes

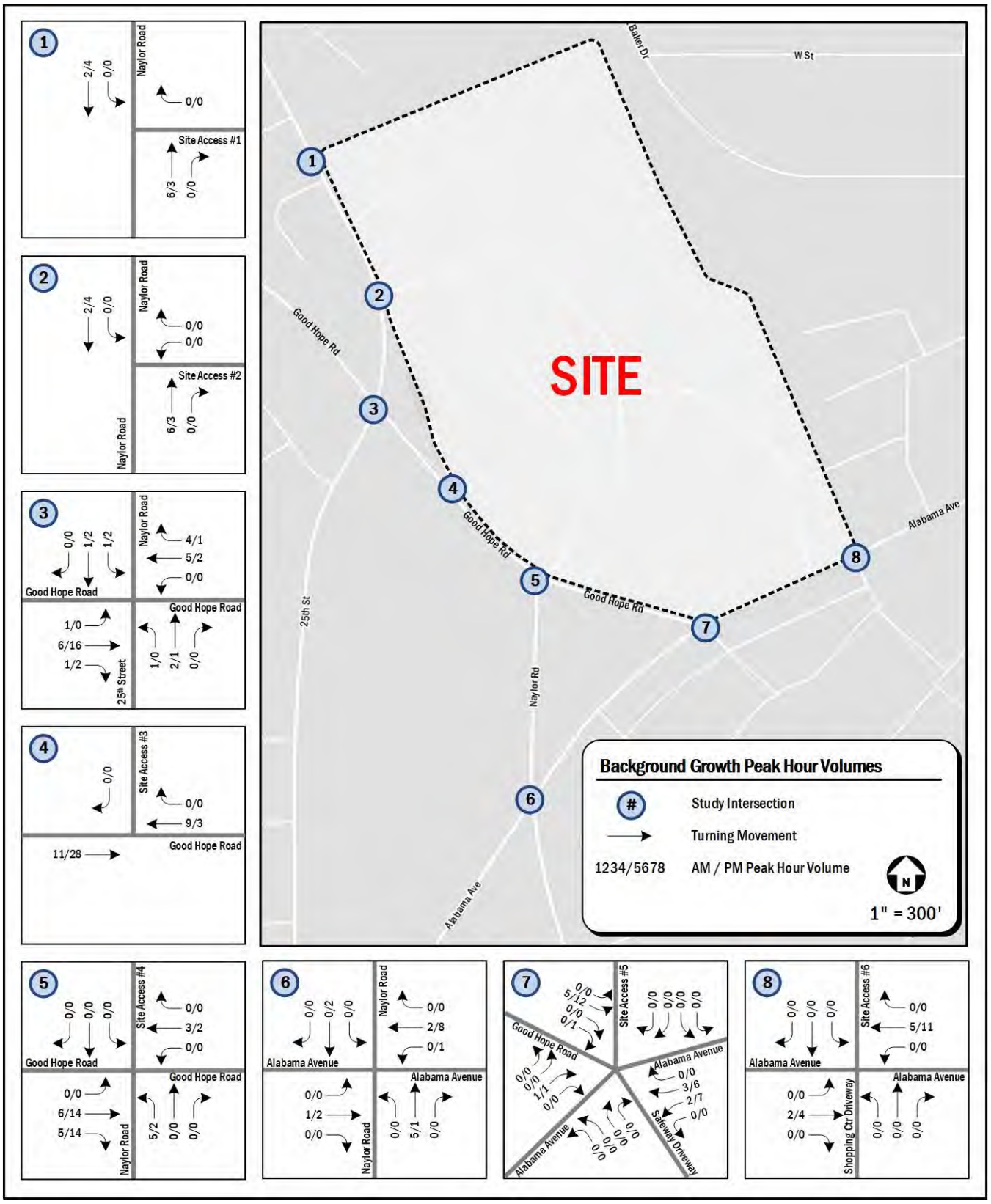

Figure 20: Background Growth Peak Hour Traffic Volumes

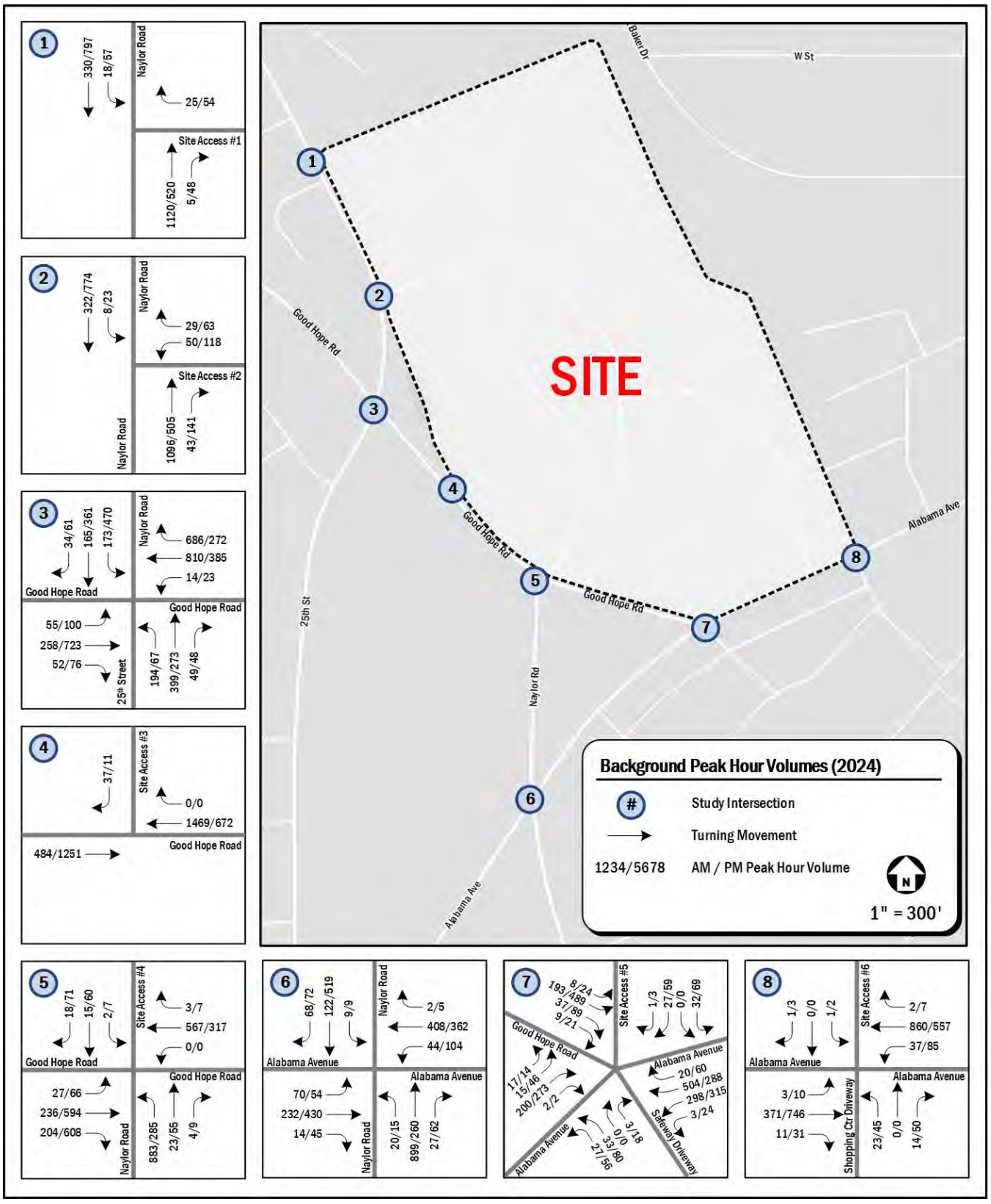

Figure 21: Background Peak Hour Traffic Volumes (2024)

