

**BOARD OF ZONING APPEALS  
CASE SUMMARY FOR  
SPECIAL EXCEPTION**



**2401 Atlas Road**

June 3, 2021 at 4:00 P.M.

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**Case Number:** 2021-0065-SE  
**Subject Property:** 2401 Atlas Road (TMS# 13500-02-04)  
**Zoning District:** RG-2 (General Residential District) (pending)  
**Applicant:** Nick Andersen, Dominionium  
**Property Owner:** Bible Way Church of Atlas Road  
**Summary Prepared:** May 24, 2021

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**Requested Action:** Special exception to reduce parking requirements for a residential use

**Applicable Sections of Zoning Ordinance:**

§17-345<sub>(c)</sub> The board of adjustment may, as a special exception, after notice and hearing, and subject to appropriate safeguards and conditions, grant a reduction in off-street parking requirements of not more than 50 percent of that generally required for residential facilities intended for occupancy by the elderly, provided that adequate land is available for future expansion to accommodate the generally required amount of parking and that the site design of such reduced parking area will facilitate future expansion, if such is required.

§17-112 Standard criteria for special exceptions

**Case History:** 05/06/2021 A variance to the maximum building height for a residential multifamily development (2021-0049-SE) was granted by the Board of Zoning Appeals.

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**Staff Comments:** The applicant is requesting a special exception to reduce the minimum parking requirement for a residential use intended for use by the elderly. The parking required is 392 spaces, applicant is instead requesting 245 off-street spaces.

The subject property is a +/- 12-acre undeveloped lot. The applicant intends to develop the site into an affordable multifamily senior housing community.

The applicant is proposing a 38% reduction in parking to meet the resident's parking needs. Applicant states that this equates to 1.2 parking spaces per unit rather than the required 2 spaces. The parking reduction further allows for more greenspace to be utilized for the senior residents. Adequate land is available for future expansion if necessary in the future.

A conceptual plan and a traffic impact analysis are also included with the application. Site plan review by Planning Commission required.

**Should the Board approve this request, the following items be conditions of approval:**

- Applicant shall substantially conform to the application, submitted materials, and testimony before the board and shall conform to all the relevant city development regulations.

- Rezoning to RG-2 approved.

**The above recommendation is based upon the following findings as required within §17-112 of the Zoning Ordinance:**

1. The proposed parking reduction, when operated in conformance with the application and submitted documents presented to the Board prior to the public hearing:
  - a. Will not have a substantial adverse impact on vehicular traffic or vehicular and pedestrian safety and adequate provisions are made in the proposed exception for parking and for loading and unloading;
  - b. Will not have a substantial adverse impact on adjoining properties in terms of environmental factors such as noise, lights, glare, vibration, fumes, odors, obstruction of air or light;
  - c. Will not have a substantial adverse impact on the aesthetic character of the area, to include a review of the orientation and spacing of buildings as is within existing structure;
  - d. Will not have a substantial adverse impact on public safety or create nuisance conditions detrimental to the public interest or conditions likely to result in increased law enforcement response;
  - e. The establishment of the proposed special exception does not create a concentration or proliferation of the same or similar types of special exception use, which concentration may be detrimental to the development or redevelopment of the area in which the special exception use is proposed to be developed;
  - f. Is consistent with the character and intent of the underlying RG-2 district as indicated in the zoning district description;
  - g. Is appropriate for its location and compatible with the permitted uses adjacent to and in the vicinity of the property; and
  - h. The proposed use would not adversely affect the public interest.

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**Any documents submitted by persons expressing support or concern about this application are attached hereto and made part of the record of the public hearing.**

# Zoning Map

Special Exception 2021-0065-SE

2401 Atlas Road  
TMS# 13500-02-04 (p)



Department of Planning & Development Services

**Legend**

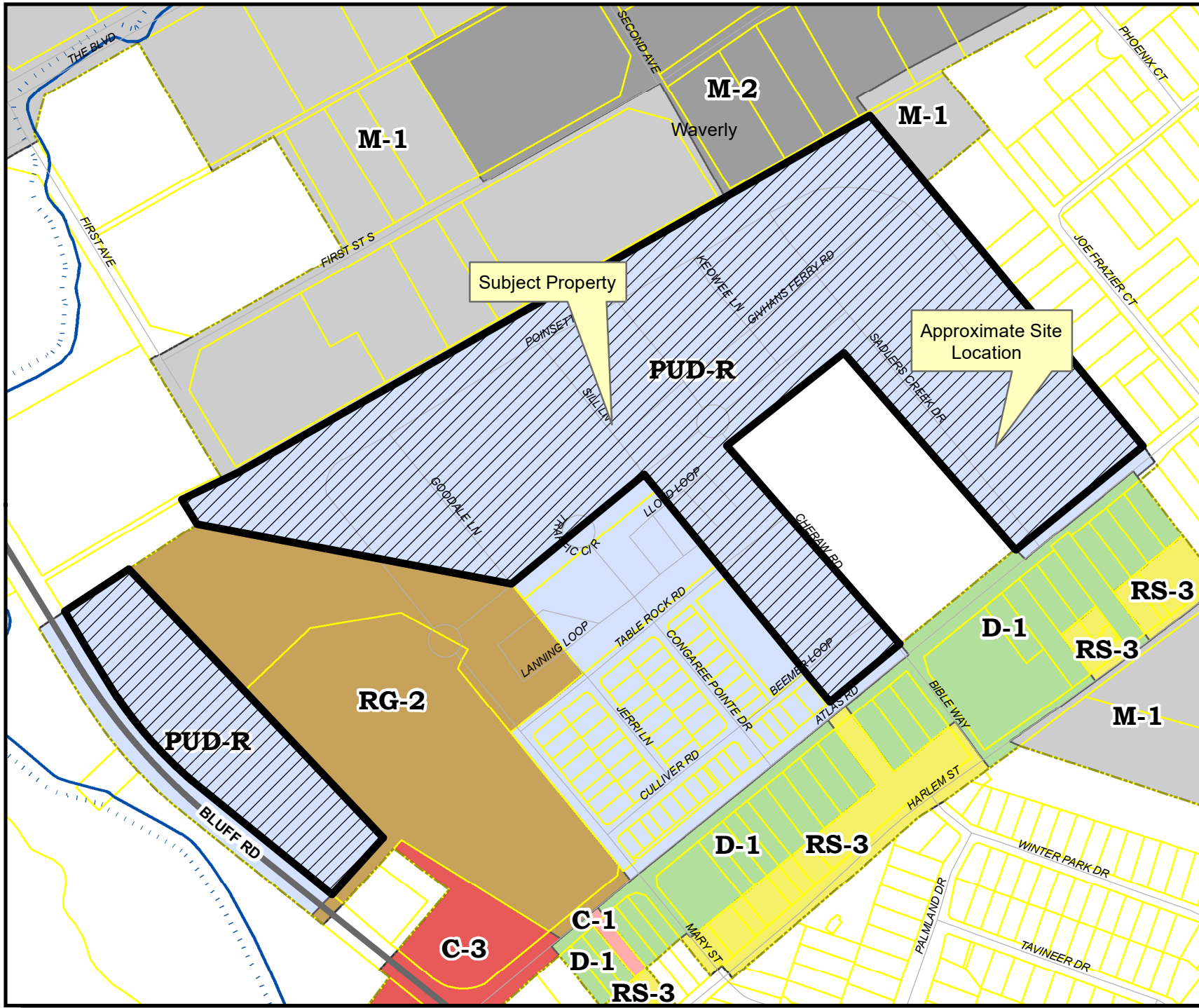
RAILROADS CITY LIMITS  
FEMA FP

D-1	C-1
RS-1	C-2
RS-1A	C-3
RS-1B	C-3A
RS-2	C-4
RS-3	C-5
RD	M-1
RD-2	M-2
RG-1	PUD-C
RG-1A	PUD-LS
RG-2	PUD-LS-E
RG-3	PUD-LS-R
UTD	PUD-R
MX-1	OUT OF CITY
MX-2	DD DISTRICT
	DP DISTRICTS
	PD DISTRICT
	CC OVERLAY
★	City Landmark

1 inch = 450 feet

**ORIGINAL PREPARATION/DATE:**  
This map was prepared by:  
Erica Jaen  
for  
June 3, 2021  
BoZA Meeting

**DISCLAIMER:**  
The City of Columbia Department of Planning and Development Services data represented on this map or plan is the product of compilation, as produced by others. It is provided for informational purposes only and the City of Columbia makes no representation as to its accuracy. Its use without field verification is at the sole risk of the user.



