



Planning Board Meeting
March 25, 2024
7:00 p.m.

AGENDA

A. Call to Order

1. Pledge of Allegiance
2. Invocation
3. Approval of February 26, 2024 Planning Board Meeting Minutes

B. Regular Agenda

1. REZ-23-07 – Rezoning Application – 111/113/115 W. Young St.
2. REZ-24-02 – Rezoning Application – Hills at Harris Creek

C. Communications

1. Planning Director's Report
 - a. Previous Planning Board Recommendations
 - b. Other
2. Town Attorney's Report
3. Other Business
4. Adjournment



Memo

To: Town of Rolesville Planning Board
From: Meredith Gruber, Planning Director
Date: March 25, 2024
Re: Hills at Harris Creek
Rezoning Case REZ-24-02

Background

The Town of Rolesville Planning Department received this Rezoning (Map Amendment) application in February 2024, requesting to rezone approximately 116 acres consisting of four (4) tracts of land on the north side of Mitchell Mill Road, between Jonesville and Rolesville Roads, from Wake County's R-30 Zoning District to the Town's Land Development Ordinance (LDO) zoning district of Residential Medium Density as a Conditional Zoning District (RM-CZ). This submittal includes a Concept Site Plan of a proposed residential single family detached subdivision, and a set of proposed Conditions of Approval.

Prior to this current Application:

- Map Amendment (Rezoning) application MA 22-01 was processed between January and October 2022. This application requested rezoning the entire property to a Neighborhood Center (NC) as a Conditional Zoning (CZ) District. The specifics of the project were for single family attached and detached housing as well as 150,000 square feet of commercial floorspace.
- In early 2023, the Applicant chose to significantly revise the scope of the application, and REZ-23-03 was submitted to replace MA 22-01, and this application requested a small NC District with the majority of the land area proposed for the Residential High Density (RH) District, both as Conditional Zoning (CZ) Districts. The specifics of the project included maximums of 270 total residential dwellings units (combined single-family detached and attached), with no more than 115 of them being detached units, and a non-residential component in the NC-CZ District meeting the minimum requirements for that District.
- REZ-23-03 was denied by the Town Board of Commissioners on November 8, 2023.

V2 - REZ-24-02

EXHIBIT ONE CONCEPT SKETCH PLAN



Hills at Harris Creek Concept Site Plan

A Voluntary Annexation Petition (ANX 24-01) has also been submitted and reviewed and processed simultaneously with this rezoning request. There will be a combined Legislative hearing at a future Town Board of Commissioners' meeting.

Applicant Justification

The Applicant provided a brief statement regarding the submittal noting the desire to integrate seamlessly with the surrounding community (see attached application).

Neighborhood Meetings

The Applicant conducted a neighborhood meeting for this current Rezoning request on March 18, 2024; a meeting report follows this staff memo as an attachment. The Applicant conducted several such meetings related to the prior two Rezoning applications during 2022 and 2023.

Comprehensive Plan

Land Use

The 2017 Comprehensive Plan's Future Land Use Map designates the subject property, and the entire area south of Harris Creek to Mitchell Mill Road, as appropriate for Medium-Density Residential development. Per the Plan, this is defined as predominantly single family residential uses with portions of duplex, townhomes, and/or multifamily residential. These are lots or tracts at a density range of three to five dwelling units per gross acre.

Community Transportation Plan

The Town of Rolesville's Community Transportation Plan (CTP, adopted 2021) includes recommendations for Thoroughfares, Collectors, and intersections.

Thoroughfare Recommendations

- Mitchell Mills Road is planned to be a 4-lane, Raised Median-divided section with curb & gutter, bike lanes, and sidewalks.

Collector Recommendations

- At the far northern tip of the subject property, an east/west Collector roadway is identified. As demonstrated in the Concept/Sketch Plan (Attachment 5), the Applicant is proposing a more southern route for this roadway, moving it away from the environmental features (Harris Creek) further to the north, and bringing it closer to Mitchell Mill, where it can serve as a more near-by parallel roadway to the Arterial that Mitchell Mill will eventually function as. This more southern route aligns more so with a similar alignment approved with MA 22-06, 5109 Mitchell Mill Road, which when built will connect to Jonesville Road west of this subject property/project.

Intersection Recommendations

- There are no intersection recommendations associated with the subject property.
- The closest intersection recommendations are located at Mitchell Mill and Rolesville Roads, for an intersection realignment.

Greenway and Bike Plans

As per the 2022 Greenway and Bike Plans, proposed pedestrian routes are shown in the following locations:

- A ten foot (10') greenway is shown on the northern end of the property, on the south side of Harris Creek.
- A ten foot (10') side path is illustrated on the north side of Mitchell Mill Road.
- Bicycle lane within Mitchell Mill Road.

Consistency

The Applicant's rezoning request is consistent with the Town of Rolesville's Comprehensive Plan for the following reasons:

- The proposed single family detached residential housing type fits the Medium Density Residential land use description.
- The proposed vehicular circulation network will enhance or establish Thoroughfare and Collector connections, respectively, as recommended by the Town's Community Transportation Plan.
- The proposed greenways will establish pedestrian connections as recommended by Rolesville's Greenway Plan.

Traffic

Traffic Impact Analysis

The consulting firm, DRMP, performed the Traffic Impact Analysis (TIA) for this project on behalf of the Town; the study analyzed the development of 220 single family detached lots. Site access is proposed via two full movement driveway connections to Mitchell Mill Road. The TIA for this proposed development was originally sealed on May 19, 2022 and approved by NCDOT. The Town of Rolesville requested the TIA be updated to match the rezoning Concept Site Plan

changes that resulted in a lower trip generation. The updated TIA was sealed on February 29, 2024, and this TIA updates the analysis using the new trip generation.

Site Trip Generation						
Land Use (ITE Code)	Intensity	Daily Traffic	AM Peak Hour Trips Enter	AM Peak Hour Trips Exit	PM Peak Hour Trips Enter	PM Peak Hour Trips Exit
Single Family Housing (210)	220 Dwelling Units	2,084	38	115	131	78

Three (3) intersections were studied for capacity analysis and Level of Service (LOS) impact of this development – US 401 Bypass and Jonesville Road; US 401 Bypass and Eastern U-turn location; Mitchell Mill Road and Jonesville Road / Peebles Road.

TIA Summary – Intersection Improvements	
Recommendations	
Required Frontage Improvements per Rolesville Community Transportation Plan (CTP)	<ul style="list-style-type: none"> Widen one-half section of Mitchell Mill Road along the site frontage to this roadway's ultimate section (4-lane Median [raised] divided).
US 401 Bypass and Jonesville Road	<ul style="list-style-type: none"> Conduct a full signal warrant analysis prior to Full Build-out of the proposed development and install a traffic signal if warranted and approved by NCDOT and Town.
Mitchell Mill Road and Jonesville Road / Peebles Road	<ul style="list-style-type: none"> Construct a south-bound (Jonesville Rd) left-turn lane with at least 100 feet of storage and appropriate decel and taper. <ul style="list-style-type: none"> <i>It should be noted that this improvement was also identified by the 5109 Mitchell Mill Rd TIA.</i>
	<ul style="list-style-type: none"> Construct a westbound (Mitchell Mill Road) right-turn lane with at least 100 feet of storage and appropriate decel and taper.
	<ul style="list-style-type: none"> Conduct a full signal warrant analysis prior to Full Build-out of the proposed development and install a traffic signal if warranted and approved by NCDOT and Town.
Mitchell Mill Road and Site Access 1	<ul style="list-style-type: none"> Construct the southbound approach (Site Access 1) as a right-in/right-out with one ingress lane and one egress lane.
	<ul style="list-style-type: none"> Provide stop control for the southbound approach (Site Access 1).
	<ul style="list-style-type: none"> Construct a concrete median on Mitchell Mill Road that restricts access to right-in/right-out.
Mitchell Mill Road and Site Access 2	<ul style="list-style-type: none"> Construct the southbound approach (Site Access 2) with one ingress lane and one egress lane.

	<ul style="list-style-type: none"> • Provide stop control for the southbound approach (Site Access 2).
	<ul style="list-style-type: none"> • Construct the westbound (Mitchell Mill Road) right-lane with at least 100 feet of storage and appropriate decel and taper.

Development Review

The Technical Review Committee (TRC) reviewed one version of this current Rezoning application (but approximately five full reviews of the two other Applications prior to this), with all comments pertinent to the consideration of the proposed districts and the general development plan being resolved. Note that this does not mean that all LDO subdivision and/or site development regulations have been demonstrated, as the attached Concept Site Plan is only a conceptual plan, and not an engineered and dimensioned layout.

Staff Recommendation

Staff recommends approval of Rezoning request REZ-24-02. The proposed housing type is consistent with the Comprehensive Plan Future Land Use Map, and the Applicant's efforts to revise the Site Concept Plan to better fit the Town of Rolesville's current policy direction of where or where not to locate townhomes is noted. (The proposed Site Concept Plan includes single family detached lots only; prior plans for MA-22-01 and REZ-23-03 included townhome lots.)

Further review of the proposed Conditions of Approval may occur prior to the Town Board of Commissioners' review to improve their future implementation.

Proposed Motion

Motion to recommend (approval or denial, along with mention of consistency or inconsistency with the Comprehensive Plan) to the Town Board of Commissioners of Rezoning request REZ-24-02 – Hills at Harris Creek.