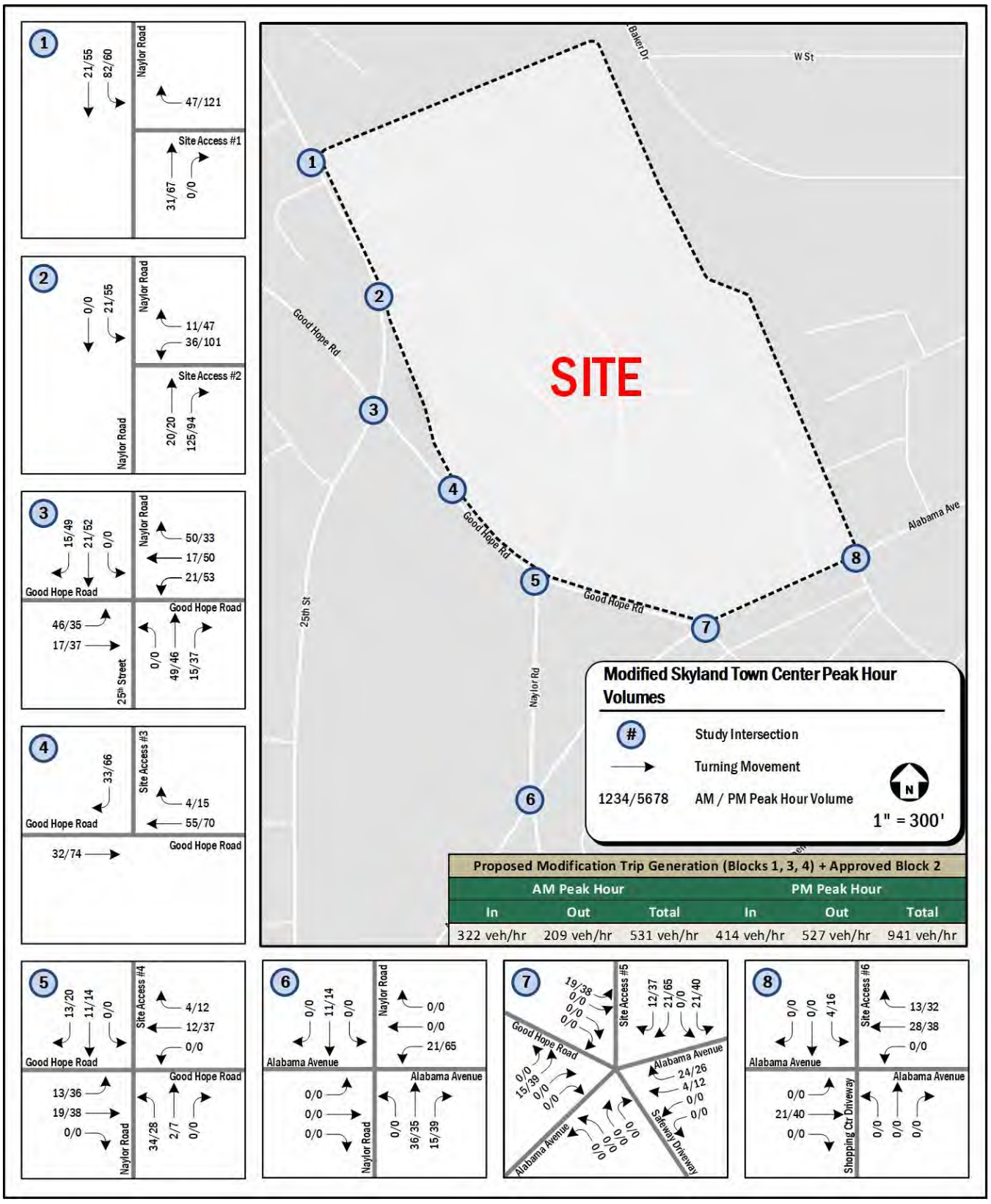

Figure 22: Modified Skyland Town Center Peak Hour Volumes

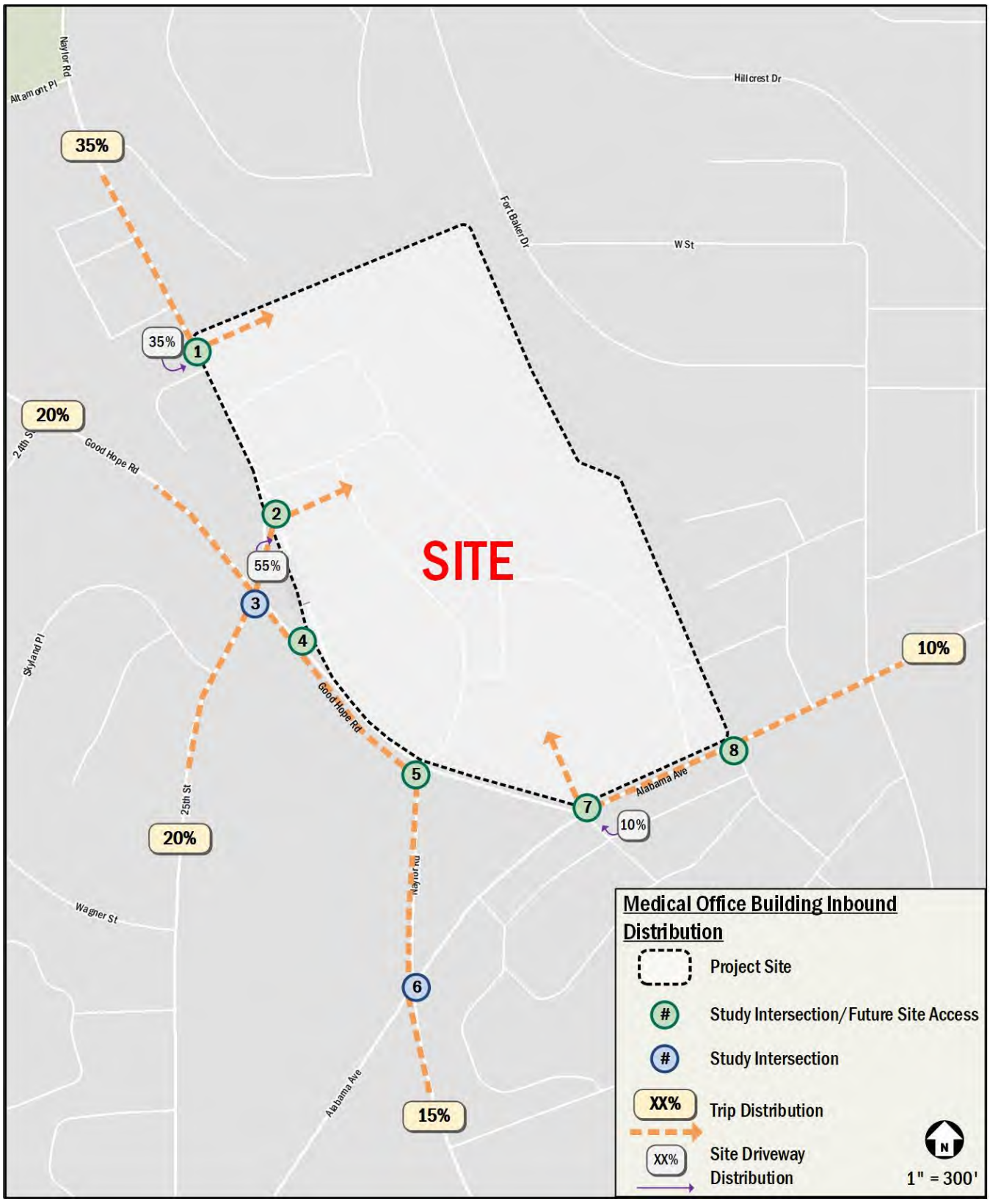

Figure 23: Medical Office Building Inbound Distribution

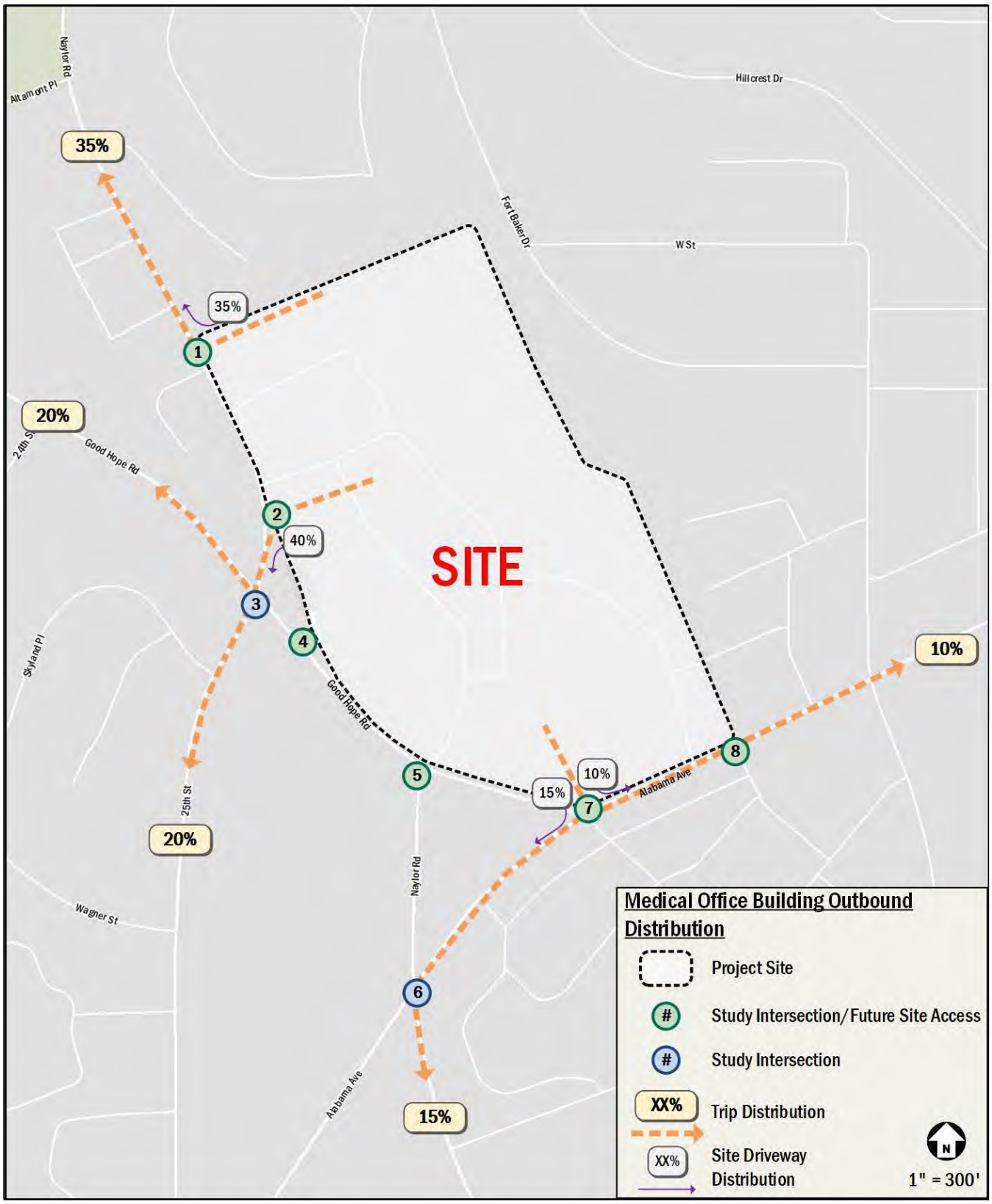

Figure 24: Medical Office Building Outbound Distribution

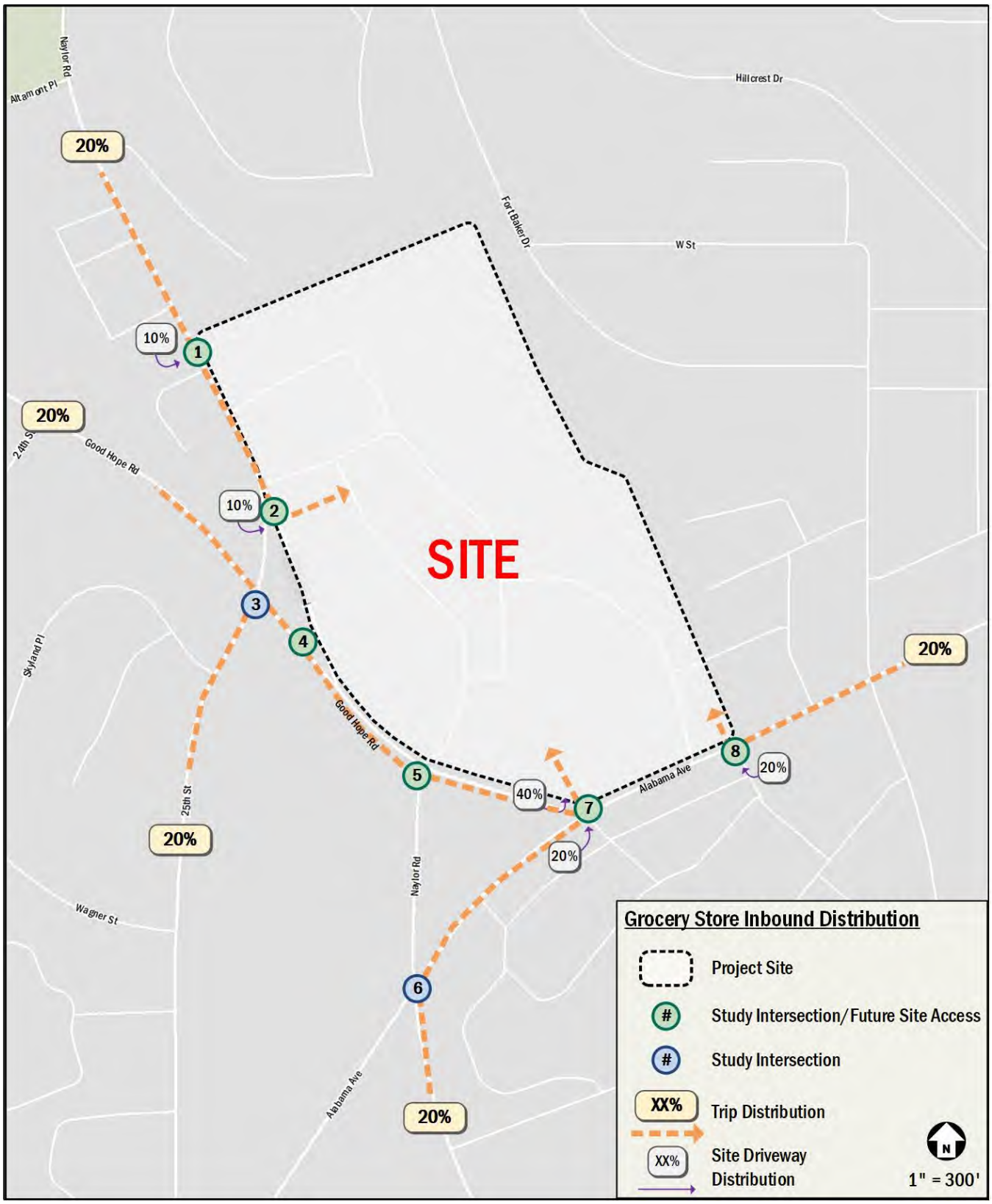

Figure 25: Grocery Store Inbound Distribution

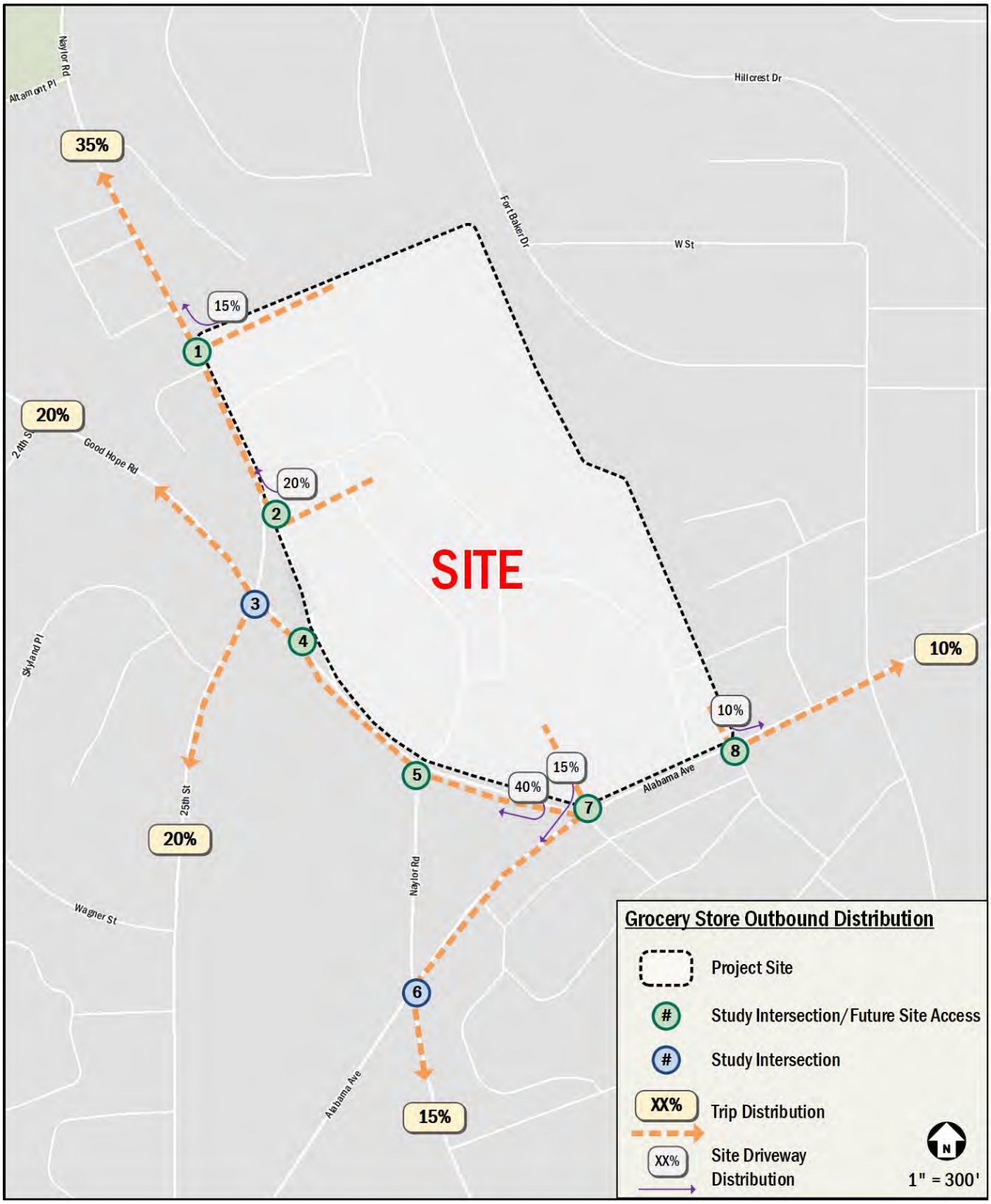

Figure 26: Grocery Store Outbound Distribution

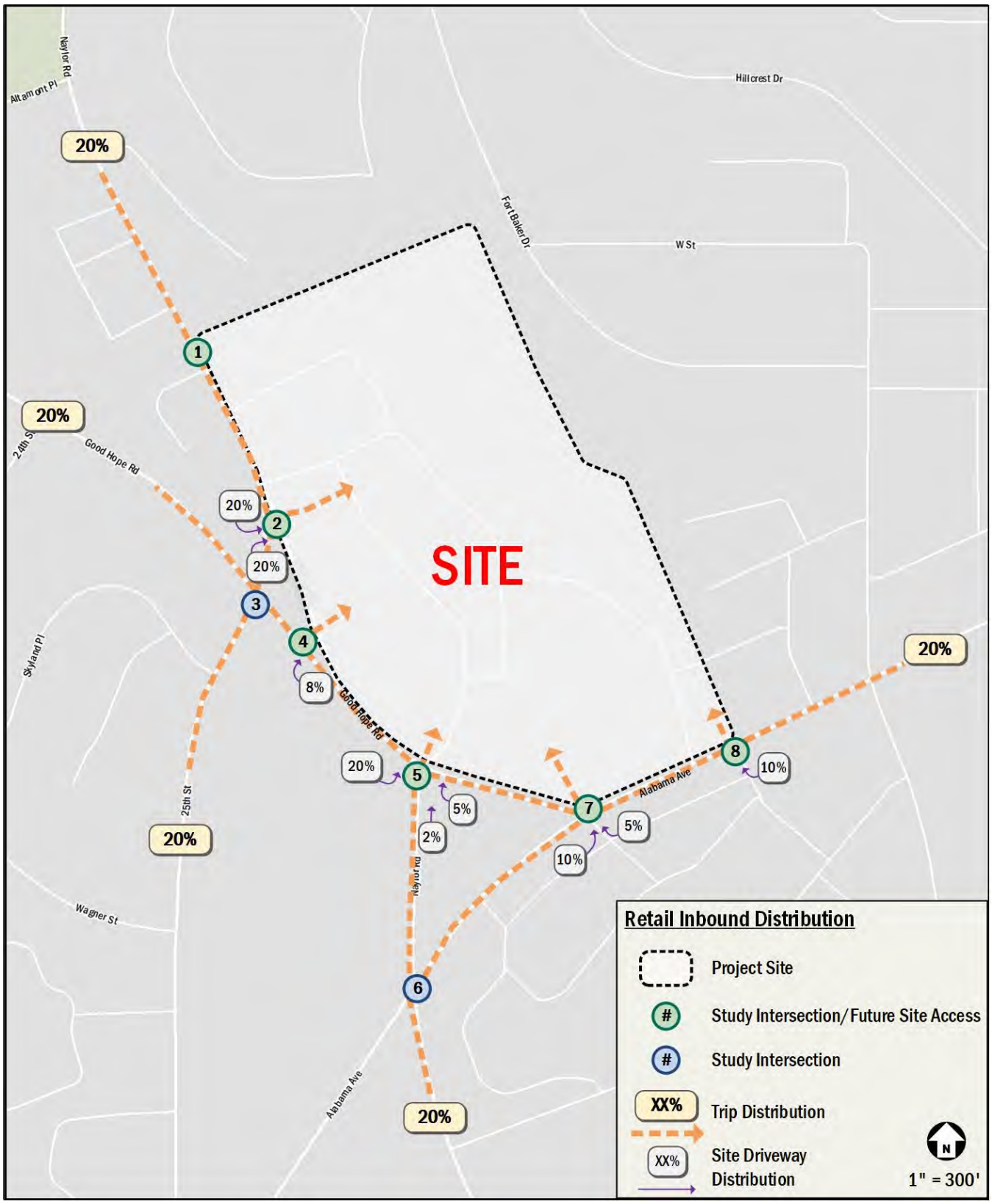

Figure 27: Retail Inbound Distribution

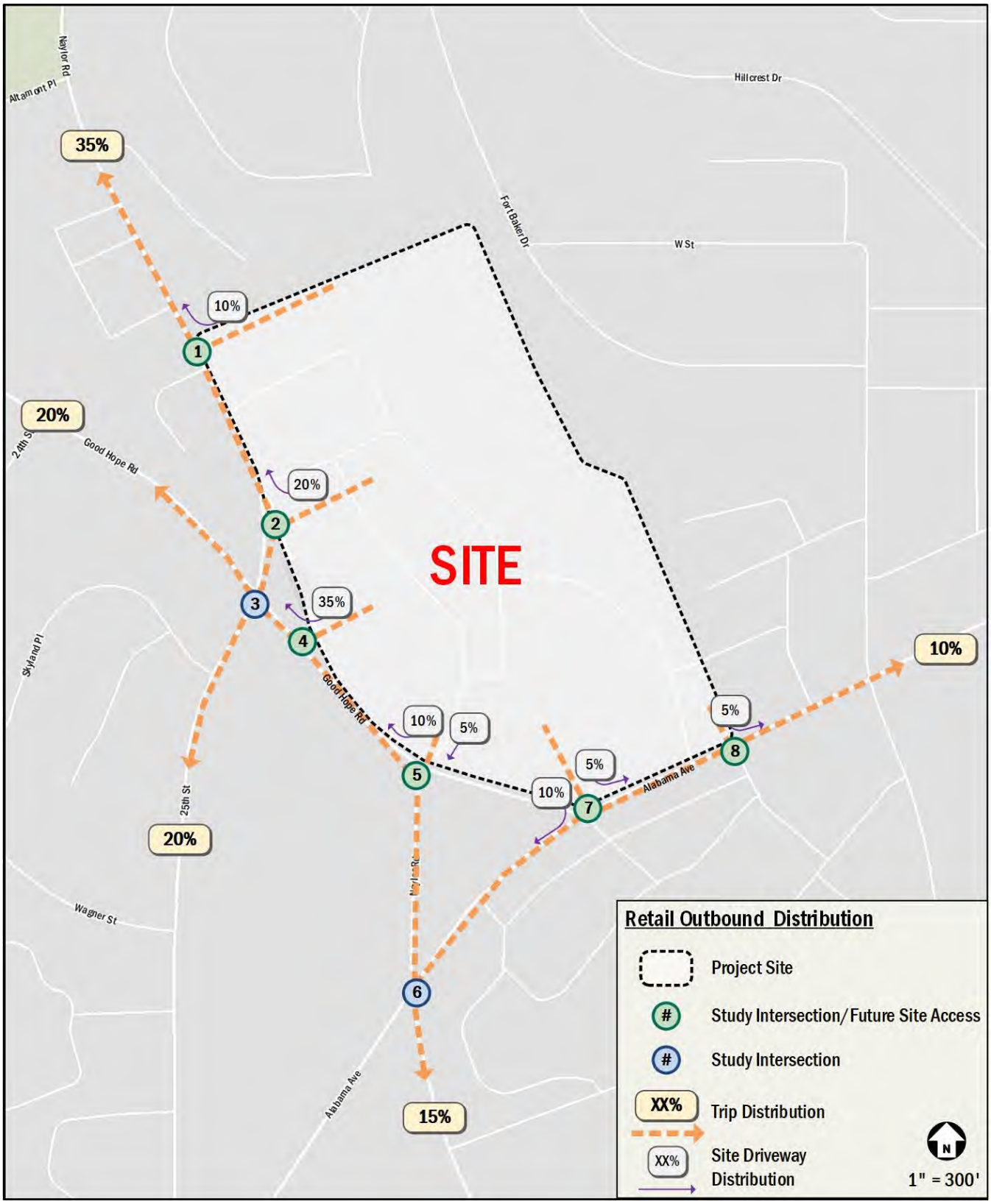

Figure 28: Retail Outbound Distribution

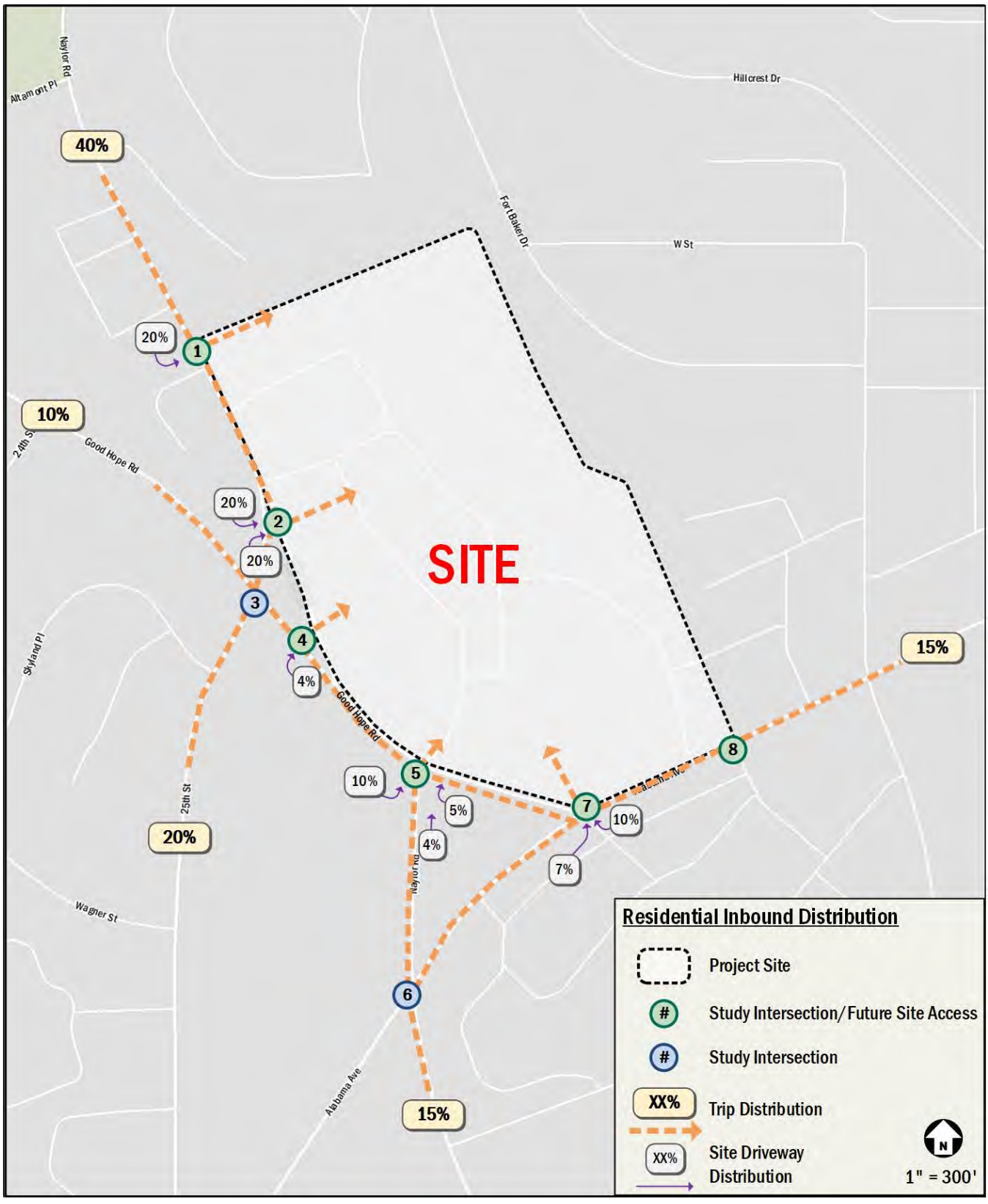

Figure 29: Residential Inbound Distribution

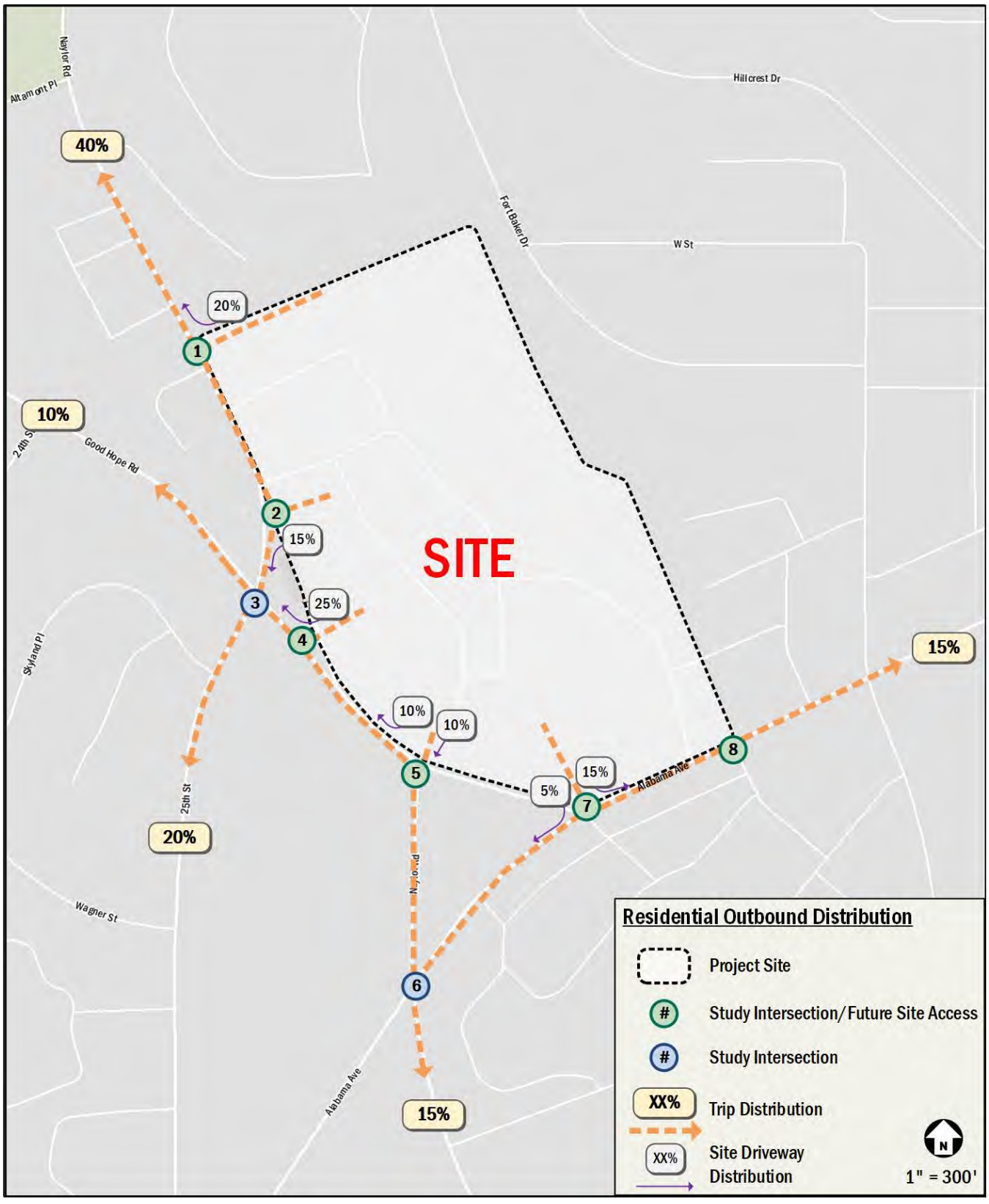

Figure 30: Residential Outbound Distribution

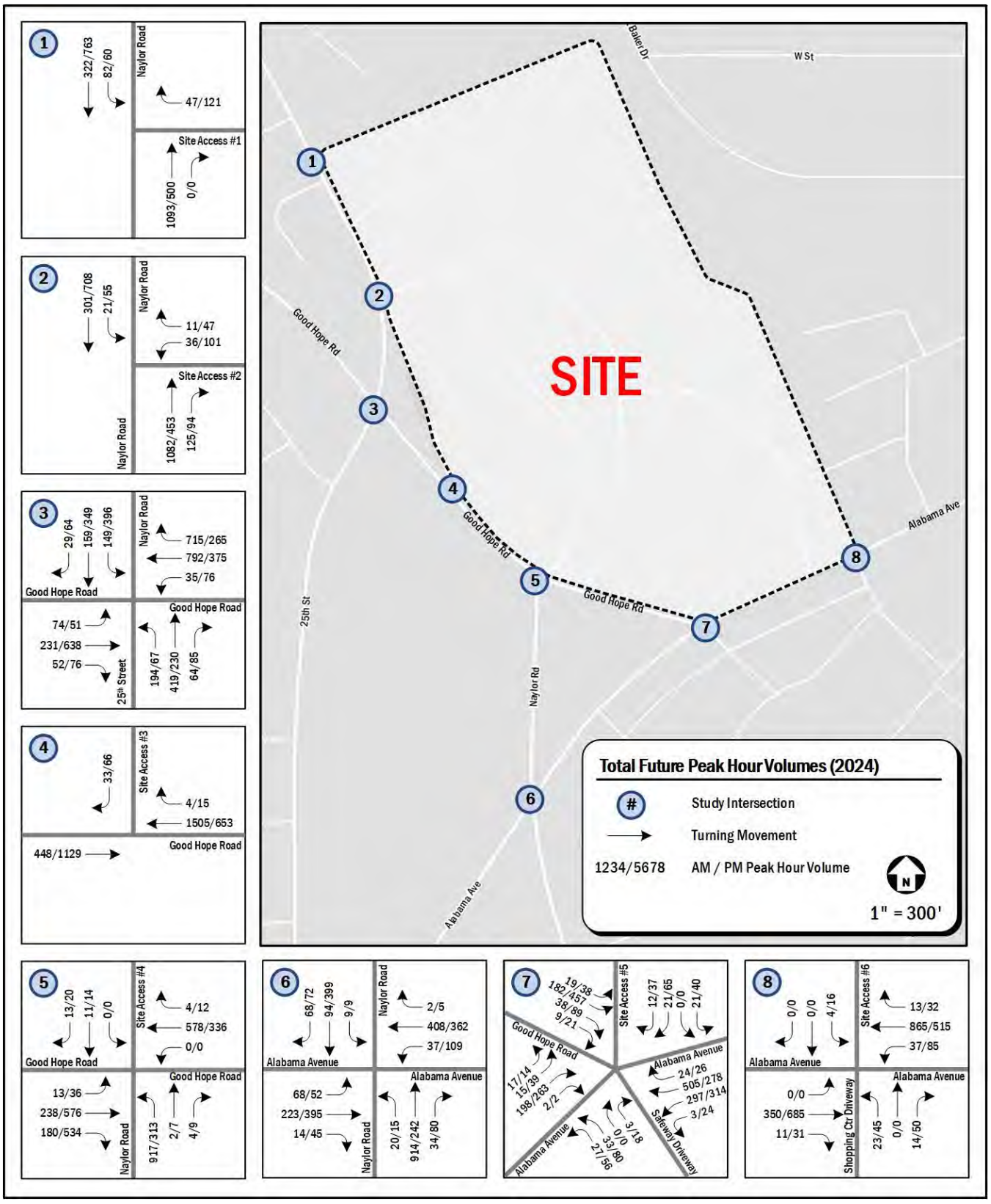

Figure 31: Total Future Peak Hour Traffic Volumes (2024)

Table 17: LOS Results

Intersection and Approach	Existing (2023)				Background (2024)				Future (2024)				Future (2024) with Mitigations			
	AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Naylor Rd & MOB Dwy SE																
Westbound	--	--	--	--	29.5	D	12.8	B	34.4	D	13.7	B	--	--	--	--
Northbound	--	--	--	--	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--
Southbound	--	--	--	--	2.8	A	1.8	A	15.2	C	1.7	A	--	--	--	--
2. Naylor Rd & Town Center Dr SE																
Overall	**--**	**--**			**7.4**	**A**	**10.0**	**B**	**6.0**	**A**	**8.3**	**A**	**--**	**--**	**--**	**--**
Westbound	237.2	F	79.8	F	51.8	D	55.5	E	53.7	D	53.0	D	--	--	--	--
Northbound	0.0	A	0.0	A	6.0	A	4.0	A	5.2	A	2.3	A	--	--	--	--
Southbound	1.4	A	1.0	A	1.8	A	4.6	A	1.3	A	4.0	A	--	--	--	--
3. 25th St/Naylor Rd & Good Hope Rd SE																
Overall	**44.5**	**D**	**39.1**	**D**	**52.7**	**D**	**79.0**	**E**	**66.4**	**E**	**52.7**	**D**	**47.4**	**D**	**--**	**--**
Eastbound	33.4	C	36.6	D	94.5	F	131.7	F	162.9	F	45.9	D	30.8	C	--	--
Westbound	28.8	C	21.9	C	29.9	C	21.3	C	32.0	C	29.2	C	34.7	C	--	--
