



Memo

To: Rolesville Planning Board
From: Meredith Gruber, Planning Director
Date: September 23, 2022
Re: Map Amendment (Rezoning) MA 22-03 Parker Ridge

Background

The Town of Rolesville Planning Department received a Map Amendment (Rezoning) application in February 2022 for 86.89 acres located at 82 School Street, 120 School Street, and 201 Redford Place Drive with Wake County PINs 1758988411, 1758884270, 1768091558, and 1758983710. The applicant, Lennar Carolinas LLC, is requesting to change the zoning from Residential Low (RL) and Residential and Planned Unit Development (R&PUD) to Residential Medium Conditional Zoning District (RM-CZ) and Residential High Conditional Zoning District (RH-CZ). A concept plan showing 162 single family lots at a density of 2.80 units per acre, and 114 townhome lots at a density of 3.93 units per acre, is included as a condition of the rezoning request. The average density of the entire neighborhood is 3.18 units per acre.



The applicant has proposed the following conditions as part of the Parker Ridge rezoning request:

1. Development of the property shall be in substantial conformance with the accompanying Exhibit C Concept Plan. Locations shown for committed elements including, but not limited to greenways, streets, and open areas shown on Exhibit C are conceptual and provided for illustration and context only. Final locations of elements shall be determined at subsequent stages of approval.
2. The following uses shall be prohibited on the portion of the property zoned Residential High Density (the "RH Parcel"):
 - a. Family Care Facility
 - b. Live-Work Unit
 - c. Residential Care (ALF, ILF, CCF)
 - d. Telecommunications Tower
3. The RH Parcel shall have a maximum of 120 townhouse dwellings.
4. The following uses shall be prohibited on the portion of the property zoned Residential Medium Density (the "RM Parcel"):
 - a. Family Care Facility
 - b. Telecommunications Tower
5. The RM Parcel shall have a maximum of 170 single-family detached dwellings.
6. A single family detached home shall be developed and donated as part of Wounded Warrior Homes, Operation Coming Home, Operation Finally Home, or similar organization providing homes to veterans.
7. The development shall include at least one pollinator garden.
8. Perimeter buffers shall be provided as shown on the Concept plan. Type 3 and Type 4 perimeter buffers may include 6' fences instead of walls.
9. All single family detached dwellings shall have the following features:
 - a. A 2 car garage;
 - b. All garage doors shall have windows;
 - c. A minimum 24" stone or masonry water table;
 - d. If masonry is not the predominant first floor finish, then the front elevation shall have 2 types of siding. For example, horizontal siding may be combined with shake/board and batten;
 - e. Roof pitches on the main roof will have a pitch between 5 on 12 and 12 on 12;
 - f. Roof materials shall be asphalt shingles, metal, copper or wood;
 - g. Minimum 12" front overhangs;
 - h. A covered stoop or porch at least 20 sf and 5 ft deep;
 - i. Shutters or window trim shall be on front façade windows;
 - j. A minimum 64 sf rear patio;
 - k. At least one window on each side elevation; and
 - l. A varied color palette shall be used throughout the subdivision.

10. All townhouse dwellings shall have the following features:
 - a. A 1 or 2 car garage;
 - b. A minimum 24" stone or masonry water table;
 - c. If masonry is not the predominant first floor finish, then the front elevation shall have 2 types of siding. For example, horizontal siding may be combined with shake/board and batten;
 - d. Roof materials shall be asphalt shingles, metal, copper or wood;
 - e. Minimum 12" front overhangs;
 - f. A covered stoop or porch at least 20 sf and 5 ft deep;
 - g. Shutters or window trim shall be on front façade windows;
 - h. A minimum 64 sf rear patio;
 - i. At least one window on each side elevation (excluding interior units); and
 - j. A varied color palette shall be used throughout the subdivision.
11. The developer shall offer to dedicate the section of land labeled as "Parcel – A – Town of Rolesville Park Expansion" on the Concept Plan for use as a public park. This land shall count toward open space requirements for the overall development.

Applicant Justification

The applicant provided the justification statement below for their rezoning request. The complete application is included as an attachment.

Parker Ridge is a proposed residential development with a combination of single family detached and single family attached (townhouse) uses. Parker Ridge will benefit the public by creating more housing choices and needed housing supply in a key location near downtown Rolesville. The request will allow for development that is consistent with nearby neighborhoods and will complement the established character of the surrounding area. Parker Ridge includes a significant amount of open space, offsetting any impacts of the development and preserving the natural features of the site. Parker Ridge is consistent with the Town of Rolesville's long range plans and will further the Town's goals outlined in the Rolesville Comprehensive Plan.

Parker Ridge is consistent with the Future Land Use Map. The subject property is designated as High Density Residential on the Future Land Use Map. (Comprehensive Plan p. 39) This category contemplates mixed use neighborhoods consisting of single family, duplex, condominium, townhouse, or multifamily residential uses. (Comprehensive Plan p. 37) Parker Ridge will include the desired mixture of uses, with a combination of single family detached and single family attached uses, accompanied by substantial open space.

Parker Ridge also fulfills the following additional goals of the Comprehensive Plan:

Major Recommendation: Create a Diversity of New Houses, but Ensure High Quality and Limited Locations for Multi-Family Units. The Comprehensive Plan calls for more dense residential uses in limited, appropriate locations including locations closer to Main Street and areas closer to downtown. Parker Ridge is in close proximity to Main Street and Downtown. The site is a short walking distance from the many services and business currently located along Main Street and is an appropriate location for the proposed mix of residential uses.

Major Recommendation: *Celebrate Downtown*. The Comprehensive Plan seeks mixed use development, including diverse housing options, near downtown to activate the downtown core. Parker Ridge will offer a mix of residential uses in the vicinity of the downtown core, in a location walkable to existing commercial development and will help to activate the downtown core.

Neighborhood Meeting

The applicant held a neighborhood meeting on August 10, 2022 at the Rolesville Community Center. Meeting minutes are included as an attachment.

Comprehensive Plan

Land Use

The Future Land Use Map shows the subject parcels as High Density Residential, which is described as a mixed use neighborhood of single family, duplex, condominium, townhouse, or multifamily residential. These are lots or tracts at a density range of six to twelve dwelling units per acre including preserved open space areas.

Single family and townhome dwellings are residential types listed in the High Density Residential land use category definition; however, the average density for the proposed development is 3.18 units per acre which falls in the Medium Density Residential range.

Community Transportation Plan

The Town of Rolesville's Community Transportation Plan includes recommendations for thoroughfares, collectors, and intersections.

Thoroughfare Recommendations

- The subject property has no frontage on any thoroughfare roadways.
- The closest thoroughfares the proposed development are Main Street and Young Street.

Collector Recommendations

- Redford Place Drive is an existing collector roadway that passes through the proposed Parker Ridge development.
- School Street is proposed to continue through the subject property and is shown on the Parker Ridge Concept Plan.
- Another collector is proposed to connect School Street to Young Street, and a street stub is shown on the Parker Ridge Concept Plan.

Intersection Recommendations

- There are no intersection recommendations associated with the subject property.
- The closest intersection recommendations are located at Main Street and Redford Place Drive as well as at Main Street and Young Street.

Greenway Plan

As per the 2022 Greenway Plan, proposed greenways are shown in the following locations:

- Along the northwestern side of Redford Place Drive
- Running north-south through the single family portion of the proposed development

- In addition, a greenway connection is shown through the park between the proposed townhome portion and single family portion of the development.

Consistency

The applicant's request for 162 single family lots and 114 townhome lots at an average density of 3.18 units is consistent with the Town of Rolesville's Comprehensive Plan for the following reasons:

- The proposed housing types, single family and townhomes, are consistent with the High Density Residential land use category
- Community Transportation Plan collector recommendations are reasonably illustrated in the rezoning concept plan
- Greenways are shown as recommended in the 2022 Greenway Plan

The applicant's request may not be consistent with the Town's Comprehensive Plan for the following reason:

- The proposed density for the single family portion of Parker Ridge is 2.80 units per acre and for the townhome portion is 3.93 units per acre. The average density of 3.18 units per acre is lower than the High Density Residential land use category's typical density of 6 – 12 units per acre.
- The collector street design may function better with School Street being the primary route with Long Melford Drive forming a T-intersection on the western side.

Traffic

Traffic Impact Analysis

The consultant firm Stantec performed the Traffic Impact Analysis for this project on behalf of the Applicant and the Town; see Attachment 8 for the Final Report dated August 15, 2022. Traffic counts were obtained on Thursday, June 9, 2022 at four locations. The project inputs were 162 single-family (detached) homes and 114 townhomes, with build-out anticipated in 2028. Primary access is described as coming from the Redford Place roundabout, with an additional access (Concept Plan Street D) via extension of School Street from S. Main Street.

TIA Summary - Trip generation	<i>Entering</i>	<i>Existing</i>	<i>Total</i>
AM Peak (7-9 am)	47	123	170
PM Peak (4-6 pm)	134	86	220
Weekday Daily Trips	--	--	2,391

Five intersections were studied for capacity analysis and level of service impact of this development.

TIA Summary – Intersection Improvements	
South Main at Old Rogers / School St.	No Improvements. * <i>Southbound Old Rogers should consider RI/RO.</i>
South Main at Redford Place / Roger Rd.	No Improvements - Intersection functions at LOS E under (existing) No Build and Build scenarios at PM Peak.

School St at School driveway/ Scarboro driveway	No Improvements
Redford Place at School driveway	No Improvements
Redford Place at (Development) Access A / Access B	Construct new streets at opposite sides of roundabout, with 100' minimal internal protective stems

Development Review

The Technical Review Committee (TRC) reviewed this rezoning request and concept plan.

- The only outstanding item is further discussion about greenway alignment details.

Staff Recommendation

Staff finds that the proposed rezoning request and associated residential project is generally consistent with the Comprehensive Plan on many fronts but could more greatly fulfill the High Density Residential vision with a varied, denser housing and an overall mixed use development.

Staff may recommend approval with the following changes:

- Remove applicant's Condition 8: Perimeter buffers shall be provided as shown on the Concept plan. Type 3 and Type 4 perimeter buffers may include 6' fences instead of walls.
- Redesign collector street with School Street being the primary route and Long Melford Drive forming at T-intersection on the western side of the single family residential layout.

Proposed Motion

Motion to recommend (approval or denial) of rezoning request MA 22-03 Parker Ridge.

Attachments

1	Application
2	Vicinity Map
3	Future Land Use Map
4	Zoning Map
5	Neighborhood Meeting Minutes
6	Concept Plan
7	Conditions
8	Traffic Impact Analysis



Case No. MA 22-03
Date rcvd 2-1-2022

Map Amendment Application

Contact Information

Property Owner See attached addendum for all owner contact information

Address See attached addendum City/State/Zip See attached addendum

Phone See attached addendum Email See attached addendum

Developer Lennar Carolinas LLC c/o Collier Marsh

Contact Name Collier Marsh

Address 301 Fayetteville Street City/State/Zip Raleigh, NC 27601

Phone 919-835-4663 Email colliermarsh@parkerpoe.com

Property Information

Address 82 School Street, 201 Redford Place Drive, and 120 School Street (See attached addendum for additional information by parcel)

Wake County PIN(s) 1758988411, 1758884270, 1768091558, and 1758983710

Current Zoning District RL, R and PUD Requested Zoning District RM and RH

Total Acreage 88.36

Owner Signature

I hereby certify that the information contained herein is true and completed. I understand that if any item is found to be otherwise after evidentiary hearing before the Town Board of Commissioners, that the action of the Board may be invalidated.

Signature William McLeod Power Jr. Date 12-29-2021

STATE OF NORTH CAROLINA

COUNTY OF Beaufort

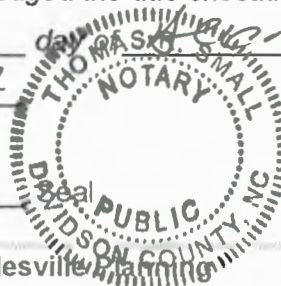
I, a Notary Public, do hereby certify that William McLeod Power Jr.

personally appeared before me this day and acknowledged the due execution of the foregoing instrument. This

the 29 day of December 20 21

My commission expires 1-7-2022

Signature [Signature]



Town of Rolesville Planning



Case No. _____

Date _____

Map Amendment Application

Contact Information

Property Owner See attached addendum for all owner contact informationAddress See attached addendumCity/State/Zip See attached addendumPhone See attached addendumEmail See attached addendumDeveloper Lennar Carolinas LLC c/o Collier MarshContact Name Collier MarshAddress 301 Fayetteville StreetCity/State/Zip Raleigh, NC 27601Phone 919-835-4663Email colliermarsh@parkerpoe.com

Property Information

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Signature W. Mark R. L. Date 12-29-2021

STATE OF NORTH CAROLINA

COUNTY OF GallatinI, a Notary Public, do hereby certify that William Mark Parker Jrpersonally appeared before me this day and acknowledged the due execution of the foregoing instrument. This the 29 day of December 20 21.My commission expires 1-7-2022Signature [Signature]

Town of Rolesville Planning



Case No. _____

Date _____

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City/State/Zip See attached addendum

Phone See attached addendum

Email See attached addendum

Developer Lennar Carolinas LLC c/o Collier Marsh

Contact Name Collier Marsh

Address 301 Fayetteville Street

City/State/Zip Raleigh, NC 27601

Phone 919-835-4663

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Owner Signature

I hereby certify that the information contained herein is true and completed. I understand that if any item is found to be otherwise after evidentiary hearing before the Town Board of Commissioners, that the action of the Board may be invalidated.

Signature Catherine Faye Parker Date 12/29/2021

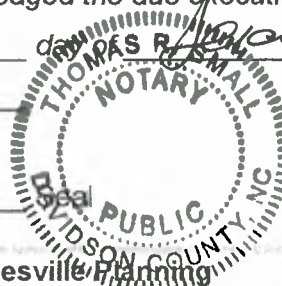
STATE OF NORTH CAROLINA

COUNTY OF Gallatin

I, a Notary Public, do hereby certify that Catherine Faye Parker
personally appeared before me this day and acknowledged the due execution of the foregoing instrument. This
the 29 day of December, 20 21.

My commission expires 1-7-2027

Signature [Signature]



Town of Rolesville Planning



Case No. _____

Date _____

Map Amendment Application

Contact Information

Property Owner See attached addendum for all owner contact information

Address See attached addendum City/State/Zip See attached addendum

Phone See attached addendum Email See attached addendum

Developer Lennar Carolinas LLC c/o Collier Marsh

Contact Name Collier Marsh

Address 301 Fayetteville Street City/State/Zip Raleigh, NC 27601

Phone 919-835-4663 Email colliermarsh@parkerpoe.com

Property Information

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Total Acreage 88.36

Owner Signature

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Signature  Date 12/21/21

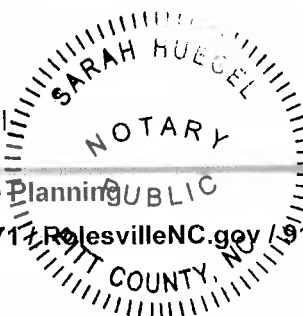
STATE OF NORTH CAROLINA

COUNTY OF DH

I, a Notary Public, do hereby certify that Thomas Glenon
personally appeared before me this day and acknowledged the due execution of the foregoing instrument. This
the 21st day of December 2021

My commission expires 12/2025

Signature  Seal



Town of Rolesville Planning

PO Box 250 / Rolesville, North Carolina 27571 / RolesvilleNC.gov / 919.554.6517

Metes and Bounds Description of Property

See attached Exhibit B

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Rezoning Justification

See attached addendum

EXHIBIT A
to
School Street Rezoning Application
Property and Owner Contact Information

Wake County PIN: 1758988411

Address: 82 School Street, Rolesville, NC 27571
Current Zoning District: RL
Requested Zoning District: RM and RH
Total Acreage: 60.97 acres
Property Owner: W. Harold Parker Jr and Catherine Faye Parker
Owner Mailing Address: 149 Stonebridge Drive
City/State/Zip: New London, NC 28127
Phone: N/A
Email: N/A

Wake County PIN: 1768091558

Address: 0 School Street, Rolesville, NC 27571
Current Zoning District: RL
Requested Zoning District: RM
Total Acreage: 0.14 acres
Property Owner: W. Harold Parker Jr and Catherine Faye Parker
Owner Mailing Address: 149 Stonebridge Drive
City/State/Zip: New London, NC 28127
Phone: N/A
Email: N/A

Wake County PIN: 1758884270

Address: 201 Redford Place Drive, Rolesville, NC 27571
Current Zoning District: R and PUD
Requested Zoning District: RH
Total Acreage: 26.99 acres
Property Owner: Rolesville Development LLC
Owner Mailing Address: PO Box 30803
City/State/Zip: Greenville, NC 27833
Phone: N/A
Email: N/A

Wake County PIN: 1758983710

Address: 120 School Street, Rolesville, NC 27571
Current Zoning District: RL
Requested Zoning District: RM
Total Acreage: 0.4 acres
Property Owner: W. Harold Parker, Jr.
Owner Mailing Address: 149 Stonebridge Drive
City/State/Zip: New London, NC 28127
Phone: N/A
Email: N/A

Rezoning Justification

Parker Ridge is a proposed residential development with a combination of single family detached and single family attached (townhouse) uses. Parker Ridge will benefit the public by creating more housing choices and needed housing supply in a key location near downtown Rolesville. The request will allow for development that is consistent with nearby neighborhoods and will complement the established character of the surrounding area. Parker Ridge includes a significant amount of open space, offsetting any impacts of the development and preserving the natural features of the site. Parker Ridge is consistent with the Town of Rolesville's long range plans and will further the Town's goals outlined in the Rolesville Comprehensive Plan.