Attachments

1	Vicinity Map
2	Zoning Map
3	Future Land Use Map
4	Map Amendment Application
5	Concept Site Plan and Recreational Amenities Plan
6	Proposed Conditions of Approval
7	Neighborhood Meeting Package
8	Traffic Impact Analysis (TIA) sealed dated February 29, 2024

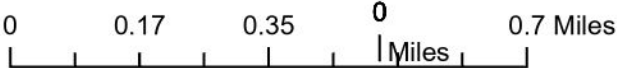
Case: ANX 22-04, REZ 23-03
Address: 0,0,3645 Rock Farm, 5333 Mitchell Mill Road
PIN 1757750520, 1757758529, 1757761273, 1757778982
Date: 2023.07.18



Vicinity Map



Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri



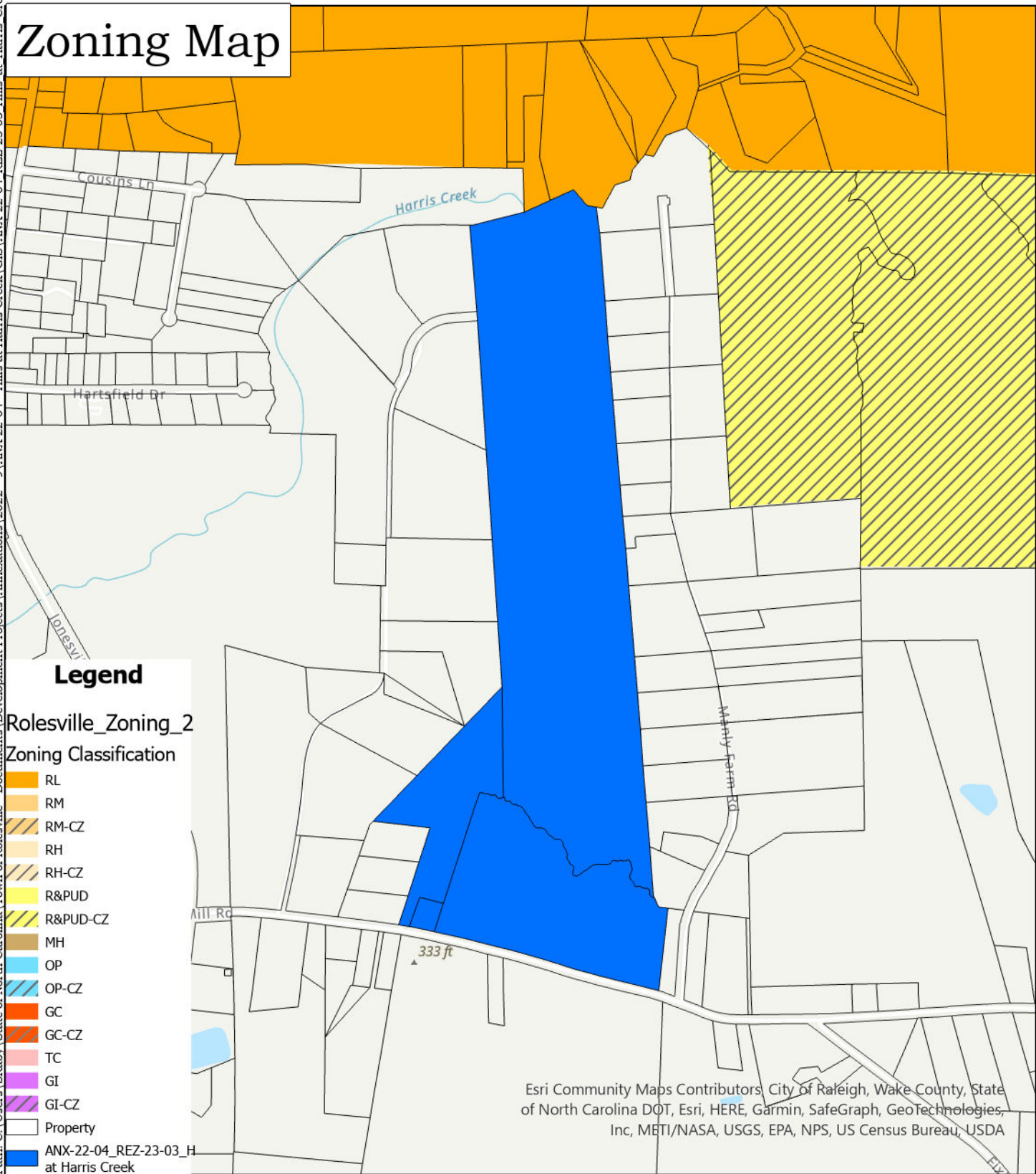
Path: C:\Users\SRaby\State of North Carolina\Town of Rolesville - Documents\Development Projects\Annexations\2022 - 9\ANX 22-04 - Hills at Harris Creek\GIS\ANX 22-04 - Hills at Harris Creek_Base_Map.aprx Date Saved: 7/18/2023 10:10 AM

ATTACHMENT 2 - EXISTING ZONING



Case: ANX 22-04, REZ 23-03
Address: 0,0,3645 Rock Farm, 5333 Mitchell Mill Road
PIN 1757750520, 1757758529, 1757761273, 1757778982
Date: 2023.07.18

Zoning Map



ATTACHMENT 3 - FUTURE LAND USE MAP



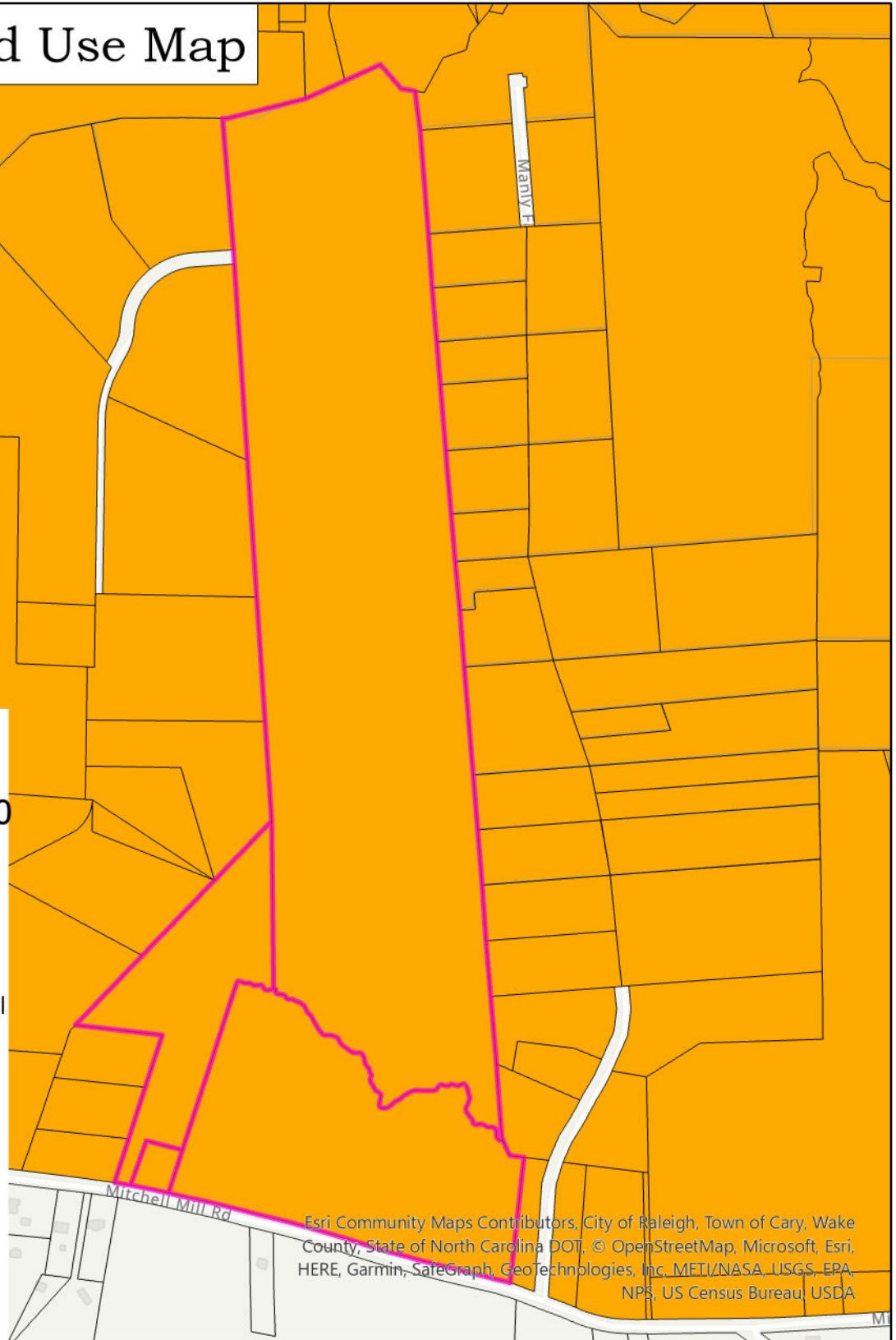
Case: ANX 22-04, REZ 23-03
Address: 0,0,3645 Rock Farm, 5333 Mitchell Mill Road
PIN 1757750520, 1757758529, 1757761273, 1757778982
Date: 2023.07.18

Future Land Use Map

Legend

RolesFULU03-13-20
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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0 0.07 0.15 0 0.3 Miles
Miles



Case No. REZ-24-02

Date rcvd 2-x-2024

Map Amendment Application

Contact Information

Property Owner Alan & Randy Watkins // Laura and Randall Watkins // Ellis Land Investment Company, LLC

Address 305 Church at North Hills Street, Suite 1110 City/State/Zip Raleigh NC 27609

Phone 919-824-6088 Email jason@ellisdevgroup.com

Developer Ellis Developments NC, LLC

Contact Name Jason Pfister

Address 305 Church at North Hills Street, Suite 1110 City/State/Zip Raleigh, NC 27609

Phone 919-824-6088 Email jason@ellisdevgroup.com

Property Information

Address 5326 Mitchell Mill Rd

Wake County PIN(s) 1757758529, 1757750520, 1757761273, 1757778982

Current Zoning District Wake R30 Requested Zoning District RM-CZ

Total Acreage 115.44

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 [Signature] Date 12 Feb 24

STATE OF NORTH CAROLINA

COUNTY OF WAKE

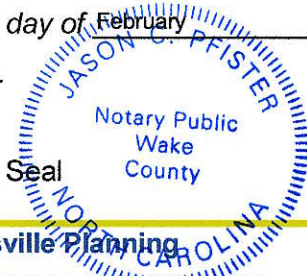
I, a Notary Public, do hereby certify that Stephen Ellis, Manager of Ellis Land Investment Company, LLC

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

the 12th day of February 2024

My commission expires 1/7/2028

Signature [Signature] Seal



Town of Rolesville Planning

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



Case No. _____

Date _____

Map Amendment Application

Contact Information

Property Owner Alan & Randy Watkins // Laura and Randall Watkins // Ellis Land Investment Company, LLC

Address 305 Church at North Hills Street, Suite 1110 City/State/Zip Raleigh NC 27609

Phone 919-824-6088 Email jason@ellisdevgroup.com

Developer Ellis Developments NC, LLC

Contact Name Jason Pfister

Address 305 Church at North Hills Street, Suite 1110 City/State/Zip Raleigh, NC 27609

