



**TOWN OF HARRISBURG, NORTH CAROLINA
HARRISBURG TOWN HALL
PLANNING AND ZONING BOARD MEETING**

**July 16, 2019
6:00 PM**

AGENDA

1. CALL TO ORDER

- A. AGENDA ADOPTION
- B. SPECIAL PRESENTATIONS
- C. PUBLIC COMMENT - Anyone wishing to address the Board may do so during the Public Comment section. Please state your name and address for the record, be courteous and do not repeat what has already been said. Please keep your comments about the subject and not personal in nature.

2. CONSENT AGENDA

- A. Consider the minutes of the May 21, 2019 Planning and Zoning Board meeting.

3. OLD BUSINESS

- A. H-2018-08 (R) – Camellia Gardens (Shea Homes) Conditional Rezoning and Zoning Map Amendment.

4. NEW BUSINESS

- A. Planning Board Vacancies (2) and Applications.

5. STAFF UPDATES/INFORMATION

6. ADJOURNMENT

Town of Harrisburg's Vision Statement

Harrisburg will be the best small town in North Carolina based on low density housing, excellent economic opportunities, a safe living environment, and efficient and effective municipal services. Amenities such as excellent recreational programs, adequate open space, attractive shopping opportunities, a diversity of restaurants, and a connected system of roadways, sidewalks, greenways, and bicycle lanes will continue to enhance the quality of life of the Town. These services and amenities will be provided while retaining reasonable tax rates and debt levels.



TOWN OF HARRISBURG

Agenda Item Details

Title:

Consider the minutes of the May 21, 2019 Planning and Zoning Board meeting.

Presenting Personnel:

Suggested Motion or Action:

Motion to approve the May 21, 2019 Planning and Zoning Board minutes.

Description/Background:

Recommendation:

Fiscal Impact:

Attachments:

1. PZ MINS MAY 21 2019

**TOWN OF HARRISBURG, NORTH CAROLINA
PLANNING & ZONING ADVISORY BOARD MEETING
TUESDAY, MAY 21, 2019
6:00 PM**

MINUTES

1.

CALL TO ORDER

Andy Rathke called the meeting to order.

PRESENT: Andy Rathke, Lloyd Quay, Steve Bedwell, John Overcash, Rodney Garner, Thelma Thorne-Chapman, Jacob Carpenter

A.

AGENDA ADOPTION

MOTION:

Andy Rathke made a motion to adopt the agenda as presented. Second was made by Jacob Carpenter. **The motion passed 7-0.**

2.

CONSENT AGENDA

A. Planning Board meeting minutes from April 16, 2019.

MOTION:

Thelma Thorne-Chapman made a motion to approve the Consent Agenda. Second was made by John Overcash. **The motion passed 7-0.**

3.

OLD BUSINESS

4.

NEW BUSINESS

H-2018-08 (R) – Camellia Gardens (Shea Homes) Conditional Rezoning and Zoning Map Amendment. Mike Shea, on behalf of Shea Homes has submitted a request to rezone approximately 85.35 acres located on the properties south of Stallings Road across from Stallings Road Park and Harrisburg Elementary School. The applicant proposes to develop 157 single-family detached residential dwellings. To achieve this, the applicant is requesting that the property be rezoned from the current Rural Estate (RE) district to Conditional Residential Village (CZ-RV) in accordance with the site plan submitted with the application. A staff report is attached for more information and a site plan is submitted for your consideration. If approved, staff will review the site plan in accordance with our Unified Development Ordinance (UDO). Staff is recommending approval of the rezoning request with conditions included in the staff report:

1. Applicant agrees to obtain any and all applicable local, state, and federal permits required for development before any development activity can take place.
2. Applicant agrees to restrict cladding materials for all buildings to classing products other than vinyl siding.
3. Applicant agrees to complete all the traffic improvements as outlined in the Final TIA report.
4. Applicant agrees to dedicate land for Public Open Space as required in the UDO.
5. Applicant agrees to construct a ten (10) foot wide greenway trail connection and dedicate a twenty-five (25) foot wide easement to provide access to the greenway connection from Stallings Road to Back Creek Greenway. The installation of the greenway connection shall be completed prior to the issuance of a certificate of occupancy for the first 71 homes to be constructed on the site. The applicant will also fund 50% of the cost to build a pedestrian bridge across Back Creek to connect the greenways. In the event that the easement is not secured by the Town of Harrisburg within two (2) years of the date of approval of this rezoning, the applicant shall have the option to instead exercise the fee-in- lieu provision of the UDO, which is calculated to be \$165,000
6. Applicant agrees to install all required improvements as identified in the Traffic Impact Analysis.

7. Applicant agrees to provide easement to allow the Town to decommission existing pump station on Hoffner Rd and connect onto the projects sewer system.
8. Applicant agrees to complete a LOMR-F prior to any fill activity taking place within the floodplain.

Public Comment:

- Rodney Dellinger- 3713 Ayrshire Court, Harrisburg, NC
- Patrick Ryan- 7250 Stream Haven Drive, Harrisburg, NC
- Lester Lemley- 7820 Grimsby Circle, Harrisburg, NC
- Bridget Grant- 100 North Tryon Street, Charlotte, NC-applicant
- Matt Kearns- 6220 Amber Lane, Charlotte, NC-applicant

After some discussion about the project and reviewing the conditions of this current project, they then took the following action:

MOTION:

Steve Bedwell made a motion to recommend approval of H-2018-08 (R) with the following conditions and send it on to Town Council for their consideration with a second from Lloyd Quay. **The motion passed 7-0.**

The following Consistency Statement was then proposed:

CONSISTENCY STATEMENT:

1. Based on the staff report, staff presentation and with the conditions proposed, this rezoning request is consistent with the Harrisburg Area Land Use plan and with the conditions it is reasonable and in the public interest.

MOTION:

Lloyd Quay made a motion to approve the proposed Consistency Statement with a second from Andy Rathke. **The motion passed 7-0.**

5.

STAFF UPDATES/INFORMATION

- At the last Town Council meeting, Town Council approved the Town Center Rezoning. We are planning for a community chat to talk about the Town Center project which will be an open public meeting and it will be held sometime in July.

6.

ADJOURNMENT

MOTION:

There being no further business, Andy Rathke made a motion to adjourn, with a second from Steve Bedwell. **The motion passed 7-0.**

Andy Rathke, Chairman

Carly Bedgood, Secretary



TOWN OF HARRISBURG

Agenda Item Details

Title:

H-2018-08 (R) – Camellia Gardens (Shea Homes) Conditional Rezoning and Zoning Map Amendment.

Presenting Personnel:

Sushil Nepal, Planning & Economic Development Director

Suggested Motion or Action:

If approved, the following motion is suggested:

To approve the conditional rezoning request from Rural Estate (RE) to Conditional Residential Village (CZ-RV) as requested by the applicant for the related property in application H-2018-08 (R).

If denied, the following motion is suggested:

To deny the conditional rezoning request from Rural Estate (RE) to Conditional Residential Village (CZ-RV) as requested by the applicant for the related property in application H-2018-08 (R).

Description/Background:

This item was presented to the Planning and Zoning Board at their May 21, 2019 meeting, board approved the conditional rezoning request and recommended approval by the Town Council. An issue with the traffic counts was discovered and the TIA report was updated with new counts and is attached for your review.

With updated counts, one turn lane at the recommended roundabout increased from 200 to 250' with no other changes in previous traffic improvement recommendations. Previously submitted staff report and other information/ attachments with no changes are attached for your reference as well.

Mike Shea, on behalf of Shea Homes has submitted a request to rezone approximately 85.35 acres located on the properties south of Stallings Road across from Stallings Road Park and Harrisburg Elementary School. The applicant proposes to develop 157 single-family detached residential dwellings. To achieve this, the applicant is requesting that the property be rezoned from the current Rural Estate (RE) district to Conditional Residential Village (CZ-RV) in accordance with the site plan submitted with the application.

A staff report is attached for more information and a site plan is submitted for your consideration. If approved, staff will review the site plan in accordance with our Unified Development Ordinance (UDO). Staff is recommending approval of the rezoning request with conditions included in the staff report.

Recommendation:

With the conditions proposed, the rezoning request is consistent with the Harrisburg Area Plan. Planning and Zoning Department staff support approval of the rezoning request with conditions.

Fiscal Impact:

Applicant agrees to provide easement to allow the Town to decommission existing pump station on Hoffner Rd and

connect onto the projects sewer system. This will save cost to the town to maintain and operate the pump station.

Attachments:

1. Rezoning Application _ Shea Homes_Camellia Gardens
2. H_2018_08_R Staff Report
3. H2018-08-R Zoning Map
4. Neighborhood Meeting Summary _ Shea Homes_Camellia Gardens
5. Revised Fee in lieu-#2056690-Shea_Homes_PR_letter 11.13.18
6. 2019-06-18 Camellia Gardens TIA REPORT UPDATED



APPLICATION FOR CONDITIONAL REZONING

Applications for a Conditional District must be accompanied by an application for a Zoning Map Amendment.

- 1. Please submit fifteen (15) copies of a complete development plan in conformance with Appendix B, Section B-4 of the UDO (all conditional rezoning applications shall include a site specific development plan which, if approved, shall be binding on the property in question). If approved, a zoning site plan review and approval will be required to receive a zoning compliance permit. For specific requirements, please see the form entitled “Site Plan Requirements”.
- 2. Please list the specific permitted land use(s) that you are proposing. Land use(s) shall be chosen from Article 4.6 in the Harrisburg UDO titled “Use Regulations” and shall correspond to the Zoning District requested.

Single-family residential	

- 3. Please list any specific conditions that you would be willing to impose as part of this application (example: no outside storage permitted on-site, increased buffer width, etc.).

See attached



Owner Information

It is understood by all parties hereto that while this application will be carefully considered and reviewed, the burden of providing its need and providing all required evidence rests with the below named petitioner. In addition, it is understood and acknowledged that if the property is rezoned as requested, the property involved in this request will be perpetually bound by the use(s) authorized and subject to such conditions as imposed, unless subsequently changed or amended through the rezoning process. It is further understood and acknowledged that it is the responsibility of the petitioner to file the development plan in the Cabarrus County Register of Deeds Office as a deed restriction upon the subject property.

If, after two years from the date of approval substantial construction has not begun, the property in question may revert to its prior zoning designation after a public hearing is held in compliance with the required procedure for a zoning map amendment.

I do hereby certify that all information which I have provided for this application is, to the best of my/our knowledge, correct.

Property Owner (1)	John & Mary Ellen Sims Alice S & Merrill Morgan
Address	615 Liberty Road Federalsburg, MD 21632
Phone	704-787-6047
Fax	
Signature	Mary Ellen Sims dotloop verified 08/06/18 11:46AM EDT DX6D-4Z3W-WETT-KA09 John Sims dotloop verified 08/06/18 9:18AM EDT BZCS-SZ7Y-XDT1-KAGE Merrill Morgan dotloop verified 08/06/18 2:55PM EDT 2EYG-AESR-YIZG-W9MY Alice Morgan dotloop verified 08/06/18 2:57PM EDT

NOTE: If multiple parcels are involved in a request, property owners must sign an application identifying the individual parcel(s) represented. Each parcel included in the request must be accounted for in the application process for the application to be considered complete.



Owner Information

It is understood by all parties hereto that while this application will be carefully considered and reviewed, the burden of providing its need and providing all required evidence rests with the below named petitioner. In addition, it is understood and acknowledged that if the property is rezoned as requested, the property involved in this request will be perpetually bound by the use(s) authorized and subject to such conditions as imposed, unless subsequently changed or amended through the rezoning process. It is further understood and acknowledged that it is the responsibility of the petitioner to file the development plan in the Cabarrus County Register of Deeds Office as a deed restriction upon the subject property.

If, after two years from the date of approval substantial construction has not begun, the property in question may revert to its prior zoning designation after a public hearing is held in compliance with the required procedure for a zoning map amendment.

I do hereby certify that all information which I have provided for this application is, to the best of my/our knowledge, correct.

Property Owner (2)	<u>Yates M McCachren Jr. & Linda McCachren</u>				
Address	<u>6925 Hickory Ridge Rd</u> <u>Harrisburg, NC 28075</u>				
Phone	<u>704-773-0006</u>				
Fax					
Signature	<table><tr><td><u>Yates M. McCachren Jr.</u></td><td>dotloop verified 08/03/18 7:50PM EDT ISZK-WG59-IKMX-QS00</td></tr><tr><td><u>Linda McCachren</u></td><td>dotloop verified 08/06/18 7:59PM EDT YCHG-3HVF-LB5E-1BFG</td></tr></table>	<u>Yates M. McCachren Jr.</u>	dotloop verified 08/03/18 7:50PM EDT ISZK-WG59-IKMX-QS00	<u>Linda McCachren</u>	dotloop verified 08/06/18 7:59PM EDT YCHG-3HVF-LB5E-1BFG
<u>Yates M. McCachren Jr.</u>	dotloop verified 08/03/18 7:50PM EDT ISZK-WG59-IKMX-QS00				
<u>Linda McCachren</u>	dotloop verified 08/06/18 7:59PM EDT YCHG-3HVF-LB5E-1BFG				

NOTE: If multiple parcels are involved in a request, property owners must sign an application identifying the individual parcel(s) represented. Each parcel included in the request must be accounted for in the application process for the application to be considered complete.

**Owner Information**

It is understood by all parties hereto that while this application will be carefully considered and reviewed, the burden of providing its need and providing all required evidence rests with the below named petitioner. In addition, it is understood and acknowledged that if the property is rezoned as requested, the property involved in this request will be perpetually bound by the use(s) authorized and subject to such conditions as imposed, unless subsequently changed or amended through the rezoning process. It is further understood and acknowledged that it is the responsibility of the petitioner to file the development plan in the Cabarrus County Register of Deeds Office as a deed restriction upon the subject property.

If, after two years from the date of approval substantial construction has not begun, the property in question may revert to its prior zoning designation after a public hearing is held in compliance with the required procedure for a zoning map amendment.

I do hereby certify that all information which I have provided for this application is, to the best of my/our knowledge, correct.

Property Owner (3)	<u>Paul Quinton Harris Jr</u>
	<u>Patricia Harris</u>
Address	<u>3923 Stallings Road</u>
	<u>Harrisburg, NC 28075</u>
Phone	<u>(704) 995-9997</u>
Fax	
Signature	<u>Paul Quinton Harris Jr</u>
	<u>Patricia Harris</u>

NOTE: If multiple parcels are involved in a request, property owners must sign an application identifying the individual parcel(s) represented. Each parcel included in the request must be accounted for in the application process for the application to be considered complete.



Subject Property Information **(1)**

1. Street Address 4025 Stallings Rd, Harrisburg, NC 28075
2. PIN(s) (10 digit#) 5507 -- 93 -- 6364; -----
3. Deed Reference Book 7658 Page 126 & 130
4. Township # 1

Description of Subject Property

5. Size (square feet or acreage) 29.21 acres
6. Street Frontage (feet) 1165
7. Current Land Use vacant
8. Surrounding Land Use and Zoning Classification
- North: Zoning CUO-1 Land Use Park
- South: Zoning RE Land Use vacant
- East: Zoning RE Land Use vacant/residential
- West: Zoning RM-1 Land Use residential
9. Request to Change Zoning From RE to RV
10. Is this a request for a Conditional Rezoning? ☒ YES NO

(If YES, you must also submit an application for a Conditional Rezoning)

11. Purpose for Request: _____

To develop single-family residential under RV Conditional zoning standards.



Subject Property Information (2)

1. Street Address 6931 Hickory Ridge Rd, Harrisburg, NC 28075
2. PIN(s) (10 digit#) 5507 -- 92 -- 5547; -----
3. Deed Reference Book _____ Page _____
4. Township # 1

Description of Subject Property

5. Size (square feet or acreage) 17.5 acres
6. Street Frontage (feet) N/A
7. Current Land Use vacant
8. Surrounding Land Use and Zoning Classification
- North: Zoning RE Land Use vacant
- South: Zoning OI Land Use school
- East: Zoning RE Land Use vacant residential
- West: Zoning RE Land Use vacant residential
9. Request to Change Zoning From RE to RV
10. Is this a request for a Conditional Rezoning? ☒ YES NO

(If YES, you must also submit an application for a Conditional Rezoning)

11. Purpose for Request: _____

To develop single-family residential under RV Conditional zoning standards.



Subject Property Information (3)

1. Street Address 3923 Stallings Road, Harrisburg, NC 28075
2. PIN(s) (10 digit#) 5517 -- 03 -- 4742; 5517 -- 02 -- 3525; 5517-02-4591; 5517-03-9042
3. Deed Reference Book 10032 Page 0235 and 0239
4. Township # 1

Description of Subject Property

5. Size (square feet or acreage) 41.31 acres
6. Street Frontage (feet) 735 ft
7. Current Land Use residential
8. Surrounding Land Use and Zoning Classification
- | | | | |
|---------------|-----------|----------|--------------------|
| North: Zoning | <u>RE</u> | Land Use | <u>residential</u> |
| South: Zoning | <u>OI</u> | Land Use | <u>school</u> |
| East: Zoning | <u>RE</u> | Land Use | <u>vacant</u> |
| West: Zoning | <u>RE</u> | Land Use | <u>vacant</u> |
9. Request to Change Zoning From RE to RV(CD)
10. Is this a request for a Conditional Rezoning? ☒ YES ☐ NO

(If YES, you must also submit an application for a Conditional Rezoning)

11. Purpose for Request: _____

To develop single-family residential under RV Conditional zoning standards



Owner/Agent/Applicant Information

It is understood by all parties hereto that while this application will be carefully considered and reviewed, the burden of providing its need and providing all required evidence rests with the below named petitioner.