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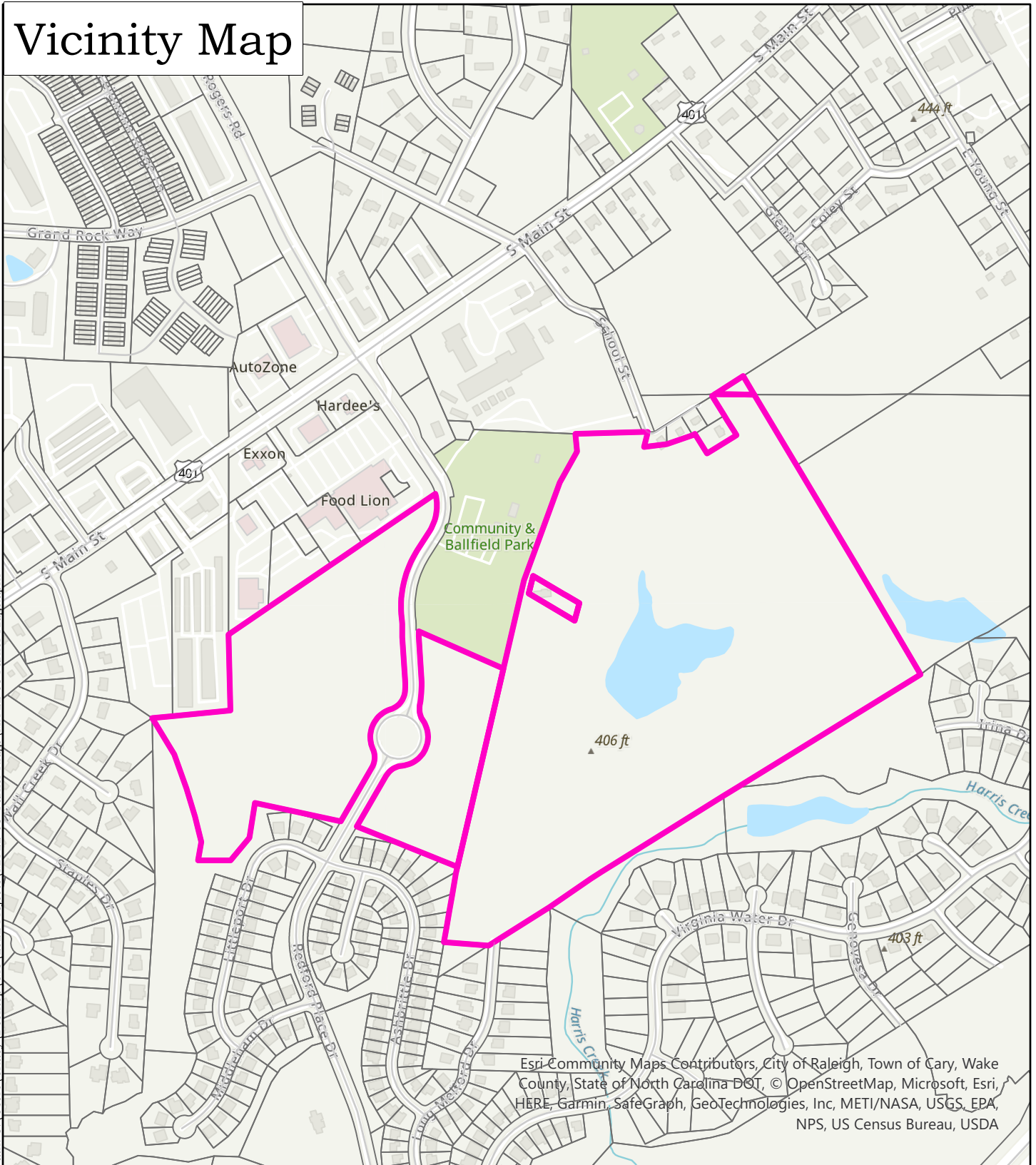
Major Recommendation: *Create a Diversity of New Houses, but Ensure High Quality and Limited Locations for Multi-Family Units.* The Comprehensive Plan calls for more dense residential uses in limited, appropriate locations including locations closer to Main Street and areas closer to downtown. Parker Ridge is in close proximity to Main Street and Downtown. The site is a short walking distance from the many services and business currently located along Main Street and is an appropriate location for the proposed mix of residential uses.

Major Recommendation: *Celebrate Downtown.* The Comprehensive Plan seeks mixed use development, including diverse housing options, near downtown to activate the downtown core. Parker Ridge will offer a mix of residential uses in the vicinity of the downtown core, in a location walkable to existing commercial development and will help to activate the downtown core.

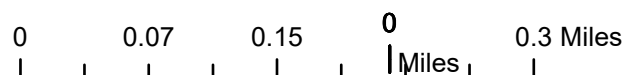
Vicinity Map

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Future Land Use Map

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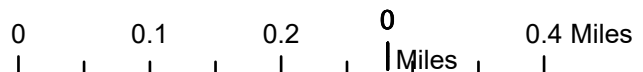
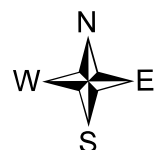
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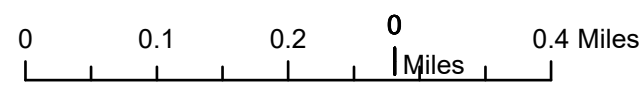
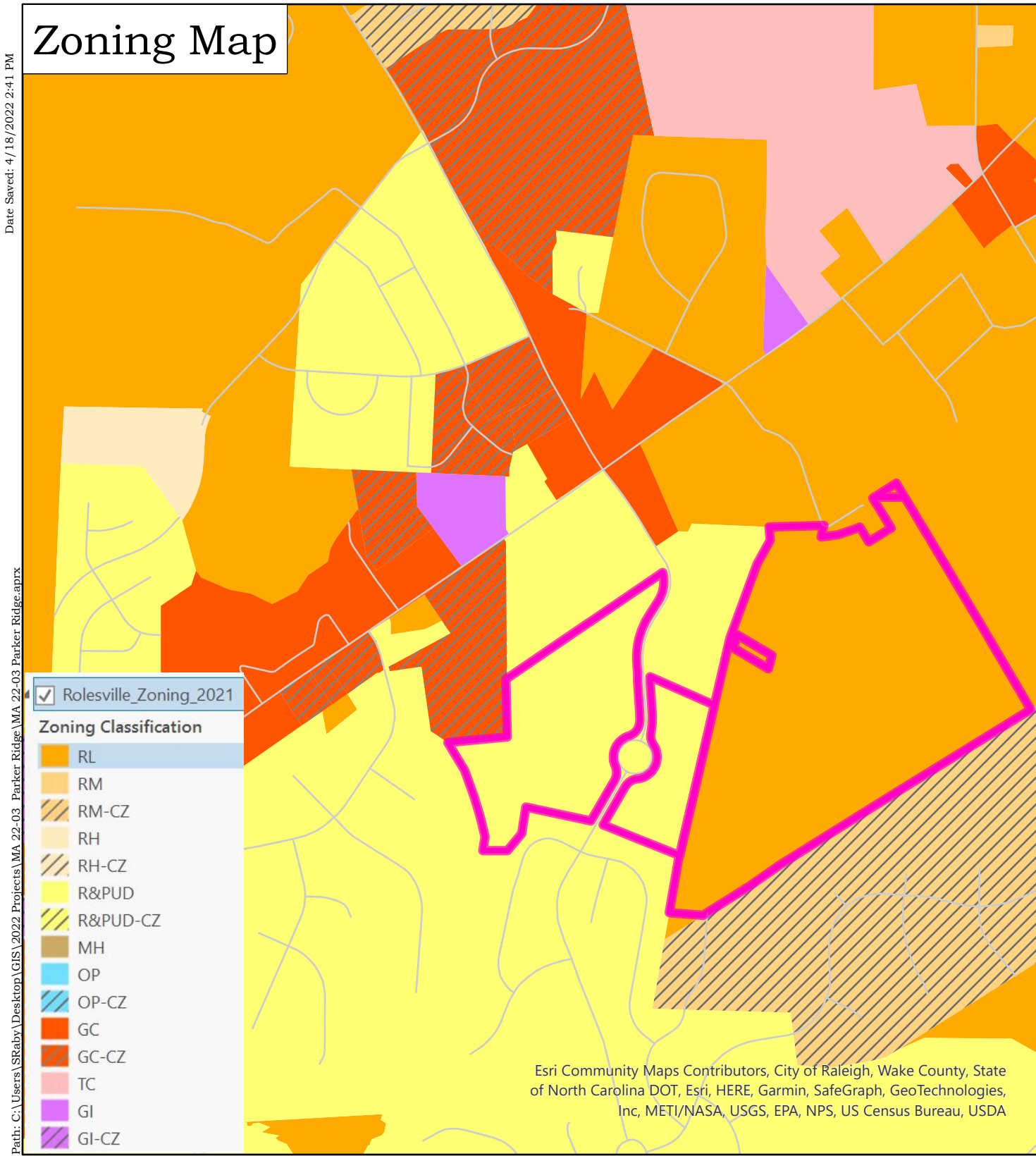
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ROLU_CLASS

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Town Center
- Mixed Use Neighborhood
- Commercial
- Business Park
- Industrial
- School
- Preserved Open Space
- Water Sewer Services

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PARKER RIDGE NEIGHBORHOOD MEETING MINUTES

Parker Ridge

August 10, 2022 Neighborhood Meeting Minutes

The Applicant held a neighborhood meeting for the Parker Ridge rezoning at the Town of Rolesville Community Center on August 10th, 2022. The following members of the project team were in attendance to present and answer questions: Charlie Yokley from Lennar, Michael Taylor from Lennar, Kelly Race from BGE, and Collier Marsh from Parker Poe. Approximately 15 neighbors were in attendance. Collier Marsh began by introducing the project team, gave an overview of the rezoning process, and then described the proposed rezoning. The floor was then opened to questions from the attending neighbors. The following is a summary of the questions asked by neighbors and the applicant's responses.

Question: What is the timeframe for development.

Applicant Response: There are several steps to go in the process. We are currently in the rezoning process, which is followed by the site plan process. We are targeting early 2024 for the start of construction.

Question: How tall will the Townhomes be?

Applicant Response: Two stories.

Question: What is the project's open space?

Applicant Response: Open space includes all of the open land outside of individual lots and street rights of way. In this project, the open space includes environmentally sensitive areas, greenways, buffers, and other open areas.

Question: Will there be buffers provided at the perimeter of the development adjacent to Villages of Rolesville?

Applicant Response: Yes, we are proposing buffers along our perimeter. Along the Villages of Rolesville Boundary, we are proposing a 25' Type 3 perimeter buffer.

Question: How does the project address traffic in the area?

Applicant Response: The Town has completed its Traffic Impact Analysis and did not recommend any offsite traffic improvements. We have engaged our own traffic engineer to review the Town's Traffic Impact Analysis.

PARKER RIDGE
NEIGHBORHOOD MEETING MINUTES

Question: Have you evaluated the School Street access and backups related to student drop offs?

Applicant Response: Yes, we are working with Wake County Schools to see what can be done.

Question: Where will construction traffic go?

Applicant Response: Construction traffic will be directed to use main roads where possible and avoid neighborhood streets. Lennar has onsite construction managers to ensure rules are followed.

Question: Will the project require blasting? What procedures are followed?

Applicant Response: We do expect some blasting due to existing rock. There are extensive requirements for blasting, including permitting and notice requirements that must be followed.

Question: What will happen to environmentally sensitive areas?

Applicant Response: Environmentally sensitive areas are being preserved and, where possible, activated with greenway trails for the public to enjoy.

Question: Will greenways run through neighboring properties?

Applicant Response: No. The greenways we are proposing are entirely on our property and have been coordinated with the Town.

Question: Can fences be added in buffers?

Applicant Response: We can look into adding fences where they are not already being provided.

After the question and answer session, the applicant team had informal discussions with several neighbors and the meeting concluded at 7:30 pm

CONCEPT PLAN FOR
PARKER RIDGE
EXHIBIT C
82 SCHOOL STREET
ROLESVILLE, NORTH CAROLINA 27571

SITE DATA TABLE

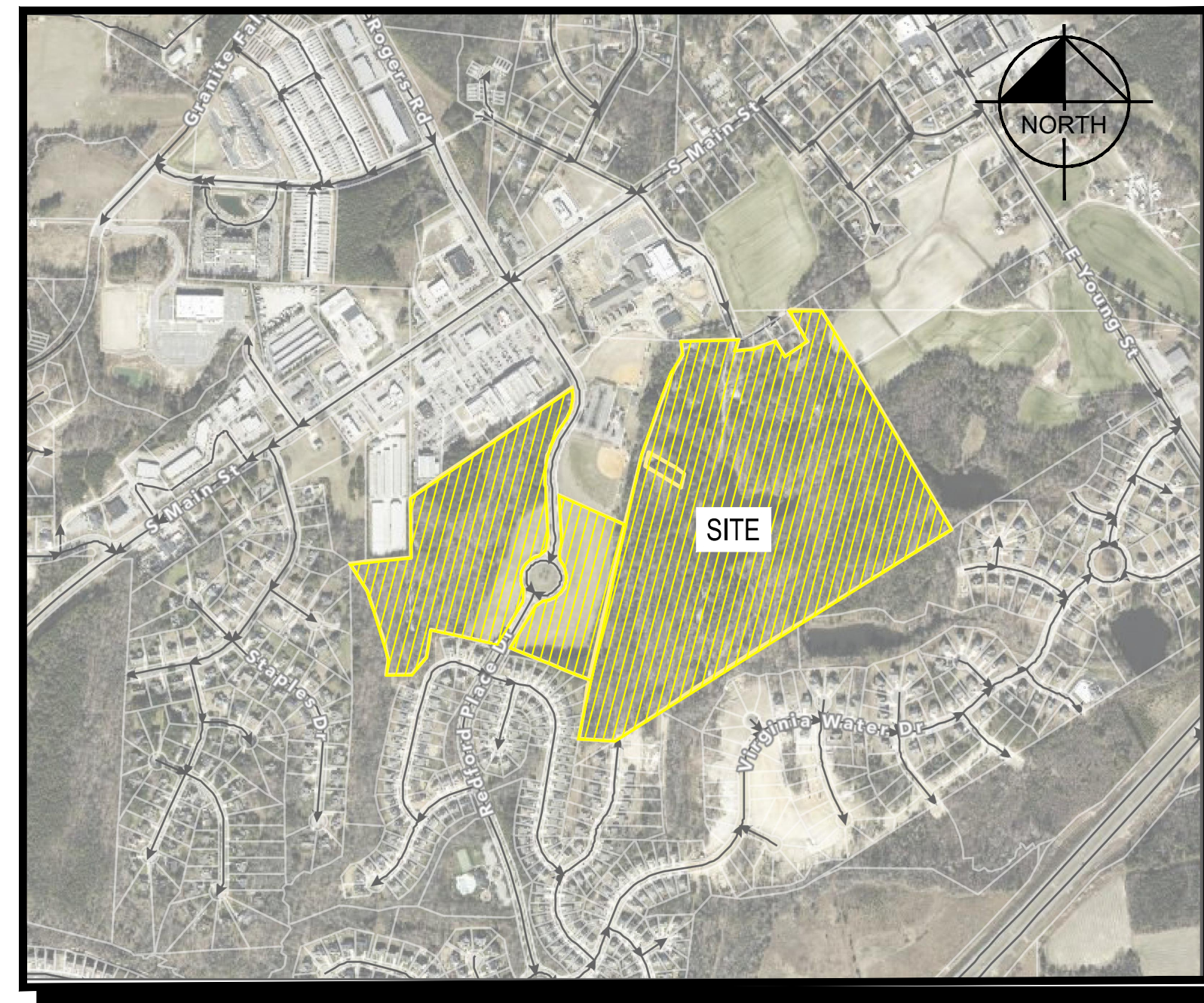
OWNER

W. HARLOD PARKER JR. / ROELSVILLE DEVELOPMENT, LLC

DEVELOPER

LENNAR OF CAROLINAS, LLC

			SETBACKS MINIMUM			
			RM (CLUSTER) SINGLE-FAMILY DETACHED)			
	PIN#	AREA (AC)	AREA (SF)	FRONT	20'	
	1758988411	59.51	2,592,300	SIDE	5'	
	1758983710	0.39	17,121	CORNER SIDE	10'	
	1758884270 E	7.12	310,215	REAR	20'	
	1758884270 W	19.86	865,243	MIN FRONT LOT WIDTH	40'	
				MIN AREA	5000 SF	
	GROSS AREA	86.89	3,784,879			
	ROW DEDICATION	0.00	0	SF	AC	
	NET AREA	86.89	3,784,879	RM-CZ CLUSTER (SINGLE-FAMILY DETACHED)		
				FINAL TRACT AREA	2,521,690	57.89
	EXISTING ZONING	RL		TOTAL UNITS	162	
	EXISTING USE	VACANT/AG		PROPOSED DENSITY (DU/AC)	2.8	
	FUTURE LAND USE	HDR		MAXIMUM DENSITY (DU/AC)	5	
	PROPOSED ZONING	RH/RM CLUSTER		PUBLIC GREENWAY (EST. 30' ESTM WIDTH)	150,754	3.46
	PROPOSED USE	RESIDENTIAL		CLUSTER OPEN SPACE REQUIRED 40%	1,008,676	23.16
				PROVIDED OPEN SPACE	1,008,676	23.16
				RH-CZ (TOWNHOMES)		
				FRONT	15'	
				PARKING SETBACK FOR TOWNHOMES	18'	
				BUILDING SEPARATION	30'	
				SIDE	10'	
				CORNER SIDE	15'	
				REAR	15'	
				MIN FRONT LOT WIDTH	20'	
				RH-CZ (TOWNHOMES)	SF	AC
				FINAL TRACT AREA	1,263,191	29.00
				TOTAL UNITS	114	
				PROPOSED DENSITY (DU/AC)	3.93	
				MAXIMUM DENSITY (DU/AC)	9	
				TOWNHOME TRACT AREA	625,873	14.37