Phone 919-824-6088 Email jason@ellisdevgroup.com

Property Information

Address 5326 Mitchell Mill Rd

Wake County PIN(s) 1757758529, 1757750520, 1757761273, 1757778982

Current Zoning District Wake R30 Requested Zoning District RM-CZ

Total Acreage 115.44

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  Date 13 Feb 2024

STATE OF NORTH CAROLINA

COUNTY OF WAKE

I, a Notary Public, do hereby certify that Laura Watkins + Randall Watkins

personally appeared before me this day and acknowledged the due execution of the foregoing instrument. This the 13th day of February 20 24

My commission expires 1-7-28

Signature  Seal



Town of Rolesville Planning

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



Case No. _____

Date _____

Map Amendment Application

Contact Information

Property Owner Alan & Randy Watkins // Laura and Randall Watkins // Ellis Land Investment Company, LLCAddress 305 Church at North Hills Street, Suite 1110 City/State/Zip Raleigh NC 27609Phone 919-824-6088 Email jason@ellisdevgroup.comDeveloper Ellis Developments NC, LLCContact Name Jason PfisterAddress 305 Church at North Hills Street, Suite 1110 City/State/Zip Raleigh, NC 27609Phone 919-824-6088 Email jason@ellisdevgroup.com

Property Information

Address 5326 Mitchell Mill RdWake County PIN(s) 1757758529, 1757750520, 1757761273, 1757778982Current Zoning District Wake R30 Requested Zoning District RM-CZTotal Acreage 115.44

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 Alan Watkins Randy Watkins Date 02/09/2024

STATE OF NORTH CAROLINA

COUNTY OF WAKE

I, a Notary Public, do hereby certify that Alan Watkins and Randy Watkins personally appeared before me this day and acknowledged the due execution of the foregoing instrument. This the 9th day of February 20 24.

My commission expires 1-7-28

Signature _____

Seal

Notary Public
Wake
County

Town of Rolesville Planning

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

Metes and Bounds Description of Property

This image shows a single page of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page, leaving small margins at the top and bottom. There are no vertical margin lines or other markings on the page.

Rezoning Justification

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.

Property Owner Information

[illegible]

Metes and Bounds report for Hills at Harris Creek Parcel

Beginning at an iron pipe, with North Carolina Grid Coordinates using NAD83 (2011) of Northing 775,443.03' and an Easting 2,156,848.70', the true point of beginning, thence,

N19°37'29"E for a distance of 190.11' to a point, thence

N18°40'39"E for a distance of 227.11' to a point, thence

N19°31'15"E for a distance of 230.79' to a point, thence

N83°06'35"W for a distance of 376.14' to a point, thence

N43°56'42"E for a distance of 1,191.02' to a point, thence

N03°44'09"W for a distance of 2,728.43' to a point, thence

N03°44'09"W for a distance of 235.15' to a point, thence

N75°53'40"E for a distance of 340.47' to a point, thence

N65°27'07"E for a distance of 350.10' to a point, thence

S40°38'56"E for a distance of 133.25' to a point, thence

S80°06'11"E for a distance of 62.70' to a point, thence

S04°46'37"E for a distance of 4,426.22' to a point, thence

S24°08'12"E for a distance of 83.90' to a point, thence

S00°25'56"E for a distance of 530.78' to a point, thence

N71°34'19"W for a distance of 6.89' to a point, thence

Around a curve to the left with a radius of 730.00', a length of 54.41', a chord bearing of N73°42'26"W and chord distance of 54.39' to a point, thence

Around a curve to the right with a radius of 12,981.80', a length of 667.56', a chord bearing of N75°02'09"W, and a chord distance of 667.49' to a point, thence

Around a curve to the left with a radius of 11,030.00', a length of 753.92', a chord bearing of N75°25'44"W, and a chord distance of 753.77' to a point, thence

N77°23'13"W for a distance of 103.54' to a point, thence

Around a curve to the left with a radius of 1,229.93', a length of 86.32', a chord bearing of N79°23'51"W, and a chord distance of 86.30' to a point, thence

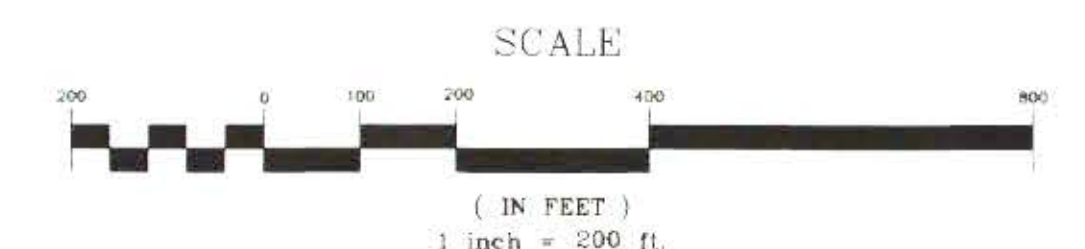
N78°33'23"W for a distance of 60.60' to the point and place of beginning. For a total of 5,029,708.11 square feet or 115.466 acres.

V2 - REZ-24-02

EXHIBIT ONE CONCEPT SKETCH PLAN

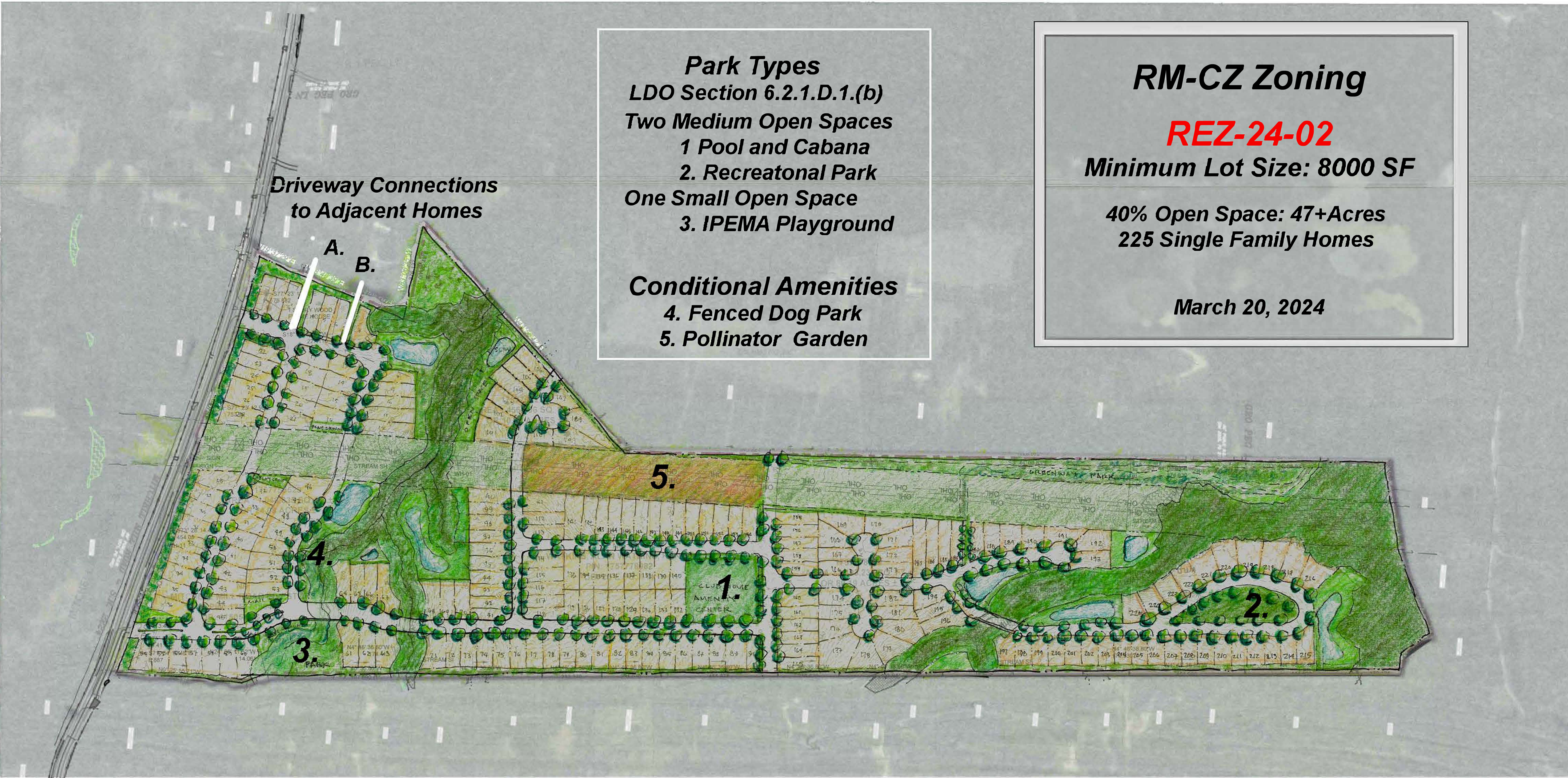


Hills at Harris Creek



V2-REZ-24-02

EXHIBIT TWO RECREATIONAL AMENITIES PLAN



Park Types
LDO Section 6.2.1.D.1.(b)
Two Medium Open Spaces
1 Pool and Cabana
2. Recreational Park
One Small Open Space
3. IPEMA Playground

Conditional Amenities
4. Fenced Dog Park
5. Pollinator Garden

RM-CZ Zoning
REZ-24-02
Minimum Lot Size: 8000 SF

40% Open Space: 47+Acres
225 Single Family Homes

March 20, 2024

Hills at Harris Creek

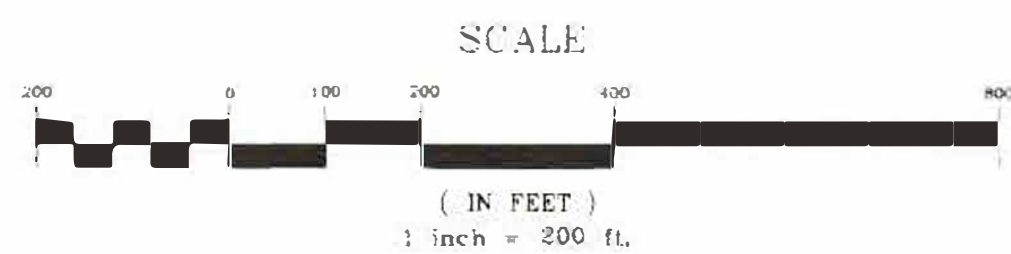


Exhibit Three

REZ-24-02/Hills at Harris Creek

March 19, 2024

Conditions of Approval

Conditions Applicable to the entire property:

1. The subject property shall be developed generally in accordance with the Concept Sketch Plan attached hereto as Exhibit One and incorporated herein as if fully set out. Locations shown for committed elements including, but not limited to greenways, streets, and open areas shown on the Concept Plan, are conceptual and provided for illustration and context only. Final locations of elements shall be determined at subsequent stages of approval.
2. The improvements described herein may be developed in phases in accordance with a phasing plan approved by the Town of Rolesville.
3. The property shall be rezoned to a Residential Medium Density Conditional Zoning (RM-CZ) District and may be developed with up to a maximum of 225 single family detached dwelling units.
4. Affordable Housing: Prior to the first residential dwelling unit building permit issuance, the property owner shall donate Twenty Thousand Dollars and No Cents (\$20,000.00) to Homes for Heroes (or another non-profit organization with a substantially similar mission statement).
5. Pollinator Plantings: At least four acres of the landscaping planted within the Duke Energy power line easement on the subject property shall utilize plant materials that are listed as Native Pollinator Plants on North Carolina Wildlife Federation ("NCWF") or other resources for native plants recommended by the NCWF. Where evergreen plantings or street trees are required by the Rolesville Land Development Ordinance as the same may be amended from time to time, pollinator plantings shall not be required. Nothing herein shall be construed to limit the plant materials permitted on individual residential lots.
6. Recreational Amenities: The following recreational amenities shall be provided generally as shown on the Recreational Amenities Plan attached hereto Exhibit Two as a part of the development of the subject property and dedicated to the community's homeowner's association except for those areas offered to and accepted by the Town of Rolesville:
 - a. A swimming pool and cabana, including changing rooms and restrooms shall be constructed prior to the 150th residential dwelling unit building permit issuance;
 - b. At least one fenced playground shall be constructed prior to the 150th residential dwelling unit building permit issuance;
 - c. At least one fenced dog park shall be constructed prior to the 150th residential dwelling unit building permit issuance;
 - d. At least one (1) garden park shall be provided prior to the 200th residential dwelling unit building permit issuance.
7. Transportation Improvements: The property owner shall install all required roadway and transportation improvements set forth in the Traffic Impact Analysis report associated with this project in order to address the transportation impacts reasonably expected to be generated by the development. All transportation improvements shall be installed in accordance with future phasing plans approved by the Town. While it is

- anticipated that the improvements contemplated by this condition will be clarified by a formal development agreement, reimbursement agreement, or other written agreement between the property owner and the Town, the absence of such a subsequent written agreement shall not be deemed to invalidate this condition. Notwithstanding the foregoing, the Town acknowledges that some of the potential traffic improvements set forth in the Traffic Impact Analysis report associated with this project are also contemplated by and included in other Traffic Impact Analysis reports for unrelated development projects in the general area of this project ("Nearby Projects"). Nothing contained within this condition shall be construed to limit or hamper the property owner's ability to enter into agreements with the owners of those Nearby Projects to share the costs of any roadway and transportation improvements set forth in the Traffic Impact Analysis report associated with this project.
8. Foundations: All homes shall include either crawl space foundations or stem wall foundation. Any stem wall foundations shall have an average of at least eighteen inches (18") in height across the front facade of the home. There shall be no exposed concrete on any portion of the stem wall foundation on any side of the home facing a public street. Compliance with this condition shall be demonstrated by noting the following on the plans submitted with the residential building permit application: i) the average stem wall height for the front façade of the stem wall foundation, and ii) the building materials to be used (stone veneer or brick) on the stem wall foundation façade on any side of the home facing a public street.
 9. Each single family detached dwelling shall contain a minimum gross building square footage of 2,000 square feet.
 10. Driveway Access to Neighboring Properties: Two private driveways (shown as Driveway A and Driveway B on the attached Exhibit One) shall be constructed to connect the property to the two adjacent properties (identified as Wake County PIN's 1757657746 & 1757658917) that currently access Mitchell Mill Road via the private road known as Rock Farm Road (the "Rock Farm Road Properties"). Rock Farm Road will be abandoned and removed in connection with the development of the property. As such, the property owner shall grant access easements to the Rock Farm Road Properties to provide ingress/egress to the Rock Farm Road Properties through Driveway A and Driveway B prior to the abandonment and removal of Rock Farm Road.
 11. Greenway and Shared Use Path: The property owner shall construct a 10' wide multi-use path (labeled as the Shared Use Path on the attached Exhibit One) which shall be constructed to connect to the 10' wide public greenway path (labeled as the Public Greenway on the attached Exhibit One). The property owner shall grant an easement to the Town to allow the Town to perform maintenance and repair of the Shared Use Path and the Public Greenway. Upon completion of the Shared Use Path, the Town shall be solely responsible for any required repair and/or maintenance of the Shared Use Path at the Town's sole cost and expense.

Rezoning Justification for Hills at Harris Creek Rezoning Application (REZ-24-02)

The proposed rezoning, of the parcels described above, is made in concert with careful consideration of the Rolesville Comprehensive Plan 2017. The Future Land Use Map designates these parcels as Medium Density Residential, and we believe the Residential Medium Density Conditional Zoning (RM-CZ) zone would allow the best variety of housing types to meet this objective while integrating seamlessly with the surrounding community. The varied housing types appeal to a various income levels while still maintaining the appeal and quality that is consistent with the planned development of the surrounding areas. The proposed rezoning has been designed to ensure efficient development within the Town and incorporates public facilities such as the integrated Greenway and bike pathways in order to increase and expand transportation opportunities within the Town in a safe and efficient manner. The Applicant has coordinated several design aspects of this project with the developers of the Reserve at Mitchell Mill (MA-22-06) in order to ensure that both projects are developed and constructed in a logical and orderly manner. The applicant has also designed the project in order to minimize any adverse environmental impacts. In particular, the applicant has designed the route of the Greenway to avoid and minimize impacts on the natural wetlands found on the property and surrounding areas and also proposes a pollinator garden to support native pollinator populations.

In total, the proposed rezoning is consistent with the goals of the Rolesville Comprehensive Plan 2017 and is not in conflict with and provisions of the Town's Land Development Ordinance. The proposed reasonable and in the public interest. We request your support for the proposed zoning.

NEIGHBORHOOD MTG PACKAGE



ELLIS
DEVELOPMENTS GROUP

305 Church at North Hills Street, Suite 1110
Raleigh, NC 27609

Notification of Neighborhood Meeting for Pending Rezoning



You have received this notice because you own property near where an application to rezone or subdivide property has been filed. This notice is to inform you of an upcoming public meeting on this proposed rezoning.

Dear Property Owner:

Please be advised that a formal application has been submitted to amend the zoning classification for four properties (Wake County Property Identification Numbers 1757750520, 1757758529, 1757761273, and 1757778982) located at 5326 Mitchell Mill Road in Rolesville. The project consists of approximately 115.94 acres which is currently zoned R-30: Residential. The parcels are currently zoned under the development jurisdiction of Wake County. However, Ellis Developments Group has also filed a pending annexation application (ANX 24-01) to annex the parcels into the town limits of Rolesville.

Ellis Developments Group has applied to rezone the parcels to RM-CZ (Residential Medium Density Conditional Zoning) to allow for the construction of up to 225 single family detached homes. We believe the proposed rezoning at this location is consistent with the Town of Rolesville Future Land Use Map which calls for medium density residential in this area.

In compliance with the requirements of the Town of Rolesville's Land Development Ordinance Code, a Neighborhood Meeting will be held to provide you with an opportunity to review a conceptual plan for the project and to give you an opportunity to ask any questions you may have about the project.

The Neighborhood Meeting will be held on Monday, March 18, 2024 from 6:30-7:30 p.m. at the Rolesville Community Center located at 514 Southtown Circle, Rolesville, NC 27571. Should you have questions prior to the meeting, please feel free to contact me via telephone at 919-824-6088 or email at jason@ellisdevgroup.com.

Sincerely,

Jason Pfister
Vice President of Development

COMMUNITY MEETING SIGN-IN SHEET

Project:	Hills at Harris Creek REZ-24-02	Meeting Date:	March 18, 2024
Applicant:	Ellis Developments Group	Location:	Rolesville Community Center

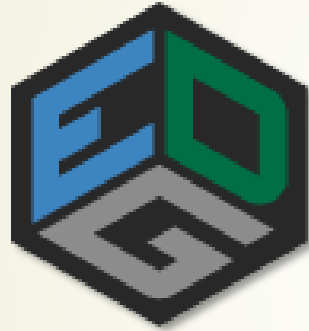
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Hills at Harris Creek: Neighborhood Meeting

March 18, 2024
Rolesville Community Center



About Us



ELLIS
DEVELOPMENTS GROUP

▶ Who are We?

- ▶ Ellis Developments Group – Land Acquisition and Development Company

▶ Where are We?

- ▶ Headquarters in Raleigh with an office in Charlotte
- ▶ Projects throughout the Carolinas

▶ What is our Role?