\*\* DATA SOURCE - CITY OF COLUMBIA, GIS DIVISION





01/26/2019 - 02/08/2019





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02/08/2015





We Are Columbia

Office Use Only

Date Received: 5.7	Case #: 2021-006
Staff Initial: [Signature]	Invoice:

CITY OF COLUMBIA ZONING DIVISION  
 1136 Washington Street, 1st Floor  
 Columbia, SC 29201  
 Office: 803-545-3333 E-mail: zoning@columbiasc.gov  
 www.columbiasc.net

## APPLICATION

CITY OF COLUMBIA  
 BOARD OF ZONING APPEALS

### PLEASE READ:

So that we can better serve all applicants, completed applications must be submitted by the 4:00 PM published application deadline (please refer to the official BoZA Calendar, available on our web site at [www.columbiasc.net](http://www.columbiasc.net)). Any failure to submit all required documentation and payment by the published deadline shall result in applications being returned, withdrawn, or scheduled at a later date.

*\*\* In some instances, a pre-application meeting with staff is encouraged. Applicant is **strongly** advised to contact and/or meet with the adjacent neighborhood association(s) to communicate details of the proposed project prior to application submittal. Neighborhood Association contact information may be obtained from Zoning staff.*

### Property Information

Address of Subject Property: 2401 Atlas Rd. Columbia, SC 29209  
 Tax Map Number(s): R13500-02-04 Zoning District: RG-2 Overlay District: 1CC  
 Current Use of Property: N/A  
 Estimated Value of Project: \$21,000,000 Type of Development: Multifamily Senior Housing

### Applicant Information

Applicant: Nick Andersen  
 Name of Company (if applicable): Dominium  
 Mailing Address 2905 Northwest Blvd.  
 City: Plymouth State: MN Zip: 55441  
 E-mail Address: nandersen@dominiuminc.com Phone: 404-205-8096

Are you the property owner? Yes  No

**If no, please ensure the Letter of Agency is completed in its entirety and submitted with application**



Case #:

*Please provide the specific section(s) of the City of Columbia Zoning Ordinance from which a special exception is being requested (ex. 17-258). To find the applicable section, please see Chapter 17 of the City of Columbia Code of Ordinances, viewable at [www.municode.com](http://www.municode.com)*

Section(s): 17-345(C)

**Description of Request:**

*Please describe your proposal in detail. You may attach a separate sheet if necessary. Additionally, you may provide any supporting materials that are applicable to your request (i.e. business plan, site plan, plat of property, photographs, etc.)*

The RG-2 zoning ordinance calls for 2 parking spots per unit. Under Sec. 17-345c of the Code of Ordinances, a reduction of parking spaces is available to senior developments. Dominion is proposing Haven at Congaree Pointe contains 245 parking spaces, as opposed to the 392 parking spaces required by the Code of Ordinances. For Haven of Congaree Pointe, we propose 1.25 spaces per unit, which we believe will be adequate to serve the needs of the community based on data from our previous senior developments. This represents an approximate 38% reduction, within the code’s 50% maximum reduction threshold.

**Applicant Response to Section 17-112(2):**

*The Board of Zoning Appeals shall approve an application for a special exception only upon finding that the required criteria are met (see 17-112(2) of the Zoning Ordinance). In evaluating your request, the members of the Board will review the answers below as part of the case record. You may attach a separate sheet if necessary.*

1. Describe in what ways the proposed special exception will not have a substantial adverse impact on vehicular traffic or vehicular and pedestrian safety and how adequate provisions are made in the proposed exception for parking and for loading and unloading.

Dominium and the Midlands Community Development Corporation have partnered in order to build this future senior community. It is our belief that many residents will also be members of the congregation, so pedestrian and vehicular safety is at the forefront of our design as we envision tenants walking to the Church for services. A reduction in parking will enable shorter walking distances to units from parking spaces, to outdoor amenities, and to the Church. Furthermore, with anticipated foot traffic to and from the Church, a reduction in parking spaces makes pedestrians safer within our community. From a vehicular perspective, an initial Traffic Impact Analysis (TIA) has been completed showing no adverse impacts. An increase in parking spaces from 245 to 392 would inevitably create greater vehicular traffic.

2. Describe in what ways the proposed special exception will not have a substantial adverse impact on adjoining properties in terms of environmental factors such as noise, lights, glare, vibration, fumes, odors, obstruction of air or light, and litter.

The primary neighbors of the property are single family homes, the Midlands Community Development Corporation (MCDC), and the Church. MCDC will provide various activities and services to residents in the community. The surrounding neighborhood is in support of this development and a reduction to parking would enable Dominion to provide larger buffers and more green-space, which would be a positive impact for community. The other family multifamily development near Atlas Road will have access to their community via a separate road on Bluff Rd. The other development should not adversely affect the environment adjacent to Haven at Congaree Pointe. Additionally, fewer cars on the site would reduce noise, lights, vibration, fumes and odor.

3. Describe in what ways the proposed special exception will not have a substantial adverse impact on the aesthetic character of the area, to include a review of the orientation and spacing of buildings.

The proposed site is a single four-story building. From an aesthetic perspective, the site’s reduction in parking to 245 spaces enables the residents to utilize more greenspace and Dominion to provide more landscaping features. The ability of Dominion to retain these options will only increase the opportunity to pass along more open space to residents, without having a substantial impact on the surrounding neighborhood.

4. Explain how the proposed special exception will not have an adverse impact on public safety or create nuisance conditions detrimental to the public interest or conditions likely to result in increased law enforcement response.

As previously stated, a TIA was completed noting no adverse impact related to traffic. The Haven at Congaree will not contribute to any public safety concerns. Instead, our vision is to make the lives of our senior tenants easier and safer. Dominion will also act as the property manager for the development. Dominion Management Services currently manages over 35,000 units nationwide. Management staff is present on site on weekdays as well as weekends. The reduction of parking spaces would likely result in a decrease in law enforcement response to this site. Ample parking space is already provided by the Church and additionally, the Church has law enforcement representation directing traffic on Sundays.

Case #:

5. Explain how the establishment of the proposed special exception does not create a concentration or proliferation of the same or similar types of special exception use, which concentration may be detrimental to the development or redevelopment of the area in which the special exception use is proposed to be developed.

Sec. 17-345c specifically references a reduction of parking available senior communities provided there is additional space on site for future expansion. We believe our 12 acre site has the ability to increase parking density if necessary. Additionally, the closest senior development is 1.8 miles away to the East on Atlas Road. The Church is the owner of much of the adjacent land and it is not anticipated that another senior development would be built nearby, so a similar special exception would not apply to this neighborhood.

6. Explain how the proposed special exception is consistent with the character and intent of the underlying district as indicated in the zoning district description, with any applicable zoning overlay district goals and requirements.

This site is under consideration for rezoning to RG-2. The RG-2 district is intended for medium and high density residential areas. Senior communities require fewer parking spaces in comparison to family communities, as the density is much greater for families. Therefore, a reduction in parking spaces needed to support the community enables greater opportunity for a site plan that senior are able to enjoy, indoors and outdoors.

7. Describe how the proposed special exception is appropriate for its location and compatible with the permitted uses adjacent to and in the vicinity of the property.

The neighborhood, Church and community are in support of the proposed community and are particularly excited that the site plan will enable walking paths, community gardens, outdoor seating and grilling, and other common space outdoor amenities that will enhance the lives of the residents. On May 6, 2021, the Board of Zoning Appeals granted this development a height variance largely because of the greenery and walkability of this site. The Board believed this would be a tremendous benefit to residents. The special exception will help the preserve the greenery and tenant amenity space to provide the best site plan possible.

8. Explain in what ways the proposed special exception will not adversely affect the public interest.

The reduction will allow for more greenspace for residents and neighbors and will enable greater buffer protection for nearby single-family residential neighbors. The Church is in support of creating this community and providing greater access for seniors to attend services and events. Furthermore, the initial TIA shows that there will be no adverse affects with this development. Increasing the parking to 392 spaces would only increase traffic within the site, creating a greater likelihood for an incident.