SITE LOCATION MAP
NOT TO SCALE

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
C0-0	COVER SHEET
C1-0	EXISTING CONDITIONS
C1-1	EXISTING CONDITIONS
C2-0	PROPOSED ZONING DISTRICT
C3-0	OVERALL CONCEPT PLAN
C3-1	ENLARGED CONCEPT PLAN
C3-2	ENLARGED CONCEPT PLAN

PROJECT OWNER AND CONSULTANT INFORMATION		
DEVELOPER: LENNAR CORPORATION 1100 PERIMETER PARK DRIVE, SUITE 112 MORRISVILLE, NC 27560 (919) 236-3052 CONTACT: CHARLIE YOKLEY, AICP	ENGINEER: BGE, INC 5400 WADE PARK BOULEVARD RALEIGH, NORTH CAROLINA 27607 (919) 276-0111 CONTACT: SHAYNE LEATHERS, P.E.	SURVEYOR: BATEMAN CIVIL SURVEY COMPANY THROUGH THE SPAULDING GROUP 2524 RELIANCE AVENUE APEX, NORTH CAROLINA 27539 (919) 577-1080 EXT. 115 CONTACT: STEVEN CARSON



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DRAWN BY:	SL/KH				
REVIEWED BY:	SL				
	SL/KH				
	REV	DATE	DESCRIPTION		
	△	03/31/2022	PER TOWN OF ROLESVILLE COMMENTS		

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5440 WADE PARK BLVD, SUITE 102
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**PARKER RIDGE
MASTER PLAN**
82 SCHOOL STREET
ROLESVILLE / NORTH CAROLINA / 27571

COVER SHEET



LEGEND

- PUBLIC GREENWAY (EST. 10' TRAIL IN 20' ESMT)
- PERIMETER BUFFERS
- OPEN SPACE
- ENVIRONMENTAL AREAS
- PROPOSED ZONING LINE
- TOWNHOME TRACT AREA
- SINGLE FAMILY
- TOWNHOME (FRONT LOAD)
- TOWNHOME (ALLEY)
- TOWN OF ROLESVILLE PARK EXPANSION PROPERTY (AREA CREDITED TOWARD OPEN SPACE REQUIREMENTS OF OVERALL PROJECT)
- POLLINATOR GARDEN

LOCATIONS SHOWN FOR COMMITTED ELEMENTS INCLUDING, BUT NOT LIMITED TO GREENWAYS, STREETS, AND OPEN AREAS ARE CONCEPTUAL AND PROVIDED FOR ILLUSTRATION AND CONTEXT ONLY. FINAL LOCATIONS OF ELEMENTS SHALL BE DETERMINED AT SUBSEQUENT STAGES OF APPROVAL.

DESIGNED BY: SL/KH

DRAWN BY: SL/KH

REVIEWED BY: SL

ADJOINING PROPERTY OWNERS			
(A) MARQUIS BRYANT PIN# 175897232	(G) GARY W. PARRISH & CHARLENE T. PARRISH PIN# 1758976325	(M) THE VILLAGE AT ROLESVILLE HOMEOWNERS ASSOCIATION, INC. PIN# 1758976606	(S) RICHARD E. DUNN ET AL. (HEIRS OF MARY CATHRYN DUNN) PIN# 1758999444
(B) JOHN SHANNON POPE & ALICIA POPE PIN# 1758979088	(H) THOMAS E. AUGUSTINE & KATHARINE THERESSA SILEO-AUGUSTINE PIN# 1758978431	(N) THE VILLAGE AT ROLESVILLE HOMEOWNERS ASSOCIATION, INC. PIN# 1758977301	(T) ALBERT EMERY BURKE & KIMBERLY LUANNE BURKE PIN# 1760090348
(C) JOHN SHANNON POPE & ALICIA POPE PIN# 1758979113	(I) THURMAN GREENE MILLER, JR. & SALLY EVERHART MILLER PIN# 1758978407	(O) KENNETH LEE TURNER & ANN JOHNSTON TURNER PIN# 1758978402	(U) ALBERT EMERY BURKE & KIMBERLY LUANNE BURKE PIN# 1760090348
(D) WANDA ELOISE JONES PIN# 1758978107	(J) PAUL D. HEWITT & TAMMY J. HEWITT PIN# 1758977251	(P) JAMES L. EDWARDS & JOYCE F. EDWARDS PIN# 1758978409	(V) EDWARD W. SCARBORO, JR. ET AL. PIN# 1758988560
(E) SUSAN JOHANSON PIN# 1758978213	(K) ESTHER EPERT PIN# 1758978594	(Q) DOROTHY JONES PENDER ET AL. (HEIRS OF DOROTHY D. JONES) PIN# 1758987388	(R) MICHAEL T. DERHAM ET AL. (HEIRS OF RUTH UPCHURCH DERHAM) PIN# 1758988460
(F) ANDRE KELLY & ARTEMISIA KELLY PIN# 1758978218	(L) NG02 UMELO & DOMINIC LAGORJI PIN# 1758978546		

PER TOWN OF ROLESVILLE COMMENTS

09/08/2022 03/31/2022

DATE

REV

DESIGNED BY: SL/KH

DRAWN BY: SL/KH

REVIEWED BY: SL

BCE

5440 WADE PARK BLVD, SUITE 102
RALEIGH NC 27607
WWW.BCEINC.COM
NC LICENSE #C-4397

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PARKER RIDGE

MASTER PLAN

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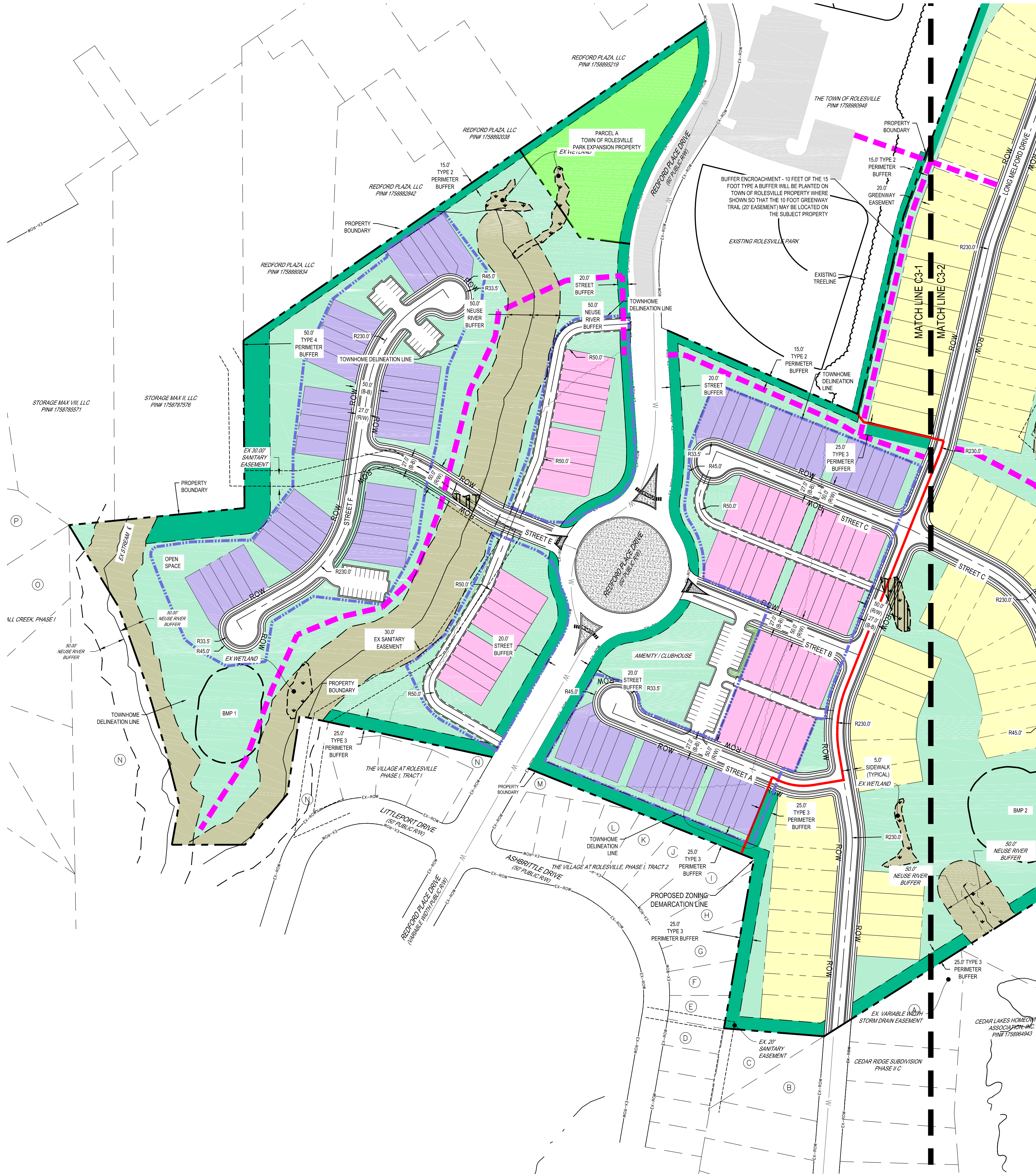
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DATE: 02/03/2022

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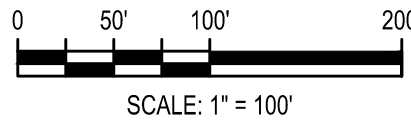
LEGEND

- PUBLIC GREENWAY (EST. 10' TRAIL IN 20' ESMT)
- PERIMETER BUFFERS
- OPEN SPACE
- ENVIRONMENTAL AREAS
- PROPOSED ZONING LINE
- TOWNHOME TRACT AREA
- SINGLE FAMILY
- TOWNHOME
- TOWNHOME (ALLEY)

LOCATIONS SHOWN FOR COMMITTED ELEMENTS INCLUDING, BUT NOT LIMITED TO GREENWAYS, STREETS, AND OPEN AREAS ARE CONCEPTUAL AND PROVIDED FOR ILLUSTRATION AND CONTEXT ONLY. FINAL LOCATIONS OF ELEMENTS SHALL BE DETERMINED AT SUBSEQUENT STAGES OF APPROVAL.

ADJOINING PROPERTY OWNERS

(A) MARQUIS BRYANT PIN# 1758872232	(G) GARY W. PARRISH & CHARLINE T. PARRISH PIN# 1758876325	(M) THE VILLAGE AT ROLESVILLE HOMEOWNERS ASSOCIATION, INC. PIN# 1758875606	(S) RICHARD E. DUNN ET AL. (HEIRS OF JERRY CATWYN DUNN) PIN# 1758889444
(B) JOHN SHANNON POPE & ALICIA POPE PIN# 1758873008	(H) THOMAS E. AUGUSTINE & KATHARINE THERESA SILEO AUGUSTINE PIN# 1758878431	(N) THE VILLAGE AT ROLESVILLE HOMEOWNERS ASSOCIATION, INC. PIN# 1758777301	(T) ALBERT EMERY BURKE & KIMBERLY LUANNE BURKE PIN# 1758880348
(C) JOHN SHANNON POPE & ALICIA POPE PIN# 1758878113	(I) THURMAN GREENE MILLER, JR. & SALLY EVERHART MILLER PIN# 1758878407	(O) KENNETH LEE TURNER & ANN JOHNSTON TURNER PIN# 1758784082	(U) ALBERT EMERY BURKE & KIMBERLY LUANNE BURKE PIN# 1758880437
(D) WANDA ELOISE JONES PIN# 1758878107	(J) PAUL D. HEWITT & TAMMY J. HEWITT PIN# 1758877251	(P) JAMES L. EDWARDS & JOYCE P. EDWARDS PIN# 1758784108	(V) EDWARD W. SCARBORO, JR. ET AL. PIN# 1758888560
(E) SUSAN JOHNSON PIN# 1758878213	(K) ESTHER EIFERT PIN# 1758876594	(Q) DOROTHY JONES PENDER ET AL. (HEIRS OF DOROTHY D. JONES) PIN# 1758887386	
(F) ANDRE KELLY & ARTEMISIA KELLY PIN# 1758878218	(L) NR02 UMEL O & DOMINIC UGORJI PIN# 1758876546	(R) MICHAEL T. DERHAM ET AL. (HEIRS OF RUTH UPCHURCH DERHAM) PIN# 1758888480	



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ENLARGED SITE PLAN
1 OF #

PARKER RIDGE
MASTER PLAN
82 SCHOOL STREET
ROLESVILLE / NORTH CAROLINA / 27571

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MORRISVILLE / NORTH CAROLINA / 27560

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RALEIGH NC 27607
WWW.BCEINC.COM
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DESIGNED BY:	SL/KH
DRAWN BY:	SL/KH
REVIEWED BY:	SL
DATE	09/08/2022
PER TOWN OF ROLESVILLE COMMENTS	03/31/2022
DESCRIPTION	

EXHIBIT D
to Parker Ridge Rezoning Application
Proposed Conditions
Rev. 3 – September 19, 2022

1. Development of the property shall be in substantial conformance with the accompanying Exhibit C Concept Plan. Locations shown for committed elements including, but not limited to greenways, streets, and open areas shown on Exhibit C are conceptual and provided for illustration and context only. Final locations of elements shall be determined at subsequent stages of approval.
2. The following uses shall be prohibited on the portion of the property zoned Residential High Density (the “RH Parcel”):
 - a. Family Care Facility
 - b. Live-Work Unit
 - c. Residential Care (ALF, ILF, CCF)
 - d. Telecommunications Tower
3. The RH Parcel shall have a maximum of 120 townhouse dwellings.
4. The following uses shall be prohibited on the portion of the property zoned Residential Medium Density (the “RM Parcel”):
 - a. Family Care Facility
 - b. Telecommunications Tower
5. The RM Parcel shall have a maximum of 170 single-family detached dwellings.
6. A single family detached home shall be developed and donated as part of Wounded Warrior Homes, Operation Coming Home, Operation Finally Home, or similar organization providing homes to veterans.
7. The development shall include at least one pollinator garden.
8. Perimeter buffers shall be provided as shown on the Concept plan. Type 3 and Type 4 perimeter buffers may include 6’ fences instead of walls.
9. All single family detached dwellings shall have the following features:
 - a. A 2 car garage;
 - b. All garage doors shall have windows;
 - c. A minimum 24” stone or masonry water table;
 - d. If masonry is not the predominant first floor finish, then the front elevation shall have 2 types of siding. For example, horizontal siding may be combined with shake/board and batten;

- e. Roof pitches on the main roof will have a pitch between 5 on 12 and 12 on 12;
 - f. Roof materials shall be asphalt shingles, metal, copper or wood;
 - g. Minimum 12" front overhangs;
 - h. A covered stoop or porch at least 20 sf and 5 ft deep;
 - i. Shutters or window trim shall be on front façade windows;
 - j. A minimum 64 sf rear patio;
 - k. At least one window on each side elevation; and
 - l. A varied color palette shall be used throughout the subdivision.
10. All townhouse dwellings shall have the following features:
- a. A 1 or 2 car garage;
 - b. A minimum 24" stone or masonry water table;
 - c. If masonry is not the predominant first floor finish, then the front elevation shall have 2 types of siding. For example, horizontal siding may be combined with shake/board and batten;
 - d. Roof materials shall be asphalt shingles, metal, copper or wood;
 - e. Minimum 12" front overhangs;
 - f. A covered stoop or porch at least 20 sf and 5 ft deep;
 - g. Shutters or window trim shall be on front façade windows;
 - h. A minimum 64 sf rear patio;
 - i. At least one window on each side elevation (excluding interior units); and
 - j. A varied color palette shall be used throughout the subdivision.
11. The developer shall offer to dedicate the section of land labeled as "Parcel – A – Town of Rolesville Park Expansion" on the Concept Plan for use as a public park. This land shall count toward open space requirements for the overall development.