I do hereby certify that all information which I have provided for this application is, to the best of my/our knowledge, correct.

12. Property Owner

(1) John & Mary Sims; Alice & Merrill Morgan

(2) Yates & Linda M. McCachren Jr

Address

(1) 615 Liberty Road, Federalsburg, MD 00000

(2) 6925 Hickory Ridge Rd, Harrisburg, NC 28075

Phone

(1)

John Sims

dotloop verified
08/06/18 9:18AM EDT
A12W-EDIP-C2HN-7CWY

(2)

Yates M. McCachren Jr

dotloop verified
08/03/18 7:50PM EDT
DP9F-K88T-7XZK-RE1V

Fax

(1)

(2)

Email:

(1)

(2)

Signature

(1)

(2)

13. Agent (if any)

Bridget Grant

Address

100 N Tryon St, Ste 4700, Charlotte, NC 28202

Phone

704.331.2379

Fax

704.378.1973

Email

bridgetgrant@mvalaw.com

Signature

14. Applicant (if any)

Mike Shea

Address

8008 Corporate Center Dr, Ste 300, Charlotte, NC 28226

Phone

704.319.5000

Fax

704.543.6327

Email

mike.shea@sheahomes.com

Signature

NOTE: If multiple parcels are involved in a request, property owners must sign an application identifying the individual parcel(s) represented. Each parcel included in the request must be accounted for in the application process for the application to be considered complete.



Owner/Agent/Applicant Information

It is understood by all parties hereto that while this application will be carefully considered and reviewed, the burden of providing its need and providing all required evidence rests with the below named petitioner.

I do hereby certify that all information which I have provided for this application is, to the best of my/our knowledge, correct.

12. Property Owner (1) John & Mary Sims; Alice & Merrill Morgan (2) Yates & Linda M. McCachren Jr

Address (1) 615 Liberty Road, Federalsburg, MD 00000 (2) 6925 Hickory Ridge Rd, Harrisburg, NC 28075

Phone Signature (1)  (2) 

Fax (1) (2)

Email: (1) jsims8@carolina.rr.com (2) tmccachren@vnet.net

Signature Phone (1) (2) 704-455-2754

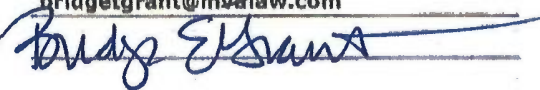
13. Agent (if any) Bridget Grant

Address 100 N Tryon St, Ste 4700, Charlotte, NC 28202

Phone 704.331.2379

Fax 704.378.1973

Email bridgetgrant@mvalaw.com

Signature 

14. Applicant (if any) Mike Shea

Address 8008 Corporate Center Dr, Ste 300, Charlotte, NC 28226

Phone 704.319.5000

Fax 704.543.6327

Email mike.shea@sheahomes.com

Signature 

NOTE: If multiple parcels are involved in a request, property owners must sign an application identifying the individual parcel(s) represented. Each parcel included in the request must be accounted for in the application process for the application to be considered complete.



Owner/Agent/Applicant Information

It is understood by all parties hereto that while this application will be carefully considered and reviewed, the burden of providing its need and providing all required evidence rests with the below named petitioner.

I do hereby certify that all information which I have provided for this application is, to the best of my/our knowledge, correct.

12. Property Owner (3) Paul Quinton Harris Jr and Patricia Harris
Address 3923 Stallings Road, Harrisburg, NC 28075
Phone (704) 995-9997
Fax _____
Email: pqharris@carolina.rr.com
Signature Paul Quinton Harris Patricia Harris

13. Agent (if any) SEE PREVIOUS SHEET
Address _____
Phone _____
Fax _____
Email _____
Signature _____

14. Applicant (if any) SEE PREVIOUS SHEET
Address _____
Phone _____
Fax _____
Email _____
Signature _____

NOTE: If multiple parcels are involved in a request, property owners must sign an application identifying the individual parcel(s) represented. Each parcel included in the request must be accounted for in the application process for the application to be considered complete.

Owner Name	Owner Address	Parcel ID #
Cabarrus County	PO BOX 707, Concord, NC 28026	55170152360000
International Church Foursquare	1910 W Sunset Blvd, Ste 200, Los Angeles, CA 90026	55079129130000
Yates M McCachren JR & Linda McCachren	6925 Hickory Ridge Rd, Harrisburg, NC 28075	55078285170000
Lydia Miller	7399 Hoffner Dr, Harrisburg, NC 28075	55078390510000
Donald Monroe Brigman	7395 Hoffner Dr, Harrisburg, NC 28075	55078391520000
John Daniel Ennis	7391 Hoffner Dr, Harrisburg, NC 28075	55078392510000
Kay Blackwelder Fisher	7387 Hoffner Dr, Harrisburg, NC 28075	55078393700000
Stephen M Rumsey & Paula D Rumsey	7383 Hoffner Dr, Harrisburg, NC 28075	55079304120000
Johnson Le	7379 Hoffner Dr, Harrisburg, NC 28075	55079305360000
Kurt D Newton & Kelly Newton	4197 Stallings Rd, Harrisburg, NC 28075	55079307550000
Town of Harrisburg, A Municipal Corporation	PO BOX 100, Harrisburg, NC 28075	55079452600000
John Sims & Mary Ellen Sims		
Alice Morgan & Merrill Morgan	615 Liberty Rd, Federalsburg, MD 21632	55079363640000
Janice Otheria Weathers	3805 Stallings Rd, Harrisburg, NC 28075	55171307850000
Peter Delaney & Stephanie Delaney	PO BOX 561, Harrisburg, NC 28075	55170422870000
Cabarrus County Board of Education	PO BOX 368, Concord, NC 28026	55172138000000
Phyllis Johnson Phifer	9480 Robinson Church Rd, Harrisburg, NC 28075	55171317530000
Phyllis Johnson Phifer	9480 Robinson Church Rd, Harrisburg, NC 28075	55171326790000
Mary Frances Hargett	3735 Stallings Rd, Harrisburg, NC 28075	55171326840000
Alberta W Talbert	PO BOX 133, Harrisburg, NC 28075	55171335980000
Ernestine Weathers Crisco-Davis & Gregory Davis	3727 Stallings Rd, Harrisburg, NC 28075	55171343180000
Phyllis Johnson Phifer & Alberta W Griffin	9480 Robinson Church Rd, Harrisburg, NC 28075	55171351960000



Town of Harrisburg
Planning and Zoning Department

DATE: May 14, 2019

SUBJECT:

Request H-2018-08-(R): To rezone approximately 85.35 acres from RE, Rural Estate to RV-CZ, Conditional Residential Village

Location: The subject property is located on Stallings Road across from Stallings Road Park and Harrisburg Elementary School. PINs 55170390420000, 55170235250000, 55170347420000, 55170245910000, 55079363640000, and 55079255470000.

Applicant: Mike Shea on behalf of Shea Homes

Staff Report Prepared by: Sushil Nepal, AICP, Planning & Economic Development Director

Neighborhood Meeting: Held December 13th, 2018

BACKGROUND:

Area: ±85.35 acres Total

Existing Land Use: Vacant/Single-Family Residential

Zoning within 500 ft:

- North – RE, Residential Estate
CU-OI, Conditional Office-Institutional
PID, Public Interest District
RL, Residential Low Density
- South – O-I, Office-Institutional
FDPO, Floodplain Overlay District
- East – O-I, Office-Institutional
RL, Rural Low Density
- West – RM-1, Residential Medium Density
RE, Rural Estate

Land Uses within 500 ft: North – Institutional, Single-Family Residential
 South – Institutional
 East – Vacant and Single-Family Residential
 West – Single-Family Residential

APPLICATION SUMMARY:

- The applicant proposes to develop 157 single-family homes. To achieve this, the applicant is requesting that the property be rezoned from the current RE district to Conditional RV in accordance with the site plan submitted with the application.
- The proposed density of the site is 1.84 dwelling units per acre. The RV district has a maximum density of 8 dwelling units per acre.
- Per the Town subdivision regulations, the applicant is providing dedicated public open space. Shea Homes shall install a ten (10) foot wide greenway trail connection and dedicate a twenty-five (25) foot wide easement to provide access to the greenway connection from Stallings Road to the future Back Creek Greenway. The installation of the greenway connection shall be completed prior to the issuance of a certificate of occupancy for the first 71 homes to be constructed on the site. Shea Homes will also fund 50% of the cost to build a pedestrian bridge across Back Creek to connect the greenways.
- In the event that the easement is not secured by the Town of Harrisburg within two (2) years of the date of approval of this rezoning, Shea Homes shall have the option to instead exercise the fee-in-lieu provision of the UDO, which is calculated to be \$165,000.
- As a conditional zoning request, the applicant has submitted a site plan along with the request for rezoning, which is attached for your consideration.

APPROVAL CRITERIA:

1. The size of the tract in question;

The subject property is approximately 85.35 acres in size.

2. Whether the proposal conforms with and is in furtherance of the implementation of the goals and policies of the Comprehensive Plan, other adopted plans, and the goals, objectives and policies of the Ordinance;

Per the Unified Development Ordinance, the intent of the proposed district depicted on the submitted site plan is as follows:

***RV:** The RV district is established to provide areas for detached and attached single family homes, with a maximum of eight (8) dwelling units per acre, in areas where large-lot development is discouraged and adequate public facilities and services are available. RV supports the principles of concentrating urban growth and reinforcing existing community centers.*

Per the Harrisburg Area Plan, the subject property is located in an area designated on the future land use maps as Medium Density Residential. The description of Medium Density Residential is as follows:

“This area is comprised of predominantly single-family detached homes but may include attached single family units, such as townhomes and duplexes. The mix of housing types intends to create neighborhoods with a density range of 3 to 4 dwelling units per acre. Improved open spaces are interspersed and the streetscape is more formal.”

Based on the description of the Medium Density Residential land use classification, the proposed development, at 1.84 dwelling units per acre, would fall below the threshold of 3 to 4 dwelling units per acre that has been set for this area.

With regard to the overall goals of the plan, recommendation LU-5 states that the Town should “Expand Housing Options” to appeal to a broad range of audiences.

Recommendation LU-7 of the plan recommends consistency between the Town’s zoning regulations and the adopted future land use map. A table included as part of this goal establishes the “appropriate” districts to use when making zoning decisions based on the Future Land Use Map. The map, as previously stated, designates this area as Medium Density Residential. The table indicates that the RV district is appropriate for this land use classification.

3. The benefits or detriments for the owner, neighbors and surrounding community;

The benefits to the owner of the property would be that single-family residential development at the proposed density of 1.84 dwelling units per acre could be achieved under the proposed zoning. The existing zoning restricts density to 1 dwelling unit per acre.

Detriments to the neighbors and surrounding community are consistent with those expected with additional residential development, such as traffic congestion and additional student generation. To help mitigate traffic congestion, the developer has undergone a Traffic Impact Analysis (TIA) and will be required to implement the suggested roadway improvements provided by the TIA report.

Benefits to the neighbors and surrounding community include the dedication and construction of a public greenway access to future Back Creek Greenway.

4. Whether the proposed request is in compliance with the adequate public facilities criteria;

a. Utilities:

Utilities are available in this area, and are sufficient to meet the needs of this property. Water and sewer access are located along Stallings Road. Any utility

line extensions or upgrades necessary to serve this development will be the responsibility of the developer.

b. Transportation:

A Traffic Impact Analysis (TIA) was required for a development of this site, a TIA has been completed and the applicant has agreed to all improvements recommended in the TIA.

c. Safety and Sanitation Services:

Adequate police, fire, and sanitation services are available for this use.

d. Schools:

Per Cabarrus County, the APF Ordinance for schools is currently not being enforced after a ruling by the NC Supreme Court. However, Cabarrus County Schools does still review the capacity of the K-12 schools that this development will feed into, and provides future capacity numbers based on the units proposed. For this site, Cabarrus County has provided the following information:

Proposed Student Generation:

Elementary	-	60
Middle	-	30
High	-	40

Current Capacity:

Elementary (Harrisburg)	-	110.34%
Middle (Hickory Ridge)	-	112.06%
High (Hickory Ridge)	-	102.47%

Future Capacity (based on unbuilt lots and including this request):

Elementary (Harrisburg)	-	145.60%
Middle (Hickory Ridge)	-	142.31%
High (Hickory Ridge)	-	130.20%

With regard to future capacity, Cabarrus County Schools offered the following statement:

“The Cabarrus County Board of Education has addressed the elementary capacity issue by purchasing land and constructing a new school on Hickory Ridge Road projected to open in the fall of 2020. It is anticipated that the new attendance area for the Hickory Ridge Elementary School will address the current capacity issue at Harrisburg, Patriots, Rocky River, and Pitts School Road elementary schools. The high school capacity issue is being addressed with the construction of the new high school on Weddington Road projected to open in

the fall of 2020. The attendance area for the West Cabarrus High School has not been determined but is expected to involve multiple high schools to address the over-capacity issue. The middle school growth issue is addressed in the CCS 10-Year Plan. This would require purchasing land and the construction of a new school projected to open in 2023. The land purchase and construction funding for the middle school has not been approved.”

5. The relationship of the uses envisioned under the new zoning and the uses currently present in adjacent tracts. The Commission shall consider the following:

- a. Whether the proposed zoning is compatible with the surrounding area or whether there will be adverse impacts on the capacity or safety of the portion of street network influenced by the rezoning, parking problems, or environmental impacts that the new use will generate such as excessive storm water runoff, water, air or noise pollution, excessive nighttime lighting or other nuisances;**

The net density of the proposed development (1.84 dwelling units per acre) is similar to the observed density of surrounding developed neighborhoods. Although the overall density is similar, the lot sizes permitted in the proposed RV district are all smaller than what is observed in neighboring developments, where the proposed lots are typically around 0.20-0.23 acres in size and the neighbors are 0.35-1.0 acres in size. With regard to specific uses, the single-family homes proposed for this development would not be incompatible with surrounding land uses.

- b. Any change of character in the area due to installation of public facilities, other zoning changes, new growth changes, deterioration, and development;**

The most recent change in this area is the recent rezoning approval for Stallings Road Subdivision H2018-06-(R), which was approved by Town Council on October 8th, 2018.

The Stallings Road corridor, and the southern part of Harrisburg, in general, is a fast-growing area that is undergoing constant and rapid change. Per the intent of the Land Use Plan, this area is designated to continue growing with residential development expected at 3 to 4 dwelling units per acre. Like all other development activity in this area, the development of this land would convert farm and forestland into residential neighborhoods.

- c. The zoning districts and existing land uses of the surrounding properties;**

The areas around this property are generally zoned for low to medium density residential use, while the school complexes and public park to the north and south of Stallings Road are zoned for conditional office-institutional and public interest use. Existing land use patterns in the area typically consist of low density

residential neighborhoods and agricultural land, with the schools being the major exception to this.

d. Whether the subject property is suitable for the uses to which it has been restricted under the existing zoning classification;

The property is suitable for the uses which it has been restricted to under the existing zoning classification.

e. Whether the rezoning is compatible with the adjacent neighborhood, especially concerning neighborhood stability and character;

As previously mentioned, the specific use of the property, single family residential, is consistent with surrounding neighborhoods. The primary point of potential inconsistency would be the introduction of smaller lots into this area.

f. The length of time the subject property has remained vacant as zoned (if applicable);

This property has been used for residential and agricultural purposes.

g. Whether there is an adequate supply of land available in the subject area and the surrounding community to accommodate the zoning and community needs;

Land supply is not a direct issue in this area.

6. Whether the existing zoning was in error at the time of adoption.

The existing zoning was not in error at the time of adoption.

Furthermore, as a Conditional Zoning request, the Board must consider the following criteria:

7. The proposed Conditional Zoning (CZ) District use's appropriateness for its proposed location and consistency with the purposes, goals, objectives, and policies of the current Land Use Plan.

The rezoning application to RV district to the property, with the proposed density limitation, is consistent with the density and lot size standards established for the base RV Zoning District and Medium Density Residential land use classification.

The proposal would restrict permitted uses to single family residences, which are appropriate in this area.

- 8. The use(s) requested are among those listed as an eligible permitted or conditional use in the general use district as included in the rezoning request.**

The applicant is seeking for the following uses to be allowed in this Conditional Zoning District:

- Single-Family Detached Residential, this use is allowed in the RV District.

- 9. The design of the proposed Conditional Zoning (CZ) District use's minimization of adverse effects, including visual impact of the proposed use on adjacent lands; and avoidance of significant adverse impacts on surrounding lands regarding trash, traffic, service delivery, parking and loading, odors, noise, glare and vibration and not create a nuisance.**

From a design perspective, mitigating traffic concerns on Stallings Road near the intersection of Veterans Road and the entrance to Harrisburg Elementary School, particularly at peak morning and afternoon drive times, is perhaps the most difficult issue to overcome. Given the number of lots in the proposed development, a second access point is required, per the NC Fire Code, for emergency access. One access is to be right-in-right-out and the other is to be full movement. The subdivision entrances would align with the entrance to Stallings Road Park and Harrisburg Elementary School. Both entries would add road improvements to Stallings Road, as required per the TIA.

All landscaping buffers shown are adequate to meet the needs of the adjacent properties.

- 10. The use limitations and conditions as proposed and/or imposed for the requested district can reasonably be implemented and enforced for the subject property.**

The conditions proposed and imposed for this district can be reasonably implemented on this site.