- ▶ Develop and deliver high-quality residential development projects that meet demand for growth
- ▶ Foster relationships with landowners, municipalities, and community members to develop projects that enhance communities
Develop and deliver high quality residential development projects that enhance communities and meet demand for growth

Proposed Rezoning

Current Status

- Rural residential land
- Acreage: 115.94 acres
- Current Zoning: Wake County R-30 (allows approximately 75 lots)

Proposed Changes

- Zoning Change to Residential Medium Density Conditional Zoning
- Proposed construction of 225 single family homes with minimum 8000 sf lots (Under 2 units/acre)

Site Plan



Updates Since Prior Meeting

- Reduced units from 267 total homes to 225 homes
- Removed townhomes and commercial parcel
- Maintains all prior traffic improvements to minimize impacts and improve traffic flows
- Greenway trail expanded and integrated into amenity center
- Reduced density and higher price point for tax base

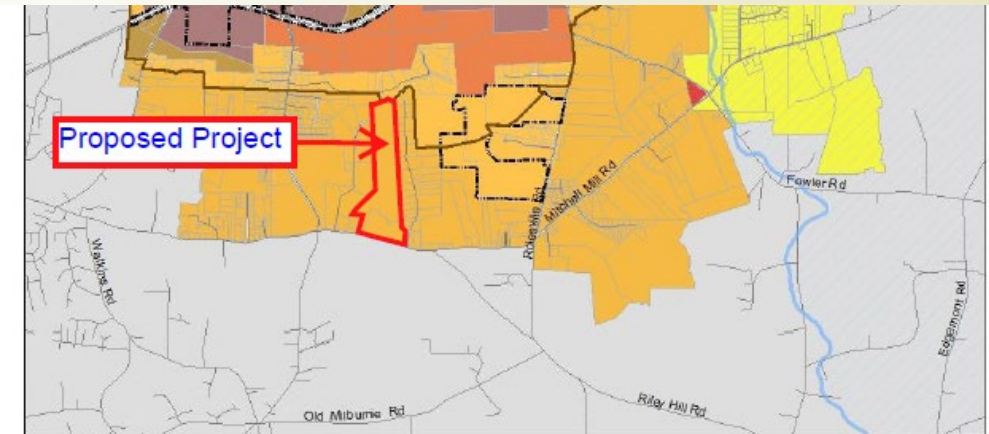
Comprehensive Plan 2017



ELLIS
DEVELOPMENTS GROUP

Rezoning Proposal:

- Consistent with Comprehensive Plan
 - Future Land Use Map designates these parcels at Medium Density Residential
- Consistent with residential character of adjacent properties



Rolesville: Future Land Use Map



Land Use & Zoning



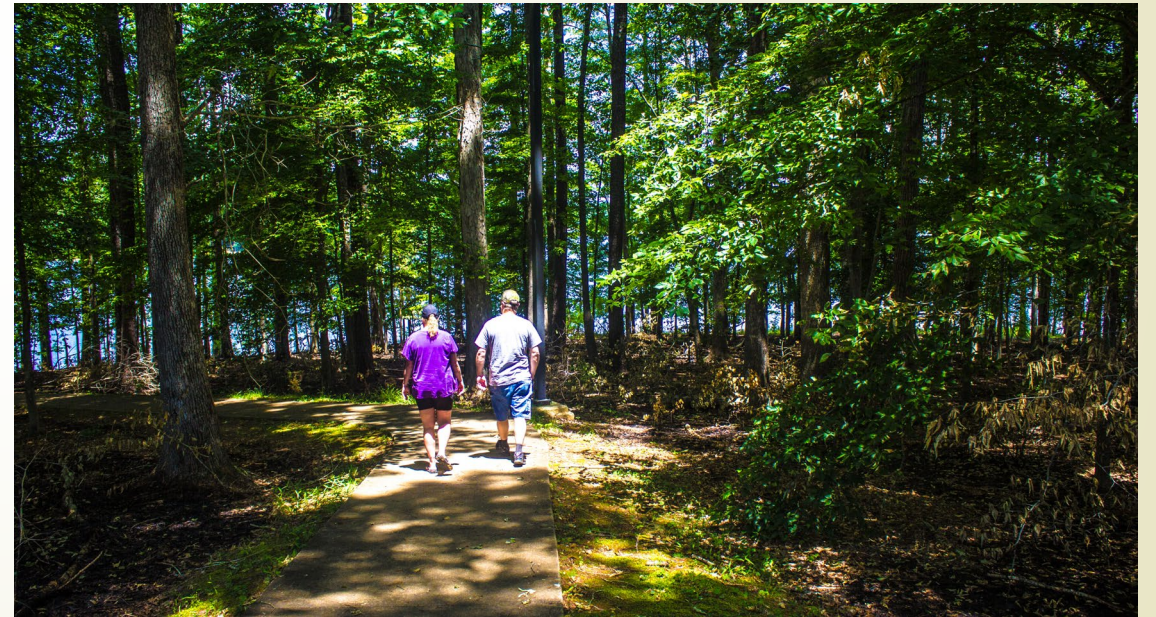
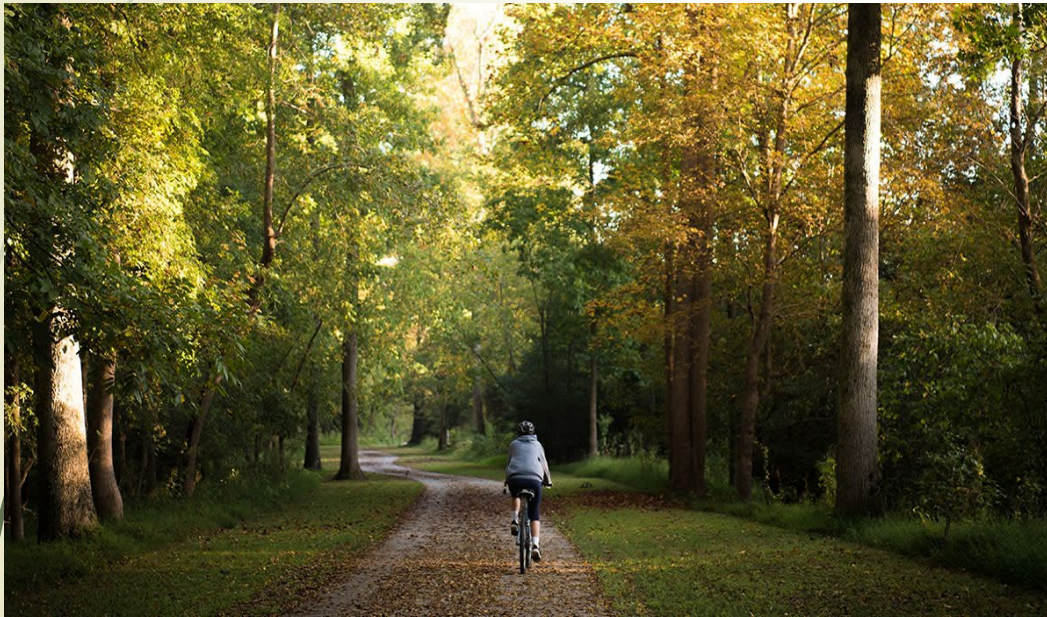
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Greenway Plan

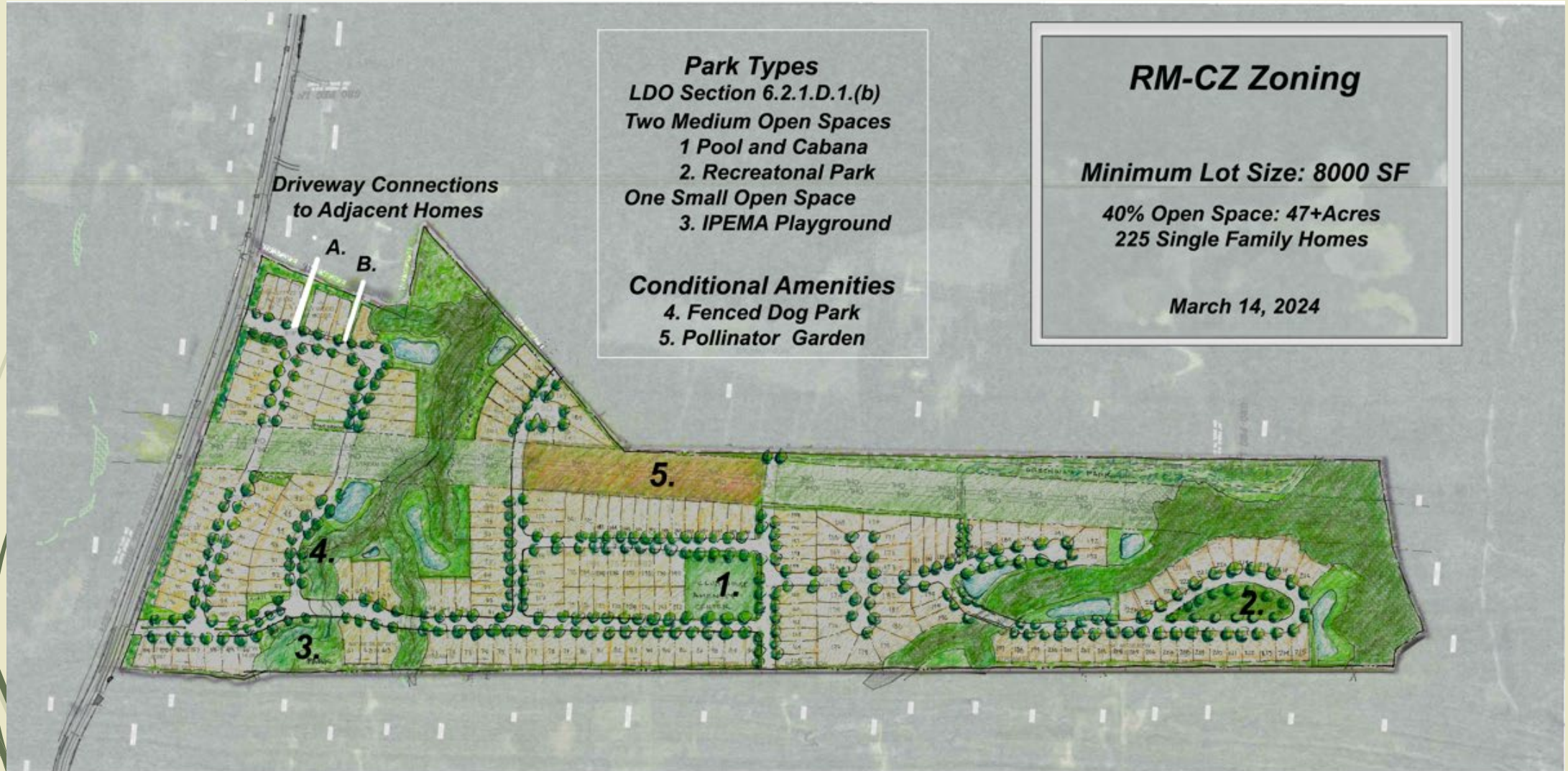


Amenities

Greenway Trails



Recreational Amenities Plan



Amenities

Community Pool and Cabana



Amenities

Dog Park



Amenities

Pollinator/Wildflower Garden



Amenities

Landscaped Boulevard Streetscapes



Benefits of Proposed Rezoning

- Preserves and maximizes open space (40%)
 - Multiple parks; pollinator garden
- Variety of housing types and price points
- Improved connectivity and traffic flow
- Increased tax base for town