**Parker Ridge
Traffic Impact Analysis**

Rolesville, North Carolina

August 15, 2022

Prepared for:

Town of Rolesville
502 Southtown Circle
Rolesville, NC 27571

Applicant:


Lennar Carolinas LLC
301 Fayetteville Street
Raleigh, NC 27601

Prepared by:

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606

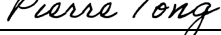
Sign-off Sheet

This document entitled Parker Ridge Traffic Impact Analysis was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Town of Rolesville (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by 

(signature)

Maggie Rogers

Reviewed by 

(signature)

Pierre Tong, PE

Approved by 

(signature)

Matt Peach, PE, PTOE



8/15/2022

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Executive Summary

The proposed Parker Ridge Development is located on both sides of Redford Place Drive south of US 401 Business (South Main Street) in Rolesville, NC. The proposed development will consist of 162 single-family homes and 114 townhomes. The development is anticipated to be completed in 2028.

The development is expected to generate 2,391 new trips per average weekday. In the AM and PM peak hours, the development is expected to generate 170 AM peak hour trips (47 entering and 123 exiting) and 220 PM peak hour trips (134 entering and 86 exiting).

Access to the site is envisioned to be provided by adding an eastbound and westbound approach to the existing roundabout on Redford Place Drive, located approximately 1,100 feet south of the school driveway. Additional access will be located on School Street just south of the Rolesville Elementary School and future Scarboro development driveways.

The purpose of this report is to evaluate the proposed development in terms of traffic conditions, evaluate the ability of the adjacent roadways to accommodate the additional traffic volumes, and recommend transportation improvements needed to mitigate congestion that may result from the additional site traffic. This report presents trip generation, trip distribution, traffic analysis, and recommendations for transportation improvements needed to meet anticipated traffic demands. This report examines the following scenarios for the AM and PM peak hours:

- 2022 Existing;
- 2028 No-Build;
- 2028 Build; and
- 2028 Build with Improvements.

Capacity analysis for the AM and PM peak hours in each scenario were performed for the following intersections:

- Old Rogers Road / School Street at South Main Street (US 401 Business);
- Redford Place Drive / Rogers Road at South Main Street (US 401 Business);
- School Street at School Driveway / Scarboro Driveway;
- Redford Place Drive at School Driveway; and
- Redford Place Drive at Access A / Access B.

Table ES-1 shows a summary of the capacity analysis results included in this Traffic Impact Analysis (TIA).



Table ES-1: Level of Service Summary Table

Level of Service (Delay, sec/veh)	2022 Existing		2028 No-Build		2028 Build	
	AM	PM	AM	PM	AM	PM
Old Rogers Road / School Street at South Main Street (US 401 Business)	C (22.5)	D (28.7)	F (70.7)	E (47.7)	F (63.5)	F (580.5)
Redford Place Drive / Rogers Road at South Main Street (US 401 Business)	D (35.2)	D (36.2)	D (51.8)	E (58.5)	D (55.0)	E (62.7)
School Street at School Driveway / Scarborough Driveway	-	-	A (8.9)	A (8.6)	A (9.0)	A (8.8)
Redford Place Drive at School Driveway	B (10.5)	A (9.7)	B (11.2)	B (10.3)	B (12.8)	B (11.1)
Redford Place Drive at Access A / Access B	-	-	-	-	A (4.1)	A (4.4)

With the addition of traffic generated by the proposed development, the northbound School Street approach of the South Main Street at Old Rogers Road / School Street intersection increases in delay such that LOS degrades from E to F. It is not uncommon for unsignalized side-street approaches to operate with high delays during peak periods. As traffic on Main Street does not stop, the overall delay at the intersection is relatively low at 2.3 seconds per vehicle in the AM peak hour and 18.9 seconds in the PM peak hour. If high delays are experienced on the stop-controlled approaches, drivers may opt for alternative routes. Even so, the intersection was evaluated for potential improvements due to meet the requirements of the LDO:

- The installation of a traffic signal would improve the LOS of the side streets significantly. This, however, is not anticipated to be permitted by NCDOT due to the proximity of the intersection to the adjacent signalized intersection of South Main Street at Redford Place Drive/Rogers Road, as well as the low traffic volumes on the side-street approaches of Old Rogers Road and School Street which are not anticipated to meet the warrants for installation of a traffic signal included in the Manual on Uniform Traffic Control Devices (MUTCD).
- The construction of dedicated left-turn turn-lanes on Old Rogers Road and School Street reduces delay but does not mitigate the impact of the proposed development. This is attributed to low volumes of traffic on the side-street approaches and high through volumes on South Main Street. The installation of turn lanes may also impact adjacent property owners. As a result, the installation of turn lanes on Old Rogers Road and School Street is not recommended.
- Converting the southbound approach of Old Rogers Road to right-in / right-out access by installing channelization was shown to reduce delays on the side streets such that School Street is anticipated to operate at LOS C and Old Rogers Road is anticipated to operate at LOS B during the PM peak hour. This would require left turns from Old Rogers Road to be redirected to Rogers Road and use the traffic signal at the intersection of South Main Street at Redford Place Drive / Rogers Road; increasing travel time for existing vehicles on the Old Rogers Road approach. Furthermore, the restriction of access without the



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

installation of a median has only limited effectiveness. As a result, the restriction of access is not recommended.

Therefore, no improvements are recommended at the South Main Street at Old Rogers Road / School Street intersection in conjunction with this development. Consideration should be made for limiting the southbound Old Rogers Road approach to right-in / right-out-only access in the future.

The signalized intersection of South Main Street at Redford Place Drive / Rogers Road operates at LOS E during the PM peak hour in both the no-build and build scenarios. In this instance, the LDO requires mitigation if the proposed development causes the LOS to fall to the next lower letter grade. As the intersection operates at LOS E during both the no-build and build scenarios, no improvements are recommended at this intersection.

The following improvements are recommended to be constructed as part of the Parker Ridge Development:

Old Rogers Road / School Street at South Main Street

- No improvements are recommended at this intersection.

Redford Place Drive / Rogers Road at South Main Street

- No improvements are recommended at this intersection

School Street at School Driveway / Scarborough Driveway

- No improvements are recommended at this intersection

Redford Place Drive at School Driveway

- No improvements are recommended at this intersection

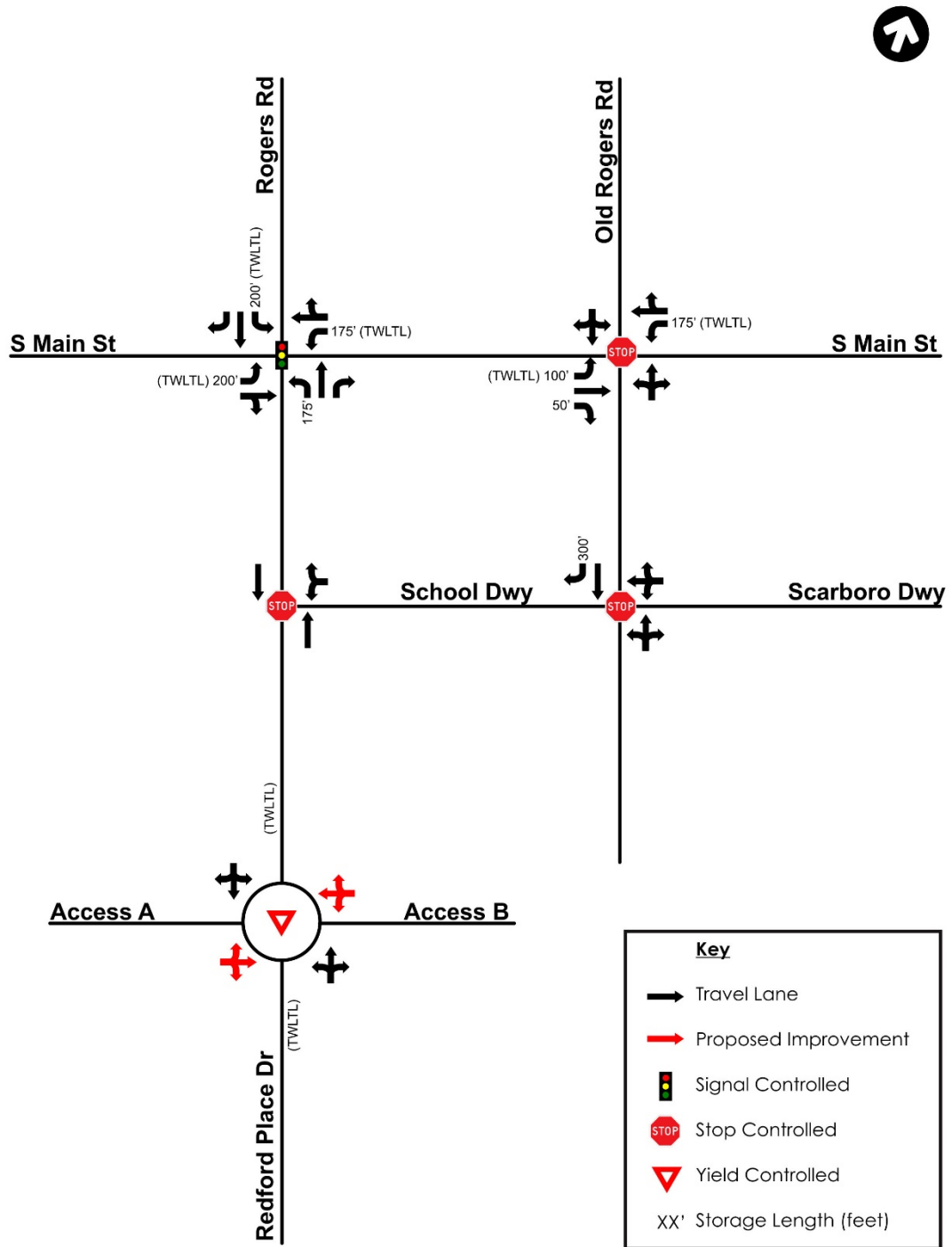
Redford Place Drive at Access A / Access B

- Construct Access A and Access B at the existing roundabout along Redford Place Drive south of the School Driveway intersection. Both intersections should have a minimum internal protective stem of 100 feet.

These recommendations are illustrated in Figure ES-1.



Figure ES-1: Recommended Improvements



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Introduction
August 15, 2022

1.0 INTRODUCTION

The purpose of this report is to evaluate the transportation impacts of the proposed Parker Ridge development located on the east and west sides of Redford Place Drive, south of Main Street in Rolesville, NC. The project location is shown below in Figure 1.

This report evaluates the feasibility of the adjacent transportation system to accommodate the total Build traffic demands of the proposed development for the Build year of 2028. The proposed development will consist of 162 single-family homes and 114 townhouses.

Trip generation, trip distribution, and traffic analysis for the following AM and PM peak hour scenarios are included in this study:

- 2022 Existing;
- 2028 No-Build;
- 2028 Build; and
- 2028 Build Improved.

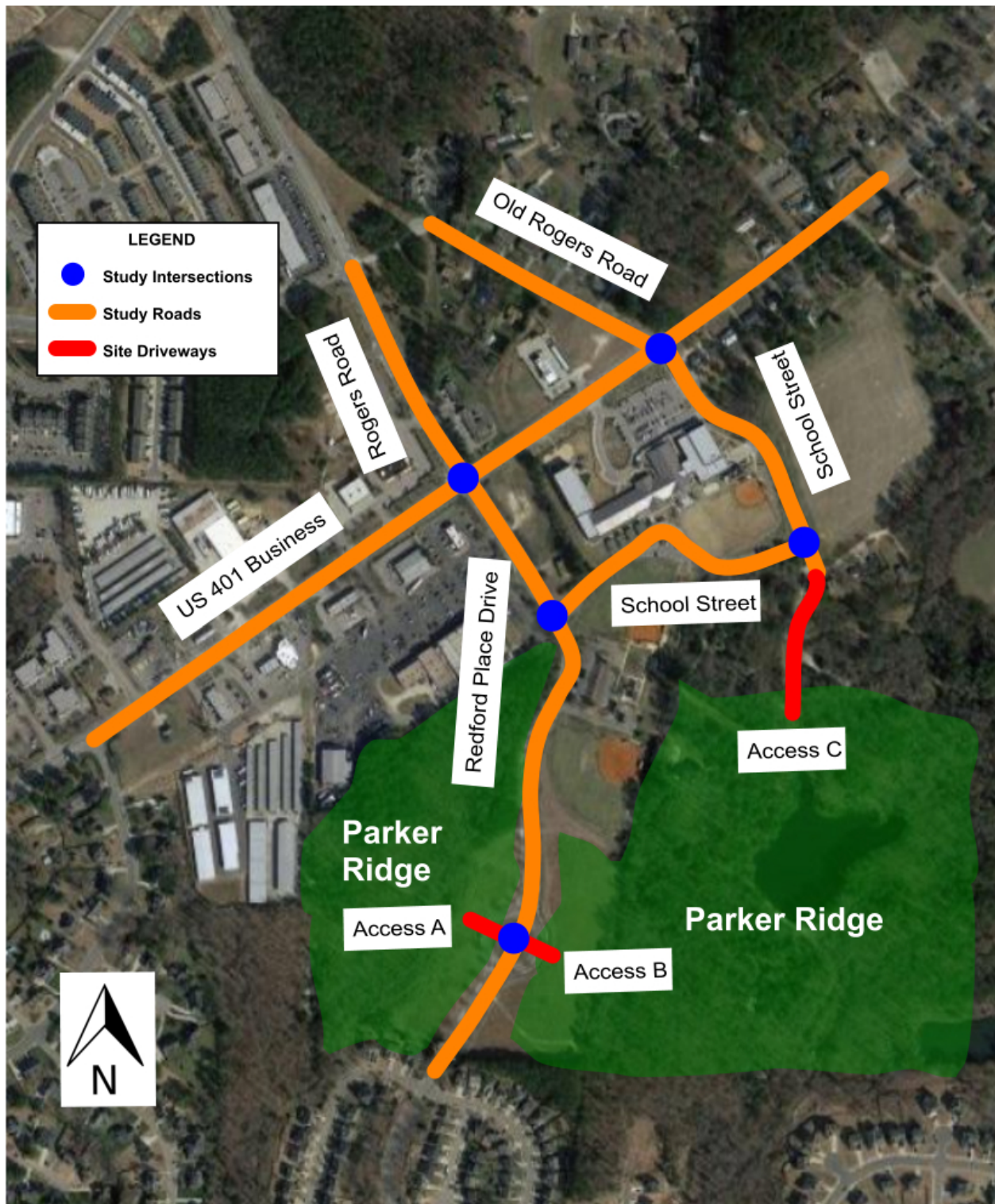
Figure 2 shows the conceptual site plan prepared by BGE. An electronic copy of the site plan is provided in the appendix.