- 11. When implemented the proposed and/or imposed use limitations and conditions will mitigate specific land development issues that would likely result if the subject property were zoned to accommodate all the uses and the minimum standards of the corresponding general zoning district. If any standards are proposed that are different from the underlying zoning district, the applicant must clearly demonstrate that the overall resultant project is greater than that which is typically allowed by the general district.**

All proposed conditions recommended by staff are to bring the site into conformance with local and state regulations.

- 12. The applicant has agreed to accept the use limitations and conditions as proposed and/or imposed for the requested district.**

The applicant will need to agree to all conditions listed in this staff report. Any additional conditions placed on this property will need the acceptance of the applicant before a decision is made on this application.

13. For an approval, the Board must adopt a consistency statement that the amendment being considered is either consistent or inconsistent with the adopted land use plan and that the Board considers the action to be reasonable and in the public interest.

Both the Planning Board and the Town Council will need to adopt a consistency statement when a recommendation or decision is made on this item.

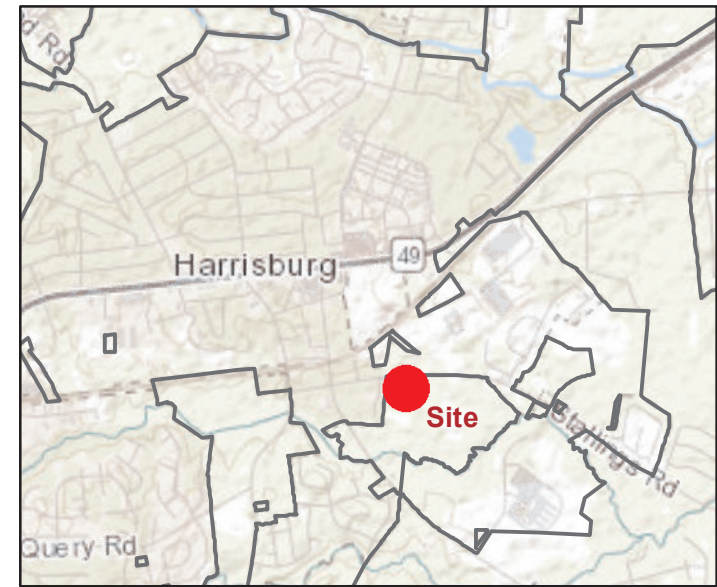
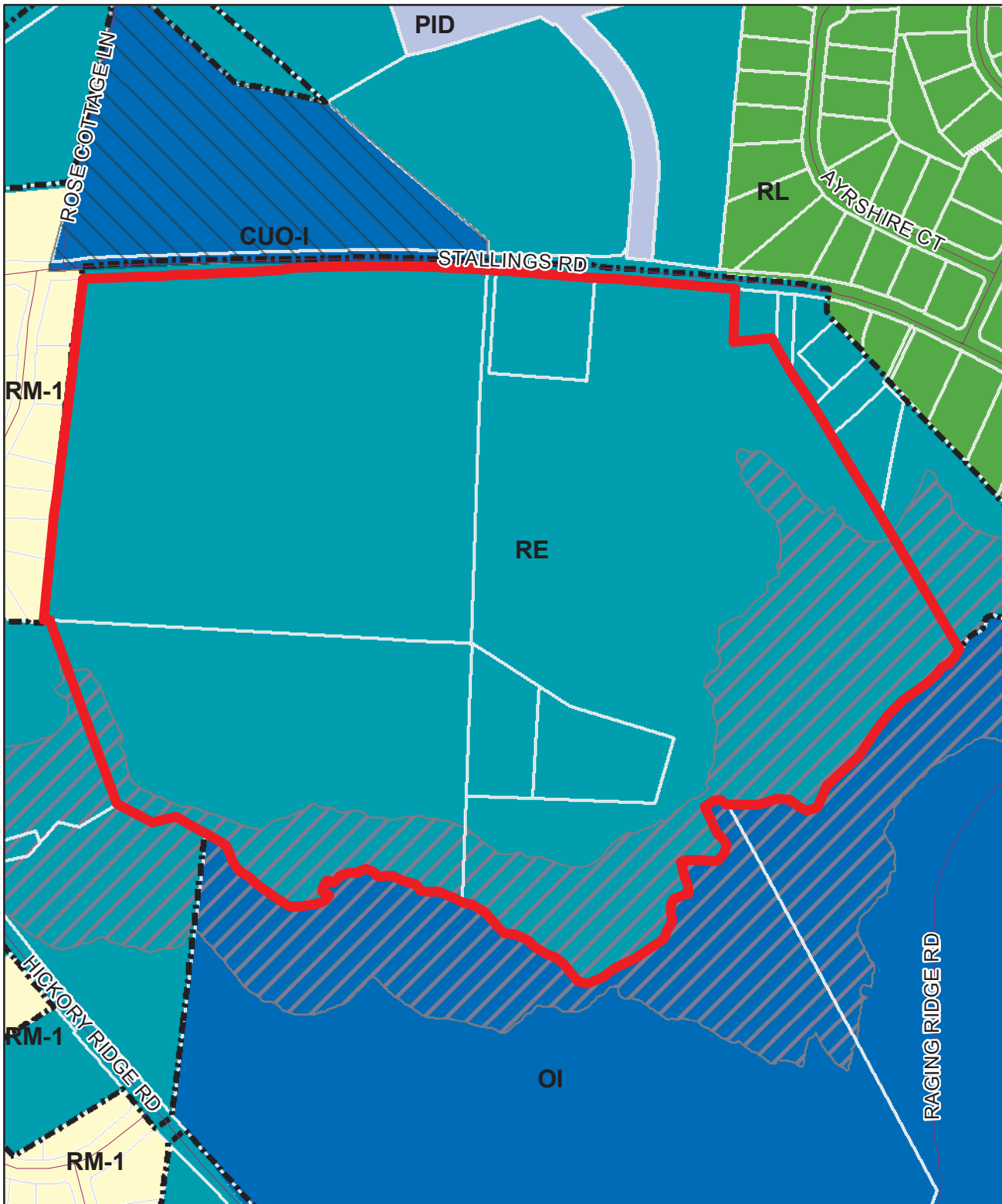
APPROVAL WITH CONDITIONS:

The proposal is a conditional zoning request. Conditions may be imposed on the zoning action. Staff recommends that the following conditions be placed on this project, if the Board sees fit to recommend approval to the Town Council.

1. Applicant agrees to obtain any and all applicable local, state, and federal permits required for development before any development activity can take place.
2. Applicant agrees to restrict cladding materials for all buildings to classing products other than vinyl siding.
3. Applicant agrees to complete all the traffic improvements as outlined in the Final TIA report.
4. Applicant agrees to dedicate land for Public Open Space as required in the UDO.
5. Applicant agrees to construct a ten (10) foot wide greenway trail connection and dedicate a twenty-five (25) foot wide easement to provide access to the greenway connection from Stallings Road to Back Creek Greenway. The installation of the greenway connection shall be completed prior to the issuance of a certificate of occupancy for the first 71 homes to be constructed on the site. The applicant will also fund 50% of the cost to build a pedestrian bridge across Back Creek to connect the greenways. In the event that the easement is not secured by the Town of Harrisburg within two (2) years of the date of approval of this rezoning, the applicant shall have the option to instead exercise the fee-in-lieu provision of the UDO, which is calculated to be \$165,000
6. Applicant agrees to install all required improvements as identified in the Traffic Impact Analysis.
7. Applicant agrees to provide easement to allow the Town to decommission existing pump station on Hoffner Rd and connect onto the projects sewer system.
8. Applicant agrees to complete a LOMR-F prior to any fill activity taking place within the floodplain.

RECOMMENDATION:

With the conditions proposed, the rezoning request is consistent with the Harrisburg Area Plan. Planning and Zoning Department staff supports approval of the rezoning request with conditions.



H 2018-08-(R) Camellia Gardens Subdivision Shea Homes

Applicant: Shea Homes

Current Zoning: RE (Rural Estate)

Proposed Zoning: CZ-RV
(Conditional Residential Village)

-  Site
-  Town Limits
-  Floodplain Overlay
-  Parcels



0 250 500 1,000 Feet

FOLLOW-UP COMMUNITY MEETING REPORT FOR REZONING PETITION
Shea Homes – Camellia Gardens

Subject: Rezoning Petition – Camellia Gardens (Stallings Road)
Owner/Developer: Shea Homes
Property: ± 89 acres located on Stallings Road (the "Site").

This Community Meeting Report is being filed prior to the Town Council Public Hearing.

PERSONS AND ORGANIZATIONS CONTACTED WITH DATES AND EXPLANATIONS OF HOW CONTACTED:

The **Community Meeting was held on Thursday, December 13, 2018**. A representative of the Town of Harrisburg mailed a written notice of the date, time and location of the Community Meeting to the individuals and organizations.

TIME AND LOCATION OF MEETING:

The **Community Meeting was held on Thursday, December 13 at 6:00 PM**, at Harrisburg Town Hall 4100 Main Street Harrisburg, NC 28075

PERSONS IN ATTENDANCE AT MEETING:

The sign-in sheet from the Community Meeting is attached as **Exhibit A**. The Petitioner's representative at the Community Meeting was Matt Kearns with Shea Homes. Also in attendance were Hy Nguyen with DPR and Bridget Grant, land use consultant with Moore & Van Allen, PLLC.

SUMMARY OF ISSUES DISCUSSED AT MEETING:

I. Overview of Petitioner's Presentation.

Introduction and Overview of Development Plan.

Bridget Grant and Matt Kearns provided a brief overview of the rezoning process and Shea Homes. Ms. Grant then described the site location, existing zoning, and the revised rezoning plan. Ms. Grant presented a comparison of the proposed plan and earlier concepts and Mr. Kearns described the quality of the homes to be constructed on the site. Representatives indicated the traffic study is underway and that the trip generation is expected to be lower than what is anticipated by the adopted land use policy.

The meeting was then opened to the audience for questions.

II. Summary of Questions/Comments and Responses:

Residents expressed concern regarding the site access points and proximity to the park entrance. One attendee inquired how the left turn in and left turn out will function. Representatives from the team shared that the proposed entrance alignment was requested by staff and is a typical NCDOT design recommendation. It was noted that the plan is still conceptual and the TIA may recommend further adjustments.

Residents expressed appreciation for additional stacking on Stallings Road, but also wanted to insure it did not exacerbate existing traffic issues. Representatives indicated that the current stacking lane into the school accommodates 4 vehicles.

Residents inquired about the school impact. Representatives shared that the Town of Harrisburg will receive comments from the school district.

Residents inquired about the plan for the existing old pond on the northeast corner. The Petitioner is waiting for a determination on the existing pond and streams onsite.

Residents expressed concern for the Water/Sewer capacity. Representatives expressed there is existing gravity sewer in the back property that we will be connecting into and there is available capacity.

Residents noted there are existing parking issues on Stallings Road. The Petitioner indicated that the project frontage will have curb & gutter that will deter parking.

Residents inquired about the building materials. Representatives stated that the development will be a mix of quality materials with limited use of vinyl for soffits and windows.

Residents expressed a desire to see larger lots developed on the site that are more consistent with other residential development along Stallings Road. The Petitioner described the demand for smaller lots in the market and the benefit of common open space as part of the overall development.

The representatives thanked the attendees for their time and the meeting was closed.

cc: Mayor and Members of Town of Harrisburg Council
Members of the Harrisburg Planning and Zoning Committee
Sushil Nepal, Planning Department
Mike Shea, Shea Homes
Matt Kearns, Shea Homes
Jeff Brown, Moore & Van Allen, PLLC
Bridget Grant, Moore & Van Allen, PLLC
Keith MacVean, Moore & Van Allen, PLLC



November 13, 2018

Town of Harrisburg
Mr. Daniel Stines
4100 Main Street
Harrisburg, NC 28075

Re: Camellia Gardens – Proposed Rezoning on Stallings Road

Dear Mr. Stines:

Shea Homes is applying for a 165 lot development on Stallings Road (the “Site”), tentatively named Camellia Gardens. The Site is located along a future greenway corridor, as identified by the adopted Bicycle, Pedestrian and Greenway plans.

Shea Homes shall install a ten (10) foot wide greenway trail on adjacent parcel PIN’s 5517015236000 and 55172138000000 (the “Primary Greenway” as conceptually shown in green on Exhibit A) prior to the issuance of a certificate of occupancy for the seventy-first (71) home to be constructed on the Site, contingent upon the Town of Harrisburg securing an easement from Cabarrus County to allow Shea Homes to construct the trail.

In the event that the easement is not secured by the Town of Harrisburg within two (2) years of the date of approval of this rezoning, Shea Homes shall have the option to instead exercise the fee-in-lieu provision of the UDO. The fee shall be based on the following formula:

$[(1/35) \times A] \times B$

A = number of approved lots in the proposed subdivision

B = fair market value per acre of the undeveloped land

Ex: 165 approved lots and an appraised per acre value of \$35,000

$[(1/35) \times 165] \times 35,000 = \$165,000$ fee-in-lieu

Shea Homes shall also install a ten (10) foot wide path and dedicate a twenty-five (25) foot wide easement to provide access to the proposed greenway from Stallings Road (the “Secondary Greenway” as conceptually shown in orange on Exhibit A). Alignment of the Secondary Greenway shall be subject to change based on the ideal location for construction of a pedestrian bridge over Back Creek, connecting the Secondary Greenway to the Primary Greenway. Shea Homes will fund 50% of the cost to build the bridge provided Shea has final approval on the design of the bridge.

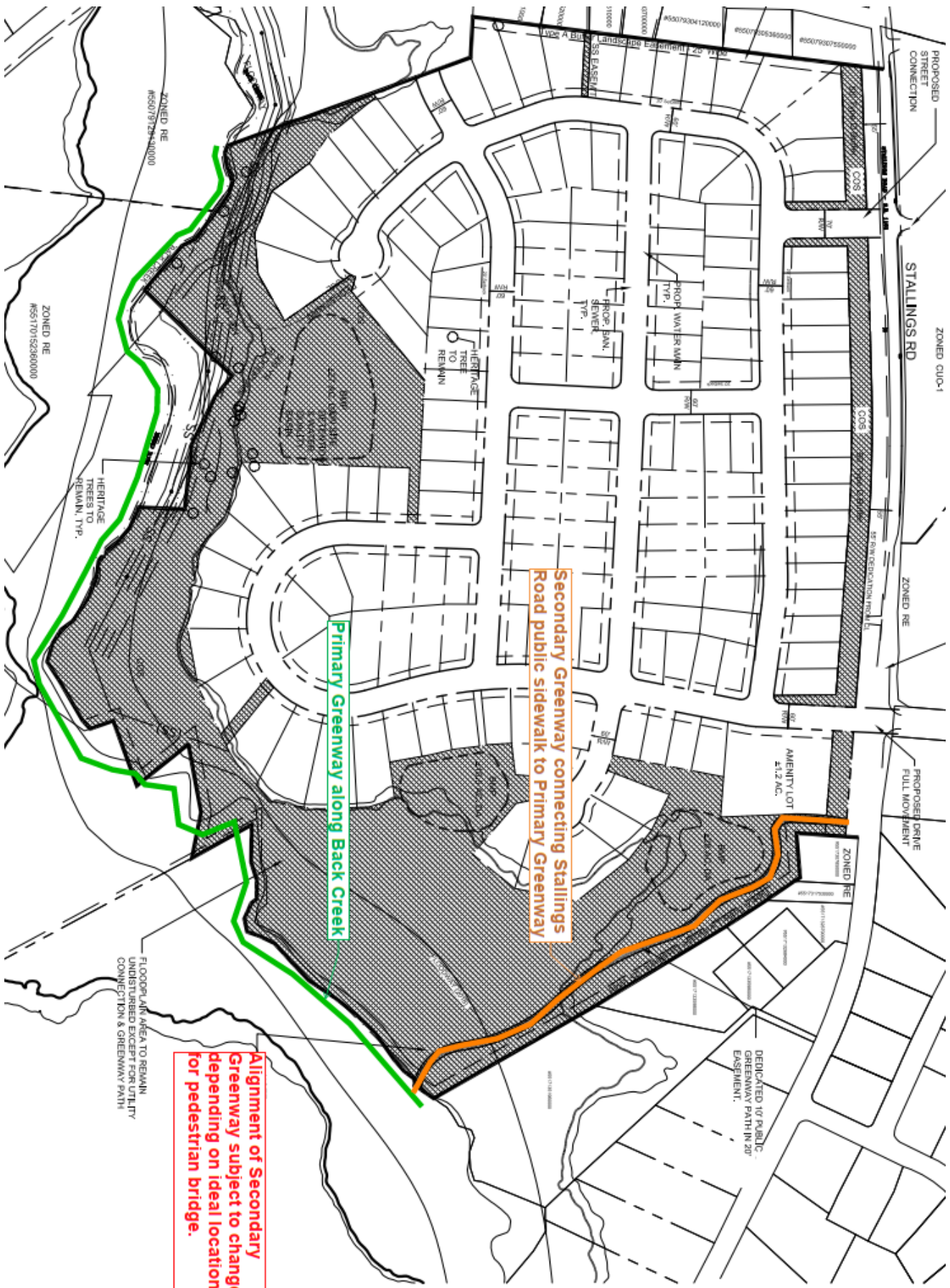
Please do not hesitate to contact me if you have any questions or need additional information. We look forward to working with you and the Town of Harrisburg on this development.

Respectfully,

Michael Shea
Member and Manager
Shea Homes

Exhibit A

Attached



Secondary Greenway connecting Stallings Road public sidewalk to Primary Greenway

Primary Greenway along Back Creek

Alignment of Secondary Greenway subject to change depending on ideal location for pedestrian bridge.