Site Plan



Hills at Harris Creek Neighborhood Meeting Report

Ellis Developments Group (EDG) hosted an informational meeting for the proposed project on March 18, 2024 at the Rolesville Community Center. Three neighboring residents attended the meeting, all of which had attended the neighborhood meetings for the prior rezoning (attendance sheet attached). During the meeting, EDG presented an overview of the updates to the proposed project compared to the prior rezoning request and provided the attendees with an opportunity to ask questions and express any concerns about the project. More specifically, the following topics were discussed in detail:

- Process and timeline
 - Overview of the rezoning process and upcoming hearings, as well as overall anticipated construction timeline.
- Future Land Use Map
 - Explained goals and rationale behind Future Land Use Map and specifically what is allowed in Medium Density Residential
 - Explained how this project is consistent with FLUM designation for this area of Town
- Overview of project
 - Unit mix, overall goal for neighborhood look and feel
 - 225 SF homes
 - Density: less than units/acre
 - Buffers/preservation of existing trees or natural areas
 - 25' landscaped buffer
 - Described amenities green space design/walkability of community
- Well integrity/blasting
 - Residents raised concerns about rock blasting near their homes and potential damage to wells servicing their homes
 - EDG committed to ensuring that blasting contractor is sufficiently insured/bonded and steps will be taken to ensure that wells will be protected
 - Any damage caused by blasting would be liability of EDG or its subcontractors
- Traffic
 - EDG responsible for all traffic improvements called for in the TIA
 - Measures to control traffic including traffic calming boulevard entrance



TRAFFIC IMPACT ANALYSIS

FOR

HILLS AT HARRIS CREEK

LOCATED

IN

ROLESVILLE, NORTH CAROLINA

Prepared For:

TOWN OF ROLESVILLE
502 Southtown Circle
Rolesville, NC 27571



FEBRUARY 2024

DRMP Project No. 20498 - 005

Prepared By: MW

Reviewed By: AE



**TRAFFIC IMPACT
ANALYSIS
FOR
HILLS AT HARRIS CREEK
LOCATED IN
ROLESVILLE, NORTH CAROLINA**



Prepared For:

Town of Rolesville
502 Southtown Circle
Rolesville, NC 27571

Prepared By:

DRMP, Inc.
License #F-1524

TRAFFIC IMPACT ANALYSIS HILLS AT HARRIS CREEK

Rolesville, North Carolina

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Hills at Harris Creek development in accordance with the Town of Rolesville (Town) Unified Development Ordinance (UDO) and North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. The proposed development is to be located north of Mitchell Mill Road, west of Manly Farm Road, and east of Gro Peg Lane in Rolesville, North Carolina. The proposed development, anticipated to be completed in 2027, is assumed to consist of 220 single-family homes. Site access is proposed via two (2) full-movement driveway connections to Mitchell Mill Road. A TIA for this development was sealed on May 19, 2022 and approved by NCDOT. The Town requested the TIA be updated to match site plan changes that resulted in lower trip generation. This TIA updates the analysis using the new trip generation. No other scope changes were made from the previous TIA.

2. Existing Traffic Conditions

The study area for the TIA was determined through coordination with the North Carolina Department of Transportation (NCDOT) and the Town of Rolesville (Town) and consists of the following existing intersections:

- US 401 Bypass and Jonesville Road
- US 401 Bypass and Eastern U-Turn Location
- Mitchell Mill Road and Jonesville Road / Peebles Road

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersection listed above, in November of 2021 during typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods, while schools were in session for in-person learning.

Previously collected counts from the year 2021 were projected to the 2022 existing analysis year using a compounded annual growth rate of 2%. Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate.

3. Future Traffic Conditions

Through coordination with the NCDOT and the Town, it was determined that an annual growth rate of 2% would be used to generate 2027 projected weekday AM and PM peak hour traffic volumes. the following adjacent developments were identified to be included as an approved adjacent development in this study:

- Cobblestone Crossing Mixed-Use
- Young Street PUD
- Wheeler Tract
- Louisbury Road Assemblage
- Kalas / Watkins Family Property

4. Site Trip Generation

Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE Trip Generation Manual, 11.1th Edition. Table E-1 provides a summary of the trip generation potential for the site.

Table E-1: Site Trip Generation

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single-Family Housing (210)	220 DU	2,084	38	115	131	78

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2027 no-build traffic volumes to determine the 2027 build traffic volumes. The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2023 Existing Traffic Conditions
- 2027 No-Build Traffic Conditions
- 2027 Build Traffic Conditions

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for 2022 existing, 2027 no-build, and 2027 build conditions. Refer to Section 7 of the TIA for the capacity analysis summary performed at each study intersection.

6. Recommendations

Based on the findings of this study, specific geometric and traffic control improvements have been identified at study intersections. The improvements are summarized below and are illustrated in Figure E-1.

Recommended Improvements by Developer

Required Frontage Improvements per Rolesville Community Transportation Plan

- Widen one-half section of Mitchell Mill Road along the site frontage to this roadway's ultimate section (4-lane median divided).

US 401 Bypass and Jonesville Road

- Conduct a full signal warrant analysis prior to full build-out of the proposed development and install a traffic signal if warranted and approved by the NCDOT and the Town.

US 401 Bypass and Easten U-Turn Location

- Conduct a full signal warrant analysis prior to full build-out of the proposed development and install a traffic signal if warranted and approved by the NCDOT and the Town.

Mitchell Mill Road and Jonesville Road / Peebles Road

- Construct a southbound (Jonesville Road) left-turn lane with at least 100 feet of storage and appropriate decel and taper.
 - It should be noted that this improvement was also identified by the 5109 Mitchell Mill Road TIA.
- Construct a westbound (Mitchell Mill Road) right-turn lane with at least 100 feet of storage and appropriate decel and taper.

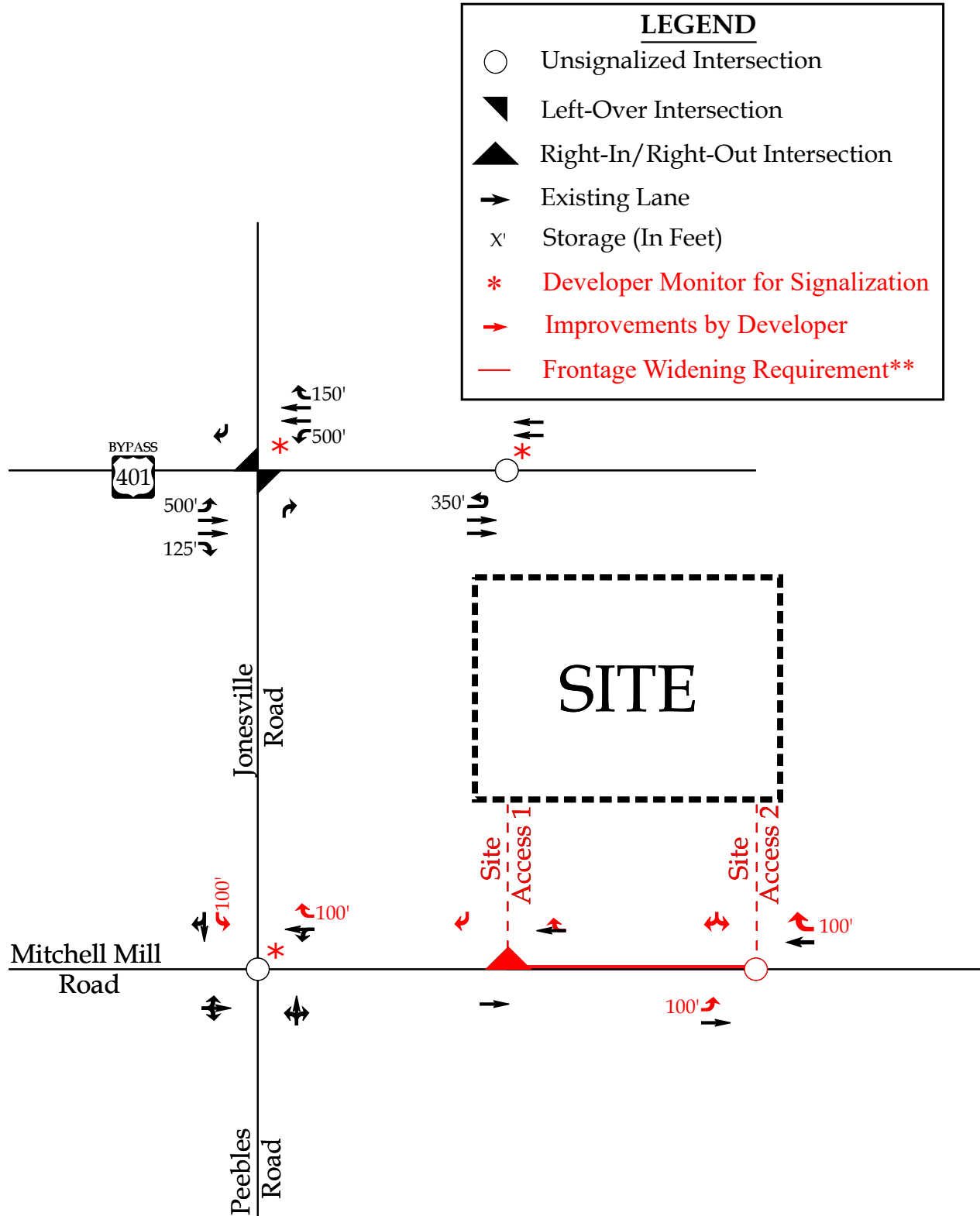
- Conduct a full signal warrant analysis prior to full build-out of the proposed development and install a traffic signal if warranted and approved by NCDOT and the Town.

Mitchell Mills Road and Site Access 1

- Construct the southbound approach (Site Access 1) as a right-in/right-out with one ingress lane and one egress lane.
- Provide stop-control for the southbound approach (Site Access 1).
- Construct a concrete median on Mitchell Mill Road that restricts access to right-in/right-out.

Mitchell Mill Road and Site Access 2

- Construct the southbound approach (Site Access 2) with one ingress lane and one egress lane.
- Provide stop-control for the southbound approach (Site Access 2).
- Construct an eastbound (Mitchell Mill Road) left-turn lane with at least 100 feet of storage and appropriate decel and taper.
- Construct a westbound (Mitchell Mill Road) right-turn lane with at least 100 feet of storage and appropriate decel and taper.