Residential:	\$50.00	Commercial Projects:	Valued ≤ \$50,000	\$75.00	<b>APPLICATION FEE TO BE PAID AT TIME OF SUBMITTAL</b>
			Valued > \$50,000	\$125.00	

By signing below, I, the applicant, understand and/or acknowledge that:

1. I have completely read this application and understand that, while the Board will carefully review and consider this application, the burden of proving conformance with the Special Exception criteria lies with me.
2. The Board of Zoning Appeals conducts public hearings on the second Tuesday of each month in City Council Chambers, 3rd Floor of City Hall, 1737 Main Street, Columbia, SC 29201.
3. The proposed use and/or construction complies or will comply with all other requirements of the City of Columbia Zoning Ordinance.
4. The Board of Zoning Appeals will render a written order regarding my application. Any time frames related to an appeal of a decision of the Board of Zoning Appeals shall start from the date the written and signed Order of the Board is mailed to the applicant via certified mail.
5. The Board may prescribe appropriate conditions and safeguards to any approval in conformity with the ordinance (i.e. (1) hours of operation; (2) landscaping; and (3) screening of activities or structures).
6. Violations of the conditions of a Board approval shall be punishable under the penalties established in the Zoning Ordinance.
7. As the applicant, I affirm that the subject parcel is not restricted by any recorded covenant that is contrary to, conflicts with, or prohibits the requested activity (See Section 6-29-1145 of the South Carolina Code of Laws)

Signature: *Katessa Archer*  
BE2DOC26014A464...  
 Date: 5/7/2021

Print Name: Katessa Archer





# LETTER OF AGENCY BOARDS AND COMMISSIONS

**TO: Planning and Development Services, City of Columbia**

I, the undersigned property owner, do hereby attest that I am the person that holds, or I am authorized on behalf of the party that holds, fee simple interest in the following parcel(s):

COMMON STREET ADDRESS(ES): 2401 Atlas Rd. Columbia, SC 29209

TAX MAP NUMBER(S): R13500-02-04

Further, I hereby authorize the persons and/or entities listed as AUTHORIZED AGENT(S) below to act on my behalf for the purpose of submitting documents, amending documents, meeting with staff, attending public meetings and hearings, and as otherwise may be necessary and proper to fulfill the required steps to request the following:

1. Variance, Special Exception, and/or Administrative Appeal (Board of Zoning Appeals)
2. Zoning Map Amendment (Planning Commission and City Council, if applicable)
3. Site Plan Review (Planning Commission or D/DRC)
4. Design Review (D/DRC)
5. Minor Subdivision (Staff)
6. Major Subdivision (Planning Commission)

*\*\*Please strike-through and initial any of the above-listed steps that do not fall under the scope of this Letter of Agency*

*Name, Company/Firm, Telephone Number*

AUTHORIZED AGENT(S): Nick Andersen, Dominion, (404) 205-8096, nandersen@dominiuminc.com  
Katessa Archer, Dominion, (404) 806-5860, Katessa.Archer@dominiuminc.com

**Please note that the Authorized Agent(s) will be the designated contact for all correspondence related to the above-listed steps**

SIGNATURE OF PROPERTY OWNER:  DATE: 3/30/21  
PROPERTY OWNER NAME (PRINTED): Darrell Jackson Jr

WITNESS TO SIGNATURE:  DATE: 03/30/21  
WITNESS NAME (PRINTED): Taryll D. Rhodes



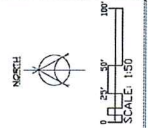
**SENIOR SITE INFO**

SITE IS CURRENTLY 12.0 +/- ACRES  
 196 APARTMENTS UNITS  
 1-BEDROOM UNITS = 98  
 2-BEDROOM UNITS = 98

206 PARKING SPACES @ 7 SPACE PER BEDROOM



1 CONCEPTUAL ARCHITECTURAL SITE PLAN  
 1" = 150'-0"



**CSP.3**

MARTIN RILEY ASSOCIATES - ARCHITECTS, P.C.  
 215 CHURCH STREET SUITE 200 DECATUR GEORGIA 30030-3329 404-373-2800  
 COLUMBIA SENIOR  
 COLUMBIA, SC  
 CONCEPTUAL ARCHITECTURAL SITE PLAN

DATE	12/01/07
REVISION	1-13-2021
DATE	3-22-2021
DESIGNER/OWNER	4-26-2021
DATE	





# ***Atlas Road Senior Housing Development***

*Columbia, SC*

## **Traffic Impact Analysis**

*Prepared for:*

Dominium Development, LLC

*Prepared by:*

Kimley-Horn

May 2021  
© Kimley-Horn and Associates, Inc.  
802 Gervais Street, Suite 201  
Columbia, South Carolina, 29201

**Kimley»Horn**



***Atlas Road  
Senior Housing Development***

*Columbia, SC*

**Traffic Impact Analysis**

*Prepared for:*

Dominium Development, LLC

*Prepared by:*

Kimley-Horn

May 2021  
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- A – Raw Turning Movement Counts
- B – Signal Timing Information
- C – Intersection Volume Development Worksheets
- D – Intersection Capacity Analysis Results
- E – Intersection Queueing Analysis Results

DRAFT



## ***Executive Summary***

The purpose of this traffic impact analysis is to review the vehicular traffic impacts resulting from a proposed senior housing development in Columbia, SC. The objectives of this study are to:

- Estimate trip generation and distribution for the proposed development
- Perform intersection capacity analyses for the identified study area
- Determine the potential traffic impacts of the proposed development
- Develop recommendations for needed roadway and operational improvements to accommodate the proposed development's traffic impacts

The proposed development is located along northwest side of Atlas Road between Bible Way and Joe Frazier Court in Columbia, SC. The development is proposed to include up to 200 senior housing apartment units.

This analysis assumes the buildout for the development is year 2023.

This report summarizes the analyses of year 2021 existing conditions, 2023 background development conditions (without the proposed development traffic), and 2023 build-out conditions during the AM and PM peak hours at the following intersections:

- Atlas Road (S-50) at Bluff Road (SC-48) – Signalized
- Atlas Road (S-50) at Shop Road (SC-768) – Signalized
- Atlas Road (S-50) at Site Driveway – Unsignalized

Kimley-Horn and Associates, Inc. was retained to determine the potential traffic impacts of this development in accordance with the traffic study guidelines in the *South Carolina Department of Transportation (SCDOT) Access and Roadside Management Standards (ARMS)* and the transportation improvements that may be required to accommodate these impacts.

Based on the results of the analyses contained within the report, there are no significant or adverse impacts resulting from the addition of the proposed project traffic.

## 1. Introduction

The proposed development is along northwest side of Atlas Road between Bible Way and Joe Frazier Court in Columbia, SC. The development is proposed to include up to 200 senior housing apartment units.

This analysis assumes the buildout for the development is year 2023. The location of the proposed development is included in Figure 1.

The development is expected to be completed (built-out) in year 2023 and will be accessed via a one (1) full-access driveway:

- Atlas Road (S-50) at Site Driveway

Kimley-Horn and Associates, Inc. was retained to determine the potential traffic impacts of this development in accordance with the traffic study guidelines in the *SCDOT ARMS* and the transportation improvements that may be required to accommodate these impacts. This report presents trip generation, distribution, capacity analyses, and recommendations for transportation improvements required to meet anticipated traffic demands.

The City of Columbia and SCDOT were contacted to establish the project study area and to ascertain the elements to be covered in this traffic impact analysis (TIA).



## ***2. Inventory***

### ***2.1. Study Area***

The study area for this TIA includes the following intersections:

- Atlas Road (S-50) at Bluff Road (SC-48) – Signalized
- Atlas Road (S-50) at Shop Road (SC-768) – Signalized
- Atlas Road (S-50) at Site Driveway – Unsignalized

This study area was determined based on engineering judgment and discussions with City and SCDOT staff. Figure 1 shows the study area intersections for this analysis, and Figure 2 shows the proposed site plan for the development.