Traffic Impact Analysis for
Camellia Gardens
Harrisburg, North Carolina

Prepared for:

Town of Harrisburg
Harrisburg, North Carolina

Prepared by:

Kimley-Horn and Associates, Inc.
NC License #F - 0102
200 South Tryon Street, Suite 200
Charlotte, North Carolina 28202
(704) 333-5131

June 2019
018536028



Laura N Reid
6/18/19

TABLE OF CONTENTS

	<u>Page No.</u>
1.0 EXECUTIVE SUMMARY	1
2.0 INTRODUCTION	4
3.0 EXISTING TRAFFIC CONDITIONS	5
3.1 STUDY AREA	5
3.2 EXISTING TRAFFIC VOLUME DEVELOPMENT	6
4.0 BACKGROUND TRAFFIC VOLUME DEVELOPMENT	11
4.1 HISTORICAL BACKGROUND GROWTH TRAFFIC	11
4.2 APPROVED DEVELOPMENTS	11
5.0 SITE TRAFFIC VOLUME DEVELOPMENT	14
5.1 SITE ACCESS	14
5.2 TRAFFIC GENERATION	14
5.3 SITE TRAFFIC DISTRIBUTION AND ASSIGNMENT	15
5.4 BUILD-OUT TRAFFIC VOLUMES	15
6.0 CAPACITY ANALYSIS	19
6.1 ROBINSON CHURCH ROAD AND TOM QUERY ROAD	21
6.2 STALLINGS ROAD AND HARRISBURG VETERANS ROAD	22
6.3 STALLINGS ROAD AND STALLINGS ROAD PARK DRIVE/SITE ACCESS #1	23
6.4 STALLINGS ROAD AND HARRISBURG ELEMENTARY SCHOOL DRIVE/SITE ACCESS #2	24
6.5 STALLINGS ROAD AND RAGING RIDGE ROAD/STALLINGS ROAD SUBDIVISION	26
7.0 AUXILIARY TURN LANE WARRANTS	27
8.0 TRAFFIC SIGNAL WARRANT ANALYSIS	28
9.0 CRASH DATA ANALYSIS	29
10.0 MITIGATION IMPROVEMENTS	31
APPENDIX	33

List of Figures

	<u>Page No.</u>
FIGURE 1.1 – IDENTIFIED MITIGATION	3
FIGURE 3.1 – STUDY AREA/SITE LOCATION	7
FIGURE 3.2 – PROPOSED SITE PLAN	8
FIGURE 3.3 – EXISTING ROADWAY LANEAGE	9
FIGURE 3.4 – 2018 EXISTING TRAFFIC VOLUMES	10
FIGURE 4.1 – 2023 BACKGROUND AM PEAK-HOUR TRAFFIC VOLUMES	12
FIGURE 4.2 – 2023 BACKGROUND PM PEAK-HOUR TRAFFIC VOLUMES	13
FIGURE 5.1 – SITE TRAFFIC DISTRIBUTION AND ASSIGNMENT	16
FIGURE 5.2 – 2023 BUILD-OUT AM PEAK-HOUR TRAFFIC VOLUMES	17
FIGURE 5.3 – 2023 BUILD-OUT PM PEAK-HOUR TRAFFIC VOLUMES	18
FIGURE 10.1 – IDENTIFIED MITIGATION	32

List of Tables

	<u>Page No.</u>
TABLE 5.1 - TRIP GENERATION	14
TABLE 6.0-A VEHICULAR LOS CONTROL DELAY THRESHOLDS FOR <u>UNSIGNALIZED</u> INTERSECTIONS	20
TABLE 6.0-B VEHICULAR LOS CONTROL DELAY THRESHOLDS FOR <u>SIGNALIZED</u> INTERSECTIONS	20
TABLE 6.1 – ROBINSON CHURCH ROAD AND TOM QUERY ROAD	21
TABLE 6.2 – STALLINGS ROAD AND HARRISBURG VETERANS ROAD	22
TABLE 6.3 – STALLINGS ROAD AND STALLINGS ROAD PARK DRIVE/SITE ACCESS #1	23
TABLE 6.4 – STALLINGS ROAD AND HARRISBURG ELEMENTARY SCHOOL DRIVE/SITE ACCESS #2	24
TABLE 6.5 – STALLINGS ROAD AND RAGING RIDGE ROAD/STALLINGS ROAD SUBDIVISION	26
TABLE 8.1 – TRAFFIC SIGNAL WARRANT ANALYSIS RESULTS	29
TABLE 9.1 – CRASH SEVERITY SUMMARY	29
TABLE 9.2 – ACCIDENT FREQUENCY SUMMARY	30
TABLE 9.3 – ACCIDENT TYPE SUMMARY	30

1.0 Executive Summary

The purpose of this Traffic Impact Analysis (TIA) is to evaluate the vehicular traffic impacts on the surrounding transportation infrastructure as a result of the proposed Camellia Gardens subdivision. The primary objectives of the study are:

- To estimate trip generation and distribution for the proposed development.
- To perform intersection capacity analyses for the identified study area.
- To determine the potential traffic impacts of the proposed development.
- To identify improvements to mitigate the proposed development's traffic impacts.

The proposed Camellia Gardens subdivision is located south of Stallings Road and east of Harrisburg Veterans Road in Harrisburg, North Carolina. Based on the site plan provided by the applicant, the proposed development is currently envisioned to consist of approximately 165 single-family homes.

For the purposes of this TIA, a build-out year of 2023 was considered at the direction of the Town. Based on the provided site plan and information provided by the applicant, the proposed development will be accessed via the following:

- Site Access #1 – right-in/right-out access at the existing Stallings Road and Stallings Road Park Drive intersection
- Site Access #2 – full-movement at the existing Stallings Road and Harrisburg Elementary School Drive intersection.

A TIA scoping meeting was held with the Town of Harrisburg and representatives of the applicant in Harrisburg on May 23, 2018, to obtain background information and to ascertain the scope and parameters to be included in this TIA. A Memorandum of Understanding (MOU) was developed based on discussions from this meeting and additional coordination with the Town and the Applicant in November 2018 that documented all scoping parameters to be used for the TIA. This scope was reviewed and agreed upon by the Town of Harrisburg and the applicant. Additionally, North Carolina Department of Transportation (NCDOT) reviewed and approved the MOU, which is included in the **Appendix**.

The following AM and PM peak-hour scenarios were analyzed to determine the proposed development's transportation impacts on the surrounding network:

- 2018 Existing Conditions
- 2023 Background Conditions
- 2023 Build-out Conditions

Based on coordination with the Town, NCDOT and the applicant, this TIA evaluated operations under each of the AM and PM peak-hour scenarios above for the following study area intersections:

1. Robinson Church Road and Tom Query Road
2. Stallings Road and Harrisburg Veterans Road
3. Stallings Road and Stallings Road Park Drive/Site Access #1
4. Stallings Road and Harrisburg Elementary School Drive/Site Access #2
5. Stallings Road and Raging Ridge Road/Stallings Road Subdivision

Note that for the purposes of this analysis, Stallings Road was considered to have an east/west orientation.

Kimley-Horn was retained to determine the potential traffic impacts of this development (in accordance with the traffic study guidelines in the *NCDOT Policy on Street and Driveway Access to North Carolina Highways* and set forth by the *Town of Harrisburg Unified Development Ordinance – Appendix F*), and to identify transportation improvements that may be required to mitigate these impacts. This report presents trip generation, distribution, capacity analyses, and identified transportation improvements required to mitigate anticipated traffic demands produced by the subject development.

Based on the capacity analyses performed at each of the identified study intersections, along with review of the auxiliary turn-lane warrants contained herein, the following improvements are identified to mitigate the impact of the proposed development on the adjacent street network:

Robinson Church Road and Tom Query Road

- Contribution of 25% of the overall cost of planned Town improvements to this intersection, not to exceed \$100,000

Stallings Road and Harrisburg Veterans Road

- Restriping of the eastbound through lane to provide a shared through-left lane
- Implementation of split phasing on the eastbound and westbound approaches
- Installation of a traffic signal at the intersection of Stallings Road and Hickory Ridge Road to be connected to the signal cabinet at Stallings Road and Harrisburg Veterans Road

Stallings Road and Stallings Road Park Drive/Site Access #1

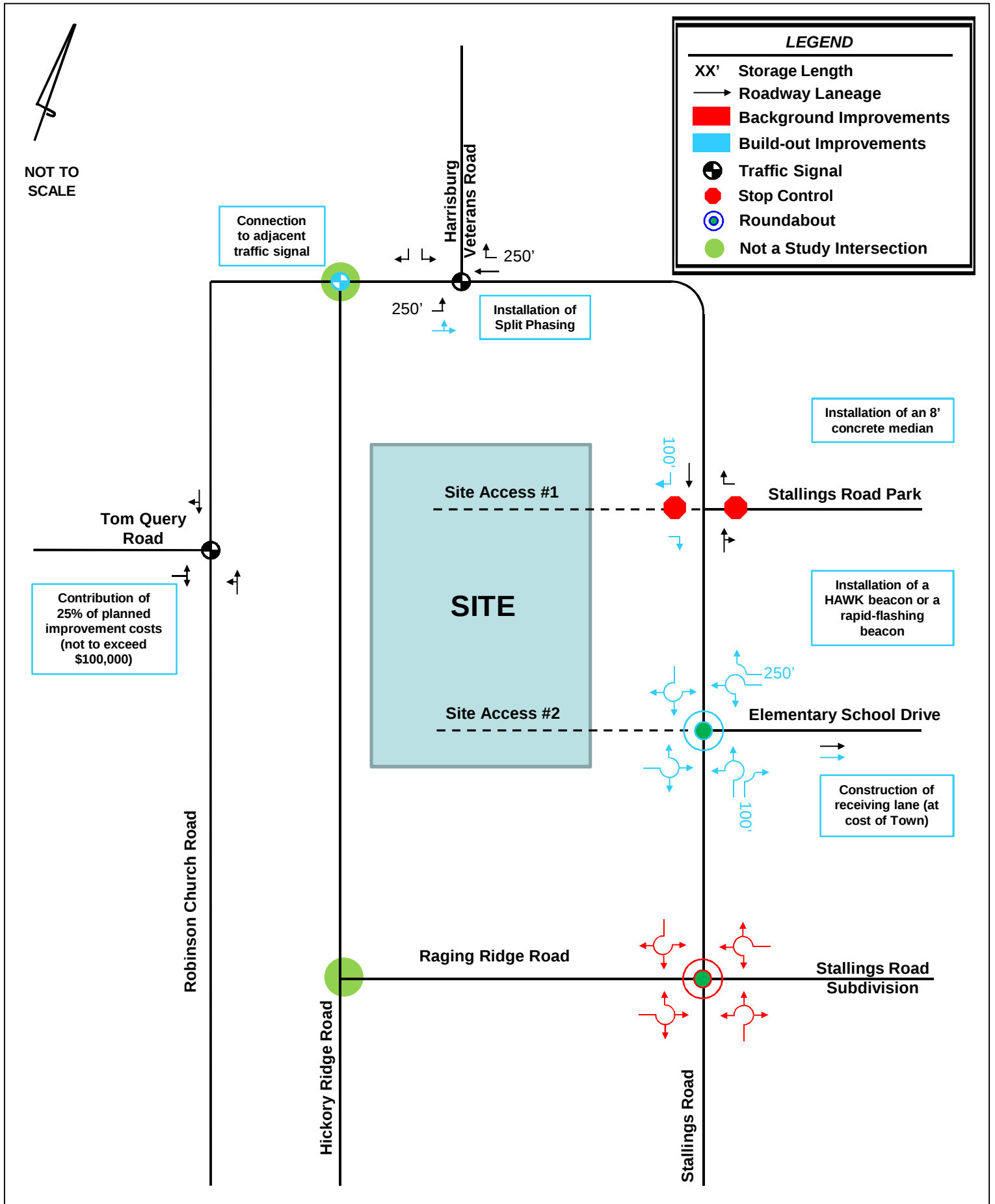
- Installation of an eastbound right-turn lane from Stallings Road into Site Access #1 with 100 feet of storage
- Installation of an 8' concrete median to serve as a refuge for pedestrian crossing and to convert the intersection to a right-in/right-out

Stallings Road and Harrisburg Elementary School Drive/Site Access #2

- Installation of a roundabout
- Construction of a single lane northbound approach
- Construction of a southbound right-turn lane from the Elementary School Drive onto Stallings Road with a minimum of 250 feet of storage (accomplished via restriping of the existing turn lanes)
- Construction of a single lane eastbound approach
- Construction of a westbound right-turn lane from Stallings Road into the Elementary School Drive with 100 feet of storage
- Construction of second receiving lane on the Elementary School Drive (this lane will be constructed by the developer at the cost of the Town)

Per the Town, installation of a High-Intensity Activated Crosswalk (HAWK) beacon or rapid-flashing beacon will be required to provide a connection from the proposed development to Stallings Road Park.

The mitigation identified within the study area is shown in **Figure 1.1**. The improvements shown in this figure are subject to approval by NCDOT and the Town of Harrisburg. All additions and attachments to the State and Town roadway system shall be properly permitted, designed and constructed in conformance to standards maintained by the agencies.



2.0 Introduction

The proposed Camellia Gardens subdivision is located south of Stallings Road and east of Harrisburg Veterans Road in Harrisburg, North Carolina. Based on the site plan provided by the applicant, the proposed development is currently envisioned to consist of approximately 165 single-family homes.

For the purposes of this TIA, a build-out year of 2023 was considered at the direction of the Town. Based on the provided site plan and information provided by the applicant, the proposed development access will be access via the following:

- Site Access #1 – right-in/right-out access at the existing Stallings Road and Stallings Road Park Drive intersection
- Site Access #2 – full-movement at the existing Stallings Road and Harrisburg Elementary School Drive intersection

A TIA scoping meeting was held with the Town of Harrisburg and representatives of the applicant in Harrisburg on May 23, 2018, to obtain background information and to ascertain the scope and parameters to be included in this TIA. A Memorandum of Understanding (MOU) was developed based on discussions from this meeting and additional coordination with the Town and the Applicant in November 2018 that documented all scoping parameters to be used for the TIA. This scope was reviewed and agreed upon by the Town of Harrisburg and the applicant. Additionally, North Carolina Department of Transportation (NCDOT) reviewed and approved the MOU, which is included in the **Appendix**.

Kimley-Horn was retained to determine the potential traffic impacts of this development (in accordance with the traffic study guidelines in the *NCDOT Policy on Street and Driveway Access to North Carolina Highways* and set forth by *Town of Harrisburg Unified Development Ordinance – Appendix F*), and to identify transportation improvements that may be required to mitigate these impacts. This report presents trip generation, distribution, capacity analyses, crash analyses and identified transportation improvements required to mitigate anticipated traffic demands produced by the subject development.

3.0 Existing Traffic Conditions

Existing traffic conditions were coordinated with Town of Harrisburg and NCDOT staff and collected through field observations and turning-movement counts to establish the existing conditions baseline analysis.

3.1 STUDY AREA

Based on coordination with the Town, NCDOT and the applicant, the study area for this TIA includes the following existing intersections:

1. Robinson Church Road and Tom Query Road
2. Stallings Road and Harrisburg Veterans Road
3. Stallings Road and Stallings Road Park Drive/Site Access #1
4. Stallings Road and Harrisburg Elementary School Drive/Site Access #2
5. Stallings Road and Raging Ridge Road/Stallings Road Subdivision

Note that for the purposes of this analysis, Stallings Road was considered to have an east/west orientation.

Figure 3.1 shows the study area intersections and the site location, **Figure 3.2** shows the proposed site plan for the development as provided by the applicant and **Figure 3.3** shows the existing roadway geometry at the study intersections.

The primary roadways in the vicinity of the site are Stallings Road, Robinson Church Road, Robinson Church Road, and Harrisburg Veterans Road.

Stallings Road is currently a two-lane, undivided local road with a posted speed limit of 35 miles per hour (mph) in the vicinity of Harrisburg Veterans Road and 45 mph from Stallings Road Park to Rocky River Road. It should be noted that from 7:45 – 8:45 am and 2:30 – 3:30 pm the Stallings Road and Harrisburg Elementary School Drive and the Stallings Road and Raging Ridge Road intersections falls within a school zone with a posted speed limit of 35 mph. Stallings Road carries an annual average daily traffic (AADT) volume of 6,700 vehicles per day (vpd) east of Hickory Ridge Road based on 2017 NCDOT AADT data.

Robinson Church Road is currently a two-lane, undivided major collector with a posted speed limit of 45 mph. Robinson Church Road carries an AADT volume of 10,000 vpd west of Stallings Road based on 2017 NCDOT AADT data.

Tom Query Road is currently a two-lane, undivided local road with a posted speed limit of 45 mph. Tom Query Road carries an AADT volume of 6,000 vpd west of Robinson Church Road based on 2017 NCDOT AADT data.

Harrisburg Veterans Road is currently a four-lane, undivided major collector with a posted speed limit of 35 mph. Harrisburg Veterans Road does not have a posted NCDOT AADT.