Northbound	82.9	F	58.4	E	85.9	F	132.2	F	103.3	F	123.2	F	84.9	F	--	--
Southbound	49.6	D	46.0	D	47.1	D	46.7	D	47.4	D	46.7	D	47.2	D	--	--
4. Good Hope Rd & Block 2 Access SE																
Eastbound	--	--	--	--	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--
Westbound	--	--	--	--	0.0	A	0.0	A	0.0	A	0.0	A	--	--	--	--
Southbound	--	--	--	--	13.7	B	10.2	B	14.0	B	10.9	B	--	--	--	--
5. Naylor Rd/Block 2 Access & Good Hope Rd SE																
Overall	**56.8**	**E**	**31.6**	**C**	**58.4**	**E**	**32.8**	**C**	**61.4**	**E**	**25.9**	**C**	**58.5**	**E**	**--**	**--**
Eastbound	21.7	C	20.4	C	24.4	C	20.4	C	23.5	C	15.1	B	21.9	C	--	--
Westbound	35.0	C	13.8	B	34.9	C	18.8	B	34.4	C	12.1	B	34.0	C	--	--
Northbound	88.7	F	80.6	F	90.7	F	81.4	F	96.2	F	74.6	E	91.2	F	--	--
Southbound	56.0	E	54.2	D	55.2	E	54.8	D	54.9	D	55.0	D	54.9	D	--	--
6. Naylor Rd & Alabama Ave SE																
Overall	**99.6**	**F**	**37.6**	**D**	**117.4**	**F**	**40.8**	**D**	**119.3**	**F**	**37.9**	**D**	**120.2**	**F**	**--**	**--**
Eastbound	76.0	E	56.8	E	74.4	E	54.9	D	69.7	E	49.8	D	74.1	E	--	--
Westbound	165.2	F	26.9	C	223.0	F	43.0	D	201.7	F	41.6	D	218.0	F	--	--
Northbound	98.9	F	18.4	B	105.0	F	19.5	B	117.5	F	19.7	B	110.2	F	--	--
Southbound	4.3	A	38.9	D	3.3	A	38.6	D	2.9	A	34.9	C	2.8	A	--	--
7. Alabama Ave & Good Hope Rd & Town Center Dr SE																
Overall	**43.4**	**D**	**35.0**	**C**	**42.8**	**D**	**42.2**	**D**	**42.4**	**D**	**42.5**	**D**	**--**	**--**	**--**	**--**
Southbound	54.5	D	53.9	D	54.5	D	54.0	D	54.5	D	54.1	D	--	--	--	--
Southeastbound	29.1	C	22.4	C	29.3	C	41.4	D	24.5	C	44.6	D	--	--	--	--
Northwestbound	40.9	D	44.8	D	38.0	D	40.8	D	38.0	C	40.8	D	--	--	--	--
Northeastbound	13.1	B	30.9	C	14.0	B	31.7	C	15.2	B	30.2	C	--	--	--	--
Southwestbound	55.5	E	41.5	D	54.6	D	46.0	D	54.6	D	44.2	D	--	--	--	--

Intersection and Approach	Existing (2023)				Background (2024)				Future (2024)				Future (2024) with Mitigations			
	AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