### ***2.2. Existing Conditions***

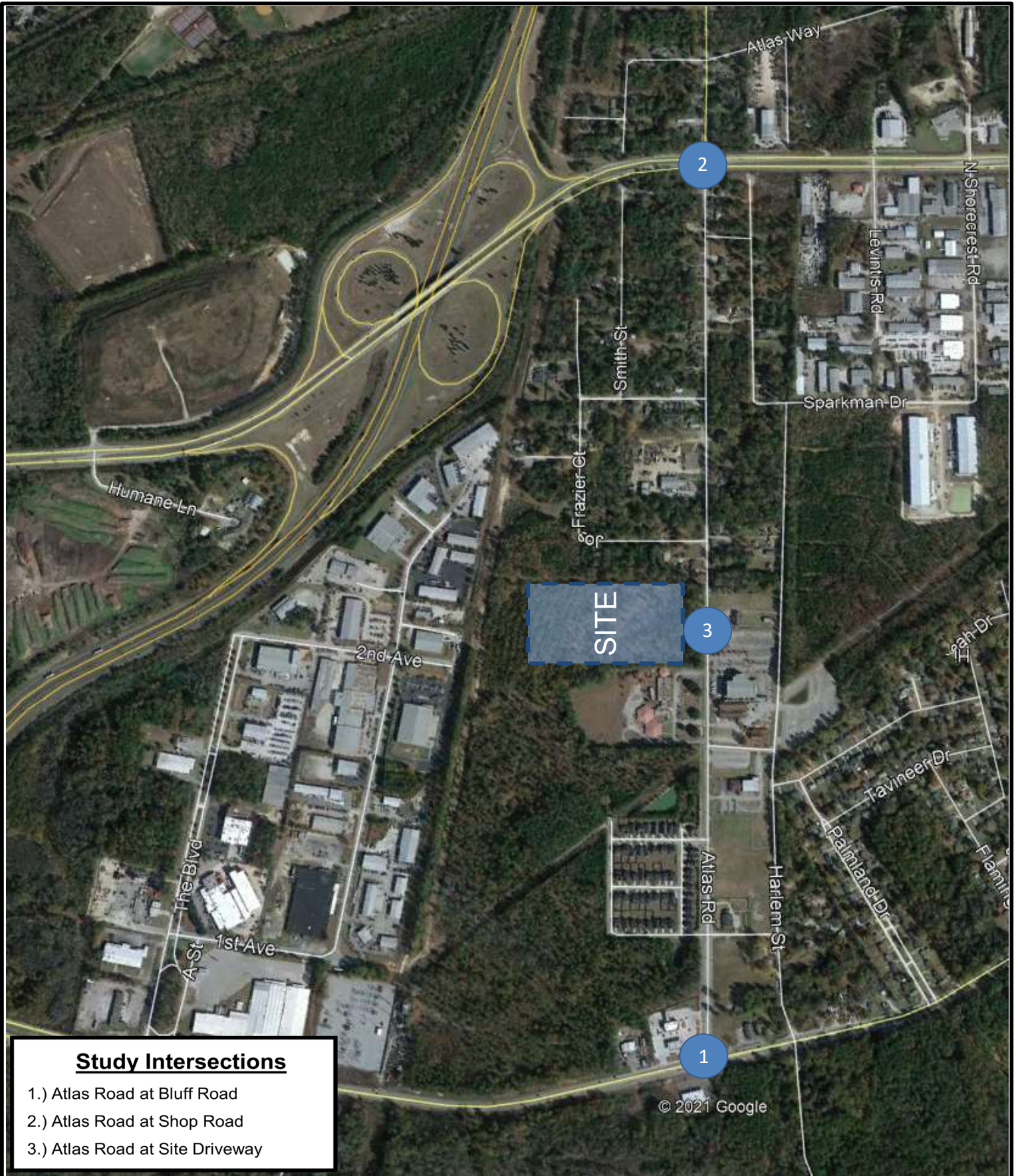
The proposed development is located along northwest side of Atlas Road between Bible Way and Joe Frazier Court in Columbia, SC. The major roadways in the project vicinity are Bluff Road (SC 48) and Shop Road (SC-768).

Bluff Road (SC-48) is a paved five-lane, divided minor arterial with a posted speed limit of 45 mph in the vicinity of the site. Bluff Road (SC 48) has a 2019 AADT of 11,500 vehicles per day at SCDOT Richland County count station 242 which is located south of Atlas Road.

Shop Road (SC-768) is a paved four-lane, divided minor arterial with a posted speed limit of 55 mph in the vicinity of the site. Shop Road (SC-768) has a 2019 AADT of 19,500 vehicles per day at SCDOT Richland County count station 290 which is located north of Atlas Road.

Atlas Road (S-50) is a paved two-lane, undivided local road with a posted speed limit of 40 mph in the vicinity of the site. Shop Road (SC-768) has a 2019 AADT of 4,900 vehicles per day at SCDOT Richland County count station 290 which is located between Bluff Road and Shop Road.

Figure 3 shows the existing laneage at the study area intersections.



**Study Intersections**

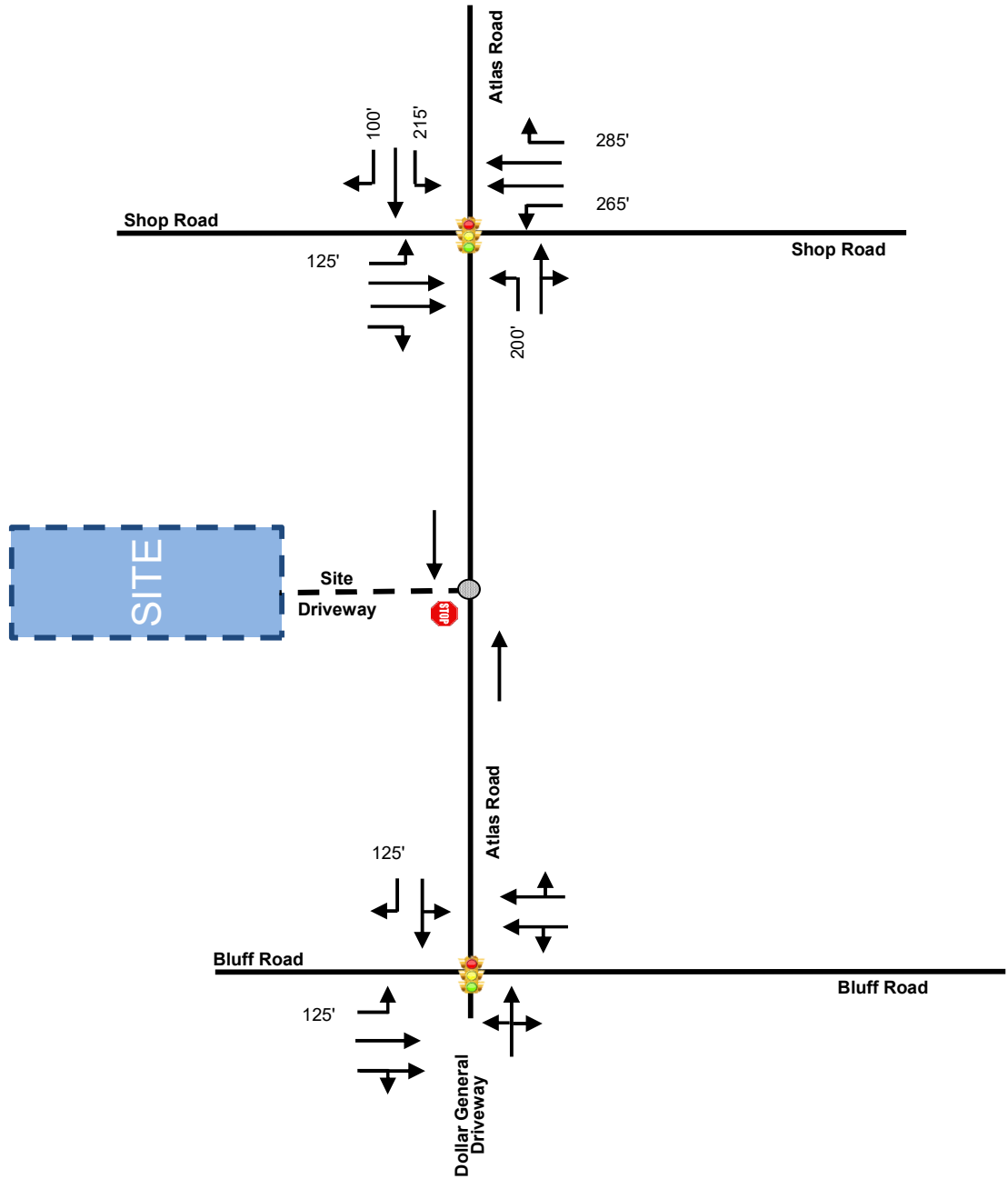
- 1.) Atlas Road at Bluff Road
- 2.) Atlas Road at Shop Road
- 3.) Atlas Road at Site Driveway











NOT TO SCALE



**Legend**

-  Existing Laneage
-  Existing Storage
-  Existing Signal
-  Existing Stop Control



### 3. Trip Generation

#### 3.1. Trip Generation Methodology Determination

The trip generation rates and equations published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10<sup>th</sup> Edition* were used to estimate the trip generation potential for the mixed-use development. The analysis was performed using the information provided for ITE 252 – Senior Adult Housing (Attached).

Using the information provided for ITE land use 252, it was estimated that the gross trip generation potential for the proposed development is 40 trips (14 enter/26 exit) during the AM peak hour of the adjacent street, and 50 trips (28 enter/22 exit) during the PM peak hour of the adjacent street.

The ITE estimated trip generation for the proposed development is summarized in Table 1.