3.2 EXISTING TRAFFIC VOLUME DEVELOPMENT

AM (7:00-9:00 AM) and PM (4:00-6:00 PM) intersection turning-movement, heavy-vehicle, pedestrian and bicycle counts were performed by National Data & Surveying Services on Thursday, September 20, 2018, at the following intersections:

1. Stallings Road and Harrisburg Veterans Road
2. Stallings Road and Raging Ridge Road/Stallings Road Subdivision

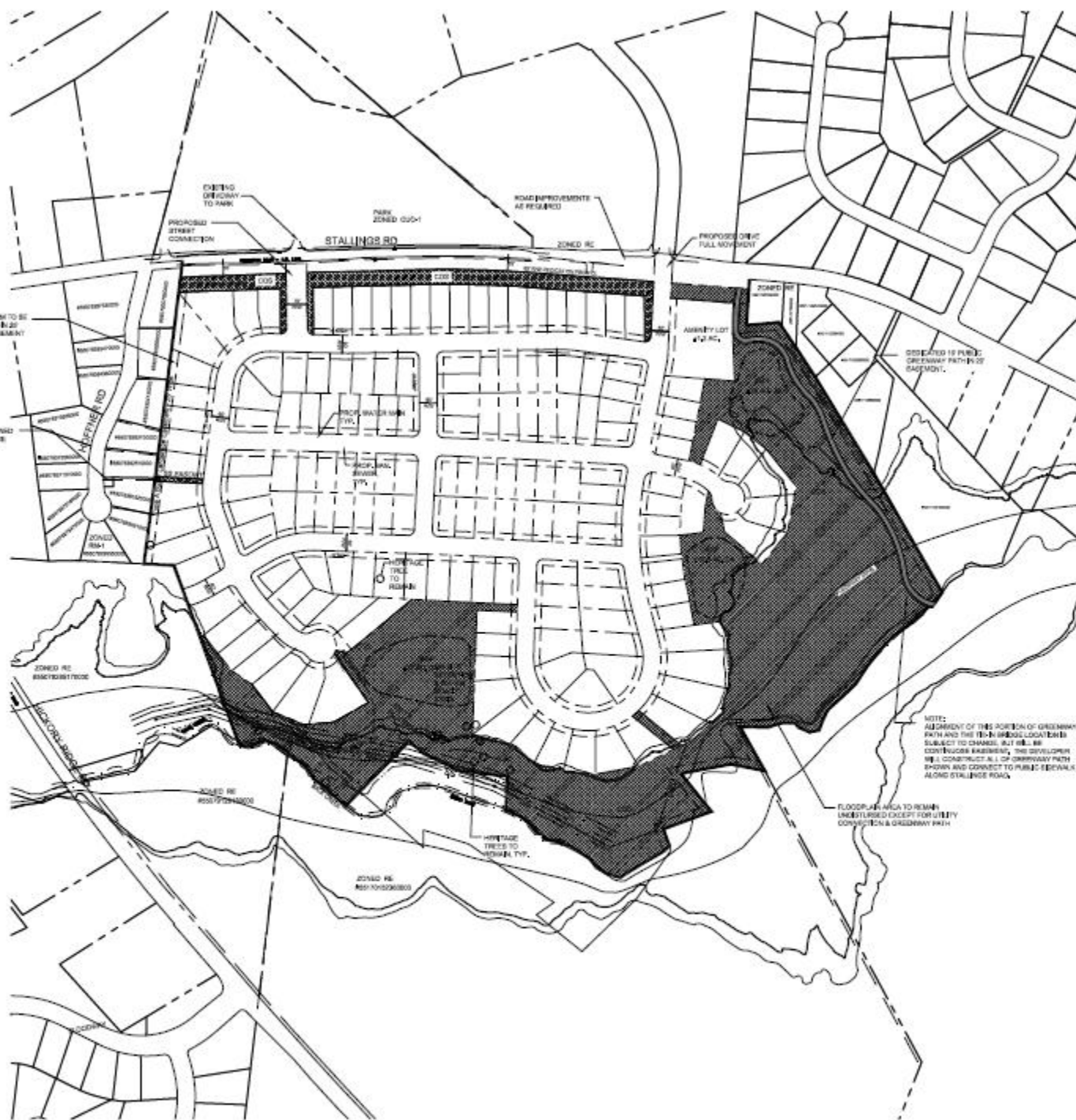
Intersection turning-movement counts were collected by Quality Counts, LLC on Tuesday, June 4, 2019, for the following intersections:

1. Stallings Road and Stallings Road Park Drive
2. Stallings Road and Harrisburg Elementary School Drive

Additionally, intersection turning-movement counts were collected by National Data & Surveying Services on Wednesday, November 28, 2018 for the intersection of Robinson Church Road and Tom Query Road.

Volume balancing was performed along Stallings Road between Stallings Road Park Drive and Harrisburg Elementary School Drive but was not performed between the remaining study area intersections due to the presence of driveways and distance between the intersections. Peak-hour intersection turning-movement count data is provided in the **Appendix**.

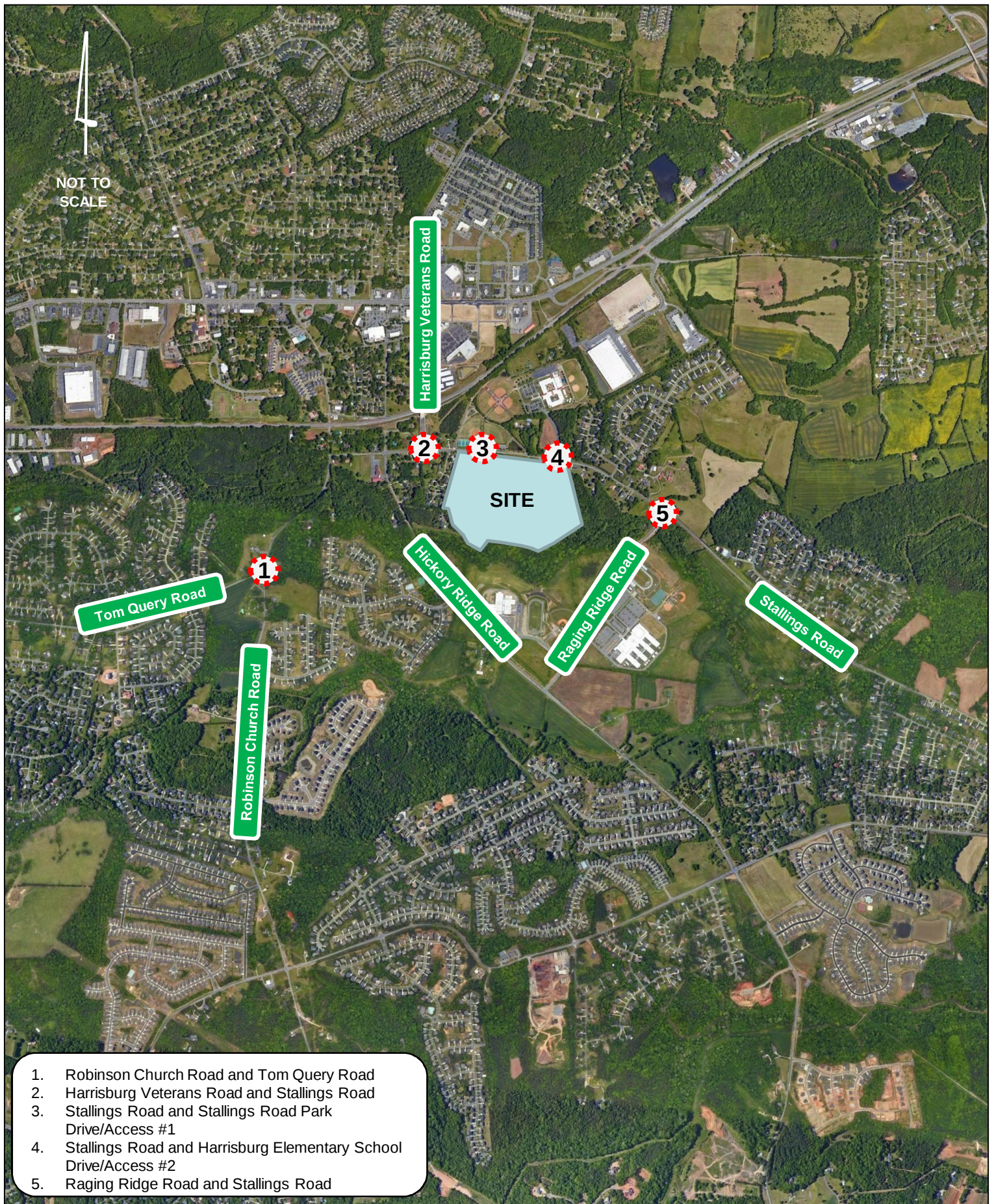
Figure 3.4 illustrates the 2018 existing AM and PM peak-hour traffic volumes.

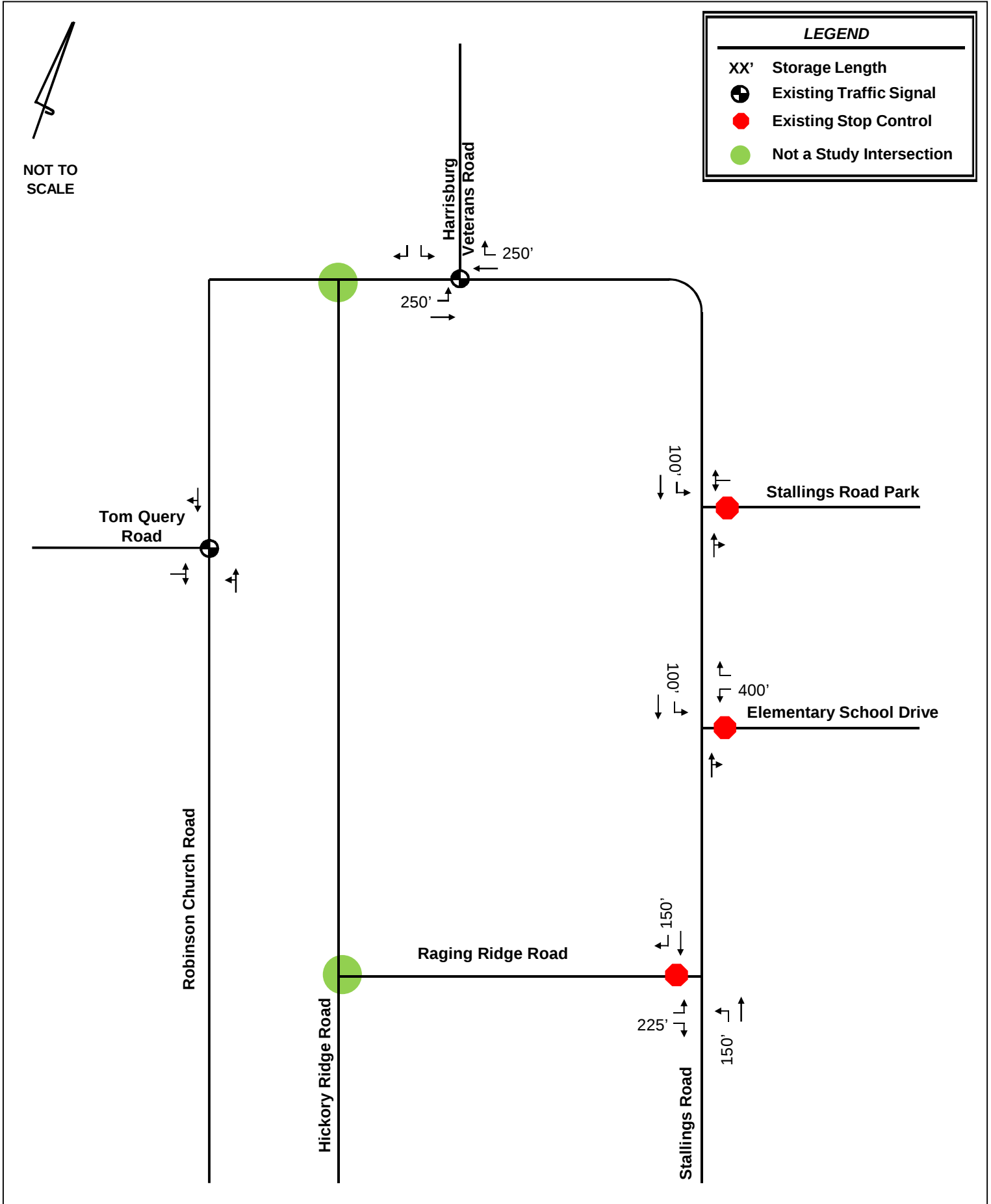


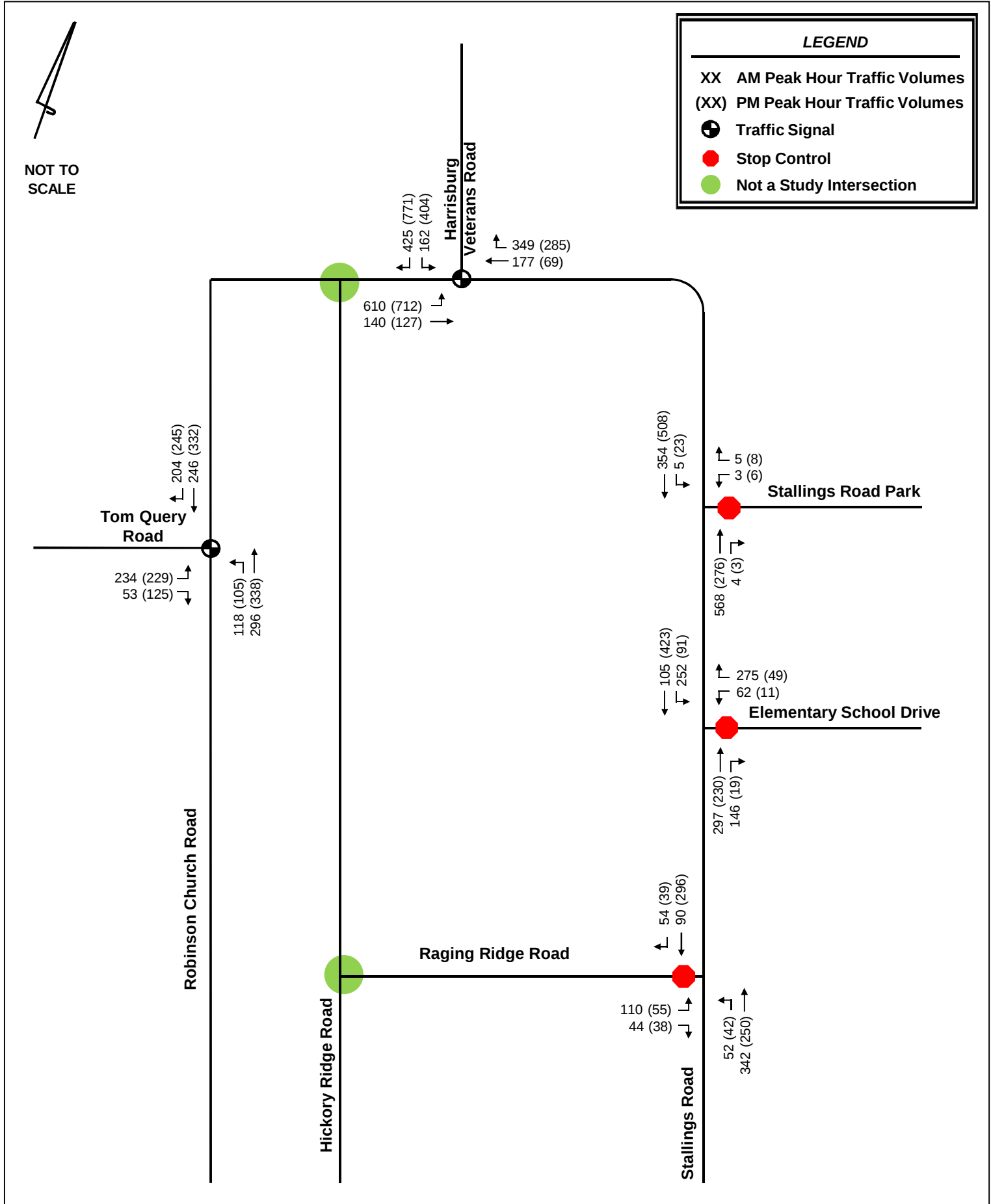
REZONE SITE PLAN
CAMELLIA GARDENS
 HARRISBURG, NORTH CAROLINA
 FOR
SHEA HOMES

Project Manager
 AHS
 Design By
 AHS
 Checked By
 HPI
 Date
 05-14-18
 Project Number
 18021

DPR landscape architecture
 civil engineering
 planning
 DPR Associates, Inc. • 420 Hawthorne Lane • Charlotte, NC 28204
 phone 704.332.1204 • fax 704.332.1210 • www.dprassociates.net







4.0 Background Traffic Volume Development

Projected background (non-project) traffic is defined as the expected growth or change in traffic volumes on the surrounding roadway network between the year the existing counts were collected and the expected build-out year absent the construction and opening of the proposed project. This includes both non-specific general growth based on historical increase in local traffic volumes (historical background growth), along with specific growth and/or change in traffic volumes caused by either approved, but not yet fully-constructed, off-site developments and/or planned transportation projects specifically identified within the vicinity of the proposed development.