8. Alabama Ave & Skyland Retail Dwy SE																
Overall	--	--	--	--	**2.7**	**A**	**4.3**	**A**	**2.7**	**A**	**4.4**	**A**	--	--	--	--
Eastbound	0.1	A	0.1	A	1.2	A	2.7	A	1.0	A	2.4	A	--	--	--	--
Westbound	0.3	A	1.4	A	2.3	A	3.4	A	2.3	A	3.4	A	--	--	--	--
Northbound	19.8	C	30.6	D	25.9	C	22.6	C	25.9	C	22.6	C	--	--	--	--
Southbound	18.8	C	20.1	C	25.0	C	21.7	C	25.2	C	22.2	C	--	--	--	--

Table 18: v/c Comparison

Intersection and Lane Group	Existing (2020)		Background (2024)		Future (2024)		Future (2024) with Mitigations	
	AM Peak	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*
	V/C	V/C	V/C	V/C	V/C	V/C	V/C	V/C
1. Naylor Rd & MOB Dwy SE Naylor Rd & MOB Dwy SE								
Westbound LR	--	--	0.16	0.12	0.28	0.24	--	--
Northbound LR	--	--	0.74	0.37	0.72	0.33	--	--
Southbound LT	--	--	0.08	0.07	0.36	0.07	--	--
2. Naylor Rd & Town Center Dr SE								
Westbound LR	1.21	0.91	0.45	0.73	0.34	0.65	--	--
Northbound TR	0.72	0.28	0.82	0.57	0.83	0.47	--	--
Southbound LT	0.13	0.32	0.13	0.39	0.14	0.39	--	--
3. 25th St/Naylor Rd & Good Hope Rd SE								
Eastbound LTR	0.66	0.76	1.05	1.18	1.23	0.89	0.59	--
Westbound LT	0.68	0.35	0.7	0.44	0.72	0.65	0.75	--
Westbound Right	0.85	0.26	0.86	0.3	0.91	0.29	0.92	--
Northbound Left	0.73	0.43	0.76	0.49	0.75	0.49	0.7	--
Northbound TR	1.04	0.77	1.05	1.15	1.12	1.12	1.06	--
Southbound Left	0.42	0.65	0.36	0.57	0.31	0.48	0.31	--
Southbound TR	0.73	0.87	0.77	0.97	0.74	0.95	0.74	--
4. Good Hope Rd & Block 2 Access SE								
Eastbound Thru	--	--	0.16	0.41	0.15	0.37	--	--
Westbound TR	--	--	0.64	0.29	0.66	0.28	--	--
Southbound Right	--	--	0.09	0.02	0.08	0.11	--	--
5. Naylor Rd/Block 2 Access & Good Hope Rd SE								
Eastbound LT	0.44	0.72	0.47	0.86	0.41	0.65	0.42	--
Eastbound Right	0.29	0.82	0.28	0.83	0.25	0.73	0.25	--
Westbound LTR	0.49	0.18	0.47	0.2	0.46	0.18	0.47	--
Northbound Left	1.29	0.98	1.3	0.99	1.32	0.94	1.3	--
Northbound TR	0.69	0.52	0.69	0.52	0.7	0.49	0.69	--
Southbound LTR	0.27	0.47	0.28	0.67	0.22	0.29	0.22	--