**Table 1: Trip Generation Analysis Summary**

Table 1 - Trip Generation								
Land Use	Intensity	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Senior Adult Housing (Attached) (ITE 252)	200 DU	779	40	14	26	50	28	22
<b>Internal Capture</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Residential Net New External Trips		779	40	14	26	50	28	22
<b>Total Net New External Trips</b>		<b>779</b>	<b>40</b>	<b>14</b>	<b>26</b>	<b>50</b>	<b>28</b>	<b>22</b>
Note: Trip generation was calculated using the following data:								
Daily Traffic Generation								
Senior Adult Housing (Attached) (ITE 252)	[ITE 252]	=	T = 4.02 X - 25.37; (50% in, 50% out)					
AM Peak-Hour Traffic Generation								
Senior Adult Housing (Attached) (ITE 252)	[ITE 252]	=	T = 0.2 X - 0.18; (35% in, 65% out)					
PM Peak-Hour Traffic Generation								
Senior Adult Housing (Attached) (ITE 252)	[ITE 252]	=	T = 0.24 X + 2.26; (55% in, 45% out)					

#### ***4. Site Traffic Distribution***

The proposed development's trips were assigned to the surrounding roadway network. The directional distribution and assignment were based on existing peak-hour turning movements, proposed land uses, and professional judgment and local knowledge. The trip distribution percentages used in this analysis are as follows:

- 15% to/from the East via Shop Road (SC-768)
- 50% to/from the West via Shop Road (SC-768)
- 5% to/from the North via Atlas Road (S-50)
- 10% to/from the East via Bluff Road (SC-48)
- 20% to/from the West via Bluff Road (SC-48)

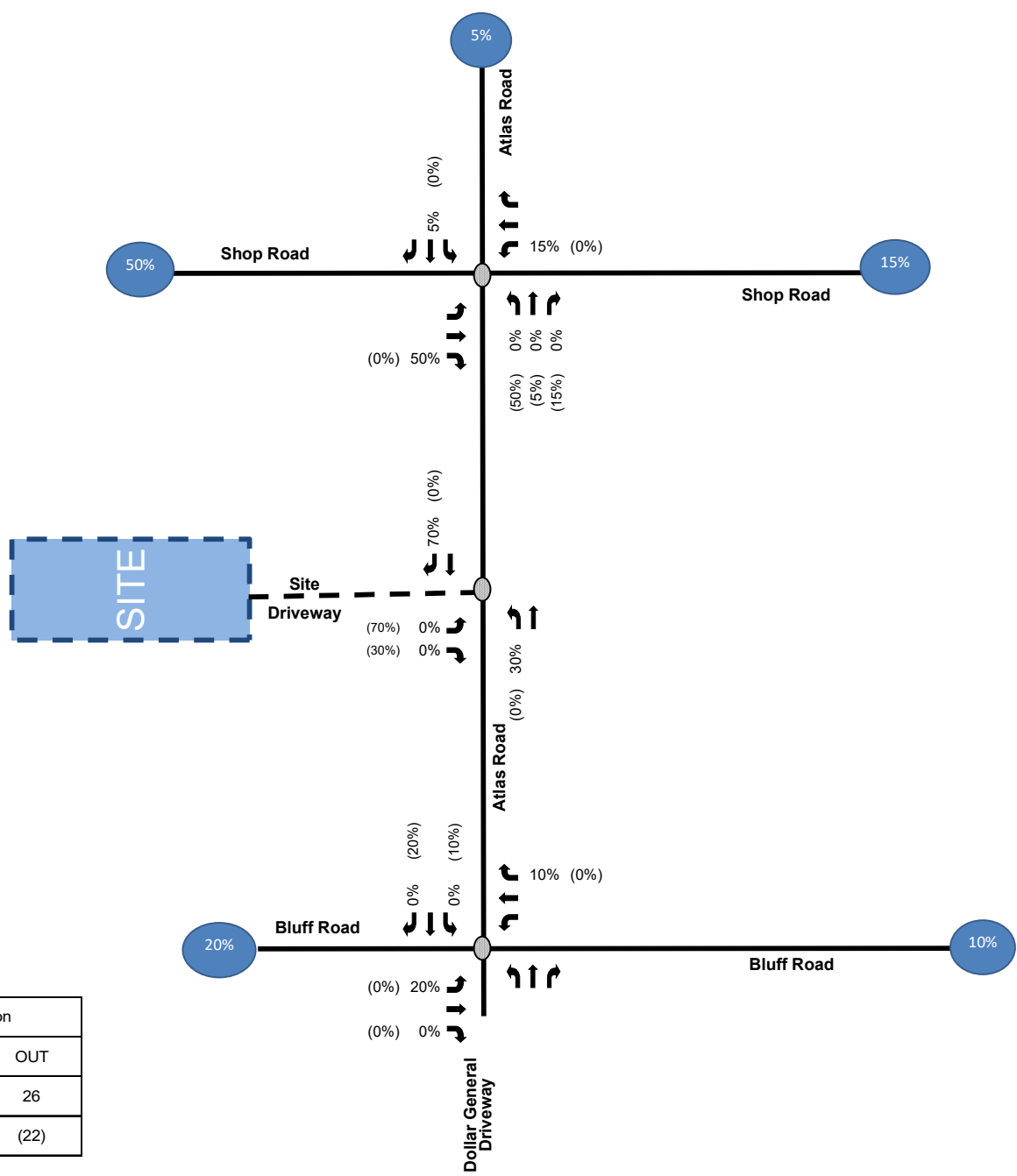
The site trip distribution is shown in Figure 4.

DRAFT





NOT TO SCALE



Trip Generation		
	IN	OUT
AM	14	26
(PM)	(28)	(22)

**Legend**

- Study Intersection
- Directional Movement
- XX% Inbound Trip Distribution
- (XX%) Outbound Trip Distribution

## **5. Traffic Volumes**

### **5.1. 2021 Existing Traffic**

Peak-hour intersection turning-movement and heavy vehicle counts were performed by National Data and Surveying Services, Inc. from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on Tuesday, April 20, 2021 for the study area intersections.

Existing counts were balanced along the study network intersections, where appropriate.

Figure 5 shows the year 2021 existing AM/PM peak-hour traffic volumes. The raw turning-movement count data are included in the Appendix.

### **5.2. Historical Growth Traffic**

Historical growth traffic is the increase in existing traffic volumes due to usage increases and non-specific growth throughout the area. An annual growth rate of 1% was applied to the existing traffic to calculate base background traffic volumes.

### **5.3. 2023 Background Traffic**

As the anticipated build-out for the outparcel development is year 2023, the analysis year for this traffic study is year 2023. The 2023 background traffic volumes include existing, and historical growth traffic. The year 2023 AM/PM peak-hour background traffic volumes are shown in Figure 6. Volume development worksheets are included in the Appendix.

### **Committed Improvements**

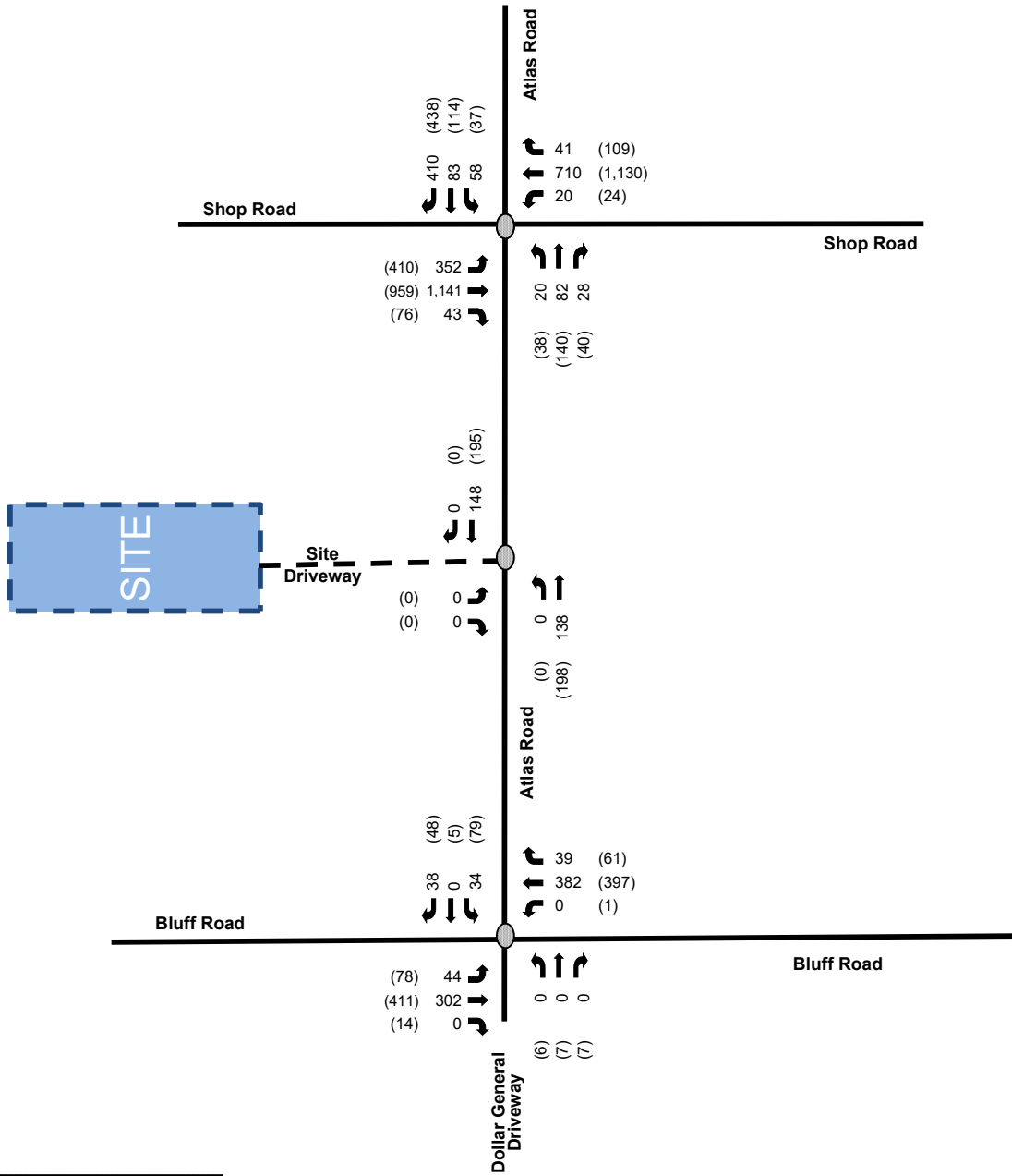
The SCDOT project viewer and Richland Penny Projects list were reviewed to identify any ongoing projects or committed improvements within the study area. The Atlas Road widening project was identified for the segment of Atlas Road from Bluff Road to Garners Ferry Road, with the section from Bluff Road to Shop Road being widened to a 3-lane section. However, it is not anticipated that this project will be completed prior to the opening of the proposed development in year 2023.