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Introduction
August 15, 2022

Figure 1: Site Location



Introduction

August 15, 2022

SITE DATA:

PROPOSED PH ZONING: TOWNHOMES, CARBON II / BRADY II (S)

PROPOSED PH CLUSTER ZONING: TOWNHOMES, CARBON II / BRADY II (S)

TOTAL SITE AREA: 80.70 ACRES

RAW DEVELOPMENT: 78.30 ACRES

UNIT BREAKDOWN:

UNIT TYPE	QUANTITY
TOWNHOMES	114 UNITS (41.3%)
SINGLE FAMILY	182 UNITS (68.7%)
TOTAL	276 UNITS

SITE PLAN LEGEND

- PHASE 1A - TOWNHOMES, CARBON II / BRADY II (S)
- PHASE 1A - ALLEY LOADED TOWNHOMES, CARBON II / BRADY II (S)
- PHASE 1B - TOWNHOMES, CARBON II / BRADY II (S)
- PHASE 1B - ALLEY LOADED TOWNHOMES, CARBON II / BRADY II (S)
- PHASE 1B - SINGLE FAMILY, WINSTED II (S)
- PHASE 2 - SINGLE FAMILY, WINSTED II (S)

LENNAR - PARKER RIDGE PHASE PLAN

DATE: 3/10/2022

SCALE: 1" = 100'

PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Inventory of Traffic Conditions
August 15, 2022

2.0 INVENTORY OF TRAFFIC CONDITIONS

2.1 STUDY AREA

Stantec coordinated with the Town of Rolesville to determine the appropriate study area and assumptions. The following intersections were agreed upon to be analyzed to determine the impacts associated with this development.

- Old Rogers Road / School Street at South Main Street (US 401 Business);
- Redford Place Drive / Rogers Road at South Main Street (US 401 Business);
- School Street at School Driveway / Scarboro Driveway;
- Redford Place Drive at School Driveway; and
- Redford Place Drive at Access A / Access B.

2.2 PROPOSED ACCESS

Access to the site is envisioned to be provided by adding eastbound and westbound approaches to the existing roundabout on Redford Place Drive, located approximately 1,100 feet south of the school driveway. Additional access will be located on School Street just south of the Rolesville Elementary School and future Scarboro development driveways.

2.3 EXISTING CONDITIONS

Table 1 provides a detailed description of the existing study area roadway network. All functional classification and average annual daily traffic (AADT) information were obtained from the North Carolina Department of Transportation (NCDOT).



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Inventory of Traffic Conditions
August 15, 2022

Table 1: Existing Conditions

Road Name	Road Number	Primary Cross-Section	Functional Classification ¹	2020 AADT ² (vpd)	Speed Limit (mph)	Maintenance Agency
Main Street	US 401 Business	Two-Lane W/ TWLTL*	Principal Arterial	9,400 (east of Rogers) 12,000 (west of Rogers)	35	NCDOT
Old Rogers Road	-	Two-Lane Undivided	Local Road	-	35	Town of Rolesville
Redford Place Drive	-	Two-Lane Undivided	Local Road	-	25	Town of Rolesville
Rogers Road	SR 2052	Four-Lane w/TWLTL	Major Collector	7,600	35	NCDOT
School Driveway	-	Two-Lane One-Way	Private Driveway	-	-	WCPSS
School Street	-	Two-Lane Undivided	Local Road	-	35	WCPSS

*TWLTL = Continuous Two-Way Left-Turn Lane

The existing lane configuration and traffic control for the study area intersections are illustrated in Figure 3.

2.4 FUTURE CONDITIONS

The NCDOT U-6241 project proposes to realign Burlington Mills Road and construct a new intersection with South Main Street (US 401 Business). U-6241 is also expected to provide improvements to the pedestrian and bike facilities along Main Street and add a concrete median along Main Street west of Rogers Road. As part of the project, geometric improvements will be made to Main Street in the study area, notably, removing the dedicated westbound right turn lane at the Main Street & Rogers Road/Redford Place Drive intersection and re-striping the existing westbound through lane to a shared thru-right turn lane. The construction year of this project is 2022.

In addition, the Scarboro development will construct a new driveway along School Street, at the existing School Street & School Driveway intersection. The Scarboro development is discussed in more detail in Section 4.3

The future year lane configuration and traffic control for the study area intersections are illustrated in Figure 5.



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Inventory of Traffic Conditions
August 15, 2022

Figure 3: 2022 Existing Lanes and Traffic Control

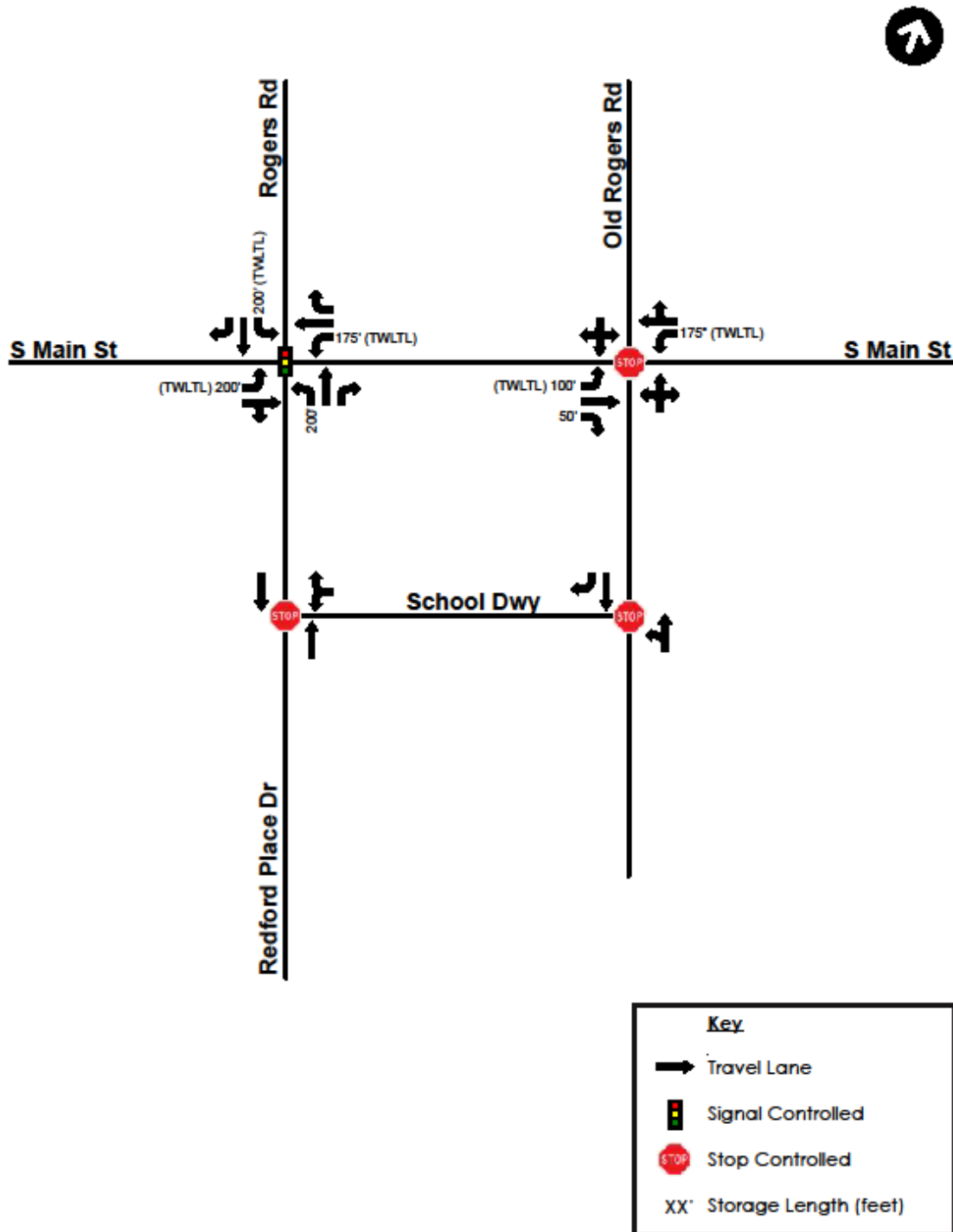


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PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Inventory of Traffic Conditions
August 15, 2022

Figure 4: 2028 No-Build Lanes and Traffic Control

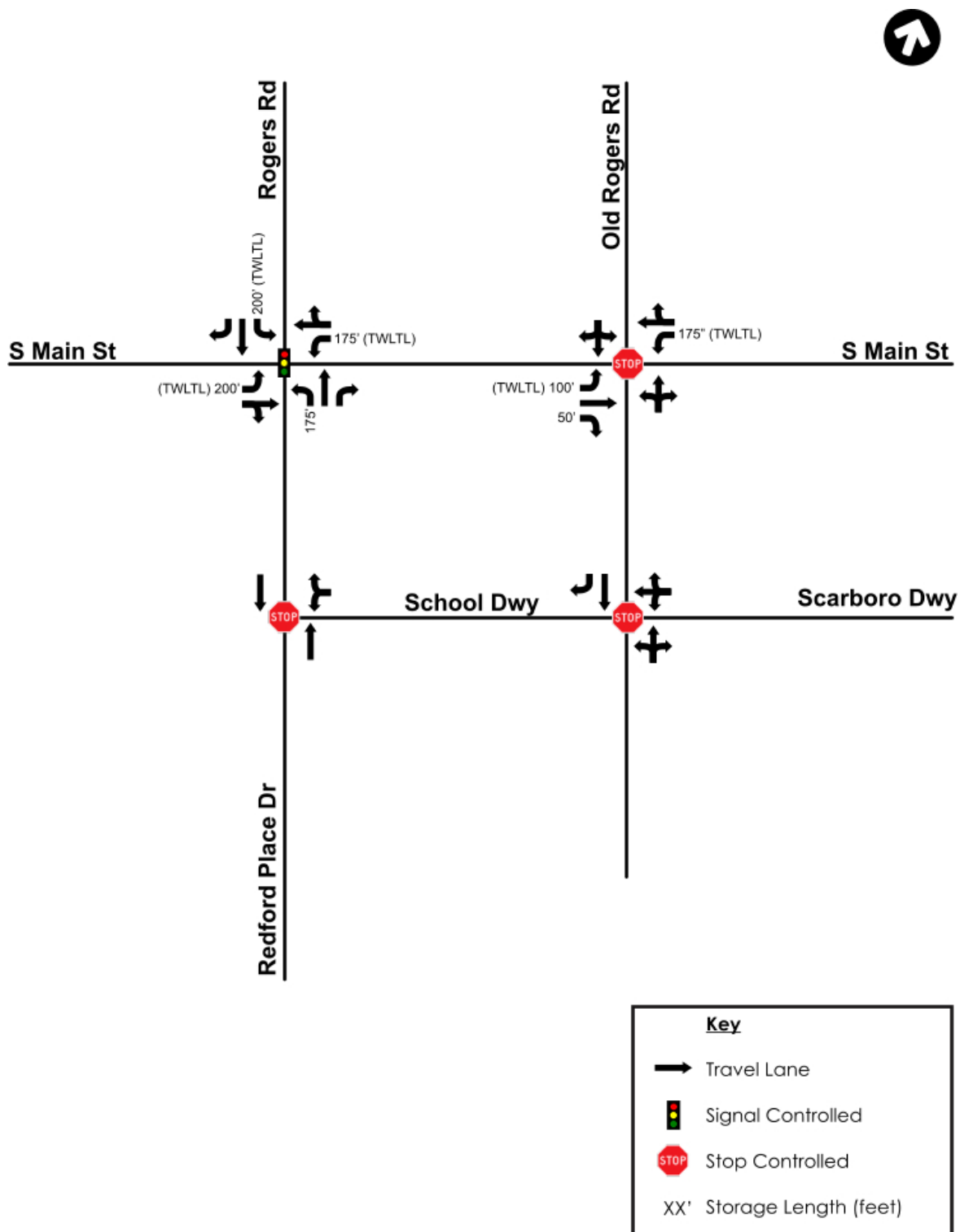


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3.0 TRIP GENERATION AND DISTRIBUTION

3.1 TRIP GENERATION

Table 2 below shows the number of anticipated trips that will be generated by the proposed development. These values are calculated using the 11th Edition of the Institute of Transportation Engineers Trip Generation Manual³. No internal capture or pass-by reductions are expected with these land uses.

Table 2: Trip Generation

Land Use	Size	Daily			AM Peak			PM Peak		
		Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit
Single-Family Detached Housing (LUC 210)	162 Units	1573	786	787	116	30	86	156	98	58
Single-Family Attached Housing (LUC 215)	114 Units	818	409	409	54	17	37	64	36	28
Total Trips Generated		2391	1195	1196	170	47	123	220	134	86

3.2 SITE TRIP DISTRIBUTION

To accurately determine the effect of the proposed development on the surrounding roadway network, an estimate of the expected distribution of traffic entering and exiting the site is needed. The following percentages were used in both the AM and PM peak hours:

- 50% to/from the west on Main Street;
- 25% to/from the east on Main Street; and
- 25% to/from the north on Rogers Road.

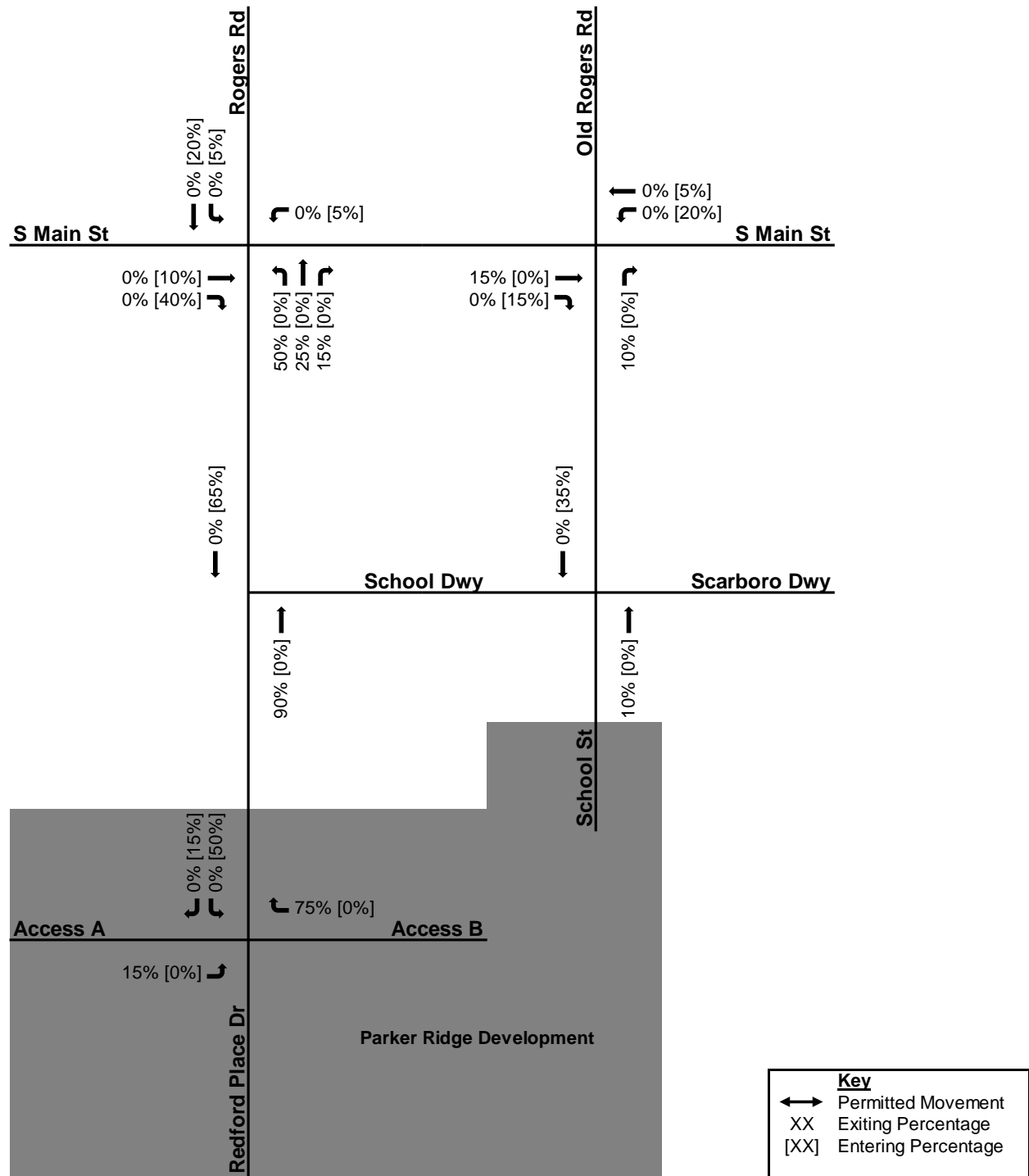
These percentages were developed using a combination of existing traffic volume counts, historic average annual daily traffic (AADT) recordings provided by NCDOT, and engineering judgment. Figure 5 shows the distribution described above as well as the turning movement percentages at each intersection. Figure 6 shows the actual trips that are expected to be generated through the study area intersections.