4.1 HISTORICAL BACKGROUND GROWTH TRAFFIC

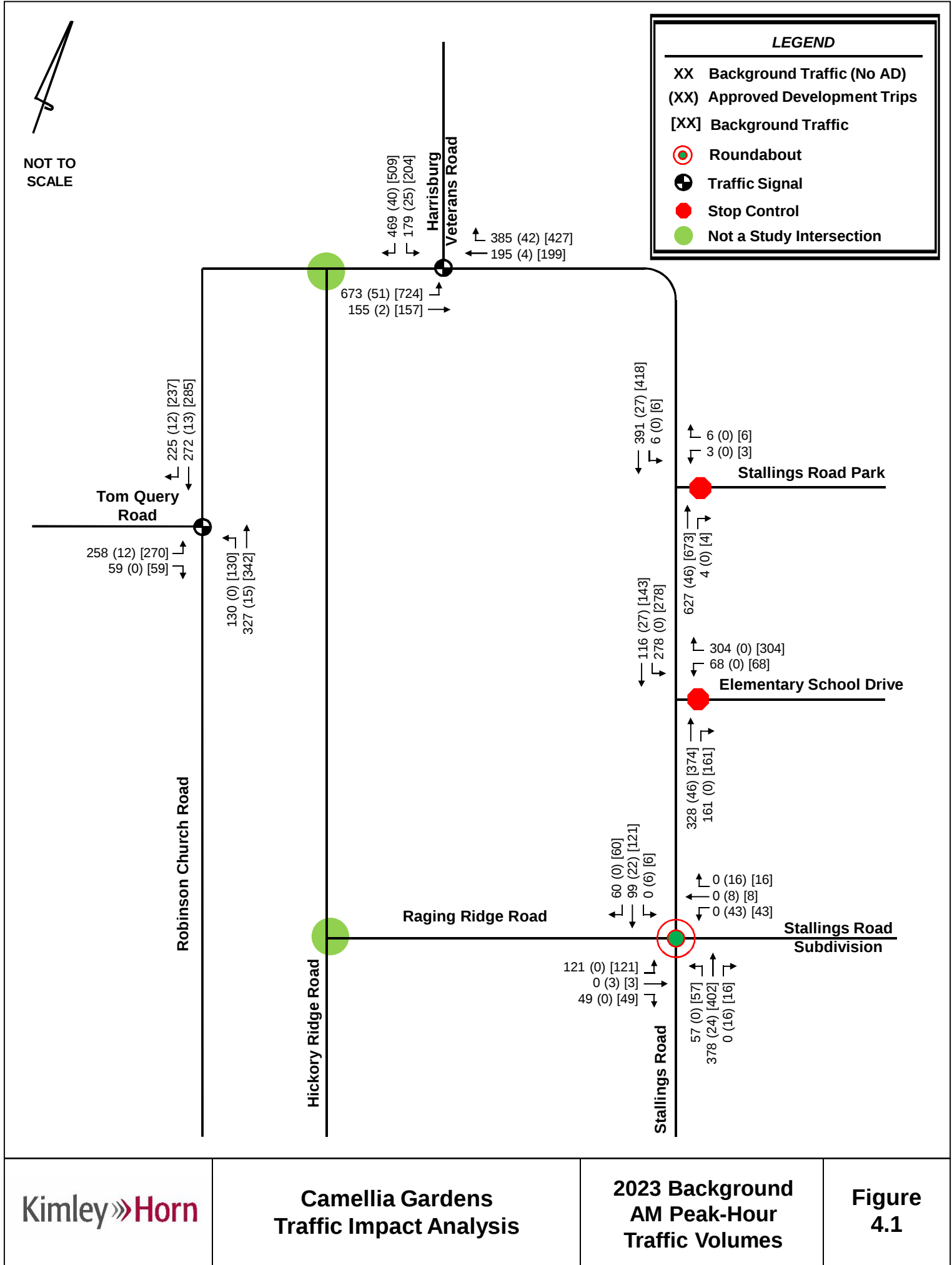
Historical background growth is the increase in existing traffic volumes due to usage increases and non-specific growth throughout the area, and accounts for growth that is independent of specific off-site developments or planned transportation projects. Historical background growth traffic is calculated using an annual growth rate, which is applied to the existing traffic volumes up to the future horizon years. For this analysis, an annual growth rate of 2.0% was applied to the 2018 existing peak-hour traffic volumes to calculate base 2023 background traffic volumes. This methodology was determined based on coordination with Town of Harrisburg and NCDOT staff.

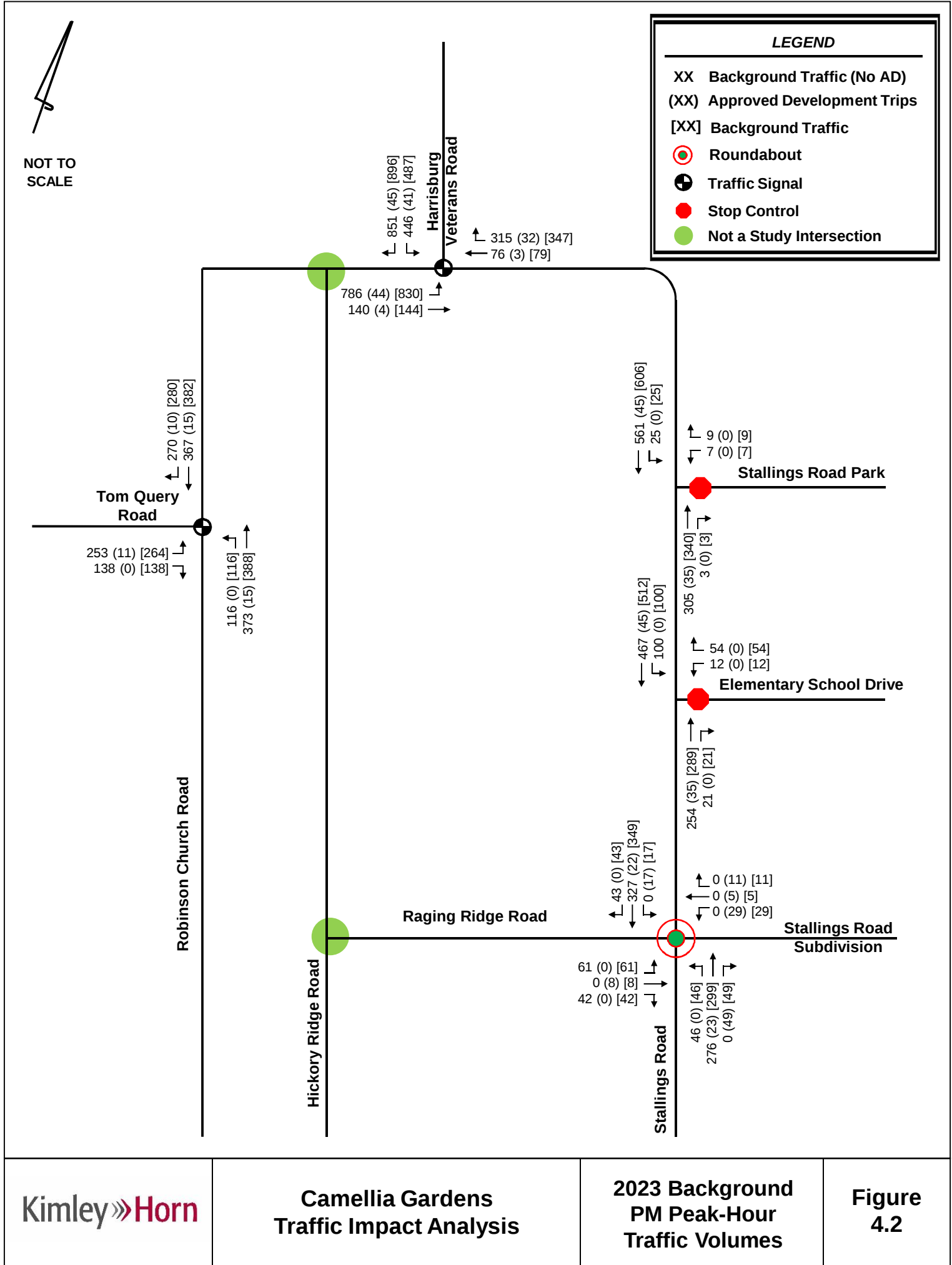
4.2 APPROVED DEVELOPMENTS

At the direction of the Town of Harrisburg and NCDOT staff, two approved developments, Harris Square and Stallings Road Subdivision, are expected to impact traffic volumes within the study area and were included in the background traffic volumes for this TIA. Per coordination with the Town, the Harris Square and Stallings Road Subdivision developments were assumed to be 40% and 0% built-out, respectively.

Volumes for these developments were obtained from the *Harris Square TIA* (Kimley- Horn, April 2016) and the *Stallings Road Subdivision TIA* (Kimley-Horn, October 2018). The existing traffic splits were used to carry and assign volumes appropriately at study area intersections that were not included in the approved TIAs.

Figures 4.1 and **4.2** show the 2023 background AM and PM peak-hour traffic volumes, respectively, that include the historical growth traffic and approved development trips.





5.0 Site Traffic Volume Development

Site traffic developed for this TIA is defined as the vehicle trips expected to be generated and added to the study area by construction of the proposed development, and the distribution and assignment of that traffic throughout the surrounding network.

5.1 SITE ACCESS

Based on the provided site plan and information provided by the applicant, the proposed development will be accessed via the following:

- Site Access #1 – right-in/right-out access at the existing Stallings Road and Stallings Road Park Drive intersection
- Site Access #2 – full-movement at the existing Stallings Road and Harrisburg Elementary School Drive intersection.

It should be noted that in the build-out condition, the Stallings Road Park Drive will be converted to right-in/right-out as well. Redistribution of left-turns in and out of this access were considered in the analysis and can be seen in **Figure 5.2** and **Figure 5.3**.

5.2 TRAFFIC GENERATION

The traffic generation potential of the proposed development was determined using the trip generation rates published in *Trip Generation* (Institute of Transportation Engineers, Tenth Edition, 2017).

Based on the site plan provided by the applicant, the proposed development is envisioned to include 165 single-family homes. **Table 5.1** summarizes the projected trip generation for the proposed residential development. During a typical weekday, the proposed development has the potential to generate 122 and 164 net new external trips during the AM and PM peak hours, respectively.

Table 5.1 - Trip Generation								
Land Use	Intensity	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Single-Family Homes [ITE 210]	165 DU	1,648	122	31	91	164	103	61
Net New External Trips		1,648	122	31	91	164	103	61

5.3 SITE TRAFFIC DISTRIBUTION AND ASSIGNMENT

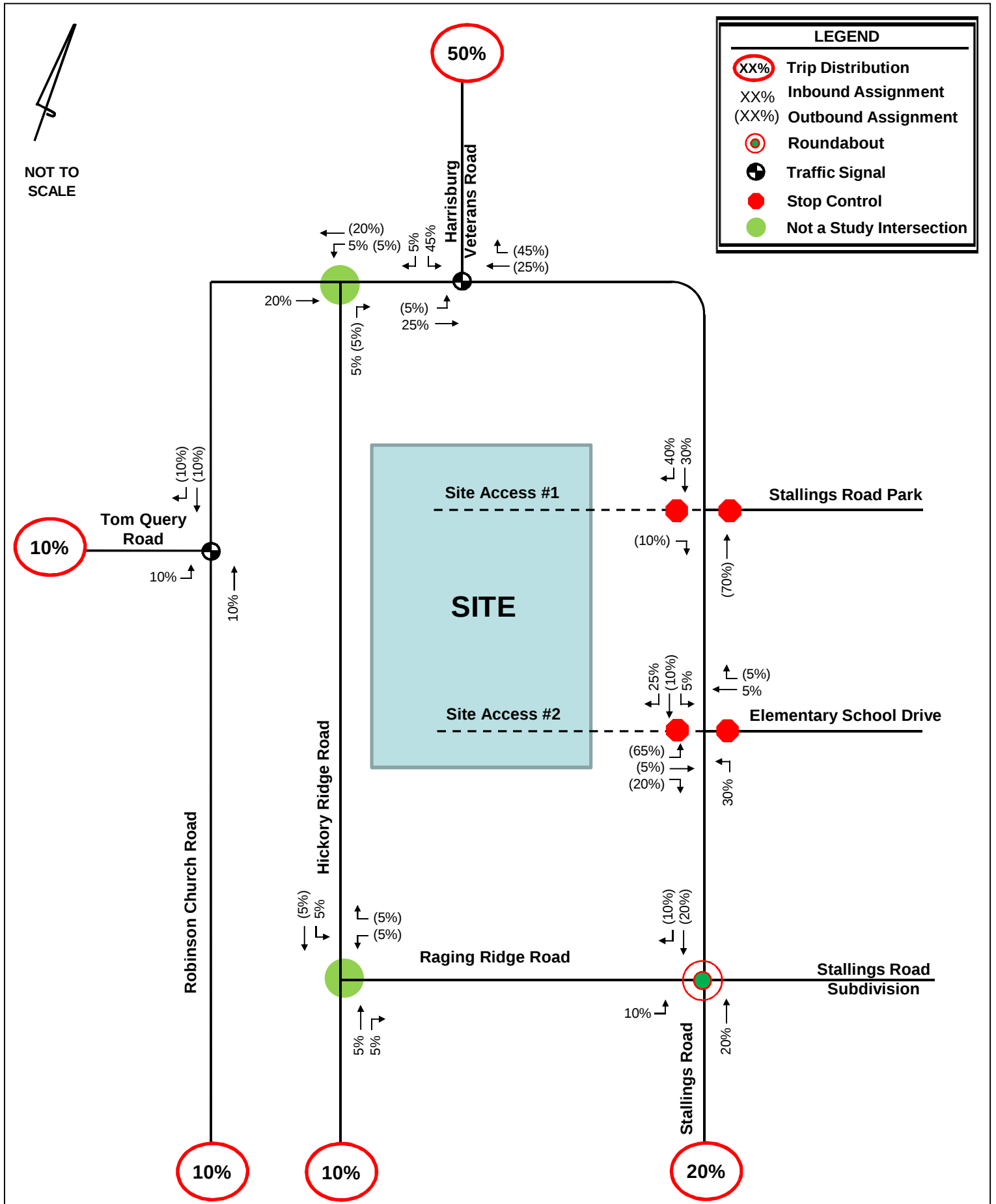
The proposed development's trips were assigned to the surrounding network based on existing peak-hour turning movements, surrounding land uses, locations of similar land use and population densities in the area. The following site traffic distribution was reviewed and approved as part of the MOU by the Town of Harrisburg, NCDOT and the applicant:

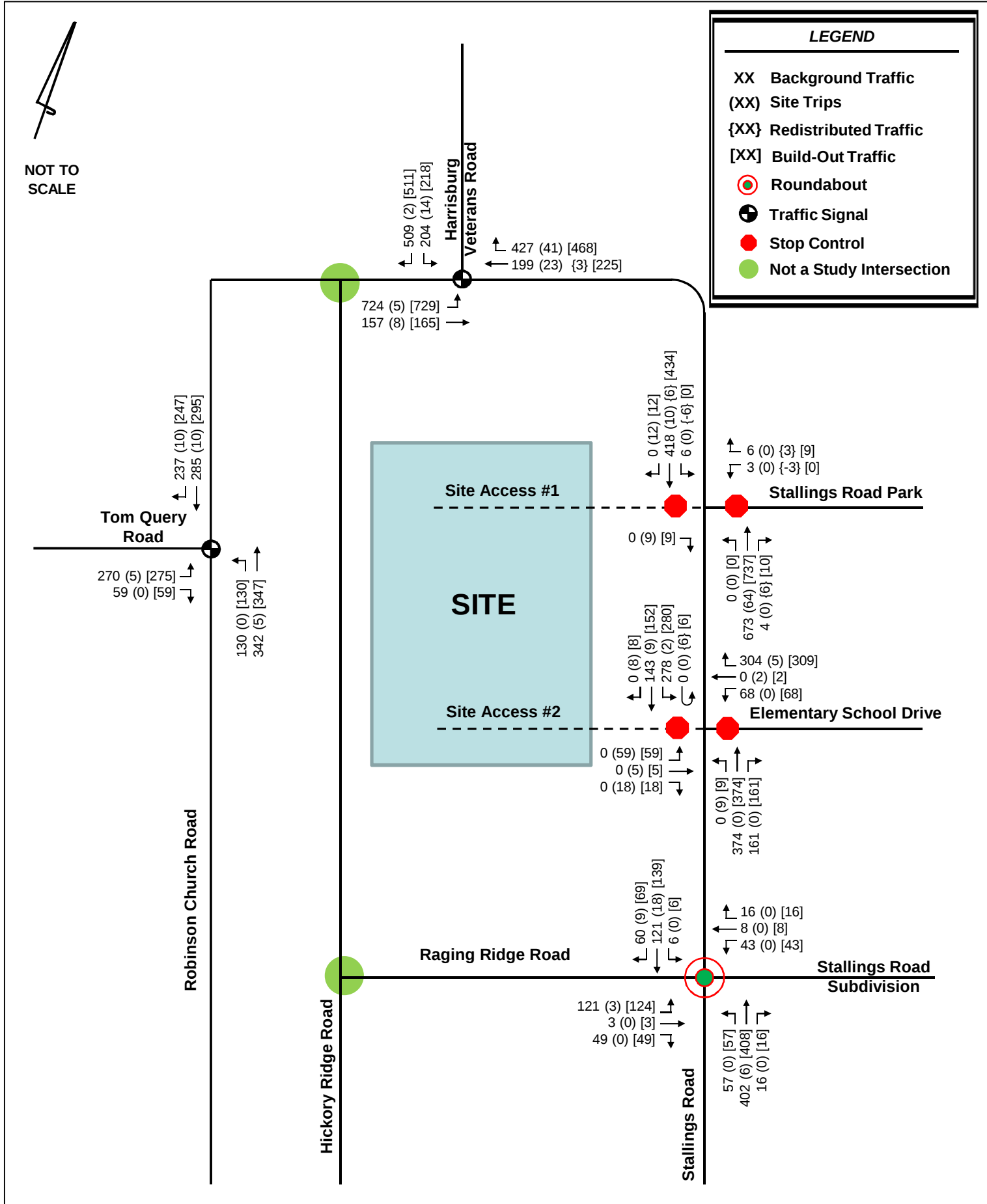
- 10% to/from the west along Tom Query Road
- 10% to/from the south along Robinson Church Road
- 20% to/from the south along Stallings Road
- 10% to/from the south along Hickory Ridge Road
- 50% to/from the north along Harrisburg Veterans Road