### **5.4. 2023 Build-Out Traffic**

The total year 2023 build-out traffic volumes include the year 2023 background traffic and the proposed site traffic. The proposed site generated trips used for estimating the build-out traffic are shown in Figure 7. The year 2023 AM/PM peak-hour build-out traffic volumes are shown in Figure 8.



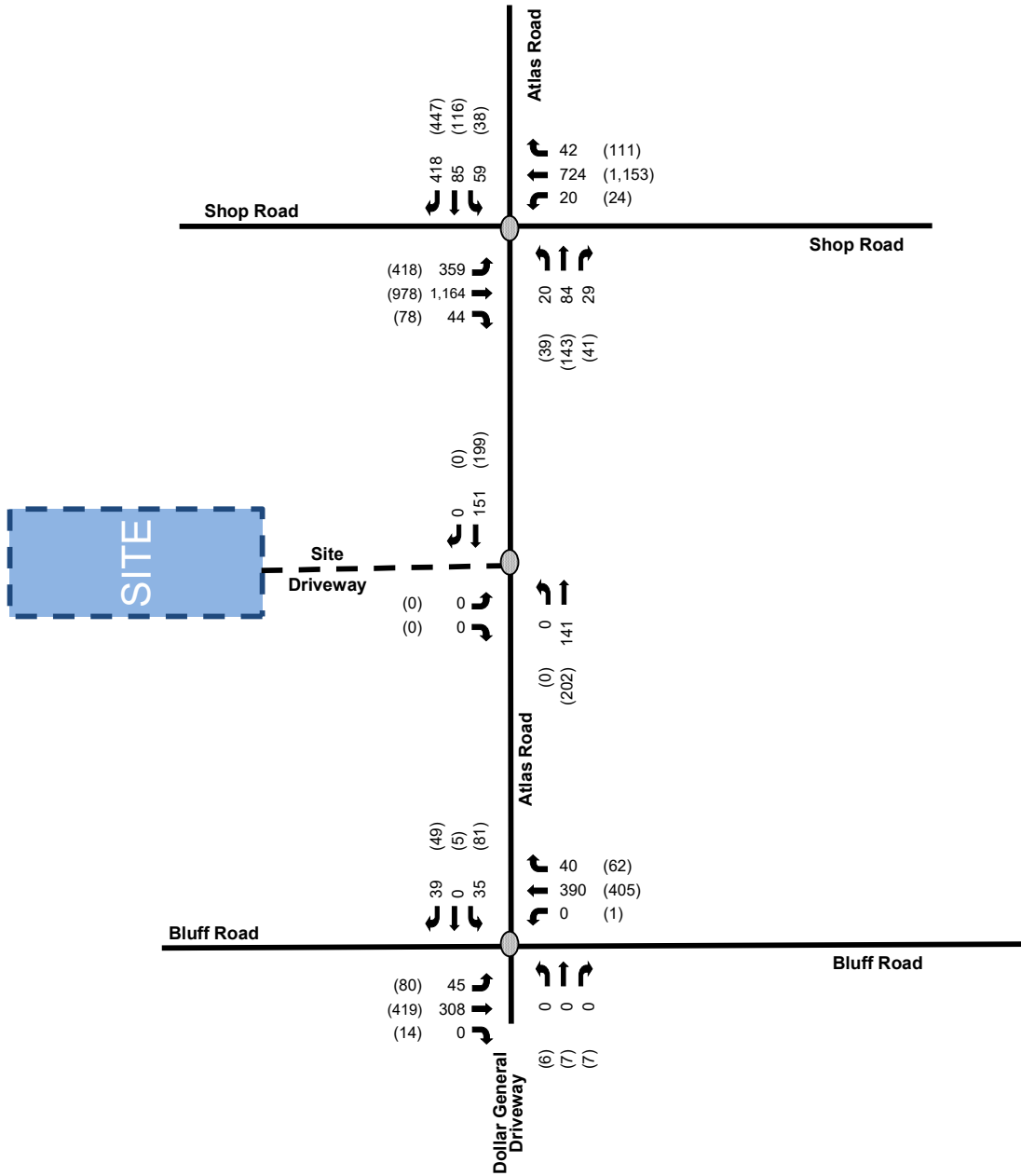
NOT TO SCALE







NOT TO SCALE

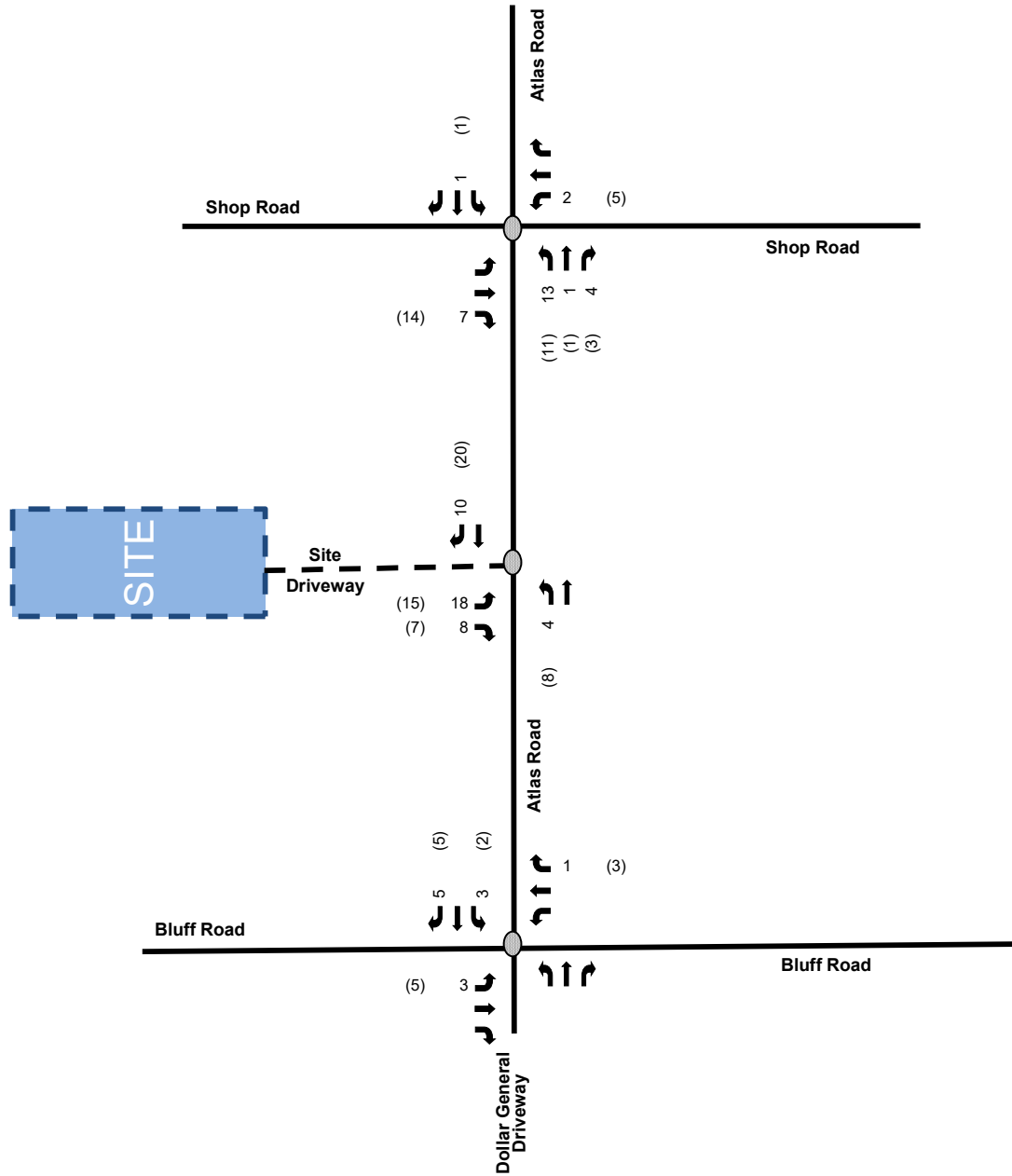


**Legend**

- Study Intersection
- ➔ Directional Movement
- XX AM Traffic Volumes
- (XX) PM Traffic Volumes