Intersection and Lane Group	Existing (2020)		Background (2024)		Future (2024)		Future (2024) with Mitigations	
	AM Peak	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*
	V/C	V/C	V/C	V/C	V/C	V/C	V/C	V/C
6. Naylor Rd & Alabama Ave SE								
Eastbound LTR	1.70dl	0.88	1.7dl	0.87	1.65dl	0.81	1.65dl	--
Westbound LTR	1.18	0.7	1.32	0.91	1.27	0.9	1.31	--
Northbound Left	0.04	0.07	0.04	0.07	0.04	0.05	0.04	--
Northbound TR	1.13	0.41	1.15	0.46	1.18	0.47	1.16	--
Southbound Left	0.18	0.02	0.18	0.02	0.18	0.02	0.18	--
Southbound TR	0.29	0.8	0.27	0.79	0.24	0.63	0.23	--
7. Alabama Ave & Good Hope Rd & Town Center Dr SE								
Southbound LTR	0.24	0.54	0.27	0.58	0.24	0.63	--	--
Southeastbound Left	0.34	0.66	0.45	0.99	0.45	0.96	--	--
Southeastbound TR	0.33	0.64	0.35	0.74	0.35	0.72	--	--
Northwestbound Left	0.08	0.18	0.08	0.18	0.08	0.18	--	--
Northwestbound TR	0.27	0.39	0.09	0.25	0.09	0.25	--	--
Northeastbound Left	0.24	0.27	0.25	0.47	0.25	0.38	--	--
Northeastbound Thru	0.22	0.34	0.22	0.36	0.22	0.35	--	--
Northeastbound Right	0.00	0.07	0	0	0	0	--	--
Southwestbound Left	0.01	0.11	0.01	0.11	0.01	0.11	--	--
Southwestbound TR	0.70	0.62	0.7	0.66	0.7	0.61	--	--
Southwestbound Right	0.94	0.56	0.91	0.59	0.91	0.55	--	--
8. Alabama Ave & Skyland Retail Dwy SE								
Eastbound LT	0.16	0.01	0.14	0.37	0.12	0.32	--	--
Eastbound Right	0.01	0.31	0.01	0.03	0.01	0.03	--	--
Westbound Left	0.04	0.11	0.05	0.23	0.05	0.21	--	--
Westbound TR	0.37	0.23	0.31	0.26	0.31	0.26	--	--
Northbound LT	0.13	0.41	0.12	0.23	0.12	0.23	--	--
Northbound Right	0.02	0.08	0.05	0.17	0.05	0.17	--	--
Southbound LTR	0.12	0.02	0.01	0.02	0.02	0.09	--	--

Notes:

dl: Defacto Left Lane. Recode with 1 though lane as a left lane.

Table 19: 50th and 95th Percentile Queuing Results (in feet)

Intersection and Lane Group	Storage Length (ft)	Existing (2020)				Background (2024)				Future (2024)				Future (2024) with Mitigations			
		AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
		50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
1. 25th St/Naylor Rd & MOB Dwy SE																	
Westbound LR		--	--	--	--	--	14	--	10	--	28	--	24	--	--	--	--
Northbound LR		--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
Southbound LT		--	--	--	--	--	6	--	5	--	39	--	5	--	--	--	--
2. Naylor Rd & Town Center Dr SE																	
Westbound LR	200	--	206	--	199	50	100	133	212	31	72	108	174	--	--	--	--
Northbound TR	50	--	0	--	0	210	m448	71	m91	236	m415	40	m57	--	--	--	--
Southbound LT	220	--	5	--	6	20	36	104	147	16	31	88	144	--	--	--	--
3. 25th St/Naylor Rd & Good Hope Rd SE																	
Eastbound LTR	535	190	302	264	345	~331	#531	~478	#613	~368	#566	307	#434	114	170	--	--
Westbound LT	400	328	m299	108	m131	340	m340	166	m183	347	m369	194	m247	354	m380	--	--
Westbound Right	75	154	m186	7	m28	165	m200	20	m58	174	m430	9	m34	162	m193	--	--
Northbound Left	100	150	#275	51	103	153	#283	51	104	152	#281	51	103	149	#267	--	--
Northbound TR	110	~429	#643	184	#324	~426	#639	~314	#504	~489	#707	~297	#488	~466	#684	--	--
Southbound Left	100	75	113	186	246	59	81	131	171	56	74	113	131	56	76	--	--
Southbound TR	125	143	228	283	#450	149	#260	350	#362	137	#229	338	#348	137	#229	--	--
4. Good Hope Rd & Block 2 Access SE																	
Eastbound Thru		--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
Westbound TR		--	--	--	--	--	0	--	0	--	0	--	0	--	--	--	--
Southbound Right		--	--	--	--	--	7	--	1	--	7	--	9	--	--	--	--
5. Naylor Rd/Block 2 Access & Good Hope Rd SE																	
Eastbound LT	400	136	m217	250	#493	166	m192	283	m334	156	m166	222	m299	132	m213	--	--
Eastbound Right	400	59	m69	283	#438	44	m51	177	m233	44	m48	190	m255	59	m76	--	--
Westbound LTR	190	149	m197	61	86	138	m174	79	115	144	m171	72	101	144	m171	--	--
Northbound Left	100	~882	m#732	276	m#532	~892	m#728	280	m#544	~918	m#720	262	m#520	~910	m#724	--	--
Northbound TR	325	164	m147	138	m203	165	m146	141	m206	166	m144	129	m195	169	m149	--	--
Southbound LTR	100	27	61	60	109	14	49	85	154	9	38	12	46	9	38	--	--

Intersection and Lane Group	Storage Length (ft)	Existing (2020)				Background (2024)				Future (2024)				Future (2024) with Mitigations			
		AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
		50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %	50th %	95th %
6. Naylor Rd & Alabama Ave SE																	
Eastbound LTR	320	132	#227	209	#311	131	#225	212	#312	125	#214	193	#277	126	#217	--	--
Westbound LTR	325	~432	#624	74	126	~486	#699	76	#284	~466	#675	79	#283	~476	#685	--	--
Northbound Left	25	7	19	6	19	7	19	6	19	7	19	6	18	7	19	--	--
Northbound TR	250	~858	#1108	137	208	~877	#1128	156	236	~916	#1168	156	237	~906	#1158	--	--
Southbound Left	25	0	m2	5	m7	0	2	5	m7	0	4	5	m8	0	6	--	--
Southbound TR	355	13	19	393	m504	9	16	385	m492	6	12	285	399	6	12	--	--
7. Alabama Ave & Good Hope Rd & Town Center Dr SE																	
Southbound LTR	100	0	0	0	34	0	0	0	44	0	0	0	55	--	--	--	--
Southeastbound Left	195	38	m86	165	242	27	m81	238	m#349	26	m57	221	#433	--	--	--	--
Southeastbound TR	195	35	m84	162	235	26	m81	191	m225	25	m57	192	324	--	--	--	--
Northwestbound Left	105	16	44	34	74	16	44	34	74	16	44	34	74	--	--	--	--
Northwestbound TR	105	56	107	74	135	0	0	0	10	0	0	0	10	--	--	--	--
Northeastbound Left	120	17	m18	14	m20	19	m20	24	m35	20	m21	20	m35	--	--	--	--
Northeastbound Thru	360	51	m52	47	m64	54	m55	51	m72	56	m56	47	m78	--	--	--	--
Northeastbound Right	100	0	m0	0	m0	0	m0	0	m0	0	m0	0	m0	--	--	--	--
Southwestbound Left	170	2	9	14	37	2	m4	15	43	2	m4	15	44	--	--	--	--
Southwestbound TR	275	212	281	164	225	213	287	187	270	215	290	170	250	--	--	--	--
Southwestbound Right	120	230	#417	141	231	224	#416	131	213	224	#416	121	180	--	--	--	--
8. Alabama Ave & Skyland Retail Dwy SE																	
Eastbound LT	275	--	0	--	1	0	50	63	m102	0	34	54	m95	--	--	--	--
Eastbound Right	150	--	0	--	0	0	m0	1	m1	0	m0	0	m1	--	--	--	--
Westbound Left	140	--	3	--	9	0	11	9	32	0	11	9	30	--	--	--	--
Westbound TR	265	--	0	--	0	0	85	33	63	0	87	31	60	--	--	--	--
Northbound LT	50	--	11	--	43	8	26	16	40	8	26	16	40	--	--	--	--
Northbound Right	50	--	1	--	6	0	0	0	13	0	0	0	13	--	--	--	--
Southbound LTR	50	--	10	--	2	0	0	0	0	1	8	6	20	--	--	--	--

Notes:

~: Volume exceeds capacity, queue is theoretically infinite.

#: 95th percentile volume exceeds capacity, queue may be longer.

m: Volume for 95th percentile queue is metered by upstream signal.

TRANSIT

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

This chapter concludes:

- The Site is well served by existing transit;
- The Site is served by 12 Metrobus routes that stop adjacent to Skyland Town Center;
- The Site may be served by a new DC Circulator route;
- The nearest Metrorail Station by foot is the Naylor Road Station, a 26-minute walk (1.2 miles) from the Site; and
- The Project is expected to generate a number of transit trips that the existing transit service is capable of handling.

EXISTING TRANSIT SERVICE

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

The Site is located approximately 1.2 miles (26-minute walk) from the Naylor Road Metrorail Station (serviced by the Green Line). The Green Line travels south from Greenbelt, MD through Downtown DC to Suitland, MD. The Green Line provides connections to the Red Line at Gallery Place, which provides a direct connection to Union Station, a hub for commuter rail – such as Amtrak, MARC, and VRE – in addition to all additional Metrorail lines, allowing for access to much of the DC Metropolitan area. Under normal operating conditions for the Green Line, trains run every 8 minutes during the morning and afternoon peak periods of 5am - 9:30am and 3pm - 7pm. They run every 12 minutes during weekday non-peak periods and on Saturdays before 9:30pm. They run every 15 minutes on Sundays before 9:30pm. They run every 20 minutes on all days after 9:30pm. The Naylor Road Metrorail station is accessible from the Site by foot via 29th Street, Erie Street, and Branch Avenue.

The Site is also serviced by local Metrobus routes, providing the Site with direct connectivity to the Downtown core and other areas of the District, Maryland, and Virginia. 12 bus routes make stops within one (1) block of the Skyland Town Center Site. These 12 routes include the 30S, 32, 34, 92, A32, D51, V7, W2, W3, W4, W6, and W8 routes. The 30S, 32, and 92 lines provide a direct ride from the Site to Downtown Washington, DC. The 92 route is classified as a Priority Corridor Network, which has undertaken improvements to increase service, reliability, and capacity.

Table 20 shows a summary of the bus route information for the route that serves the Site, including service hours, headway, and distance to the nearest bus stop. All bus routes stop within a two-minute walk of the Site boundary.

Figure 32 details the existing Metrobus stops within a quarter-mile walkshed of the overall Skyland Site. A detailed breakdown of individual bus stop amenities and criteria for standards is included in the Technical Attachments. The transit stop requirements are shown in Table 21.

Table 20: Metrobus Route Information

Route Number	Route Name	Service Hours	Headway	Walking Distance to Nearest Bus Stop
30S	Friendship Heights-Southeast Line	Weekdays: 4:12 AM - 3:39 AM Weekends: 4:20 AM - 3:56 AM	47-71 Minutes	<0.1 miles, 1 minute
32, 34	Pennsylvania Avenue Line	Weekdays: 4:32 AM - 12:10 AM Weekends: 5:00 AM - 12:32 AM	1-64 Minutes	<0.1 miles, 1 minute
92	U Street-Garfield Line	Weekdays: 4:08 AM - 3:05 AM Weekends: 4:10 AM - 2:59 AM	24-50 Minutes	<0.1 miles, 2 minutes
A32	Minnesota Avenue-Anacostia Line	Eastbound: 3:39 PM	One (1) daily bus	<0.1 miles, 2 minutes
D51	Congress Heights-Georgetown Line	Westbound: 6:38 AM	One (1) daily bus	<0.1 miles, 1 minute
V7	Benning Heights-Alabama Avenue Line	Northbound: 5:58 AM-6:17 PM Southbound: 6:26 AM-6:52 PM	12-28 min	<0.1 miles, 1 minute
W2, W3	United Medical Center-Anacostia Line	Weekdays: 5:31 AM-12:42 AM Weekends: 6:20 AM-12:38 AM	8-40 min	<0.1 miles, 2 minutes
W4	Deanwood-Alabama Avenue Line	Weekdays: 5:20 AM-2:49 AM Weekends: 6:19 AM-2:54 AM	4-36 min	<0.1 miles, 1 minute
W6, W8	Garfield-Anacostia Loop Line	Weekdays: 5:49 AM-12:44 AM Weekends: 5:58 AM-2:22 AM	12-45 min	<0.1 miles, 2 minutes

Table 21: 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 streetlights, 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

Proposed Transit Service

MoveDC

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

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

The MoveDC report highlights a High-Capacity Transit line along Branch Avenue and Alabama Avenue that would connect Skyland to Capitol Hill. A High Frequency Local & Regional Bus Corridor was also recommended along the Alabama Avenue corridor, running from the Congress Heights Neighborhood to the Benning Road Metrorail Station.

WMATA and DDOT Transit Studies

WMATA studied capacity of Metrorail stations in its *Station Access & Capacity Study (2008).* The study analyzed the capacity of Metrorail stations for their vertical transportation, for example the capacity of the station at elevators, stairs, and escalators to shuttle patrons between the street, mezzanine, and platforms. The study also analyzed stations capacity to process riders at fare card gates. For both analyses, vertical transportation and fare card gates, volume-to-capacity ratios were calculated for existing data (from 2005) and projections for the year 2030. According to the study, the Naylor Road 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, the 32, 34, and 92 Metrobus routes that travel near the Site operate at a load factor that are above during peak periods of the day.