**Refer to Section 9 of the report for more information



Hills at Harris Creek
Rolesville, NC

Recommended Lane
Configurations

Scale: Not to Scale Figure E-1

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TECHNICAL APPENDIX

Appendix A:	Scoping Documentation
Appendix B:	Traffic Counts
Appendix C:	Adjacent Development Information
Appendix D:	Capacity Calculations – US 401 Bypass & Jonesville Road
Appendix E:	Capacity Calculations – US 401 Bypass & Eastern U-Turn Location
Appendix F:	Capacity Calculations – Mitchell Mill Road & Jonesville Road / Peebles Road
Appendix G:	Capacity Calculations – Mitchell Mill Road & Site Access 1
Appendix H:	Capacity Calculations – Mitchell Mill Road & Site Access 2
Appendix I:	Turn Lane Warrants
Appendix J:	MUTCD / ITRE Signal Warrant Analysis

TRAFFIC IMPACT ANALYSIS

HILLS AT HARRIS CREEK Rolesville, North Carolina

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Hills at Harris Creek development in Rolesville, North Carolina. The proposed development, anticipated to be completed in 2027, is located north of Mitchell Mill Road, west of Manly Farm Road, and east of Gro Peg Lane in Rolesville, North Carolina. The purpose of this study is to determine the potential impacts to the surrounding transportation system created by traffic generated by the proposed development, as well as recommend improvements to mitigate the impacts.

The proposed development, anticipated to be completed in 2027, is assumed to consist of 220 single-family housing units.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2027 No-Build Traffic Conditions
- 2027 Build Traffic Conditions

1.1. Site Location and Study Area

The development is proposed to be located north of Mitchell Mill Road, west of Manly Farm Road, and east of Gro Peg Lane in Rolesville, North Carolina. Refer to Figure 1 for the site location map.

The study area for the TIA was determined through coordination with the North Carolina Department of Transportation (NCDOT) and the Town of Rolesville (Town) and consists of the following existing intersections:

- US 401 Bypass and Jonesville Road
- US 401 Bypass and Eastern U-Turn Location
- Mitchell Mill Road and Jonesville Road / Peebles Road

1.2. Proposed Land Use and Site Access

The proposed development, anticipated to be completed in 2027, is assumed to consist of 220 single-family homes.

Site access is proposed via one (1) full-movement and one (1) right-in/right-out (RIRO) driveway connection along Mitchell Mill Road. Refer to Figure 2 for a copy of the preliminary site plan.

1.3. Adjacent Land Uses

The proposed development is located in an area consisting primarily of undeveloped land and residential development.

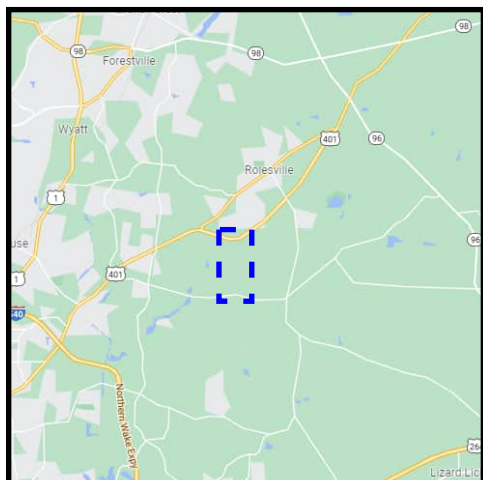
1.4. Existing Roadways

Existing lane configurations (number of traffic lanes on each intersection approach), speed limits, storage capacities, and other intersection and roadway information within the study area are shown in Figure 3. Table 1 provides a summary of this information, as well.

Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross Section	Speed Limit	2021 AADT (vpd)
US 401 Bypass		4-lane divided	55 mph	18,500
Jonesville Road	SR 2226	2-lane undivided	35 mph / 45 mph	2,210*
Mitchell Mill Road	SR 2224	2-lane undivided	45 mph	4,100
Peebles Road	SR 2929	2-lane undivided	45 mph	1,700*

*ADT based on the traffic counts from 2022 and assuming the weekday PM peak hour volume is 10% of the average daily traffic.



LEGEND

- Proposed Site Location
- Study Intersection
- Study Area



Hills at Harris Creek
Rolesville, NC


Site Location Map

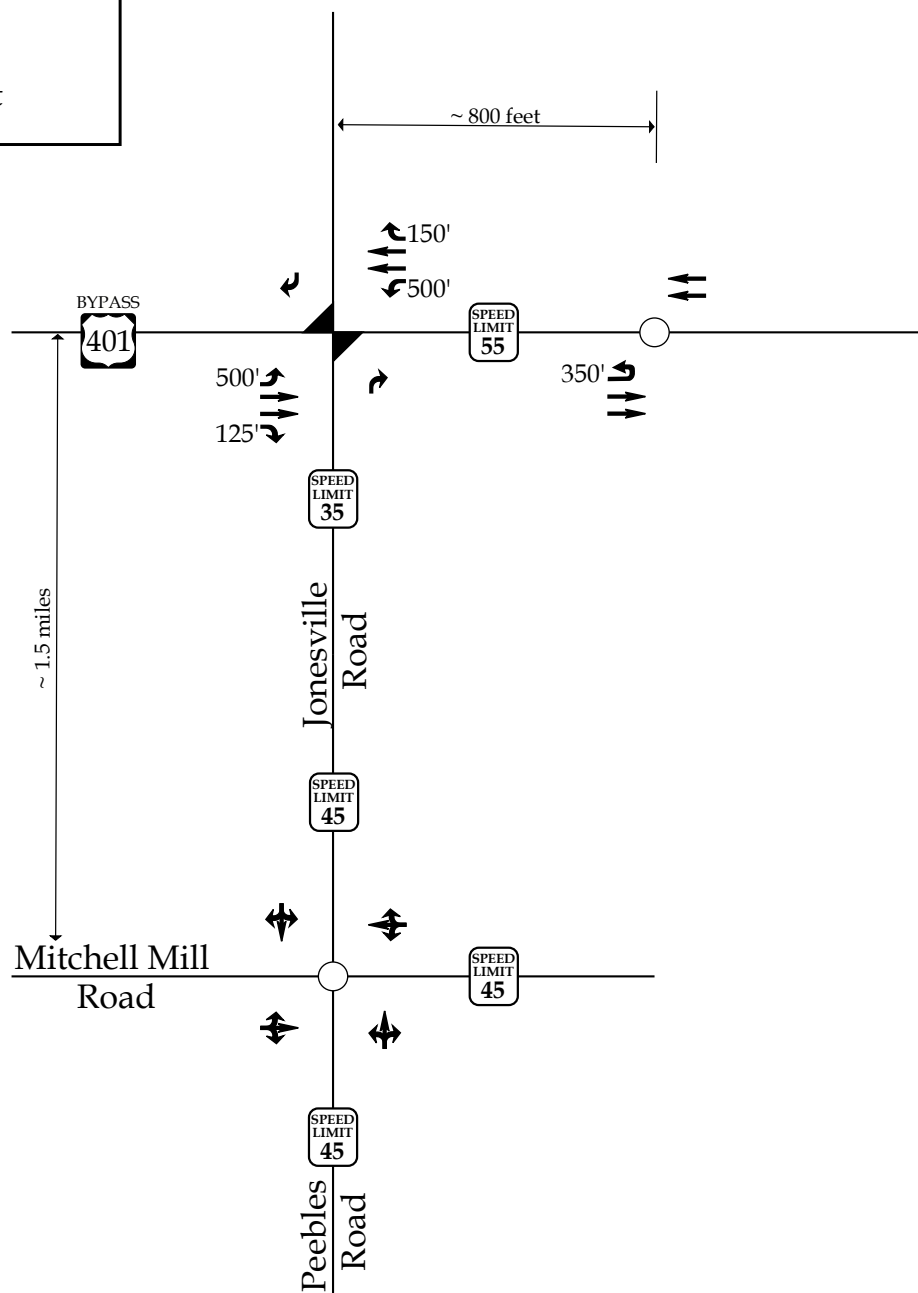
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Figure 1



LEGEND

- Unsignalized Intersection
- ◼ Left-Over Intersection
- ➔ Existing Lane
- X' Storage (In Feet)
-  Posted Speed Limit



Hills at Harris Creek
Rolesville, NC

2022 Existing
Lane Configurations

Scale: Not to Scale Figure 3

2. 2022 EXISTING PEAK HOUR CONDITIONS

2.1. 2022 Existing Peak Hour Traffic Volumes

Existing peak hour traffic volumes were determined based on previously collected traffic counts conducted at the study intersections listed below, in November of 2021 during typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods, while schools were in session for in-person learning:

- US 401 Bypass and Jonesville Road
- US 401 Bypass and Eastern U-Turn Location
- Mitchell Mill Road and Jonesville Road / Peebles Road

Previously collected counts from the year 2021 were projected to the 2022 existing analysis year using a compounded annual growth rate of 2%. Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate. Refer to Figure 4 for 2022 existing weekday AM and PM peak hour traffic volumes. A copy of the count data is located in Appendix B of this report.