NOT TO SCALE

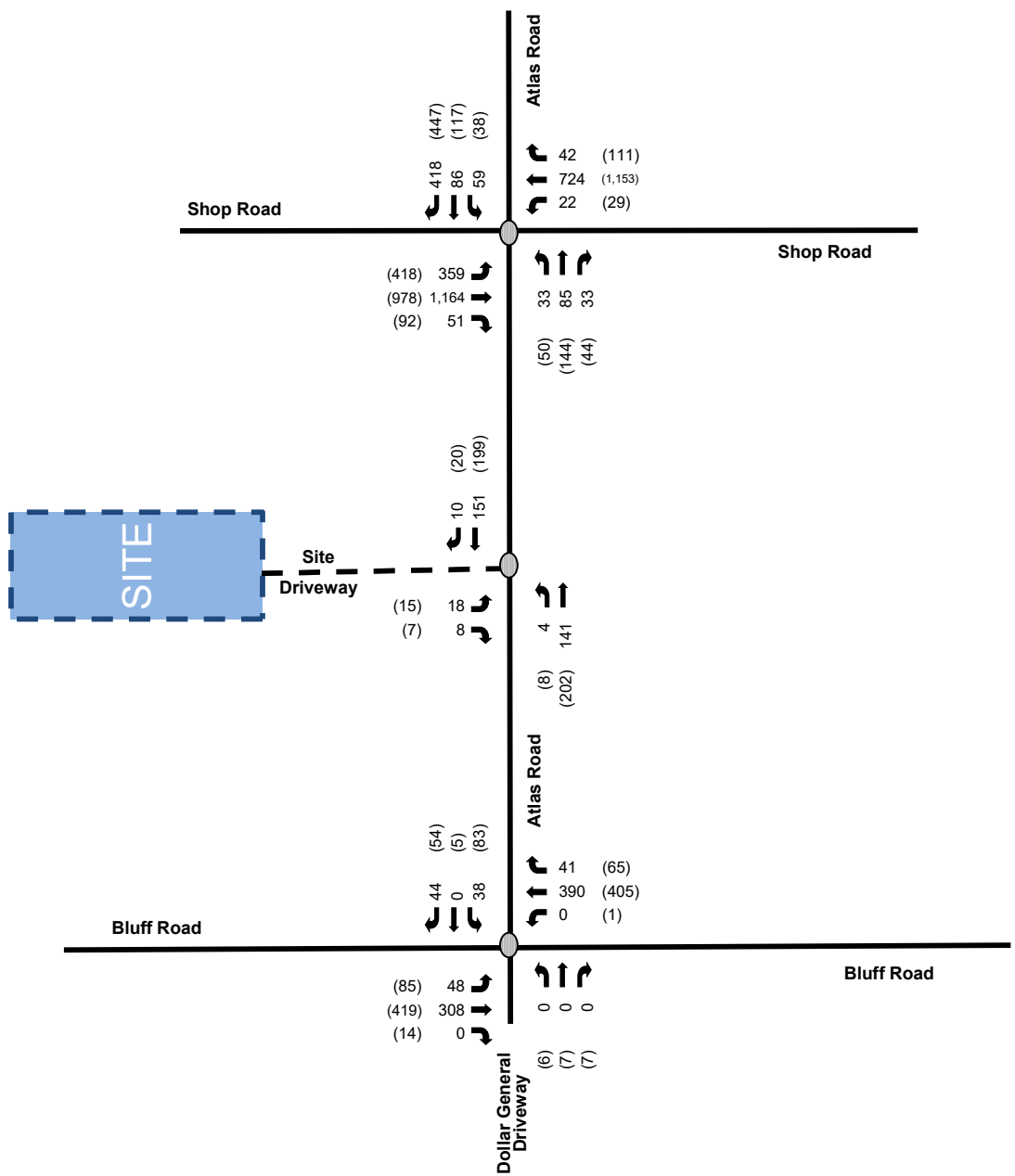


**Legend**

- Study Intersection
- ➔ Directional Movement
- XX AM Project Trips
- (XX) PM Project Trips



NOT TO SCALE



**Legend**

- Study Intersection
- ➔ Directional Movement
- XX AM Traffic Volumes
- (XX) PM Traffic Volumes



## 6. Capacity Analysis

Level-of-Service (LOS) determinations were made for the weekday AM and PM peak hours for the existing study network intersections and proposed access intersections using Synchro Version 10. The program uses methodologies contained in the 6<sup>th</sup> edition of the Highway Capacity Manual (HCM), as well as proprietary capacity analysis methods developed by Trafficware, to determine the operating characteristics of an intersection. Capacity is defined as the maximum number of vehicles that can pass over a particular road segment, or through a particular intersection, within a specified period of time under prevailing roadway, traffic, and control conditions.

LOS is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions of a traffic stream. The HCM defines six levels of service, LOS A through LOS F, with A being the best and F being the worst.

LOS for unsignalized intersections, with stop control on the minor street(s) only, are reported for the side street approaches. Low levels-of-service for the side street approaches are not uncommon, as vehicles may experience long delays turning onto a major roadway.

Levels-of-service for signalized intersections are reported for the intersection as a whole, and are based on the average control delay for the intersection. One or more movements at an intersection may experience a low level-of-service, while the intersection as a whole may operate acceptably.

Capacity analyses were performed for the following conditions:

- 2021 Existing Conditions
- 2023 Background (No-Build) Conditions
- 2023 Build-Out Conditions

Table 2 lists the LOS control delay thresholds published in the HCM for signalized intersections. Synchro Version 10 software uses the same LOS thresholds as those published in the HCM 6.

**Table 2: Signalized Level of Service Delay Thresholds**

Level-of-Service Control Delay Thresholds for Signalized Intersections (HCM 6th Edition)	
Level-of-Service	Control Delay per
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

Table 3 lists the LOS control delay thresholds published in the HCM 6 for unsignalized intersections, as well as the unsignalized operational descriptions assumed herein.

**Table 3: Unsignalized Level of Service Delay Thresholds**

Level-of-Service Control Delay Thresholds for Unsignalized Intersections (HCM 6th Edition)		
Level-of-Service	Average Control Delay per Vehicle [sec/veh]	
A	≤ 10	Short Delays
B	> 10 – 15	
C	> 15 – 25	
D	> 25 – 35	Moderate Delays
E	> 35 – 50	
F	> 50	Long Delays

Capacity analyses were performed for the 2021 existing traffic conditions, 2023 background traffic conditions, and 2023 build-out traffic conditions of development using the LOS reports generated by Synchro Version 10 software for the study area intersections.

SimTraffic was utilized to estimate 95<sup>th</sup> percentile queues for the study area intersections. The results reports are included in the Appendix.

Capacity analysis reports generated by Synchro Version 10 software are included in the Appendix and are briefly summarized in the following subsections. Intersection volume development worksheets are also included in the Appendix.

**6.1. Atlas Road (S-50) at Bluff Road (SC-48)**

Table 4 summarizes the LOS and control delay (seconds per vehicle) at the signalized intersection of Atlas Road (S-50) at Bluff Road (SC-48) for 2021 Existing conditions, 2023 Background conditions, and 2023 Build-Out conditions.

**Table 4: Atlas Road (S-50) at Bluff Road (SC-48) Capacity Analysis Results**

Atlas Road (S-50) at Bluff Road (SC-48)									
Condition	Measure	EB (Bluff Road)		WB (Bluff Road)		NB (Atlas Road)	SB (Atlas Road)		Intersection
		EBLT	EBTR	WBL	WBTR	NBTLR	SBL	SBTR	
<b>AM Peak Hour</b>									
Existing	LOS (Delay)	A (3.2)		A (3.3)		A (0.0)	B (15.8)		A (3.8)
Background	LOS (Delay)	A (3.3)		A (3.3)		A (0.0)	B (15.8)		A (3.8)
Build-Out	LOS (Delay)	A (3.3)		A (3.4)		A (0.0)	B (15.8)		A (3.9)
<b>PM Peak Hour</b>									
Existing	LOS (Delay)	A (4.3)		A (4.2)		B (14.5)	B (15.5)		A (5.3)
Background	LOS (Delay)	A (4.4)		A (4.2)		B (14.5)	B (15.5)		A (5.4)
Build-Out	LOS (Delay)	A (4.4)		A (4.3)		B (14.4)	B (15.5)		A (5.4)

As shown in Table 4, the intersection is expected to operate at LOS A or better during all scenarios, with no approaches operating above LOS B.