Bus routing with internal stops was analyzed and discussed with WMATA as part of the transportation analysis for previous PUD approval submissions. In coordination with WMATA, off-site routing was determined to be the preferred alternative.

Potential DC Circulator Route

Under the *DC Circulator Transit Development Plan 2020 Update*, new DC Circulator route alternatives are being proposed and analyzed. As part of a planned extension of service into Ward 7, several route alternatives will include direct service to Skyland Town Center. Currently the project is in the system evaluation survey phase, with a final publication of the 2020 Transit Development Plan to be released in Winter 2020.

Site Impacts

Transit Trip Generation

The proposed modification is projected to generate 202 transit trips (131 inbound, 71 outbound) during the morning peak hour and 335 transit trips (142 inbound, 193 outbound) during the afternoon peak hour. Note that the previously approved CTR did not analyze non-auto trips by specific use; however, the proposed modification generates fewer total non-auto trips as detailed in the trip generation section of this report.

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

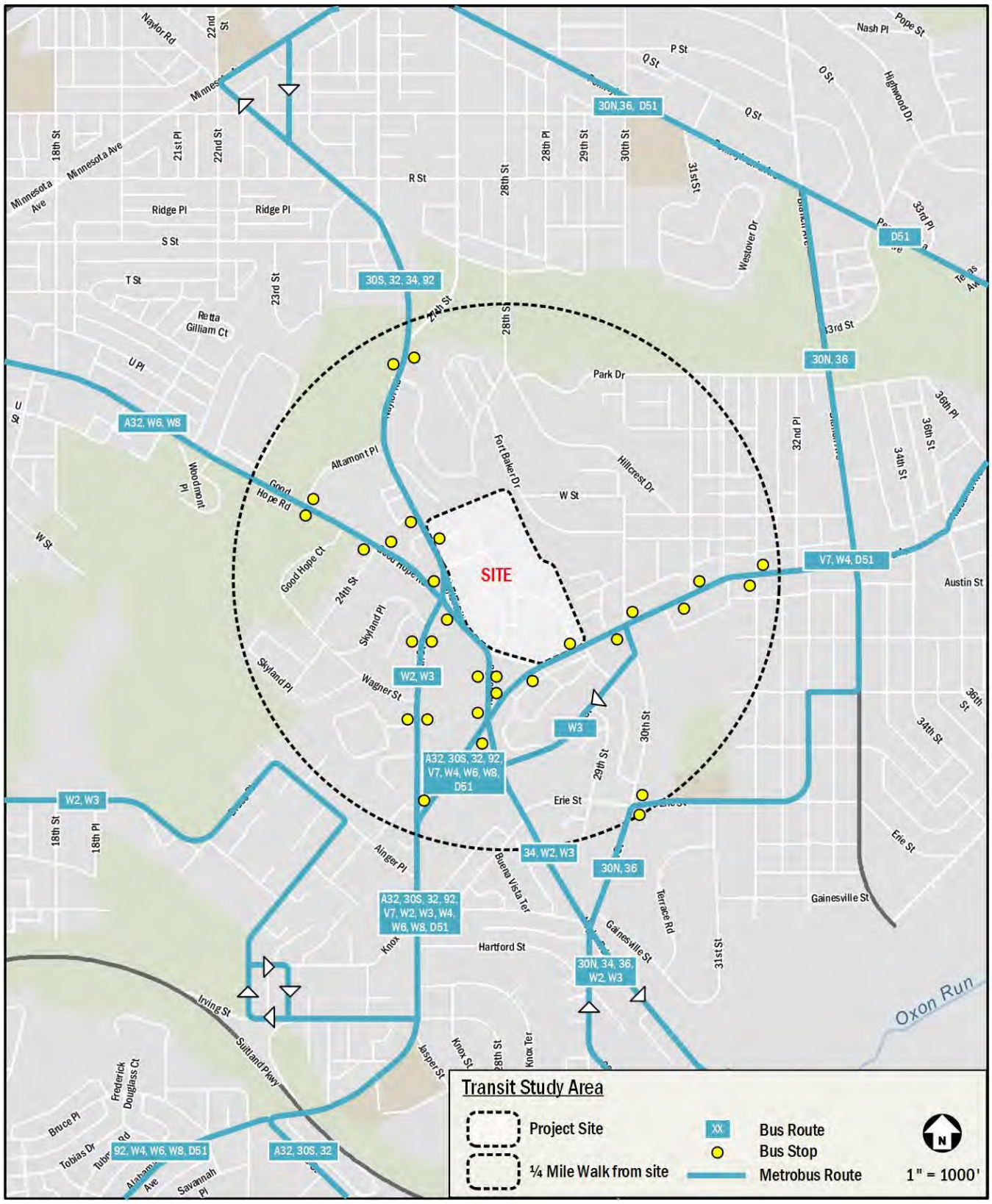

Figure 32: Existing Transit Facilities

PEDESTRIAN FACILITIES

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

This chapter concludes:

- The existing pedestrian infrastructure surrounding the Site provides a quality walking environment.
- There are sidewalks along the majority of primary routes to pedestrian destinations with a few gaps located in low residential roadways to the northeast.
- Sidewalks that do not meet DDOT requirements are generally due to length of buffer width.
- There are no barriers which block pedestrian pathways to nearby attractions.
- The Project is expected to generate pedestrian trips to origins and destinations nearby, in addition to pedestrian trips generated by walking to and from transit stops. The pedestrian facilities surrounding the project can accommodate these new trips.
- Based on community feedback, a pedestrian connection from Block 3 to Akron Place is not proposed.

PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the Site were evaluated as well as routes to nearby transit facilities. The Site is accessible to transit options such as bus stops located adjacent to the Site along Naylor Road, Good Hope Road, and Alabama Avenue. Within the direct vicinity of the Skyland development, roadways are classified as commercial, with the remaining roadways classified as low to moderate density residential. There are a few sidewalks adjacent to the Site along Alabama Avenue that do not meet minimum sidewalk or buffer widths. These few shortcomings do not overall affect the quality or attractiveness of the walking environment within the study area. Figure 33 shows suggested pedestrian pathways, walking time and distances, and barriers and areas of concern.

PEDESTRIAN INFRASTRUCTURE

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

Existing Conditions

A review of pedestrian facilities surrounding the Project shows that most facilities meet DDOT standards, resulting in a quality walking environment. No study area roadways along primary walking routes present a challenge for pedestrians by limiting connectivity. Sidewalks are not present along low volume residential streets to the northeast of the Site. These streets are not considered primary walking routes, however, and pedestrians may reach nearby destinations via the streets shown in Figure 33.

Due to construction along the southern frontage of the Site, some portions of sidewalks along Good Hope Road are temporarily closed. Figure 34 shows a detailed inventory of the existing pedestrian infrastructure surrounding the Site. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by DDOT's *Design and Engineering Manual (2019)* in addition to ADA standards. Sidewalk widths and requirements for the District are shown below in Table 22.

Within the area shown, roadways are classified as principal and minor arterials with collectors and local streets. Sidewalks surrounding the Site generally comply with DDOT standards, with deficiencies due to narrow or missing buffer widths. All primary pedestrian destinations are accessible via routes with sidewalks, all of which met DDOT standards. No sidewalks within the study area limit connectivity.

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 34, under existing conditions, curb ramps are missing along low-volume streets with no permanent pedestrian facilities.

Pedestrian Infrastructure Improvements

As part of the Project, pedestrian facilities around the perimeter of the Site will be improved to meet DDOT and ADA standards. New sidewalks will be installed along the perimeter of the Site that will meet or exceed the width requirements, as well as curb ramps with detectable warnings and crosswalks at all Site entrances. Internal roadways will also provide DDOT and ADA-compliant facilities. Figure 35 shows an inventory of planned pedestrian facilities.

The Applicant acknowledges that DDOT Staff raised the possibility of creating a pedestrian connection from Block 3 to Akron Place SE. Based on dialogue with residents of Akron

Place, SE, who are not supportive of such a connection, the Applicant is not proposing a pedestrian connection from Block 3 to Akron Place.

SITE IMPACTS

Pedestrian Trip Generation

The proposed modification is expected to generate 16 walking trips (10 inbound, 6 outbound) during the morning peak hour and 27 walking trips (11 inbound, 16 outbound) during the afternoon peak hour. Note that the previously approved CTR did not analyze non-auto trips by specific use; however, the proposed modification generates fewer total non-auto trips as detailed in the trip generation section of this report.

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

- Nearby residential areas that allow employees the opportunity to walk to work;
- Retail locations outside of the Site; and
- Neighborhood destinations such as schools, libraries, and parks in the vicinity of the Site.

In addition to these trips, the transit trips generated by the Site will also generate pedestrian demand between the Site and nearby bus stops. The pedestrian network will have the capacity to absorb the newly generated trips from the Site.