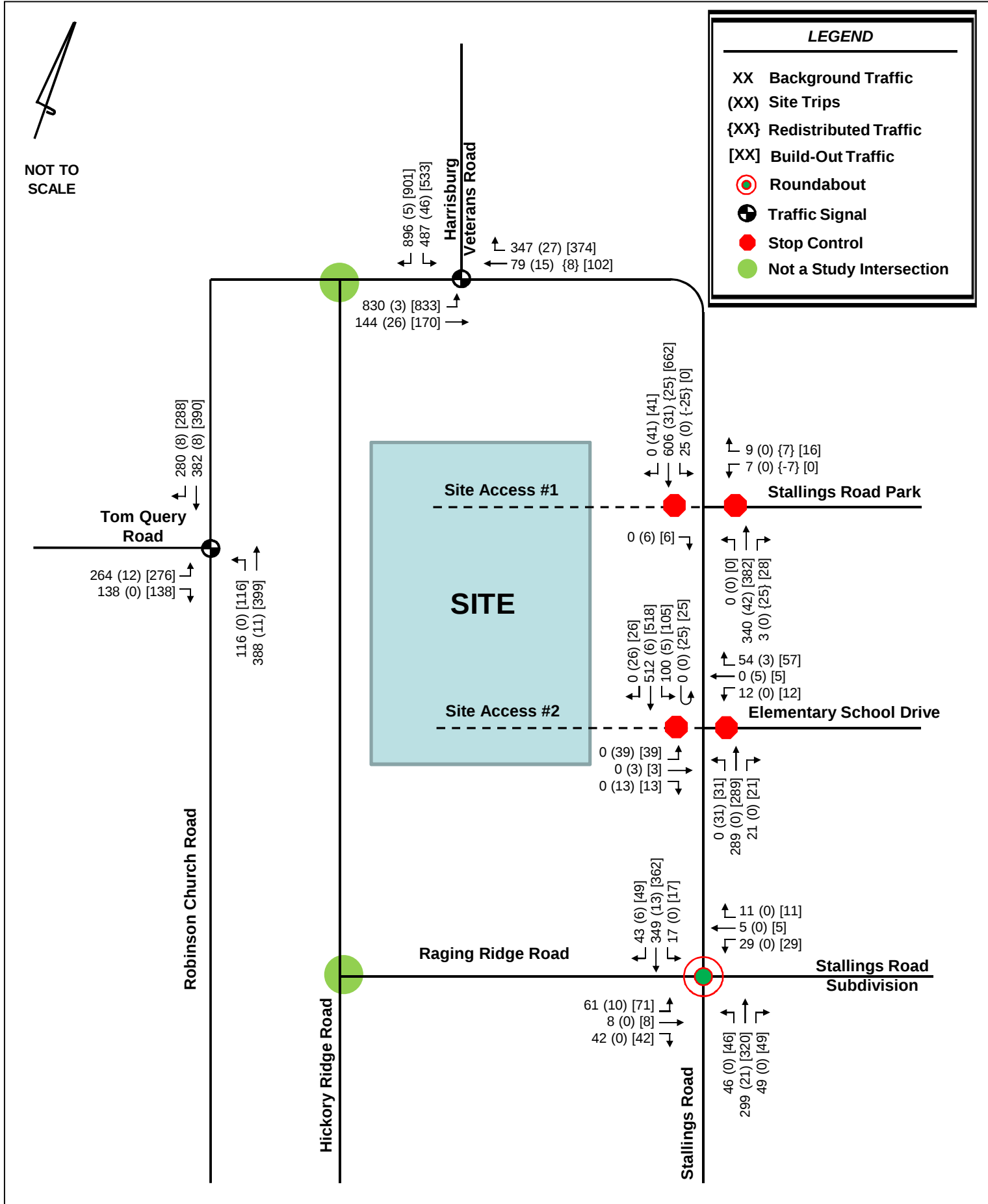
The overall site traffic distribution and assignment are shown in **Figure 5.1**.

5.4 BUILD-OUT TRAFFIC VOLUMES

The 2023 build-out traffic volumes include the assignment of the projected site traffic generation added to the 2023 background traffic volumes. **Figures 5.2** and **5.3** show the projected 2023 build-out traffic volumes for the AM and PM peak hours, respectively. Intersection volume development worksheets for all intersections and driveways within the study network are provided in the **Appendix**.







6.0 Capacity Analysis

Based on the requirements set forth by the *Town of Harrisburg Unified Development Ordinance – Appendix F* and in accordance with the traffic study guidelines in the *NCDOT Policy on Street and Driveway Access to North Carolina Highways*, capacity analyses were performed at the study area intersections for each of the following AM and PM peak-hour scenarios:

- 2018 Existing Conditions
- 2023 Background Conditions
- 2023 Build-out Conditions

Capacity analyses were performed for the AM and PM peak hours using the Synchro Version 9 software to determine the operating characteristics at the signalized and stop-controlled intersections of the adjacent street network and to evaluate the impacts of the proposed development. 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 operational, geometric and controlling conditions within a set time duration. This software program uses methodologies contained in the *Highway Capacity Manual* (HCM) to determine the operating characteristics of an intersection.

The *Highway Capacity Manual* (HCM) defines LOS as a “quantitative stratification of a performance measure or measures representing quality of service”, and is used to “translate complex numerical performance results into a simple A-F system representative of travelers’ perceptions of the quality of service provided by a facility or service”. The HCM defines six levels of service, LOS A through LOS F, with A having the best operating conditions from the traveler’s perspective and F having the worst. However, it must be understood that “the LOS letter result hides much of the complexity of facility performance”, and that “the appropriate LOS for a given system element in the community is a decision for local policy makers”. According to the HCM, “for cost, environmental impact, and other reasons, roadways are typically designed not to provide LOS A conditions during peak periods but instead to provide some lower LOS that balances individual travelers’ desires against society’s desires and financial resources. Nevertheless, during low-volume periods of the day, a system element may operate at LOS A.”

LOS for a two-way stop-controlled (TWSC) intersection is determined by the control delay at the side-street approaches, typically during the highest volume periods of the day, the AM and PM peak periods. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. With respect to field measurements, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time the vehicle departs from the stop line. It is typical for stop sign-controlled side streets and driveways intersecting major streets to experience long delays during peak hours, particularly for left-turn movements. The majority of the traffic moving through the intersection on the major street experiences little or no delay.

LOS for signalized intersections is reported for the intersection as a whole, and typically during the highest volume periods of the day, the AM and PM peak periods. One or more movements at an intersection may experience a low level-of-service, while the intersection as a whole may operate acceptably.

Table 6.0-A and **6.0-B** list the LOS control delay thresholds published in the HCM for unsignalized and signalized intersections, respectively, as well as the unsignalized operational descriptions assumed herein.

Table 6.0-A Vehicular LOS Control Delay Thresholds for Unsignalized Intersections		
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

Table 6.0-B Vehicular LOS Control Delay Thresholds for Signalized Intersections		
Level-of-Service	Average Control Delay per Vehicle [sec/veh]	
A	≤ 10	
B	$> 10 - 20$	
C	$> 20 - 35$	
D	$> 35 - 55$	
E	$> 55 - 80$	
F	> 80	

Using the signal timing plans, cycle lengths, offsets, and splits were optimized for the existing conditions analyses and carried through all scenarios. The Congestion Management (CM) minimum cycle of 90 seconds based on the phasing of the signalized intersections was also utilized. A lost time of 5 seconds was used in all scenarios and no right turn on red (RTOR) were utilized in all scenarios as well. Permitted-protected phasing was allowed in all scenarios at existing signals to reflect field conditions.

In the existing condition, the observed peak hour factor (PHF) was used in the analysis. A weighted PHF was used for all future year conditions in the AM peak hour to account for the impacts of school traffic. A 0.9 PHF was used for all conditions in the PM peak hour.

Capacity analysis reports generated by Synchro Version 9 software are included in the **Appendix**.

6.1 ROBINSON CHURCH ROAD AND TOM QUERY ROAD

Table 6.1 summarizes the LOS, control delay and 95th percentile queue lengths at the signalized intersection of Robinson Church Road and Tom Query Road.

Table 6.1 - Robinson Road and Tom Query Road					
Condition	Measure	EB	NB	SB	Intersection
		EBLR	NBLT	SBTR	
AM Peak Hour					
2018 Existing	LOS (Delay)	E (56.6)	B (15.4)	A (9.9)	C (23.4)
	Synchro 95th Q	245'	224'	249'	
2023 Background	LOS (Delay)	E (65.4)	D (35.5)	B (11.3)	C (32.8)
	Synchro 95th Q	#317'	#409'	289'	
2023 Build	LOS (Delay)	E (66.9)	D (40.5)	B (11.9)	D (35.0)
	Synchro 95th Q	#325'	#431'	316'	
PM Peak Hour					
2018 Existing	LOS (Delay)	E (56.8)	B (16.2)	B (12.7)	C (25.3)
	Synchro 95th Q	#368'	280'	303'	
2023 Background	LOS (Delay)	E (65.5)	D (35.7)	B (15.3)	C (34.7)
	Synchro 95th Q	#432'	#496'	378'	
2023 Build	LOS (Delay)	E (68.2)	D (46.9)	B (16.0)	D (39.4)
	Synchro 95th Q	#451'	#526'	396'	

95th percentile volume exceeds capacity, queue may be longer

As shown in **Table 6.1**, the eastbound approach is expected to operate with long delays in both peak hours both with and without site traffic. The overall intersection is expected to drop from LOS C to LOS D with the addition of site traffic, with an overall intersection delay increase of 2.2 seconds and 4.7 seconds in the AM and PM peak hours, respectively.

Because the site is not expected to significantly impact delay at this intersection, it is not recommended that the site constructs improvements at this intersection. However, it is recommended that the proposed site contribute 25% to the overall cost of the planned Town improvements (not to exceed \$100,000) at this intersection to mitigate the drop in LOS.

6.2 STALLINGS ROAD AND HARRISBURG VETERANS ROAD

Table 6.2 summarizes the LOS, control delay and 95th percentile queue lengths at the signalized intersection of Stallings Road and Harrisburg Veterans Road.

Condition	Measure	EB		WB		SB		Intersection
		EBL	EBT	WBT	WBR	SBL	SBR	
AM Peak Hour								
2018 Existing	LOS (Delay)	B (14.9)		B (15.9)		C (27.5)		B (18.7)
	Synchro 95th Q	m#373'	57'	134'	183'	151'	208'	
2023 Background	LOS (Delay)	F (81.8)		C (29.0)		C (21.1)		D (48.8)
	Synchro 95th Q	m#833'	65'	146'	206'	180'	284'	
2023 Build	LOS (Delay)	F (108.3)		C (28.3)		C (22.0)		E (59.0)
	Synchro 95th Q	m#826'	65'	163'	236'	196'	299'	
2023 Build IMP - Dual Lefts	LOS (Delay)	C (29.9)		B (19.6)		C (25.7)		C (25.5)
	Synchro 95th Q	m#297'	67'	163'	228'	193'	299'	
2023 Build IMP - Split Phasing	LOS (Delay)	C (34.8)		E (58.3)		C (34.5)		D (42.0)
	Synchro 95th Q	656'	274'	288'	527'	316'	325'	
PM Peak Hour								
2018 Existing	LOS (Delay)	D (50.8)		C (20.7)		B (19.6)		C (30.6)
	Synchro 95th Q	#651'	72'	84'	151'	329'	340'	
2023 Background	LOS (Delay)	F (280.7)		B (19.5)		C (20.7)		F (111.5)
	Synchro 95th Q	#1115'	93'	100'	189'	416'	530'	
2023 Build	LOS (Delay)	F (430.1)		B (17.9)		B (19.7)		F (160.8)
	Synchro 95th Q	#1200'	121'	m117'	159'	429'	605'	
2023 Build IMP - Dual Lefts	LOS (Delay)	D (41.3)		C (25.8)		C (26.2)		C (31.3)
	Synchro 95th Q	#504'	139'	m148'	m250'	558'	611'	
2023 Build IMP - Split Phasing	LOS (Delay)	E (57.6)		C (34.1)		C (25.5)		D (38.0)
	Synchro 95th Q	#846'	#844'	m166'	m303'	647'	646'	

95th percentile volume exceeds capacity, queue may be longer

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

As shown in **Table 6.2**, the eastbound approach is expected to operate with long delays in both peak hours both with and without site traffic. The overall intersection is expected to operate at LOS F in the PM peak hours in 2023 background and build-out conditions. This is due to the high volume of eastbound left-turning vehicles at the signalized intersection.

With the addition of dual eastbound left-turn lanes with 325 feet of storage, as shown in the Build Improved row in the table, the overall intersection and all of its approaches are expected to operate at LOS D or better. However, it should be noted that improvements to the eastbound approach are limited by available intersection spacing and right-of-way.

Due to this limited right-of-way, the following improvements are recommended at this intersection:

- Restriping of the eastbound through lane to provide a shared through-left lane
- Implementation of split phasing on the eastbound and westbound approaches

With improvements made at this intersection, it is also recommended that the proposed development install a signal at the intersection of Stallings Road and Hickory Ridge Road. This signal should be connected to the existing signal cabinet at the intersection of Stallings Road and Harrisburg Veterans Road.

6.3 STALLINGS ROAD AND STALLINGS ROAD PARK DRIVE/SITE ACCESS #1

Table 6.3 summarizes the LOS, control delay and 95th percentile queue lengths at the unsignalized intersection of Stallings Road and Stallings Road Park Drive/Site Access #1.

Table 6.3 - Stallings Road and Stallings Road Park Drive / Site Access #1					
Condition	Measure	EB	WB	SB	NB
		EBL	WBL	SBL	NBL
AM Peak Hour					
2018 Existing	LOS (Delay)	A (0.2)	A (0.0)	C (22.5)	-
	Synchro 95th Q	1'	0'	6'	-
2023 Background	LOS (Delay)	A (0.2)	A (0.0)	D (27.9)	-
	Synchro 95th Q	2'	0'	8'	-
2023 Build	LOS (Delay)	A (0.0)	A (0.0)	C (18.8)	B (12.3)
	Synchro 95th Q	0'	0'	4'	2'
PM Peak Hour					
2018 Existing	LOS (Delay)	A (0.5)	A (0.0)	B (14.8)	-
	Synchro 95th Q	2'	0'	5'	-
2023 Background	LOS (Delay)	A (0.3)	A (0.0)	C (15.6)	-
	Synchro 95th Q	2'	0'	4'	-
2023 Build	LOS (Delay)	A (0.0)	A (0.0)	B (11.0)	B (14.0)
	Synchro 95th Q	0'	0'	2'	1'

It should be noted that this intersection will be converted to right-in/right-out in the build-out condition. As shown in **Table 6.3**, in both peak hours, the proposed site access is expected to operate with short delays in build-out with a single lane ingress/egress. Therefore, no improvements are recommended at this intersection for capacity purposes.

To convert this intersection to right-in/right-out, an 8' concrete median should be constructed to serve as a refuge for pedestrian crossing.

6.4 STALLINGS ROAD AND HARRISBURG ELEMENTARY SCHOOL DRIVE/SITE ACCESS #2

Table 6.4 summarizes the LOS, control delay and 95th percentile queue lengths at the unsignalized intersection of Stallings Road and Harrisburg Elementary School Drive/Site Access #2.

Table 6.4 - Stallings Road and Harrisburg Elementary School Drive / Site Access #2										
Condition	Measure	EB		WB		SB		NB		Intersection
		EBL	EBTR	WBTL	WBR	SBTL	SBR	NBL	NBTR	
AM Peak Hour										
2018 Existing	LOS (Delay)	A (7.9)		A (0.0)		F (94.1)		-		-
	Synchro 95th Q	50'	0'	0'		235'	253'			
2023 Background	LOS (Delay)	A (8.8)		A (0.0)		F (237.7)		-		-
	Synchro 95th Q	69'	0'	0'		345'	460'			
2023 Build	LOS (Delay)	A (8.6)		A (0.2)		F (2021.4)		F (Err)		-
	Synchro 95th Q	70'	0'	1'		Err	455'	Err		
2023 Build IMP - Signal	LOS (Delay)	E (65.0)		E (66.7)		E (77.8)		F (85.4)		E (70.6)
	Synchro 95th Q	#268'	37'	#419'	138'	53'	#566'	#113'	27'	
2023 Build IMP - Roundabout	LOS (Delay)	A (7.1)		A (6.1)		B (10.8)		B (11.7)		A (8.2)
	SIDRA 95th Q	229'		125'	67'	46'	228'	32'		
PM Peak Hour										
2018 Existing	LOS (Delay)	A (1.9)		A (0.0)		B (13.9)		-		-
	Synchro 95th Q	10'	0'	0'		9'	8'			
2023 Background	LOS (Delay)	A (1.3)		A (0.0)		B (12.9)		-		-
	Synchro 95th Q	8'	0'	0'		5'	7'			
2023 Build	LOS (Delay)	A (1.3)		A (1.1)		C (16.2)		E (49.3)		-
	Synchro 95th Q	8'	0'	3'		11'	7'	48'		
2023 Build IMP - Signal	LOS (Delay)	B (11.5)		B (14.1)		D (38.8)		D (37.3)		B (15.3)
	Synchro 95th Q	126'	174'	212'	21'	23'	74'	52'	27'	
2023 Build IMP - Roundabout	LOS (Delay)	A (2.6)		A (2.2)		A (4.6)		B (10.1)		A (3.0)
	SIDRA 95th Q	207'		51'	5'	4'	10'	17'		

95th percentile volume exceeds capacity, queue may be longer

As shown in **Table 6.4**, the southbound approach currently operates at LOS F in the AM peak hour and is expected to continue to operate at LOS F in future years both with and without site traffic. Additionally, the proposed northbound site access is expected to operate at LOS F in the AM peak hour. While it is not uncommon for a stop controlled, side-street approach to experience long delays in peak hours, due to the AM elementary school drop-off, significant delays are expected on the northbound and southbound approaches.