**Intersection Summary**

Overall, the observed and anticipated levels of service at the intersection were found to operate acceptably under buildout conditions. Additionally, no excessive queueing is expected as a result of project traffic.

As no significant level of service or excessive queueing issues are anticipated for this intersection, there are no adverse impacts to the intersection as a result of project traffic and therefore no capacity improvements are recommended.



**6.2. Atlas Road (S-50) at Shop Road (SC-768)**

Table 5 summarizes the LOS and control delay (seconds per vehicle) at the unsignalized intersection of *Atlas Road (S-50)* at *Shop Road (SC-768)* for 2021 Existing conditions, 2023 Background conditions, and 2023 Build-Out conditions.

**Table 5: Atlas Road (S-50) at Shop Road (SC-768) Capacity Analysis**

		Atlas Road (S-50) at Shop Road (SC-48)										
Condition	Measure	EB (Shop Road)			WB (Shop Road)			NB (Atlas Road)		SB (Atlas Road)		Intersection
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBTR	SBL	SBTR	
<b>AM Peak Hour</b>												
Existing	LOS (Delay)	B (19.9)			C (31.0)			D (39.1)		D (46.0)		C (28.4)
Background	LOS (Delay)	C (20.4)			C (31.1)			D (39.5)		D (46.8)		C (29.1)
Build-Out	LOS (Delay)	C (21.1)			C (32.9)			D (39.6)		D (47.4)		C (29.8)
<b>PM Peak Hour</b>												
Existing	LOS (Delay)	D (40.4)			E (60.8)			D (53.9)		D (50.5)		D (50.2)
Background	LOS (Delay)	D (41.4)			E (62.0)			D (54.1)		D (50.9)		D (51.1)
Build-Out	LOS (Delay)	D (42.1)			E (63.0)			D (54.0)		D (51.4)		D (51.9)

As shown in Table 5, the intersection is expected to operate at LOS C during AM Peak hours and LOS D during PM Peak Hours.

**Intersection Summary**

Overall, the observed and anticipated levels of service at the intersection were found to operate acceptably under buildout conditions. There was some queuing observed for EBL movement during PM peak hours for all scenarios. But, no excessive queuing is expected as a result of project traffic.

As no significant level of service or excessive queuing issues are anticipated for this intersection, there are no adverse impacts to the intersection as a result of project traffic and therefore no capacity improvements are recommended.

**6.3. Atlas Road (S-50) at Access #1**

Table 6 summarizes the LOS and control delay (seconds per vehicle) at the unsignalized intersection of Carter Street (S-290) at Access #1 for 2023 Build-Out conditions.

**Table 6: Atlas Road (S-50) at Access #1 Capacity Analysis**

Atlas Road (S-50) at Access #1		
Condition	Measure	EB (Access #1)
		EBLR
<b>AM Peak Hour</b>		
Build-Out	LOS (Delay)	B (10.3)
<b>PM Peak Hour</b>		
Build-Out	LOS (Delay)	B (11.2)

As shown in Table 6, the intersection is expected to operate at LOS A or better during the Build-Out scenario.

**Intersection Summary**

Overall, the anticipated levels of service at the intersection were found to operate acceptably under buildout conditions. Additionally, no excessive queueing is expected as a result of project traffic.

As no significant level of service or excessive queueing issues are anticipated for this intersection, there are no adverse impacts to the intersection as a result of project traffic and therefore no capacity improvements are recommended.

## 7. Conclusion

The purpose of this traffic impact analysis is to review the vehicular traffic impacts resulting from a proposed senior housing development in Columbia, SC. The objectives of this study are to:

- Estimate trip generation and distribution for the proposed development
- Perform intersection capacity analyses for the identified study area
- Determine the potential traffic impacts of the proposed development
- Develop recommendations for needed roadway and operational improvements to accommodate the proposed development's traffic impacts

The proposed development is located along northwest side of Atlas Road between Bible Way and Joe Frazier Court in Columbia, SC. The development is proposed to include up to 200 senior housing apartment units.

This analysis assumes the buildout for the development is year 2023.

This report summarizes the analyses of year 2021 existing conditions, 2023 background development conditions (without the proposed development traffic), and 2023 build-out conditions during the AM and PM peak hours at the following intersections:

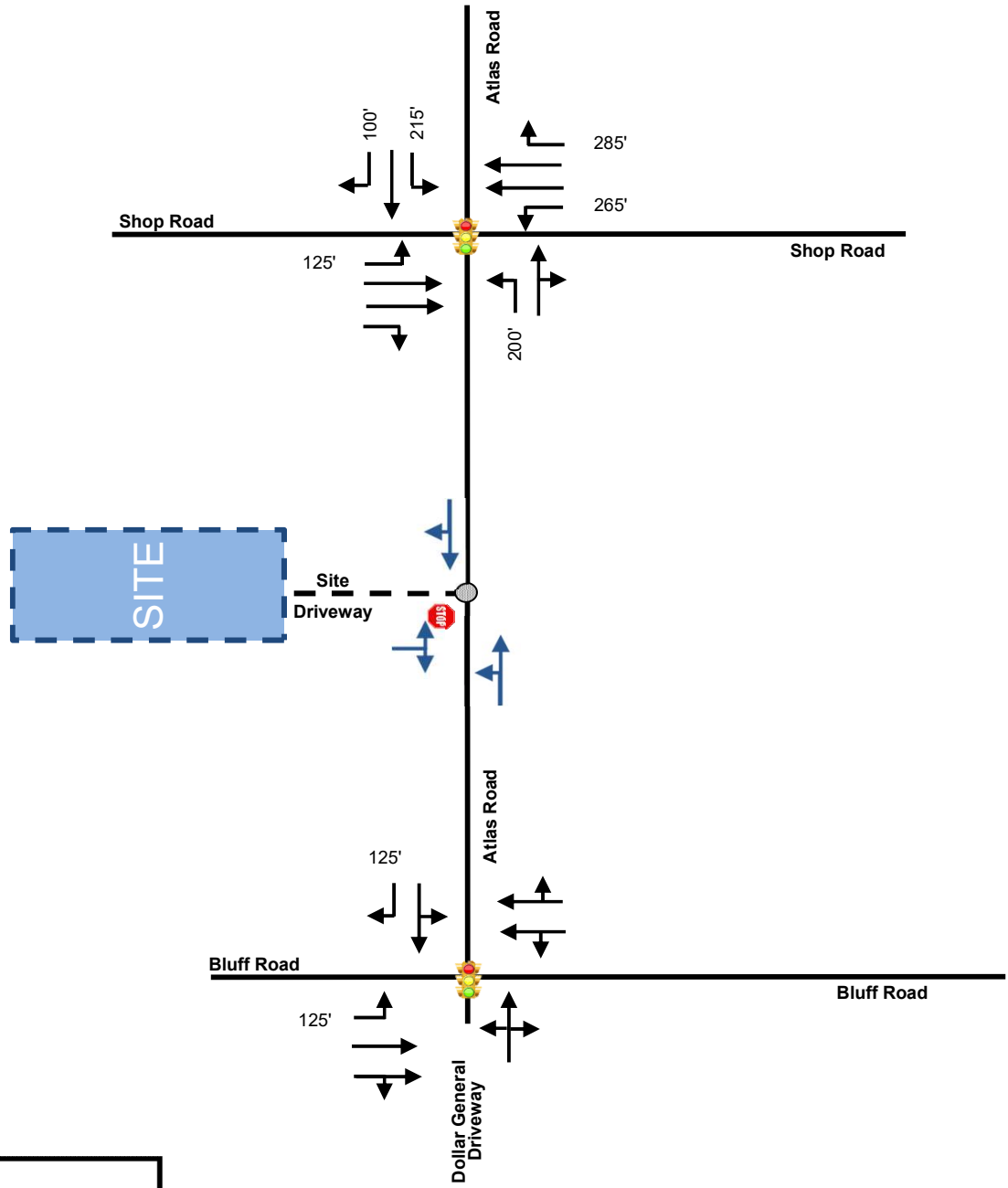
- Atlas Road (S-50) at Bluff Road (SC-48) – Signalized
- Atlas Road (S-50) at Shop Road (SC-768) – Signalized
- Atlas Road (S-50) at Site Driveway – Unsignalized

Kimley-Horn and Associates, Inc. was retained to determine the potential traffic impacts of this development in accordance with the traffic study guidelines in the *South Carolina Department of Transportation (SCDOT) Access and Roadside Management Standards (ARMS)* and the transportation improvements that may be required to accommodate these impacts.

Based on the results of the analyses contained within the report, there are no significant or adverse impacts resulting from the addition of the proposed project traffic.

The recommended laneage for the project is shown in Figure 9.





**Legend**

- Existing Laneage
- Recommended Laneage
- XX' Existing Storage
- XX' Recommended Storage
- Traffic Signal
- Stop Control