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Trip Generation and Distribution
August 15, 2022

Figure 5: Site Trip Distribution



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Trip Generation and Distribution
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Figure 6: Site Trip Assignment

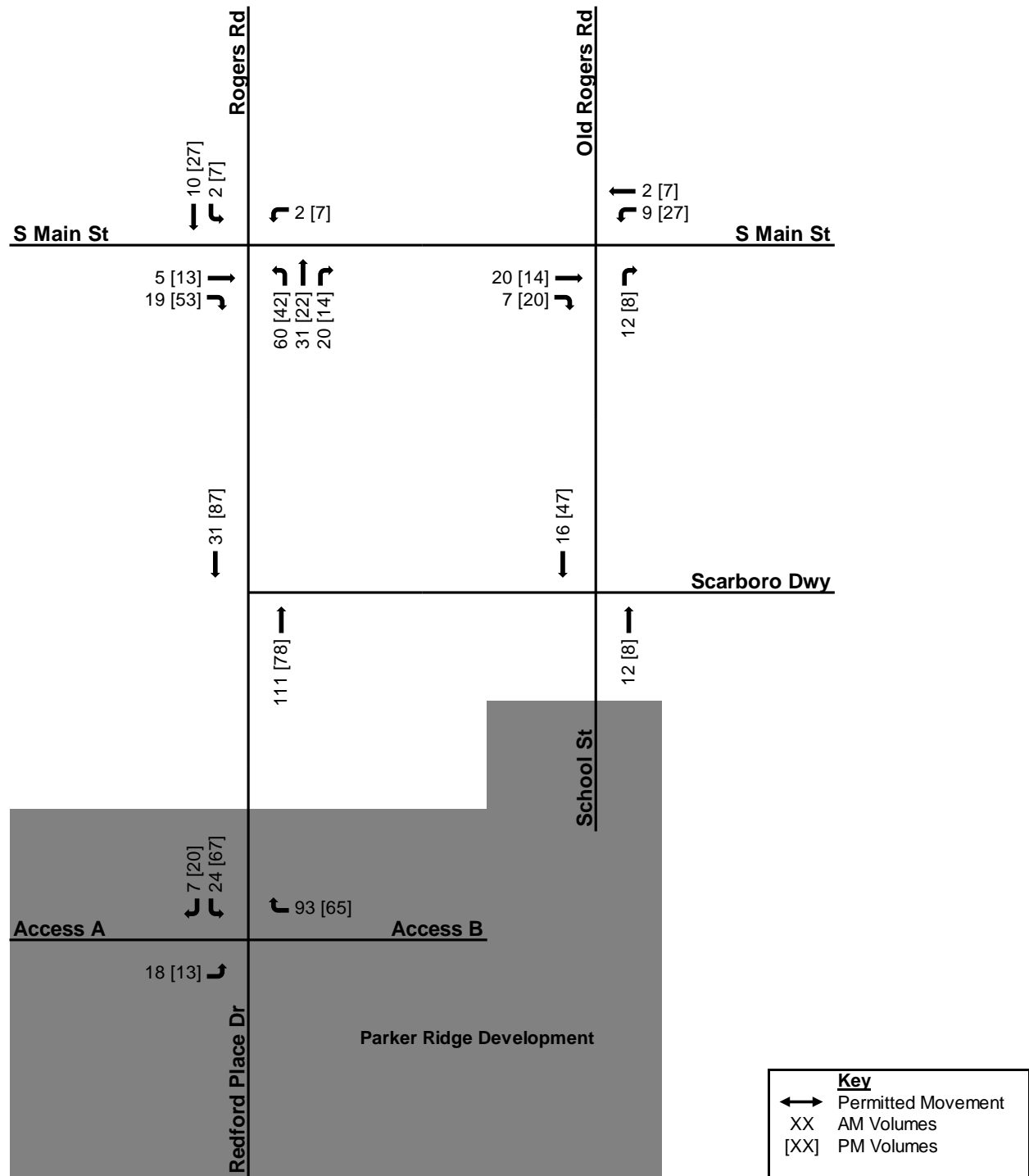


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Traffic Volumes
August 15, 2022

4.0 TRAFFIC VOLUMES

4.1 DATA COLLECTION

AM (7:00 – 9:45 AM) and PM (4:00 – 6:00 PM) turning movement counts were collected on Thursday, June 9, 2022, at the following intersections:

- Old Rogers Road / School Street at South Main Street (US 401 Business);
- Redford Place Drive / Rogers Road at South Main Street (US 401 Business);
- School Street at School Driveway / Scarboro Driveway; and
- Redford Place Drive at School Driveway.

Raw count data for these locations are included in the appendix.

Traffic volumes were not balanced due to the high-volume driveways between study intersections. Notably, the school entrance located on Main Street as well as the shopping center driveway along Redford Place Drive. The Existing (2022) traffic volumes are shown in Figure 7.

4.2 NO-BUILD TRAFFIC VOLUMES

The count data was grown by two percent (2%) per year to estimate traffic growth from 2022 to 2028. The historical growth traffic volumes were added to the existing volumes to determine the 2028 No-Build traffic volumes. Three approved developments in the vicinity of the study area were accounted for in this traffic analysis as discussed in the following sections. The 2028 No-Build traffic volumes are shown in Figure 11.

4.2.1 Cobblestone

Cobblestone is a mixed-use development proposed in the northwest quadrant of the intersection of Main Street & Young Street. The proposed development is expected to consist of 180 apartments, 18,200 square feet of municipal flex space, and 50,000 square feet of retail space. It is estimated to be built by 2023. The trips attributed to the Cobblestone approved development are shown in Figure 8. A copy of the *Traffic Impact Analysis for Cobblestone Crossing Mixed-Use* (Ramey Kemp & Associates, March 2021) is provided in the appendix.

4.2.2 Redford Place

Redford Place is a proposed 3-story, 19,500 square foot, mixed-use building with the top two stories being a medical/dental office and the ground-floor consisting of retail uses. The development is located on the east side of Redford Place Drive south of Main Street. The trips attributed to the Redford Place development are shown in Figure 9. A copy of the *Redford Place Traffic Impact Analysis* (Stantec, October 2019) is provided in the appendix.

As part of the Redford Place development, the storage of the northbound left-turn lane at the Main Street & Rogers Road development will be reduced from 200 feet to 175 feet of full-width storage, to accommodate the installation of a southbound left-turn lane on Redford Place Drive at the Site Driveway.



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Traffic Volumes
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4.2.3 Scarborough Property

Scarboro Property is a proposed development expected to consist of 240 units of senior adult housing. The trips attributed to the Scarboro Property development are shown in Figure 10. A copy of the *Site Analysis – Scarboro Property* (Ramey Kemp Associates, May 2021) is provided in the appendix. A new site driveway will be built on School Street at the existing School Street & School Driveway intersection.

4.3 BUILD TRAFFIC VOLUMES

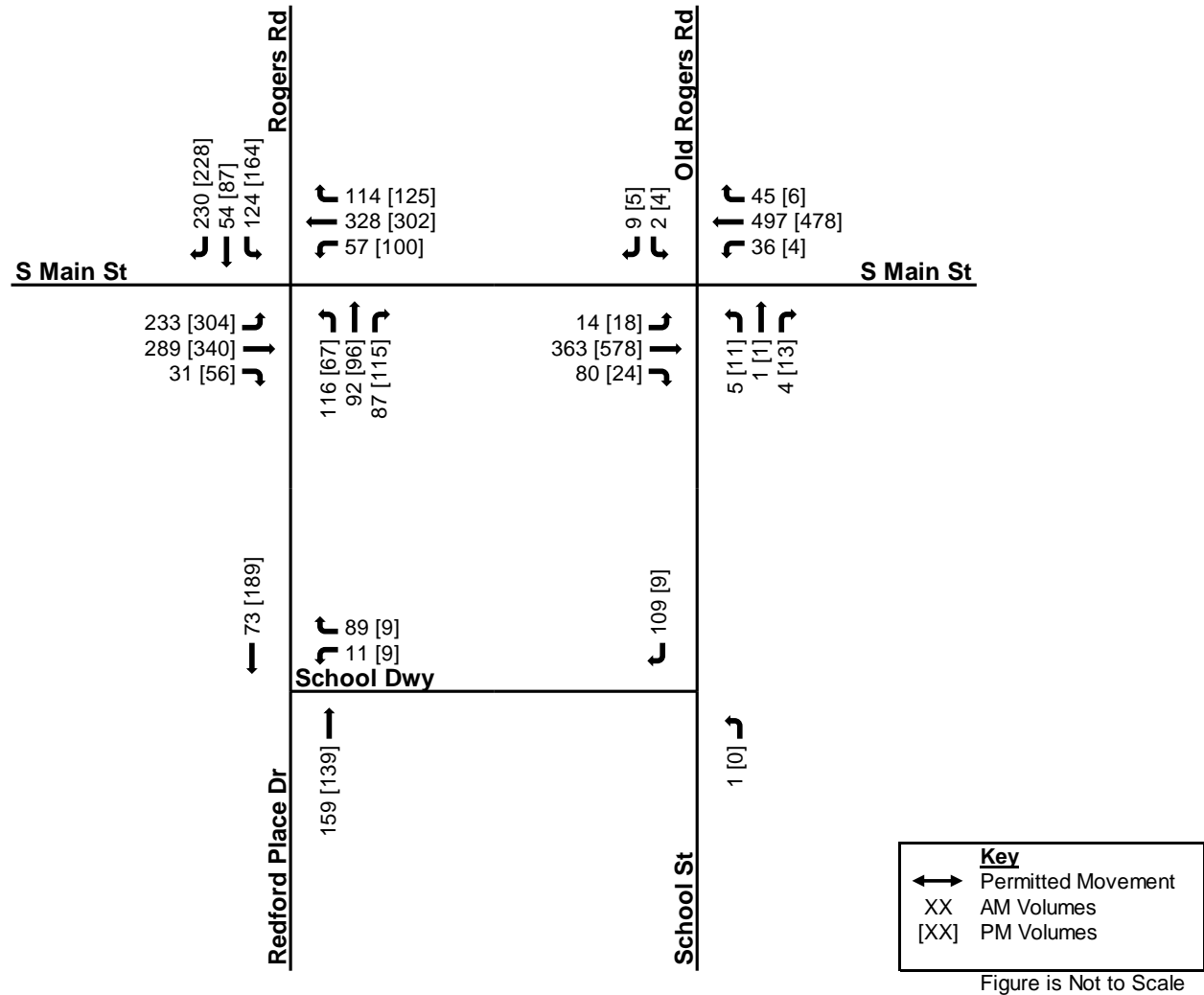
The 2028 Build traffic volumes include the 2028 No-Build traffic, approved development traffic, and the proposed development traffic discussed in section 3.0. The 2028 Build traffic volumes are shown in Figure 12.



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Traffic Volumes
August 15, 2022

Figure 7: 2022 Existing Traffic Volumes



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Traffic Volumes
August 15, 2022

Figure 8: Cobblestone Approved Development Volumes

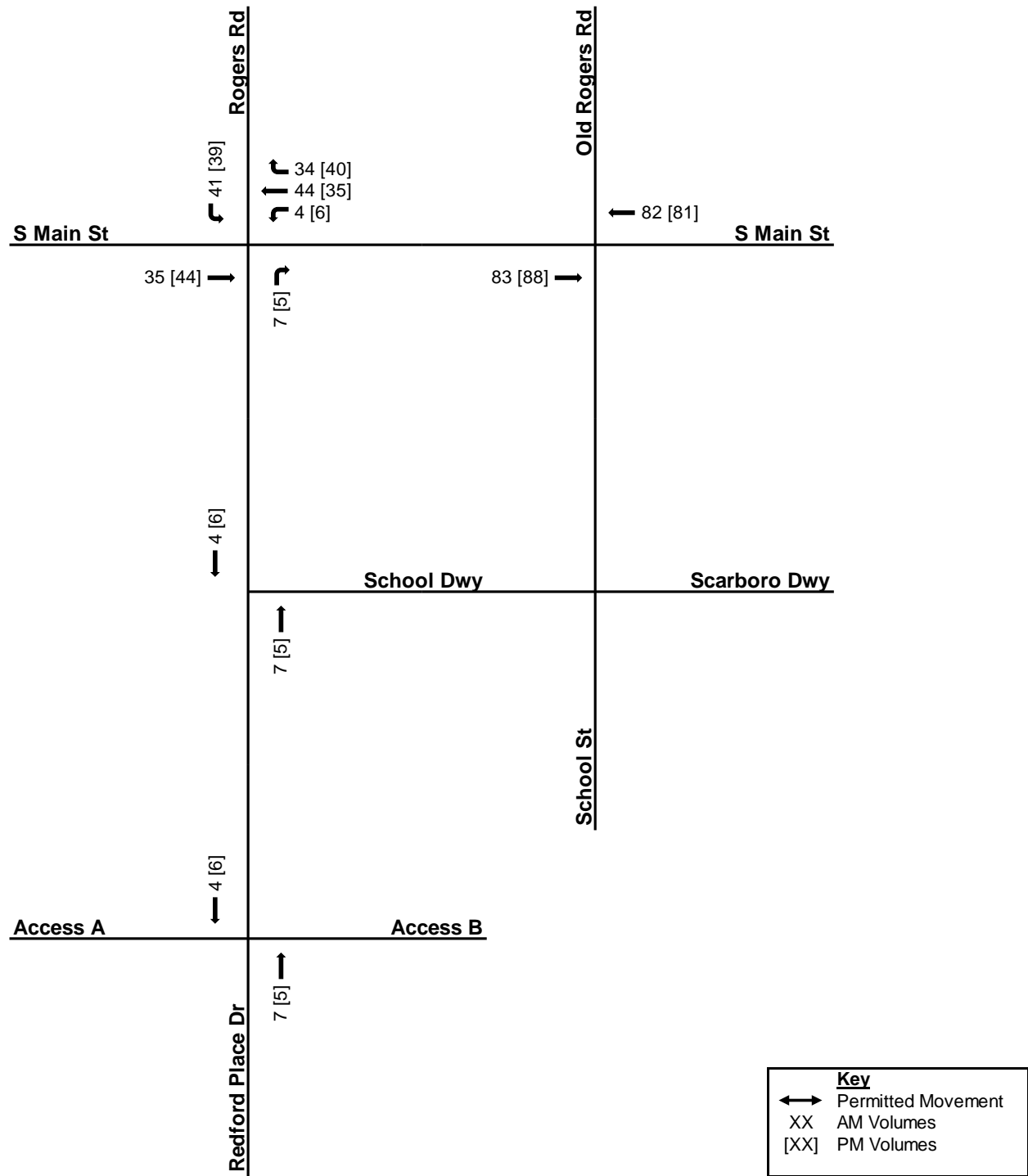


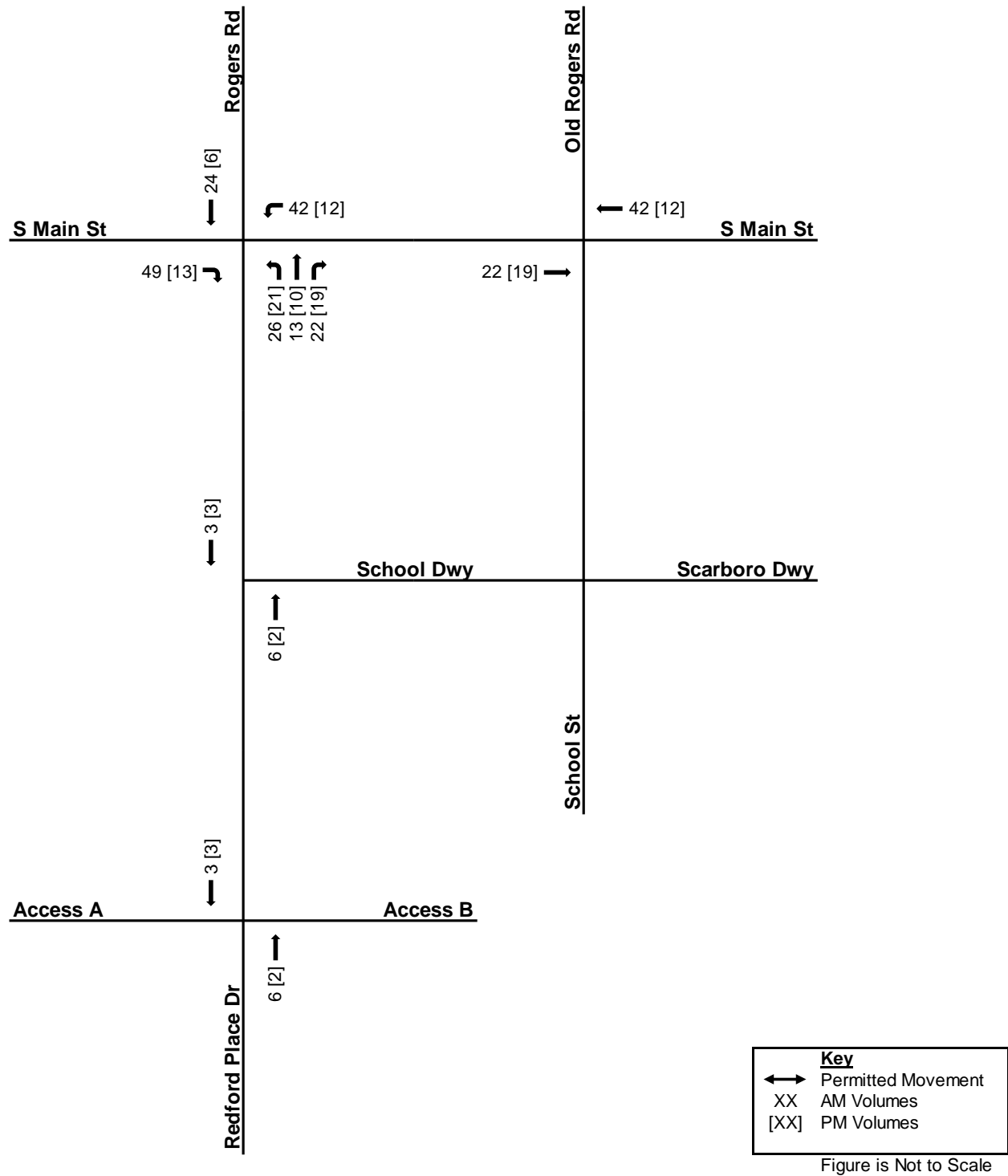
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PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Traffic Volumes
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Figure 9: Redford Approved Development Volumes