To improve capacity and delays at this intersection, a traffic signal or roundabout should be considered at this intersection. Should a signal be installed at this intersection, the following laneage improvements are recommended:

- Extension of the eastbound left-turn lane from Stallings Road into the Elementary School Drive with 275 feet of storage
- Installation of protected phasing on the eastbound approach
- Construction of a westbound right-turn lane from Stallings Road into the Elementary School Drive with 150 feet of storage
- Striping of the existing pavement on the southbound approach (Elementary School Drive) to provide a dedicated left-turn lane and a shared through-right lane
- Construction of a left-turn lane with 125 feet of storage and a shared through-right lane on the northbound approach

With these improvements in place, the overall intersection is expected to operate at LOS E in the AM peak hour and LOS B in the PM peak hour. However, it should be noted that peak-hour signal warrants are not met at this intersection.

Should a roundabout be installed at this intersection to better mitigate the AM peak hour, a single lane roundabout is expected to operate at LOS D. But the roundabout would be expected to operate with a volume to capacity ratio (v/c) of 1.11 in the AM peak hour; indicating that a single lane roundabout would be over capacity at this intersection at the build-out of the site. With a right-turn lane on the westbound and southbound approaches, as shown in the Build IMP row of **Table 6.4**, the overall intersection is expected to operate at LOS A in the AM peak hour with a v/c of 0.72.

Therefore, the following improvements are recommended at this intersection for capacity purposes:

- Installation of a roundabout
- Construction of a single lane northbound approach
- Construction of a southbound right-turn lane from the Elementary School Drive onto Stallings Road with a minimum of 250 feet of storage (accomplished via restriping of the existing turn lanes)
- Construction of a single lane eastbound approach
- Construction of a westbound right-turn lane from Stallings Road into the Elementary School Drive with 100 feet of storage

Per coordination with the Town, the roundabout should be constructed in conjunction with the Town's planned second receiving lane on the Elementary School Drive. This lane will be constructed by the developer at the cost of the Town.

6.5 STALLINGS ROAD AND RAGING RIDGE ROAD/STALLINGS ROAD SUBDIVISION

Table 6.5 summarizes the LOS, control delay and 95th percentile queue lengths at the signalized intersection of Stallings Road and Raging Ridge Road/Stallings Road Subdivision.

Table 6.5 - Stallings Road and Raging Ridge Road/ Stallings Road Subdivision									
Condition	Measure	EB		WB		SB	NB		Intersection
		EBLT	EBR	WBL	WBTR	SBTLR	NBL	NBTR	
AM Peak Hour									
2018 Existing	LOS (Delay)	A (0.0)		A (2.5)		-	F (65.0)		-
	Synchro 95th Q	0'	0'	11'	0'	-	307'		
2023 Background - Roundabout	LOS (Delay)	B (12.8)		A (3.2)		B (13.7)	A (6.4)		A (8.7)
	SIDRA 95th Q	340'		75'		33'	98'		
2023 Build - Roundabout	LOS (Delay)	B (13.3)		A (3.2)		B (13.8)	A (6.6)		A (9.0)
	SIDRA 95th Q	356'		75'		34'	100'		
PM Peak Hour									
2018 Existing	LOS (Delay)	A (0.0)		A (1.2)		-	C (15.5)		-
	Synchro 95th Q	0'	0'	4'	0'	-	26'		
2023 Background - Roundabout	LOS (Delay)	A (2.1)		A (1.7)		A (7.0)	A (6.8)		A (2.7)
	SIDRA 95th Q	81'		80'		9'	23'		
2023 Build - Roundabout	LOS (Delay)	A (2.2)		A (1.7)		A (7.2)	A (7.1)		A (2.8)
	SIDRA 95th Q	89'		86'		10'	26'		

As shown in **Table 6.5**, under 2023 background conditions with the installation of a single lane roundabout by the Stallings Road Subdivision development, the overall intersection is expected to operate at LOS A in the AM and PM peak hours. The overall intersection and its approaches are expected to continue to operate at the same, acceptable levels of service with the addition of site traffic. Therefore, no capacity improvements are recommended at this intersection due to the proposed site.

7.0 Auxiliary Turn Lane Warrants

Warrants for additional turn-lane improvements for unsignalized intersection beyond those necessary for capacity were determined based on a review of the figure titled 'Warrant for Left and Right-Turn Lanes' found on page 80 in the *NCDOT Policy On Street And Driveway Access to North Carolina Highways*. The results of the warrants for left and right-turn lanes under 2023 build-out conditions are summarized by intersection below and included in the **Appendix**.

2018 Build-out Conditions

Stallings Road and Stallings Road Park Drive/Site Access #1

- Eastbound right-turn lane along Stallings Road with a minimum storage length of 50 feet

Stallings Road and Harrisburg Elementary School Drive/Site Access #2

- Westbound left-turn lane along Stallings Road with a minimum storage length of 50 feet

Auxiliary turn lanes are warranted at both Stallings Road and Stallings Road Park Drive/Site Access #1 and Stallings Road and Harrisburg Elementary School Drive/Site Access #2. Given the proposed roundabout at Site Access #2, it is recommended that the proposed site construct the warranted turn-lane at Site Access #1.

Although 50 feet of storage is warranted per the graphic (included in the **Appendix**), per NCDOT guidelines, a minimum of 100 feet of storage will be required for the warranted turn lane.

8.0 Traffic Signal Warrant Analysis

Based on the approved MOU, a peak hour traffic signal warrant analysis was performed for the 2023 build-out year for unsignalized study intersections, based on the guidelines published by the Federal Highway Administration (FHWA) in the *Manual on Uniform Traffic Control Devices (MUTCD)*, 2009 Edition.

For signal warrant analysis, the MUTCD provides the following standards:

- An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.
- The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following signal warrants:
 - Warrant 1, Eight-Hour Vehicular Volume
 - Warrant 2, Four-Hour Vehicular Volume
 - Warrant 3, Peak Hour
 - Warrant 4, Pedestrian Volume
 - Warrant 5, School Crossing
 - Warrant 6, Coordinated Signal System
 - Warrant 7, Crash Experience
 - Warrant 8, Roadway Network
 - Warrant 9, Intersection Near a Grade Crossing

Warrant 1 Condition A is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic signal. Warrant 1 Condition B is intended for application where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street. If a combination of Condition A and Condition B are not satisfied, Warrant 1 may be satisfied by Condition C.

Warrant 2 is intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic signal.

Warrant 3 is intended for use at a location where traffic conditions are such that for a minimum of one hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

A traffic control signal should not be installed unless one or more of the above warrants are met. However, the satisfaction of a traffic signal warrant or warrants should not in itself require the installation of a traffic control signal.

Table 8.1 shows the results of the signal warrant analyses for the unsignalized study area intersections under both 2023 background and build-out conditions, along with number of hours satisfied against the number of hours required. It should be noted that this analysis only reflects peak hour traffic volumes (Warrant 3). A full 13-hour count and traffic signal warrant analysis would be required at each of these locations before a signal is installed.

Table 8.1 – Traffic Signal Warrant Analysis Results Criteria satisfied/not satisfied (hours satisfied/required)		
Intersection	2023 Background	2023 Build-Out
Stallings Road and Stallings Road Park Drive/Site Access #1	0/2	0/2
Stallings Road and Harrisburg Elementary School Drive/Site Access #2	0/2	0/2

Based on results shown in **Table 8.1**, peak hour signal warrants (Warrant 3) are not met in either background or build conditions at the following intersections:

- Stallings Road and Stallings Road Park Drive/Site Access #1
- Stallings Road and Harrisburg Elementary School Drive/Site Access #2

Signal warrant calculations are included in the **Appendix**.

9.0 Crash Data Analysis

Crash data was obtained at study intersections for crashes that occurred between November 1, 2015, and October 31, 2018. Over this three-year period, 37 total crashes were reported at the five existing study intersections. The breakdown of crashes at these five study intersections by severity, frequency and accident type can be seen the tables below.

Table 9.1 – Crash Severity Summary

Crash Type	Number of Crashes
Fatal Crashes	0
Class A	0
Class B	2
Class C	8
Property Damage Only	27
Total	37

Table 9.1 above displays the total number of crashes by severity type from most to least severe. As shown, there were no fatal or Class A crashes reported in the study area intersections over the past three years. 'Class A' incidents are crashes in which serious injury is suspected, which can include significant loss of blood or broken bones. 'Class B' incidents are crashes in which minor injury is suspected, such as bruises or minor cuts. There were two of these crash types within the study area reported over the three years. There were 8 'Class C' crashes reported, which are defined as crashes wherein possible injuries occur. Possible injuries are injuries reported by the person or indicated by his/her behavior, but no wounds or injuries are physically present, such as limping or complaint of neck pain. There were 27 crashes in which only property damage occurred, meaning no injury was reported in 73% of the recorded crashes at the study intersections.

Table 9.2 – Accident Frequency Summary

Location	Crashes/100 MEV
Robinson Church Road and Tom Query Road	13.48
Stallings Road and Harrisburg Veterans Road	9.54
Stallings Road and Stallings Road Park Drive	0.00
Stallings Road and Harrisburg Elementary School Drive	8.99
Stallings Road and Raging Ridge Road	8.99
Average	8.2

Shown in **Table 9.2** are the accident frequency rates for each study intersection, reported in crashes per 100 million entering vehicles (MEV). Their rates resulted in a weighted average crash rate of 8.2 crashes per 100 MEV, with the highest rate occurring at the intersection of Robinson Church Road and Tom Query Road.

Table 9.3 – Accident Type Summary

Accident Type	Robinson Church Road and Tom Query Road	Stallings Road and Harrisburg Veterans Road	Stallings Road and Stallings Road Park Drive	Stallings Road and Harrisburg Elementary School Drive	Stallings Road and Raging Ridge Road
Angle	1	0	0	0	0
Fixed Object	4	0	0	0	0
Left-Turn, Different Roadways	1	1	0	0	4
Left-Turn, Same Roadway	0	4	0	0	1
Other Collision with Vehicle	0	1	0	0	1
Overturn/Rollover	0	1	0	0	0
Ran off Road - Right	0	1	0	0	0
Rear End, Slow or Stop	6	5	0	1	0
Rear End, Turn	1	2	0	0	0
Right-Turn, Different Roadways	0	1	0	0	0
Sideswipe Same Direction	0	1	0	0	0
Total	13	17	0	1	6

As seen in **Table 9.3**, at the five study intersections, the most common crash type was a rear end collision due to slow or stop, with over 30% of crashes. This crash type is often associated with mainline traffic along a corridor with unsignalized turning movements with the lack of turn lanes onto side-streets. The second most common crash type was a left-turn collision. This crash type is often associated with lack of adequate gaps or poor sight distance.

10.0 Mitigation Improvements

Based on the capacity analyses performed at each of the identified study intersections, along with the review of auxiliary turn-lane warrants contained herein, the following improvements are identified to mitigate the impact of the proposed development on the adjacent street network:

Robinson Church Road and Tom Query Road

- Contribution of 25% of the overall cost of planned Town improvements to this intersection, not to exceed \$100,000

Stallings Road and Harrisburg Veterans Road

- Restriping of the eastbound through lane to provide a shared through-left lane
- Implementation of split phasing on the eastbound and westbound approaches
- Installation of a traffic signal at the intersection of Stallings Road and Hickory Ridge Road to be connected to the signal cabinet at Stallings Road and Harrisburg Veterans Road

Stallings Road and Stallings Road Park Drive/Site Access #1

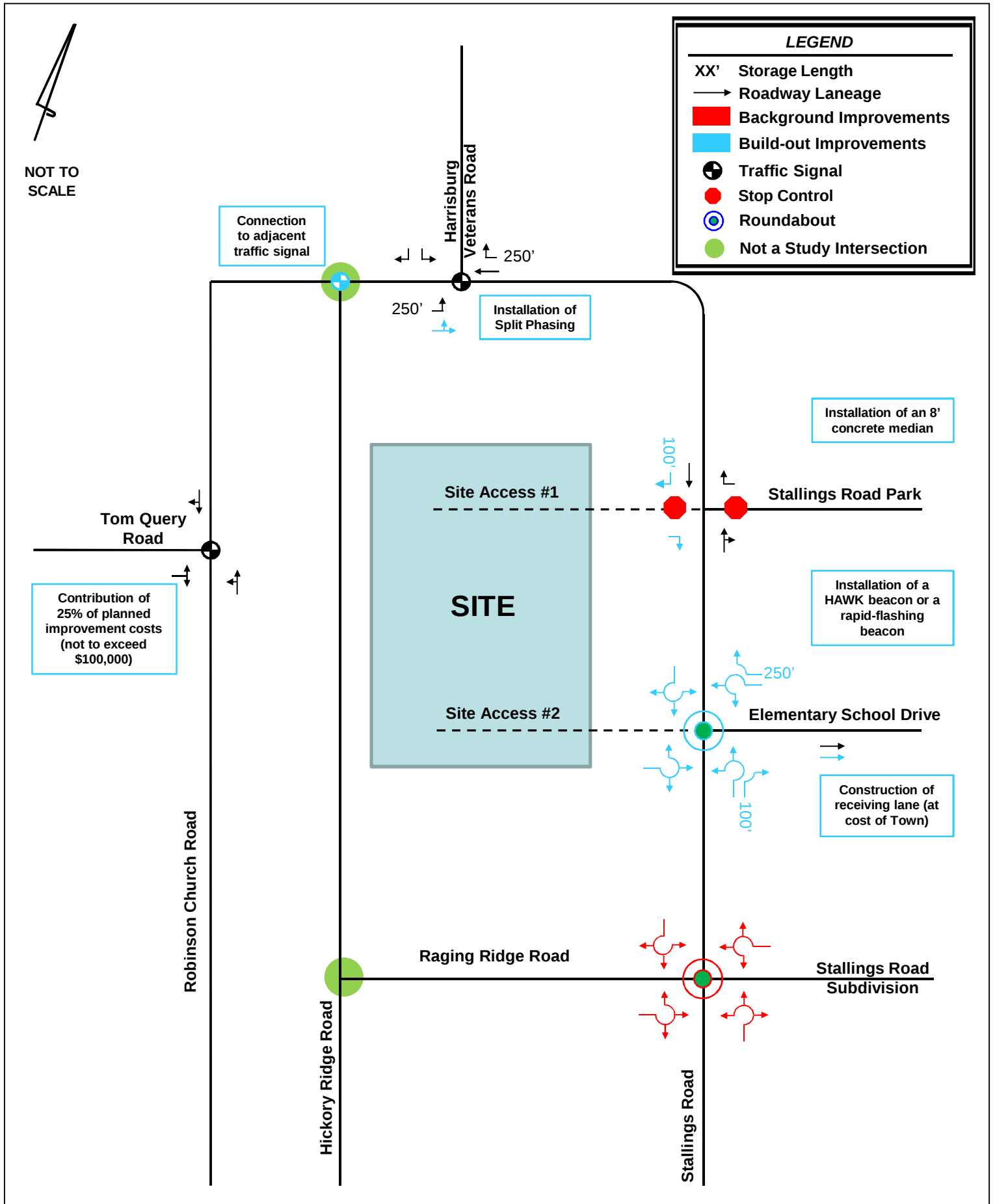
- Installation of an eastbound right-turn lane from Stallings Road into Site Access #1 with 100 feet of storage
- Installation of an 8' concrete median to serve as a refuge for pedestrian crossing and to convert the intersection to a right-in/right-out

Stallings Road and Harrisburg Elementary School Drive/Site Access #2

- Installation of a roundabout
- Construction of a single lane northbound approach
- Construction of a southbound right-turn lane from the Elementary School Drive onto Stallings Road with a minimum of 250 feet of storage (accomplished via restriping of the existing turn lanes)
- Construction of a single lane eastbound approach
- Construction of a westbound right-turn lane from Stallings Road into the Elementary School Drive with 100 feet of storage
- Construction of second receiving lane on the Elementary School Drive (this lane will be constructed by the developer at the cost of the Town)

Per the Town, installation of a High-Intensity Activated Crosswalk (HAWK) beacon or rapid-flashing beacon will be required to provide a connection from the proposed development to Stallings Road Park.

The mitigation identified within the study area is shown in **Figure 10.1**. The improvements shown on this figure are subject to approval by NCDOT and the Town of Harrisburg. All additions and attachments to the State and Town roadway system shall be properly permitted, designed and constructed in conformance to standards maintained by the agencies.



APPENDIX



TOWN OF HARRISBURG

Agenda Item Details

Title:

Planning Board Vacancies (2) and Applications.

Presenting Personnel:

Suggested Motion or Action:

Review applications and make recommendations for appointment to the Planning and Zoning Board by the Town Council.

Description/Background:

There are two (2) positions on the Planning and Zoning Board whose appointment terms expired on June 30, 2019. Staff advertised for the vacant positions on June 18, 2019 and are accepting applications until July 15, 2019.

Applications received for the vacant positions will be forwarded to the Planning and Zoning Board members after the closing date.

Recommendation:

Staff recommends reviewing the applications and making Planning and Zoning Board recommendation for appointments to the Town Council.

Fiscal Impact:

Attachments:

None