Table 22: Sidewalk Requirements

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

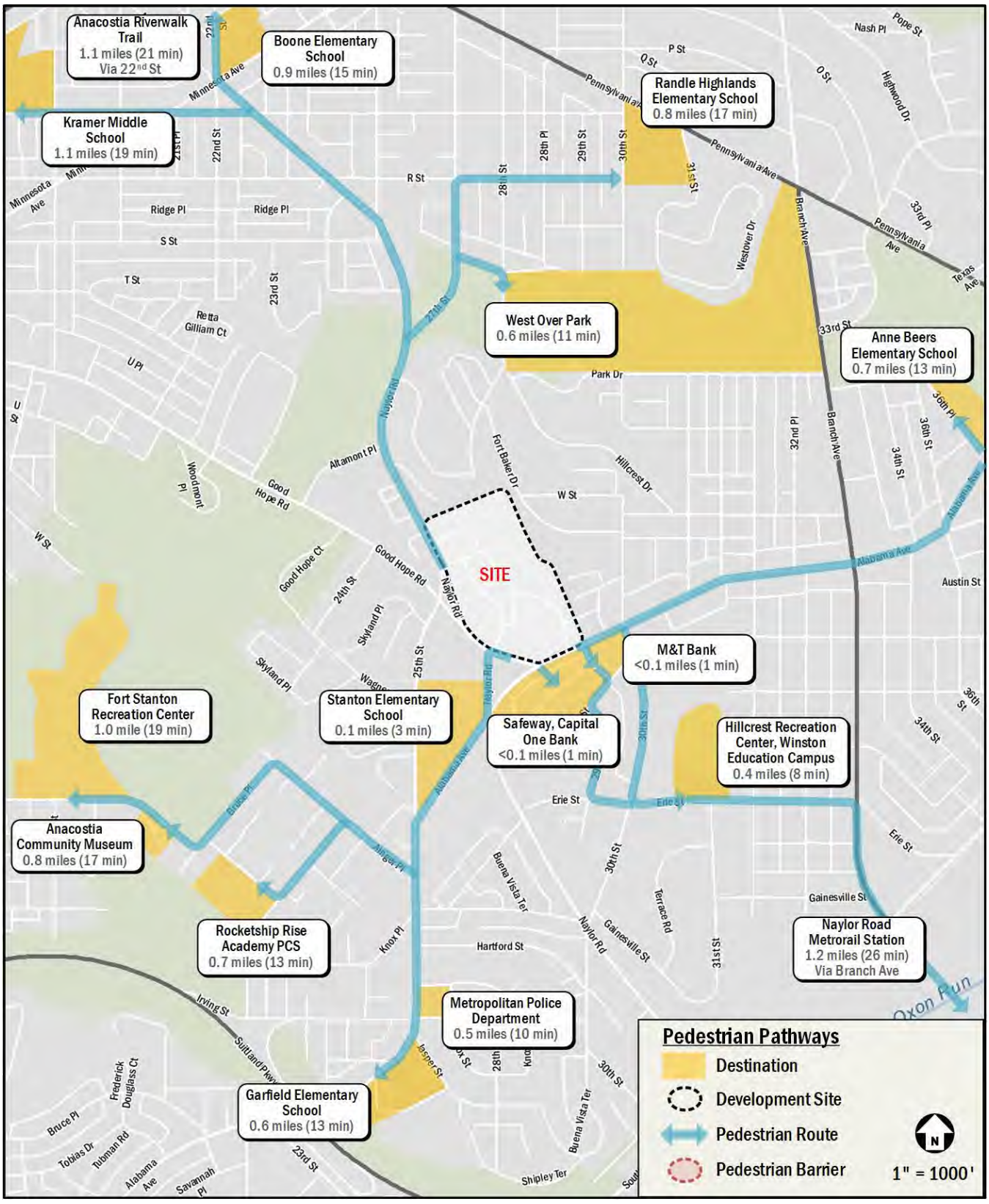

Figure 33: Pedestrian Pathways

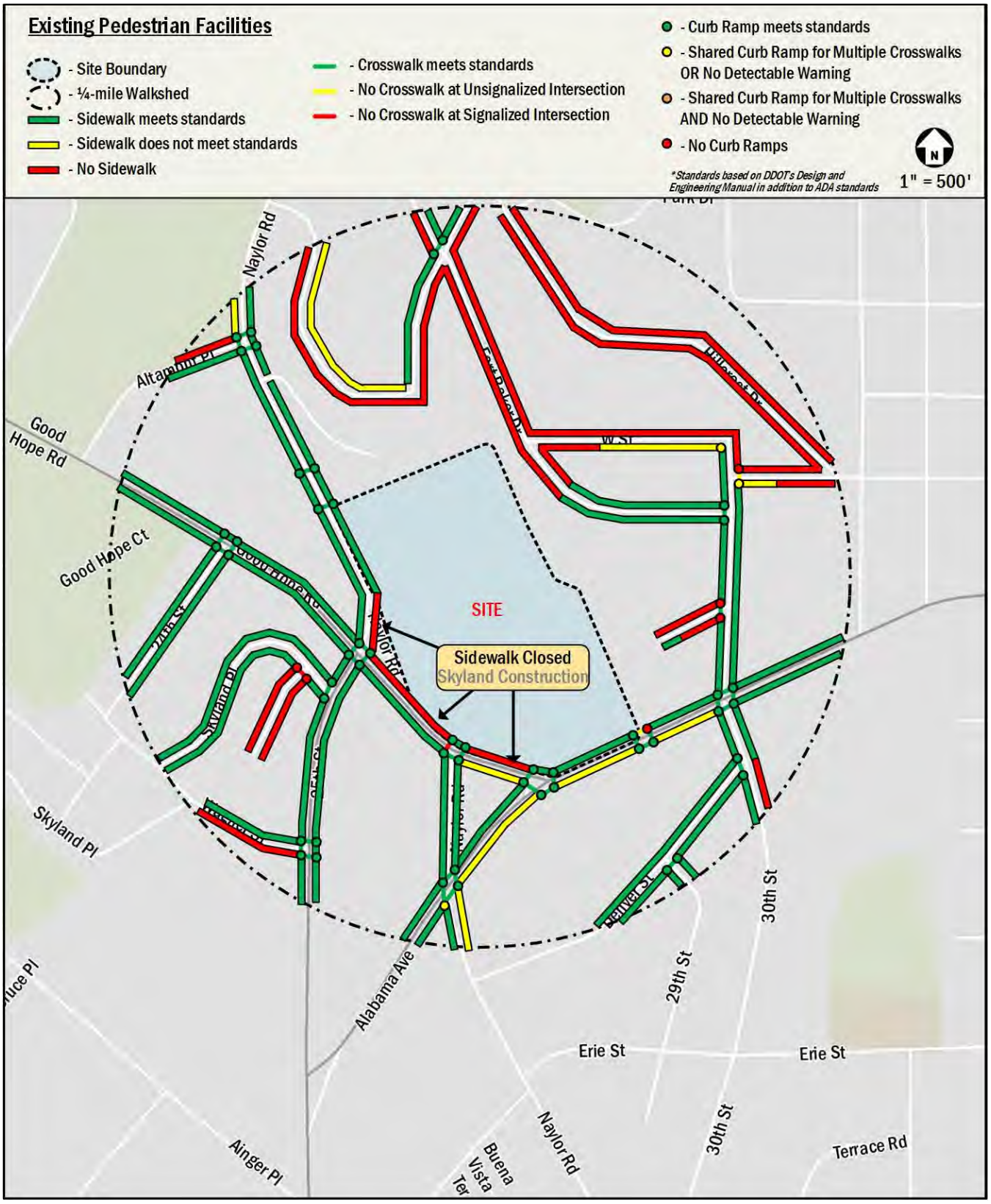

Figure 34: Existing Pedestrian Facilities

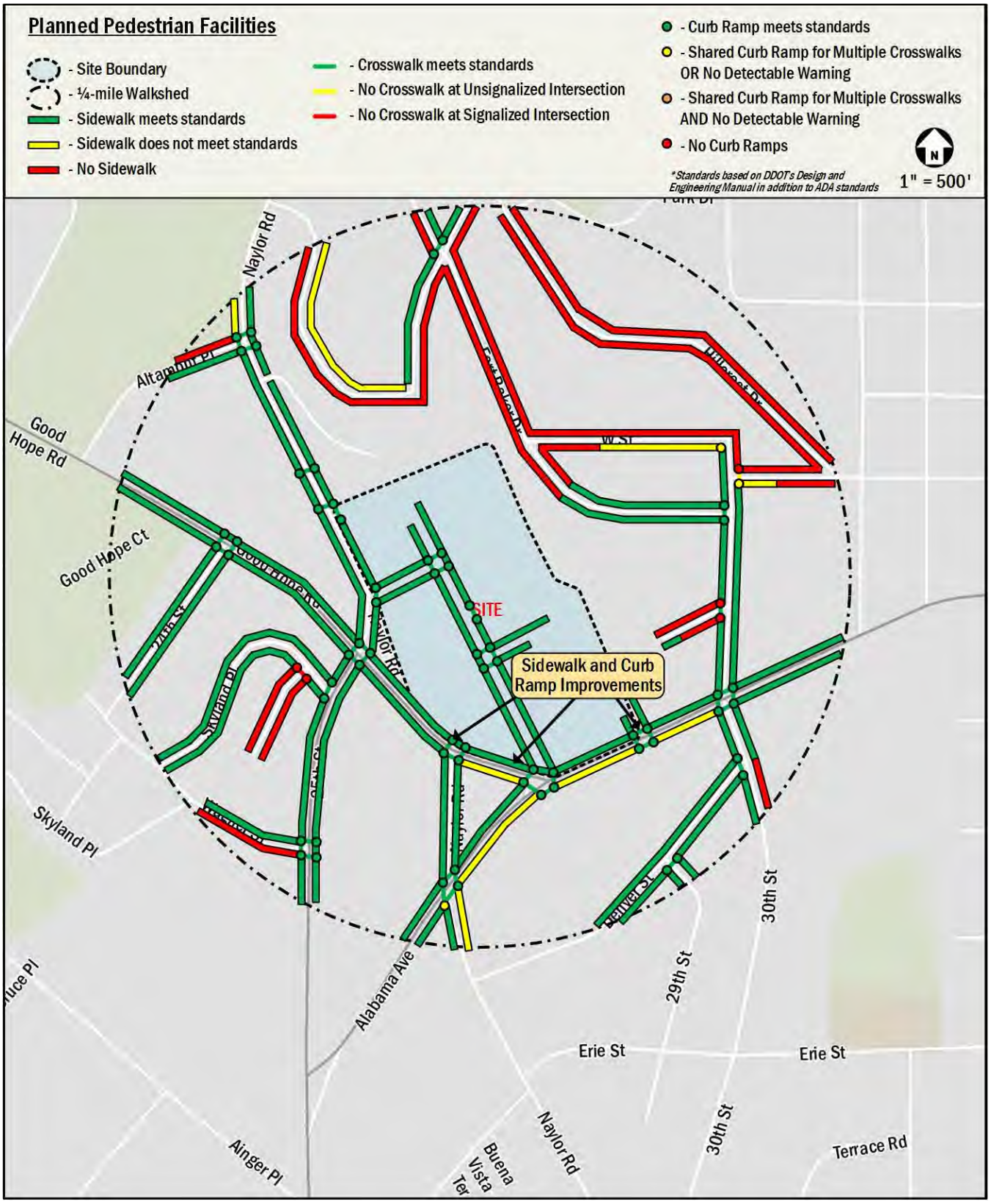

Figure 35: Planned Pedestrian Facilities

BICYCLE FACILITIES

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

This chapter concludes:

- The Site has access to on-street bicycle facilities within the study area, including recently installed and proposed facilities;
- The Project is expected to generate a manageable number of bicycle trips; therefore, site-generated bike trips can be accommodated on existing infrastructure;
- The Project will include secure bicycle parking on-site for employees and residents of the Project; and
- The Project will include short-term bicycle racks within and along the perimeter of the Site.

EXISTING BICYCLE FACILITIES

The Site is located in an area with emerging on-street bicycle facilities. Existing on-street facilities consist of signed routes along Alabama Avenue, Good Hope Road, and Naylor Road. The Fort Circle Trail lies to the north and west of the Site. The trail connects to the Marvin Gaye Trail in Northeast and provides a direct connection to the Fort Dupont Ice Arena. Traveling south on the Fort Circle Trail connects users with the Suitland Parkway Trail. The Suitland Parkway Trail provides east-west connectivity from Historic Anacostia to the Prince George's County border.

Using these connections along the on-street and off-street routes within the study area, bicyclists have access to a number of robust regional bicycle facilities.

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

Alabama Avenue SE Corridor Safety Study

In 2017, DDOT published the findings of a safety study conducted along four-mile stretch of Alabama Avenue from Martin Luther King, Jr. Avenue to Ridge Road. The study identified existing deficiencies along the corridor that could be improved to promote non-auto travel and reduce the number of vehicle accidents.

In the vicinity of the Skyland Site, the study recommends retaining the four-lane cross section between 25th Street and 30th Street due to high traffic volumes. This section of Alabama Avenue will remain a signed bicycle route, with bicycle lanes to the west and shared lanes to the east of this section.

Capital Bikeshare

In addition to personal bicycles, the Capital Bikeshare program provides additional cycling options for residents, employees, and patrons of the Project. 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 4,500 bicycles provided. Consistent with the previous PUD approval and the construction of Block 2, the Applicant relocated an 11-dock Capital Bikeshare stations to the southern frontage of the Site: located at the intersection of Good Hope Road and Naylor Road. This on-site location provides extensive accessibility to bikeshare facilities.

Demand analysis at the Good Hope Road and Naylor Road bikeshare station from August 2019 shows approximately 68 trips made from the station and 30 trips made to the station. This marks an increase from the 29 trips made from the station and 14 trips to the station in August 2018, indicating increased bikeshare use in the Skyland area.

While demand is growing, the total number of trips in a month indicate the existing station can accommodate current and additional demand. This can be accomplished through Capital Bikeshare's continued efforts to serve the community with a redistribution of bicycles that allow for a balanced supply and demand in the area.

Figure 36 illustrates the existing bicycle facilities in the study area.

SITE IMPACTS

On-Site Bicycle Elements

The project will include approximately 30 short-term bicycle spaces along the perimeter of the Site. These short-term spaces will include inverted U-racks placed in high-visibility areas.

The project will also include secure long-term bicycle parking. The plans identify a total of approximately 123 long-term spaces, located in easily accessible locations. The proposed

supply meets requirements of the 2016 Zoning Regulations (ZR16).

Bicycle Trip Generation

The proposed modification is expected to generate 16 bicycle trips (10 inbound, 6 outbound) during the morning peak hour and 27 bicycle trips (11 inbound, 16 outbound) during the afternoon peak hour. Note that the previously approved CTR did not analyze non-auto trips by specific use; however, the proposed modification generates fewer total non-auto trips as detailed in the trip generation section of this report.

The number of anticipated bicycle site trips indicates bicycling will be an important mode getting to and from the Site. With adequate facilities located on site and existing routes to and from the Site, the impacts from bicycling will be minimal.

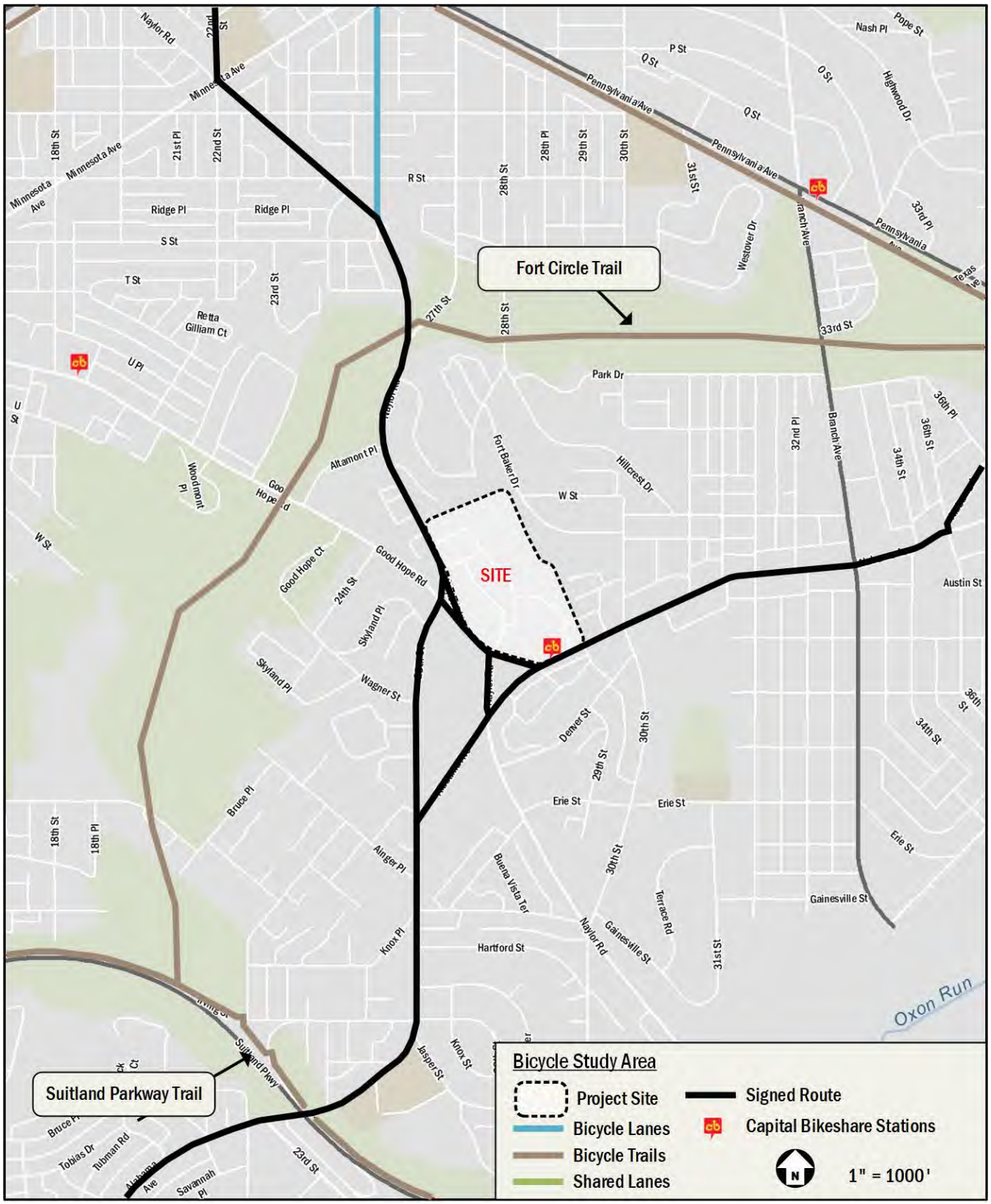

Figure 36: Existing Bicycle Facilities

SAFETY ANALYSIS

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

SUMMARY OF SAFETY ANALYSIS

A safety analysis was performed to determine if there are any intersections that pose any obvious conflicts with vehicles, pedestrians, or bicyclists. Data to determine this included DDOT's most recent *Traffic Safety Statistics Report (2015-2017)* and *Vision Zero Action Plan*; Based on observations and familiarity with the area, one (1) intersection was identified with potential conflicts. The following section details the conflict at the study area intersection.