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Traffic Volumes
August 15, 2022

Figure 10: Scarborough Approved Development Volumes

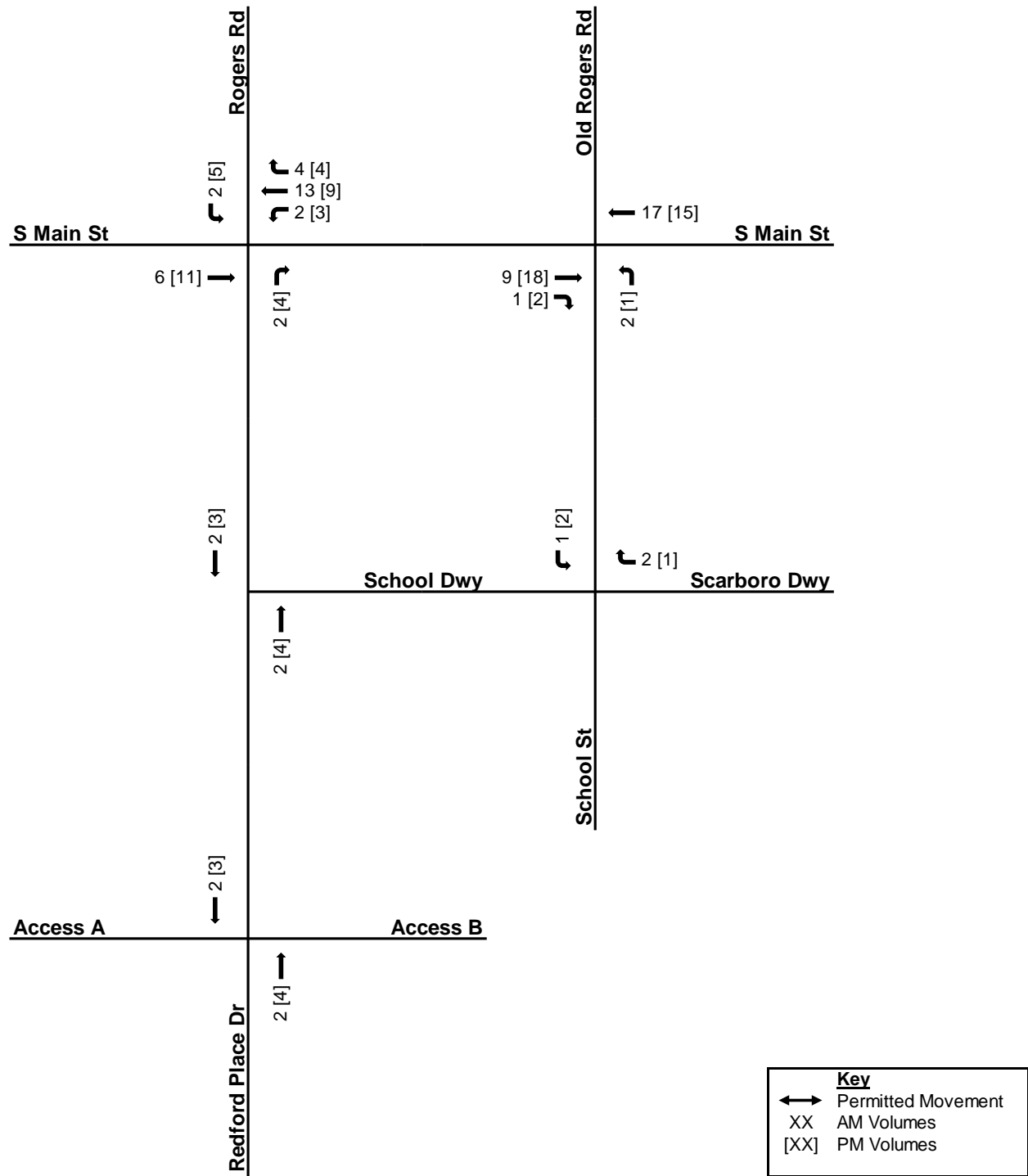


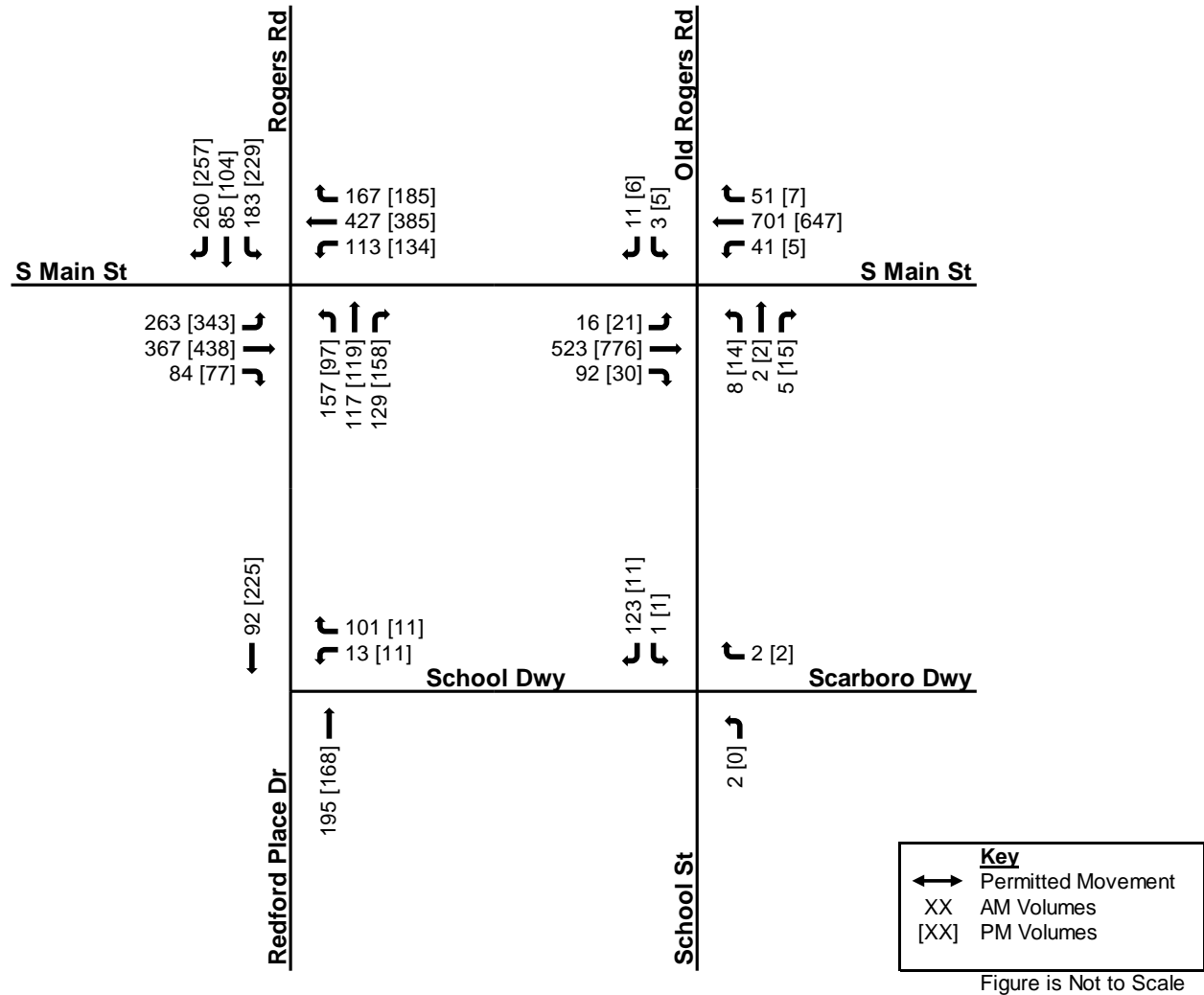
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PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Traffic Volumes
August 15, 2022

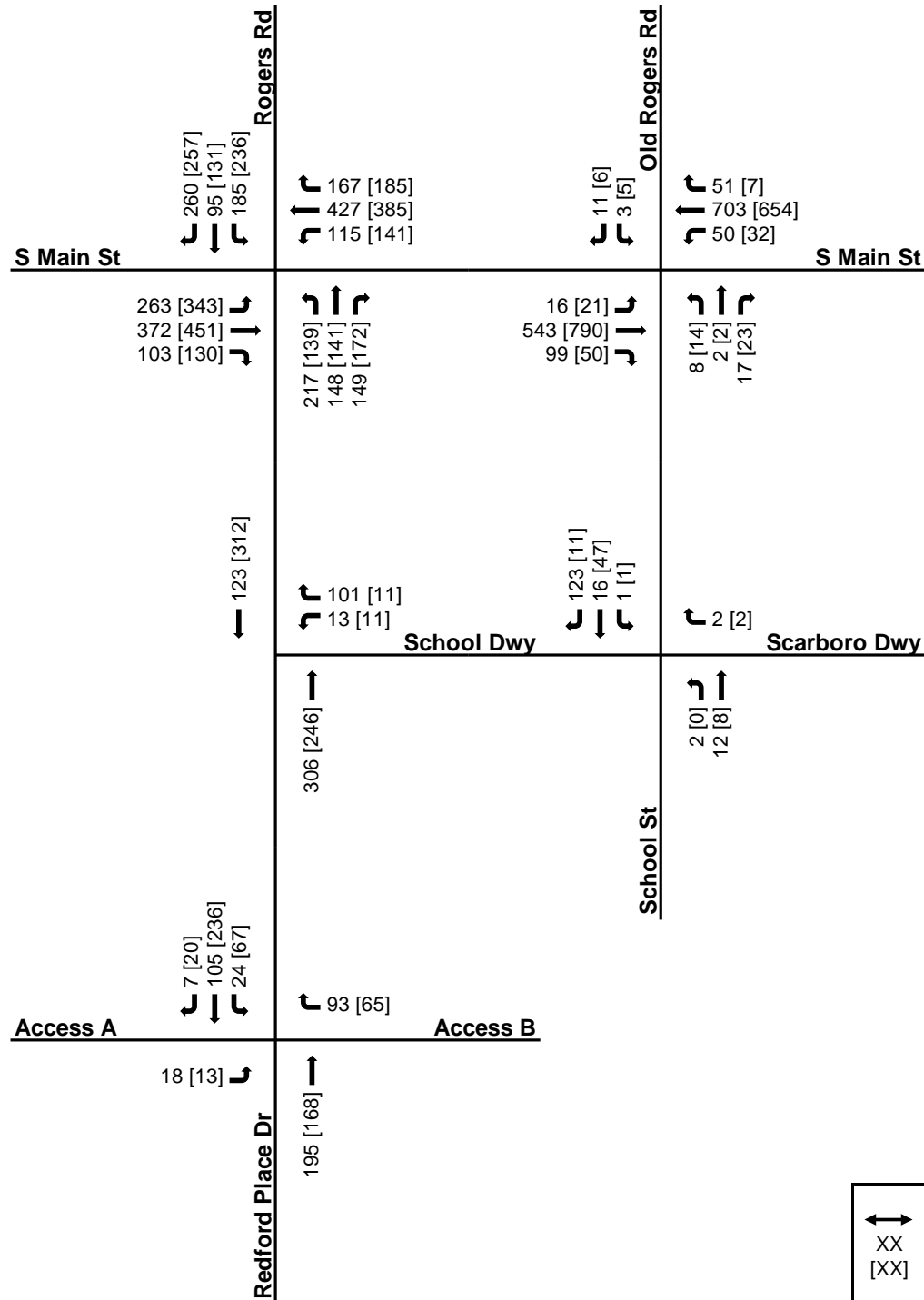
Figure 11: 2028 No-Build Traffic Volumes



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Traffic Volumes
August 15, 2022

Figure 12: 2028 Build Traffic Volumes



5.0 TRAFFIC ANALYSIS

Capacity analyses were performed for the roadway network in the study area. The traffic analysis program Synchro Version 10 and SIDRA Intersection 9 was used to analyze all signalized and stop-controlled intersections according to methods put forth by the Transportation Research Board's Highway Capacity Manual⁴ (HCM). The HCM defines capacity as the "maximum rate or flow at which persons or vehicles can be reasonably expected to traverse a point or uniform section of a line or roadway during a specified period under prevailing roadway, traffic, and control conditions, usually expressed as vehicles per lane per hour."

Level of service (LOS) is a term used to describe different traffic conditions and is defined as a "qualitative measure describing operational conditions within a traffic stream, and their perception by motorists or passengers." LOS varies from Level A, representing free flow, to Level F where traffic breakdown conditions are evident. At an unsignalized intersection, the primary traffic on the main roadway is virtually uninterrupted. Therefore, the overall delay for the intersection is usually less than what is calculated for the minor street movements. The overall intersection delay and the delay for the intersections' minor movement(s) are reported in the summary tables of this report. LOS D is acceptable for signalized intersections in suburban areas during peak periods. For unsignalized intersections, it is common for some of the minor street movements or approaches to be operating at LOS F during peak hour conditions and that is not necessarily indicative of an area that requires improvements.

Capacity analyses were completed following *NCDOT Capacity Analysis Guidelines*⁵ as well as the *Draft NCDOT Capacity Analysis Guidelines Best Practices*⁶. Table 3 presents the criteria of each LOS as indicated in the HCM.

Table 3: Level of Service Criteria

Level of Service (LOS)	Signalized Intersection Control Delay (seconds / vehicle)	Unsignalized Intersection Control Delay (seconds / vehicle)
A	≤ 10	≤ 10
B	>10 and ≤ 20	>10 and ≤ 15
C	>20 and ≤ 35	>15 and ≤ 25
D	>35 and ≤ 55	>25 and ≤ 35
E	>55 and ≤ 80	>35 and ≤ 50
F	>80	>50

The Town of Rolesville's Land Development Ordinance⁷, section 8.E, establishes the following Level of Service Standards:

1. *The traffic impact analysis must demonstrate that the proposed development would not cause build-out-year, peak-hour levels of service on any arterial or collector road or intersection within the study area to fall below Level of Service (LOS) "D," as defined by the latest edition of the Highway Capacity Manual, or, where the existing level of service is already LOS "E" that the proposed development would not cause the LOS to fall to the next lower letter grade.*



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Traffic Analysis
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2. . *If the road segment or intersection is already LOS "F," the traffic impact analysis must demonstrate that the proposed development, with any proposed improvements, would not cause build-out year peak-hour operation to degrade more than five (5) percent of the total delay on any intersection approach.*

Capacity analyses were performed for the following conditions:

- 2022 Existing;
- 2028 No-Build;
- 2028 Build; and
- 2028 Build with Improvements.

Peak hour factors for all analysis scenarios were set to 0.9 with one exception. That is, all movements into and out of Rolesville Elementary School utilize a peak hour factor of 0.5 per NCDOT Municipal School Transportation Assistance.

All Synchro and SIDRA files and detailed printouts can be found in the appendix. A summary of the results of the analyses is provided in the following sub-sections.






PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Traffic Analysis
August 15, 2022

5.1 2022 EXISTING

In the base year of 2022 under the existing geometric conditions, all study intersections and approaches operate at an acceptable LOS. Synchro LOS and delay results for the 2022 Existing analysis scenario are listed in Table 4.

Table 4: 2022 Existing Level of Service and Delay

Intersection		Approach	Lane Group	Delay (sec. / veh.)		Level of Service (LOS)		95th % Queue (feet)		Max. Obs. Queue (feet)	
				AM	PM	AM	PM	AM	PM	AM	PM
	Old Rogers Road / School Street at South Main Street (US 401 Business)	EB	L	8.8	8.6	A	A	0	3	18	19
		WB	L	8.5	9.0	A	A	3	0	32	26
		NB	LTR	22.5	27.8	C	D	5	15	30	43
		SB	LTR	21.1	28.7	C	D	8	8	43	33
	Redford Place Drive / Rogers Road at South Main Street (US 401 Business)	Overall		35.2	36.2	D	D				
		EB	L	21.0	28.4	C	C	188	291	180	280
			TR	18.4	24.7	B	C	262	392	206	309
		WB	L	25.7	30.8	C	C	71	119	116	177
			T	29.2	31.3	C	C	350	341	288	289
			R	8.7	8.6	A	A	55	59	112	101
		NB	L	52.9	47.3	D	D	152	93	185	128
			T	70.5	70.9	E	E	133	137	169	184
			R	42.1	41.6	D	D	108	131	170	200
		SB	L	75.8	71.5	E	E	170	207	185	221
			T	66.0	59.4	E	E	90	127	101	197
			R	42.4	35.5	D	D	224	212	255	282
	Redford Place Drive at School Driveway	WB	LR	10.5	9.7	B	A	23	3	81	29



5.2 2028 NO-BUILD

In the 2028 No-Build conditions, the analysis assumes the improvements associated with the approved developments and NCDOT projects are constructed. These improvements were discussed in Sections 2.4 and 4.2, but are also listed below:

South Main Street at Redford Place Drive/Rogers Road

- Remove existing westbound dedicated right-turn lane.
- Reduce the storage of the northbound left-turn lane from 200 feet to 175 feet of full-width storage.

School Street at School Driveway/Scarboro Driveway.

- Construct a stop-controlled westbound approach at the intersection for access to the Scarboro Property development.

In the future year 2028, the following intersections and movements operate at a LOS E or F:

The Main Street & Redford Place Drive/Rogers Road intersection operates at LOS E in the PM peak hours. The minor northbound and southbound approaches at the Main Street & Old Rogers Road/School Street intersection operate at LOS F in the AM peak hour and LOS E in the PM peak hour.

The northbound through and southbound left movements at the Main Street & Redford Place Drive/Rogers Road intersection operate at LOS F in both peak hours and the eastbound left movement operates at LOS F in the PM peak hour.





Synchro LOS and delay results for the 2028 No-Build analysis scenario are listed in Table 5.



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

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Table 5: 2028 No-Build Level of Service and Delay

Intersection		Approach	Lane Group	Delay (sec. / veh.)		Level of Service (LOS)		95th % Queue (feet)		Max. Obs. Queue (feet)	
				AM	PM	AM	PM	AM	PM	AM	PM
	Old Rogers Road / School Street at South Main Street (US 401 Business)	EB	L	9.6	9.2	A	A	3	3	32	33
		WB	L	9.4	9.8	A	A	5	0	45	24
		NB	LTR	70.7	47.7	F	E	23	30	40	60
		SB	LTR	51.5	41.9	F	E	20	13	38	42
	Redford Place Drive / Rogers Road at South Main Street (US 401 Business)	Overall		51.8	58.5	D	E				
		EB	L	72.0	80.1	E	F	385	498	298	300
			TR	24.9	29.3	C	C	393	477	506	837
		WB	L	61.6	61.4	E	E	157	179	275	275
			TR	45.4	59.3	D	E	637	690	672	745
		NB	L	69.7	60.2	E	E	247	142	245	198
			T	96.8	119.6	F	F	226	229	231	266
			R	40.9	41.5	D	D	154	182	189	243
		SB	L	80.0	96.0	F	F	290	363	258	298
			T	69.2	62.6	E	E	138	149	244	518
			R	39.8	31.9	D	C	284	251	287	267
	School Street at School Driveway / Scarboro Driveway	WB	LTR	8.9	8.6	A	A	3	3	30	29
		NB	LTR	7.8	7.3	A	A	0	0	0	0
		SB	LT	7.2	7.2	A	A	0	0	0	0
	Redford Place Drive at School Driveway	WB	LR	11.2	10.3	B	B	30	5	80	50



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5.3 2028 BUILD

This analysis scenario evaluates traffic operations under the increased traffic demands associated with the proposed Parker Ridge development. Similar to the 2028 No-Build scenario, the Main Street & Redford Place Drive/Rogers Road intersection operates at LOS E in the PM peak hour. The northbound through movement operates at LOS F in both peak hours, the northbound left movement operates at LOS F in the AM peak hour, and the eastbound left and southbound left movements operate at LOS F in the PM peak hour.

The westbound queue along Main Street from the Redford Place Drive/Rogers Road intersection extends into the Main Street & Old Rogers Road/School Street intersection during the PM peak hour, preventing lefts and throughs from being made from the northbound School Street and southbound Old Rogers Road intersection. As a result, delays from these approaches exceed 400 seconds in the PM peak hour.

The roundabout at the Redford Place Drive & Access A/Access B intersection operates at LOS A in both peak hours.






Capacity analysis results for the 2028 Build analysis scenario are listed in Table 6.



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Traffic Analysis
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Table 6: 2028 Build Level of Service and Delay

Intersection		Approach	Lane Group	Delay (sec. / veh.)		Level of Service (LOS)		95th % Queue (feet)		Max. Obs. Queue (feet)	
				AM	PM	AM	PM	AM	PM	AM	PM
	Old Rogers Road / School Street at South Main Street (US 401 Business)	EB	L	9.6	9.3	A	A	3	3	27	71
		WB	L	9.6	11.3	A	B	5	5	48	127
		NB	LTR	58.8	580.5	F	F	33	133	47	182
		SB	LTR	63.5	410	F	F	23	58	47	100
	Redford Place Drive / Rogers Road at South Main Street (US 401 Business)	Overall		55.0	62.7	D	E				
		EB	L	79.8	86.9	E	F	385	498	300	300
			TR	28.4	32.4	C	C	428	553	544	1000*
		WB	L	61.9	77.0	E	E	160	225	275	275
			TR	52.0	65.3	D	E	705	714	782	1262*
		NB	L	82.9	68.9	F	E	339	219	268	264
			T	86.2	105.9	F	F	254	254	368	344
			R	28.3	43.5	C	D	124	202	186	248
		SB	L	78.3	103.8	E	F	285	378	259	298
			T	69.3	65.9	E	E	151	180	250	512
R	34.4		31.3	C	C	196	248	244	252		
	School Street at School Driveway / Scarboro Driveway	WB	LTR	9.0	8.8	A	A	3	3	34	27
		NB	LTR	7.8	7.4	A	A	0	0	0	0
		SB	LT	7.3	7.2	A	A	0	0	0	0
	Redford Place Drive at School Driveway	WB	LR	12.8	11.1	B	B	35	5	86	39
	Redford Place Drive at Access A / Access B	Overall		4.1	4.4	A	A				
		EB	LTR	3.6	4.2	A	A	3	3	27	26
		WB	LTR	4.7	4.3	A	A	16	11	40	38
		NB	LTR	4.3	4.5	A	A	26	24	34	48
		SB	LTR	3.4	4.3	A	A	15	39	17	61
* Queue Extends Off SimTraffic Network or Into Next Intersection											



5.4 2028 BUILD IMPROVED

5.4.1 South Main Street at Old Rogers Road / School Street

With the addition of traffic generated by the proposed development, the northbound approach of School Street at South Main Street increases in delay such that LOS degrades from E to F. It is not uncommon for unsignalized side-street approaches to operate with high delays during peak periods. As traffic on Main Street does not stop, the overall delay at the intersection is relatively low at 2.3 seconds per vehicle in the AM peak hour and 18.9 seconds in the PM peak hour. If high delays are experienced on the stop-controlled approaches, drivers may opt for alternative routes. Even so, the intersection was evaluated for potential improvements due to meet the requirements of the LDO⁷. What follows is a discussion of each possible improvement at the intersection:

5.4.1.1 Installation of a Traffic Signal

The installation of a traffic signal would improve the LOS of the side streets significantly. This, however, is not anticipated to be permitted by NCDOT due to the following:

- The proximity of the intersection to the adjacent signalized intersection of South Main Street at Redford Place Drive / Rogers Road
- Traffic volumes on the side-street approaches of Old Rogers Road and School Street are low and are not anticipated to meet the warrants for installation of a traffic signal included in the Manual on Uniform Traffic Control Devices (MUTCD)⁸.

5.4.1.2 Installation of Turn Lanes

The construction of dedicated left-turn turn-lanes on Old Rogers Road and School Street reduces delay but does not mitigate the impact of the proposed development. This is attributed to low volumes of traffic on the side-street approaches and high through volumes on South Main Street. The installation of turn lanes may also impact adjacent property owners. As a result, the installation of turn lanes on Old Rogers Road and School Street is not recommended.

5.4.1.3 Restriction of Access

Converting the southbound approach of Old Rogers Road to right-in / right-out access by installing channelization was shown to reduce delays on the side streets such that School Street is anticipated to operate at LOS C and Old Rogers Road is anticipated to operate at LOS B during the PM peak hour.

This would require left turns from Old Rogers Road to be redirected to Rogers Road and use the traffic signal at the intersection of South Main Street at Redford Place Drive / Rogers Road; increasing travel time for existing vehicles on the Old Rogers Road approach. Furthermore, the restriction of access without the installation of a median has only limited effectiveness. As a result, the restriction of access is not recommended.

Therefore, no improvements are recommended at this intersection in conjunction with this development. Consideration should be made for limiting the southbound Old Rogers Road approach to right-in / right-out-only access in the future.



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5.4.2 South Main Street at Redford Place Drive / Rogers Road

The signalized intersection of South Main Street at Redford Place Drive / Rogers Road operates at LOS E during the PM peak hour in both the no-build and build scenarios. In this instance, the LDO requires mitigation if the proposed development causes the LOS to fall to the next lower letter grade. As the intersection operates at LOS E during both the no-build and build scenarios, no improvements are recommended at this intersection.



6.0 RECOMMENDATIONS

The following improvements are recommended as part of the Parker Ridge development.

Old Rogers Road / School Street at South Main Street

- No improvements are recommended at this intersection

Redford Place Drive / Rogers Road at South Main Street

- No improvements are recommended at this intersection

School Street at School Driveway / Scarborough Driveway

- No improvements are recommended at this intersection

Redford Place Drive at School Driveway

- No improvements are recommended at this intersection

Redford Place Drive at Access A / Access B

- Construct Access A and Access B at the existing roundabout along Redford Place Drive south of the School Driveway intersection. Both intersections should have a minimum internal protective stem of 100 feet.

The recommended improvements are illustrated in Figure 13.



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

Recommendations
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Figure 13: Recommended Improvements

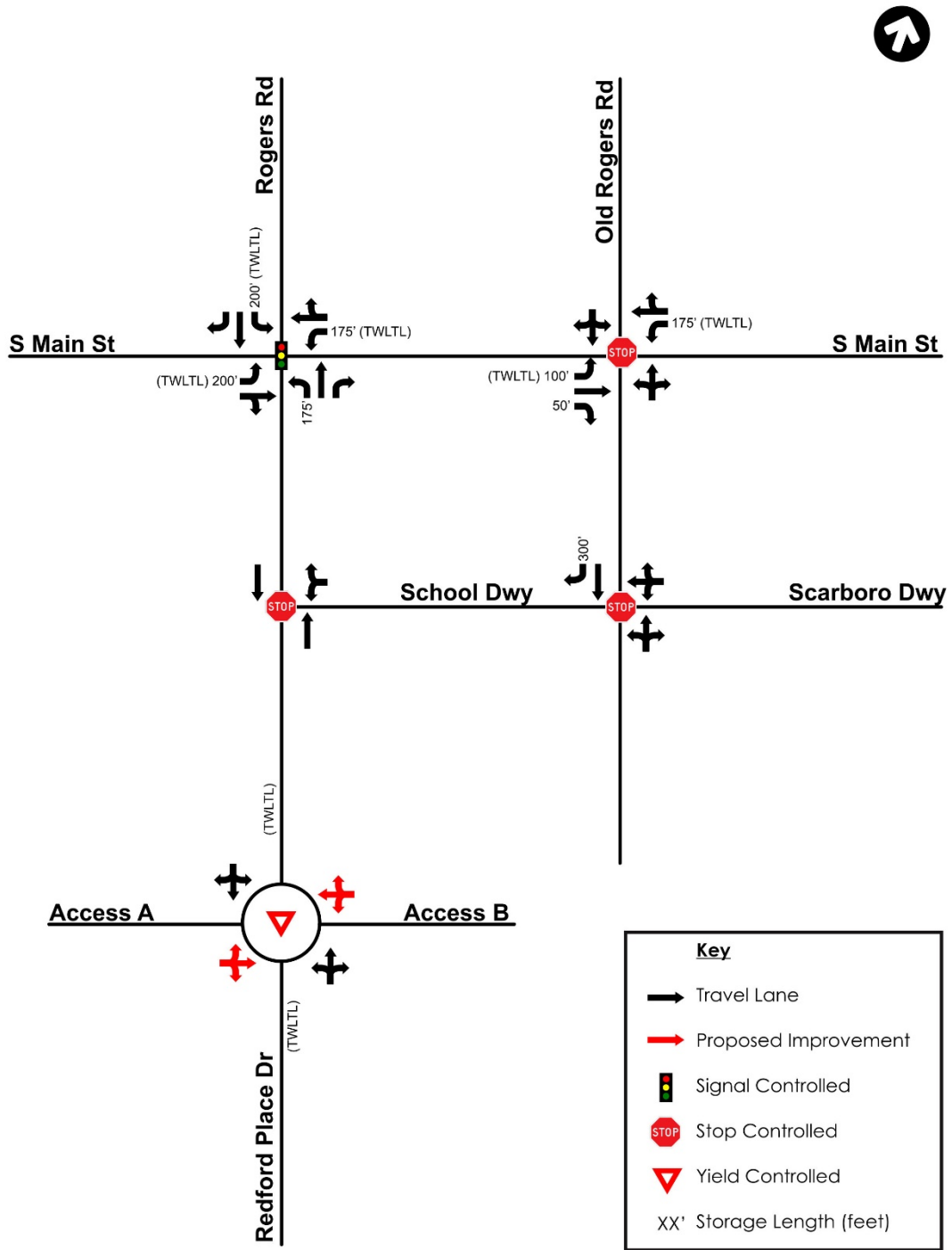


Figure is Not To Scale



PARKER RIDGE TRAFFIC IMPACT ANALYSIS

References

August 15, 2022

7.0 REFERENCES

¹ **NCDOT Functional Classification Map**,

<http://ncdot.maps.arcgis.com/home/webmap/viewer.html?layers=029a9a9fe26e43d687d30cd3c08b1792>

² **2020 NCDOT Average Daily Traffic Volumes**,

<https://ncdot.maps.arcgis.com/apps/webappviewer/index.html?id=964881960f0549de8c3583bf46ef5ed4>

³ **Trip Generation (11th Edition)**, Institute of Transportation Engineers (ITE), September 2021.

⁴ **Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis**. Washington D.C.: Transportation Research Board, 2016.

⁵ **NCDOT Capacity Analysis Guidelines**. North Carolina Department of Transportation (NCDOT), March 2022, <https://connect.ncdot.gov/resources/safety/Congestion%20Mngmt%20and%20Signing/Standards%20-%20Capacity%20Analysis%20Guidelines.pdf>

⁶ **Draft NCDOT Capacity Analysis Guidelines: Best Practices**. North Carolina Department of Transportation (NCDOT), March 2022, <https://connect.ncdot.gov/resources/safety/Congestion%20Mngmt%20and%20Signing/Best%20Practices%20-%20Capacity%20Analysis%20Guidelines.pdf>

⁷ **Land Development Ordinance**. Town of Rolesville, June 1, 2021, <https://www.rolesvillenc.gov/code-ordinances>

⁸ **Manual on Uniform Traffic Control Devices (MUTCD)**. Federal Highway Administration, May 2012, https://mutcd.fhwa.dot.gov/kno_2009r1r2.htm

8.0 APPENDIX

- Scoping Correspondence
- Site Plan
- Raw Traffic Count Data
- Approved Development Information
- Traffic Volume Calculations
- Synchro Files
- Synchro & SimTraffic Reports
- SIDRA files