POTENTIAL IMPACTS

This section reviews the one (1) intersection that was identified to pose potential conflicts to vehicles, pedestrians, or bicyclists.

Alabama Avenue & Good Hope Road

In 2017, the intersection was ranked as the 8th most hazardous intersection in Washington, D.C. by Crash Rate (5.248), based on the *Traffic Safety Statistics Report*. The intersection ranked 13th in the District with a 3-year rate of 4.013 between 2015 to 2017.

Between 2015 and 2017, the intersection operated as a 4-legged intersection, with the northbound leg servicing the Safeway shopping plaza. This intersection will operate as a 5-legged intersection under future conditions, with the southbound leg representing site-generated traffic. The proposed phasing of the intersection will allow vehicles from the Good Hope, Safeway, and Skyland Site approaches to traverse the intersection without conflicts from other approaches.

As it currently exists, pedestrian facilities along this part of Good Hope Road are deficient. Sidewalks along the north side of westbound Good Hope Road are currently not up to DDOT standards due to on-going construction activity. Improvements from the proposed project will correct these deficiencies and create new sidewalks with high visibility crosswalks. Improvements to the pedestrian facilities in this area will allow pedestrians to be more visible to motorists, reducing speeds and aggressive maneuvers along this corridor.

SUMMARY AND CONCLUSIONS

This report is a Comprehensive Transportation Review (CTR) on behalf of Skyland Holdings LLC (Rappaport Companies), the applicant (the "Applicant") for a Modification of Significance to the approved Skyland Town Center PUD. Skyland Town Center is located at located at Square 5633 and Lot 22 in Southeast, Washington, DC (the "Site").

The modification (the "Project") consists of the development of a Medical Office Building (MOB) in Block 1, a grocery store, in-line retail, a fast-casual restaurant in Block 3, and a residential building with ground-floor retail in Block 4. Block 1 and Block 3 are being submitted as a Consolidated PUD and Block 4 is being submitted as a First-Stage PUD.

The approved PUD for Skyland Center was initially approved by the Zoning Commission (ZC) as part of ZC Case Number 09-03 in July of 2010. The Applicant has submitted subsequent modifications and extensions which have been approved by the ZC. Block 2, which was last approved under ZC 09-03D and is currently under construction, is not part of the application.

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

As part of the previous PUD approvals, significant infrastructure improvements have been recommended by DDOT and have been implemented by the Applicant that include:

- Installation of a new signalized intersection at Naylor Road and the project's Town Center Drive. *This signal has been installed and will be activated with the opening of Town Center Drive;*
- Pavement restriping on Naylor Road to increase capacity (Provide pavement re-striping to delineate two travel lanes along Naylor Road southbound along the site frontage). *This improvement is under construction and will be in place prior to the opening of Block 1 and Block 3;*
- Improvements to the existing intersection at Good Hope Road and Naylor Road/25th Street;
    - Provide pavement markings to delineate a separate left-turn lane and a shared through/right-turn lane along the northbound (25th Street) approach. *This improvement has been completed;*
    - Widen the southbound approach (Naylor Road) to provide double left-turn lanes and a shared through/right-turn lane. *This improvement has been completed;*
    - Provide signalization, pavement marking and other improvements to accommodate the above-noted lane configuration improvements. *These improvements have been completed and implemented;*
- Modification of the signalized intersection at Good Hope Road and Naylor Avenue/Block 2 access driveway. *The modified signal has been installed and will be activated with the opening of Block 2;*
- Modification of the signalized intersection at Alabama Avenue/Good Hope Road and Town Center Drive;
    - Provide signalization and pavement marking improvements to accommodate Main Street as the fifth leg to Alabama Avenue/Good Hope Road intersection. *The modified signal has been installed and will be activated with the opening of Town Center Drive;*
- Installation of a new signalized intersection at Alabama Avenue and the Block 3 Retail Driveway. *This signal has been installed and will be activated with the opening of Block 3;* and
- The creation of high visibility pedestrian crosswalks at intersections adjacent to the Subject Property and throughout the project's internal street system. *These improvements are under construction and will be completed prior to the opening of Block 1 and Block 3.*

Proposed Project

The Project modifies the previous approvals for Skyland Town Center development, located at the intersection of Naylor Road, Good Hope Road, and Alabama Avenue SE. The Site is bounded by Naylor Road to the west, Good Hope Road to the southwest, Alabama Avenue to the southeast, a residential area to the east, a wooded ravine to the east and northeast, and a residential area to the north. Block 2 is already under development. The remainder of the Property has been divided into Blocks 1, 3, and 4. Block 1, Block 3, and Block 4 of the

The Project will develop the Block 1 and Block 3 pursuant to the Consolidated PUD application with:

- Approximately 131,344 square feet (SF) medical office building with 465 garage parking spaces in Block 1;
- Approximately 28,954 SF grocery store in Block 3;

- Approximately 9,792 SF in-line retail in Block 3;
- Approximately 2,483 SF fast-casual restaurant in Block 3;
- Surface lot with 214 parking spaces serving Block 3.

The Project will develop Block 4 pursuant to the First-Stage PUD application with:

- Approximately 252 dwelling units;
- Approximately 7,140 SF ground-floor retail;
- Below-grade garage with 163 parking spaces serving Block 4.

Access to the Site will be available from a total of six (6) approved curb cuts. Two (2) curb cuts will provide access from Naylor Road SE, two (2) curb cuts will provide access from Good Hope Road SE, and two (2) curb cuts will provide access from Alabama Avenue SE.

Primary access/egress to the Project's parking facilities will be available from the internal street network (Town Center Drive). Access to the Block 3 surface lot will also be available from Alabama Avenue SE.

The Project will satisfy the 2016 zoning requirements for bicycle parking by including at least 30 short-term bicycle parking spaces and 123 long-term bicycle parking spaces. The Project will supply long-term bicycle parking in secure locations for each block and short-term bicycle parking within and along the perimeter of the Site. The vehicular and bicycle parking will also meet the practical needs of the Project's employees, residents, and patrons.

Multi-Modal Impacts and Recommendations

Trip Generation

The Project is transit-, pedestrian-, and bicycle-oriented. The proposed modification is expected to generate new trips on the surrounding transportation network across all modes during the morning peak hour and generate fewer trips on the surrounding transportation network across all modes during the afternoon peak hour as compared to the approved PUD. **Overall, the modified program results in an increase in inbound trips during the morning peak hour and reduction in trips during the afternoon peak hour and Saturday peak hour.**

The net AM peak hour trip generation is projected to include an additional 118 cars/hour (147 new inbound trips of 29 fewer outbound trips). The net PM peak hour trip generation is projected to include a reduction of 303 cars/hour (152 fewer inbound trips and 151 fewer outbound trips).

The proposed PUD modification generates an additional 57 non-auto trips/hour during the AM peak hour and reduces the PM trip generation by 67 non-auto trips/hour. The multi-modal trip generation for the proposed modified Block 1, Block 3, and Block 4 includes the following:

- 202 transit riders/hour in the AM peak hour and 335 transit riders/hour in the PM peak hour;
- 16 bicycle trips/hour in the AM peak hour and 27 bicycle trips/hour in the PM peak hour; and
- 16 walking trips/hour in the AM peak hour and 27 walking trips/hour in the PM peak hour.

Transit

The Site is well-served by transit services via Metrobus. The Site is located 1.2 miles from the Naylor Road Metrorail station with 12 Metrobus routes providing service to the immediate vicinity of the Site. These routes provide direct service to nearby Metrorail Stations and Downtown, Washington, D.C.

Although the Project will generate transit trips, existing facilities have enough capacity to accommodate the new trips.

Pedestrian

The Site is surrounded by an improving pedestrian network with sidewalk improvements related to the approved Skyland Town Center PUD under construction. Most roadways within a quarter-mile radius of the Site provide sidewalks and acceptable crosswalks and curb ramps, particularly along the primary walking routes along Good Hope Road and Alabama Avenue. Roadways that do not currently provide pedestrian facilities within the pedestrian study area are found in residential areas and are considered to be low-speed, low-volume roadways.

As consistent with the approved PUD, pedestrian facilities around the perimeter of the Site will be improved to meet DDOT and ADA standards.

The Project will generate a moderate number of pedestrian trips and the improved facilities will be able to handle the new trips. Notably, the Applicant will provide improved sidewalks along Naylor Road, Good Hope Road, and Alabama Avenue frontages.

Bicycle

The Site has access to nearby on-street bicycle facilities, including recently installed and proposed facilities. Existing on-street facilities consist of signed routes along Alabama Avenue, Good Hope Road, and Naylor Road. The Fort Circle Trail lies to the north and west of the Site and the Suitland Parkway Trail lies to the south of the Site.

The existing Capital Bikeshare station located adjacent to the Site at the Good Hope Road, Alabama Avenue, and Future Town Center Drive intersection was relocated by the Applicant to its current location as consistent with the approved PUD.

The Project will provide short-term bicycle parking within and along the perimeter of the Site. On-site secure long-term bicycle parking will be provided for each block. The amount of bicycle parking provided will satisfy 2016 zoning requirements.

The Project will generate a moderate number of new bicycle trips without burdening the existing facilities.

Vehicular

The Site is accessible from principal arterials such as Pennsylvania Avenue to the north and Branch Avenue to the east. The Site is also directly served by Alabama Avenue, Good Hope Road, and Naylor Road, all minor arterials providing a robust network of local and regional connectivity. These roadways connect the Site to Suitland Parkway and to DC-295, both of which provide access to the Capital Beltway (I-495), which surrounds Washington, DC and its inner suburbs, as well as providing connectivity to the District core.

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

Gorove Slade analysis concluded that three (3) intersections require mitigation as a result of the minor impacts to delay created by the modified development program. Mitigation measures are proposed as follows:

Good Hope Road & Naylor Road/25th Street

It should be noted this intersection experiences new delays due to the mitigations requested by DDOT in the previously approved PUD. The Naylor Road slip lane was requested to be closed for pedestrian safety, forcing more vehicles through the intersection of Good Hope Road and Naylor Road/25th Street. This mitigation measure of closing the slip lane is already in place.

Gorove Slade recommends implementing morning peak period parking restrictions on the Good Hope Road eastbound approach to create a second travel lane, consistent with the existing afternoon restrictions. A 125-foot lane that repurposes approximately five (5) parking spaces would improve eastbound delays considerably. Demand for the repurposed parking spaces would be offset by the Site's parking supply.

Gorove Slade also recommends signal timing adjustments be coordinated with DDOT in the morning peak hour to ensure the most efficient future operation, following construction of the Project by 2024. Signal timing adjustments would reduce the northbound delays on 25th Street SE.

Good Hope Road & Naylor Road/Block 2 Access

Gorove Slade recommends signal timing and phasing adjustments be coordinated with DDOT in the morning peak hour to ensure the most efficient future operation, following construction of the Project by 2024.

Naylor Road & Alabama Avenue

Gorove Slade recommends signal timing and phasing adjustments be coordinated with DDOT in the morning peak hour to ensure the most efficient future operation, following construction of the Project by 2024.

Safety

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

Gorove Slade analysis concluded that existing conditions will be improved at one (1) intersection that will further enhance the multi-modal network surrounding the Site. Improvements are planned as follows:

Alabama Avenue & Good Hope Road

Improvements at this intersection are planned at this intersection as part of Project-related improvements.

Improvements include completing sidewalks which meet DDOT/ADA standards and the installation of high-visibility crosswalks. These improvements will make pedestrians more visible near the intersection and allow for multimodal connectivity.

Transportation Demand Management (TDM)

Per the DDOT CTR guidelines, the goal of TDM measures is to reduce the number of single occupancy vehicles and vehicle ownership within the District. The promotion of various programs and existing infrastructure includes maximizing the use of transit, bicycle, and pedestrian facilities. The Applicant is committed to honoring the TDM commitments previously agreed to as part of the previously approved PUD.

Summary and Recommendations

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

The Project has several positive design elements that minimize potential transportation impacts, including:

- The Site's close proximity to transit;
- The inclusion of secure long-term bicycle parking that meet zoning requirements;
- The installation of short-term bicycle parking spaces within and along the frontage of the Site that meet zoning requirements;
- The creation of new pedestrian sidewalks that meet or exceed DDOT and ADA requirements, improving the existing pedestrian environment; and,
- A Transportation Management Program (TMP) 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 reduce peak-period deliveries and efficiently manage the loading facilities of Block 3, which is seeking zoning relief in the number of loading berths being provided.