2.2. Analysis of 2022 Existing Peak Hour Traffic Conditions

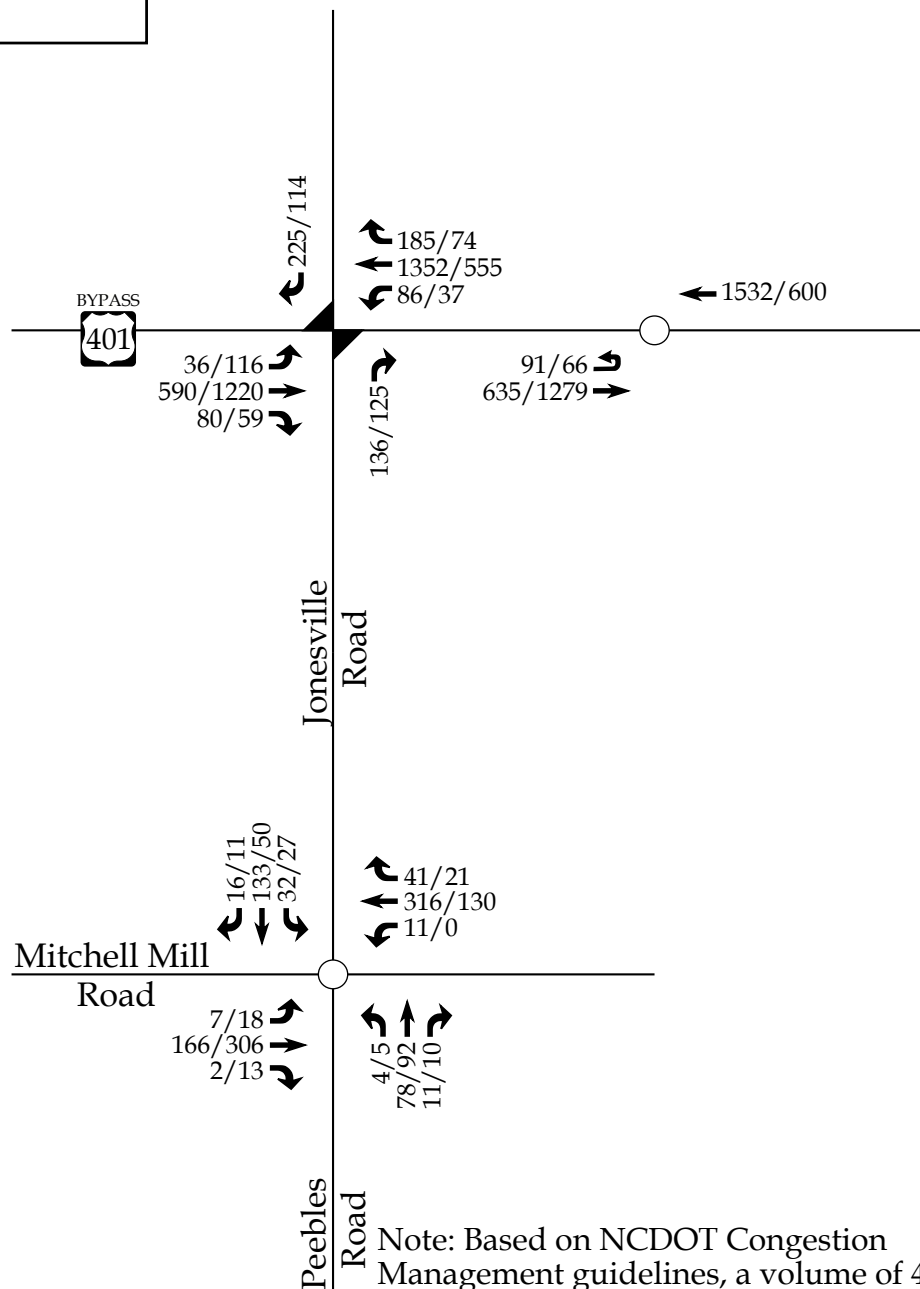
The 2022 existing weekday AM and PM peak hour traffic volumes were analyzed to determine the current levels of service at the study intersections under existing roadway conditions. The results of the analysis are presented in Section 7 of this report.

LEGEND

○ Unsignalized Intersection

◼ Left-Over Intersection

X / Y → Weekday AM / PM Peak Hour Traffic



Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.



Hills at Harris Creek
Rolesville, NC

2022 Existing
Peak Hour Traffic

Scale: Not to Scale

Figure 4

3. 2027 NO-BUILD PEAK HOUR CONDITIONS

In order to account for the growth of traffic and subsequent traffic conditions at a future year, no-build traffic projections are needed. No-build traffic is the component of traffic due to the growth of the community and surrounding area that is anticipated to occur regardless of whether the proposed development is constructed. No-build traffic is comprised of existing traffic growth within the study area and additional traffic created as a result of adjacent approved developments.

3.1. Ambient Traffic Growth

Through coordination with NCDOT and the Town, it was determined that an annual growth rate of 2% would be used to generate 2027 projected weekday AM and PM peak hour traffic volumes. Refer to Figure 5 for 2027 projected peak hour traffic.

3.2. Adjacent Development Traffic

Through coordination with the NCDOT and the Town, the following adjacent developments were identified to be included as an approved adjacent development in this study:

- Cobblestone Crossing Mixed-Use
- Young Street PUD
- Wheeler Tract
- Louisbury Road Assemblage
- Kalas / Watkins Family Property

Table 2, on the following page, provides a summary of the adjacent developments.

Table 2: Adjacent Development Information

Development Name	Location	Build-Out Year	Land Use / Intensity	TIA Performed
Cobblestone Crossing Mixed-Use	Northwest quadrant of the intersection of Main Street and Young Street	2023	180 multi-family homes 18,200 sq. ft. municipal flex space 50,000 sq. ft. general retail	March 2021 by RKA
Young Street PUD	Along both sides of US 401 Bypass west of Young Street	2025	96 single-family homes 525 single-family homes 320 multi-family homes 122,800 sq. ft. general retail	June 2019 by Kimley Horn
Wheeler Tract	Northeast quadrant of the intersection of Rolesville Road and Mitchell Mill Road	2026	233 single-family homes 125 multi-family homes	June 2019 by RKA
Louisbury Road Assemblage	West of Louisbury Road and south of Stells Road	2025	152 single-family homes	May 2020 by RKA
Kalas / Watkins Family Property	Along the west side of Rolesville Road, north of Mitchell Mill Road	2025	439 single-family homes 96 multi-family homes	August 2019 by Stantec

Adjacent development trips are shown in Figure 6. Adjacent development information can be found in Appendix C.

3.3. Future Roadway Improvements

Based on coordination with the NCDOT and the Town, it was determined there were no future roadway improvements to consider under future conditions with this study. It should be noted that per the Rolesville Community Transportation Plan (dated May 2022), the ultimate cross-section of Jonesville Road is identified as a 2-lane roadway with a center

two-way-left-turn-lane (TWLTL) and Mitchell Mill Road is identified as a 4-lane median-divided roadway.

3.4. 2027 No-Build Peak Hour Traffic Volumes

The 2027 no-build traffic volumes were determined by projecting the 2022 existing peak hour traffic to the year 2027 and adding the adjacent development trips. Refer to Figure 7 for an illustration of the 2027 no-build peak hour traffic volumes at the study intersections.

3.5. Analysis of 2027 No-Build Peak Hour Traffic Conditions

The 2027 no-build AM and PM peak hour traffic volumes at the study intersections were analyzed with existing geometric roadway conditions and traffic control. The analysis results are presented in Section 7 of this report.

LEGEND

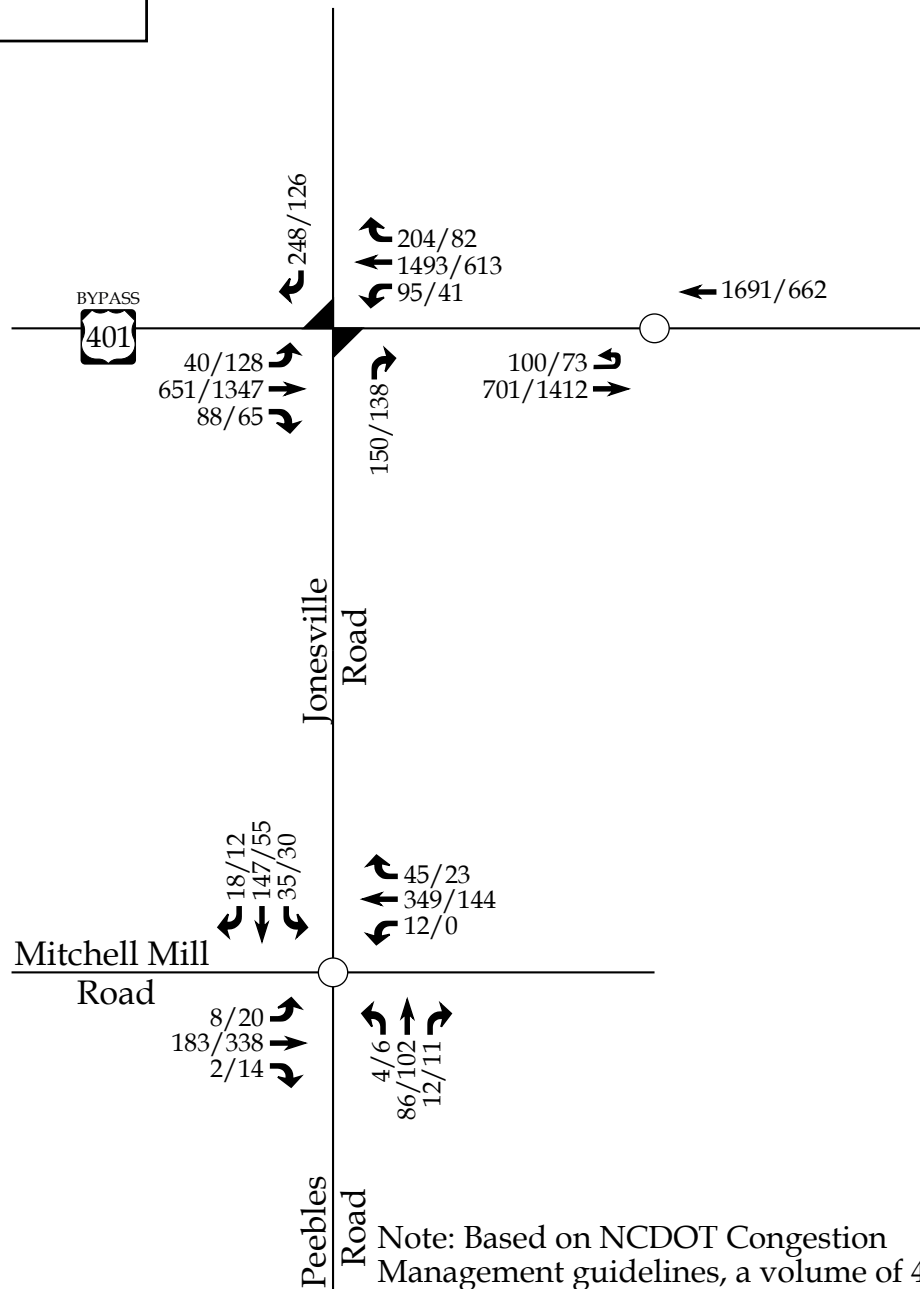


Unsignalized Intersection



Left-Over Intersection

X / Y →
Weekday AM / PM Peak
Hour Traffic



Hills at Harris Creek
Rolesville, NC

2027 Projected
Peak Hour Traffic

Scale: Not to Scale

Figure 5

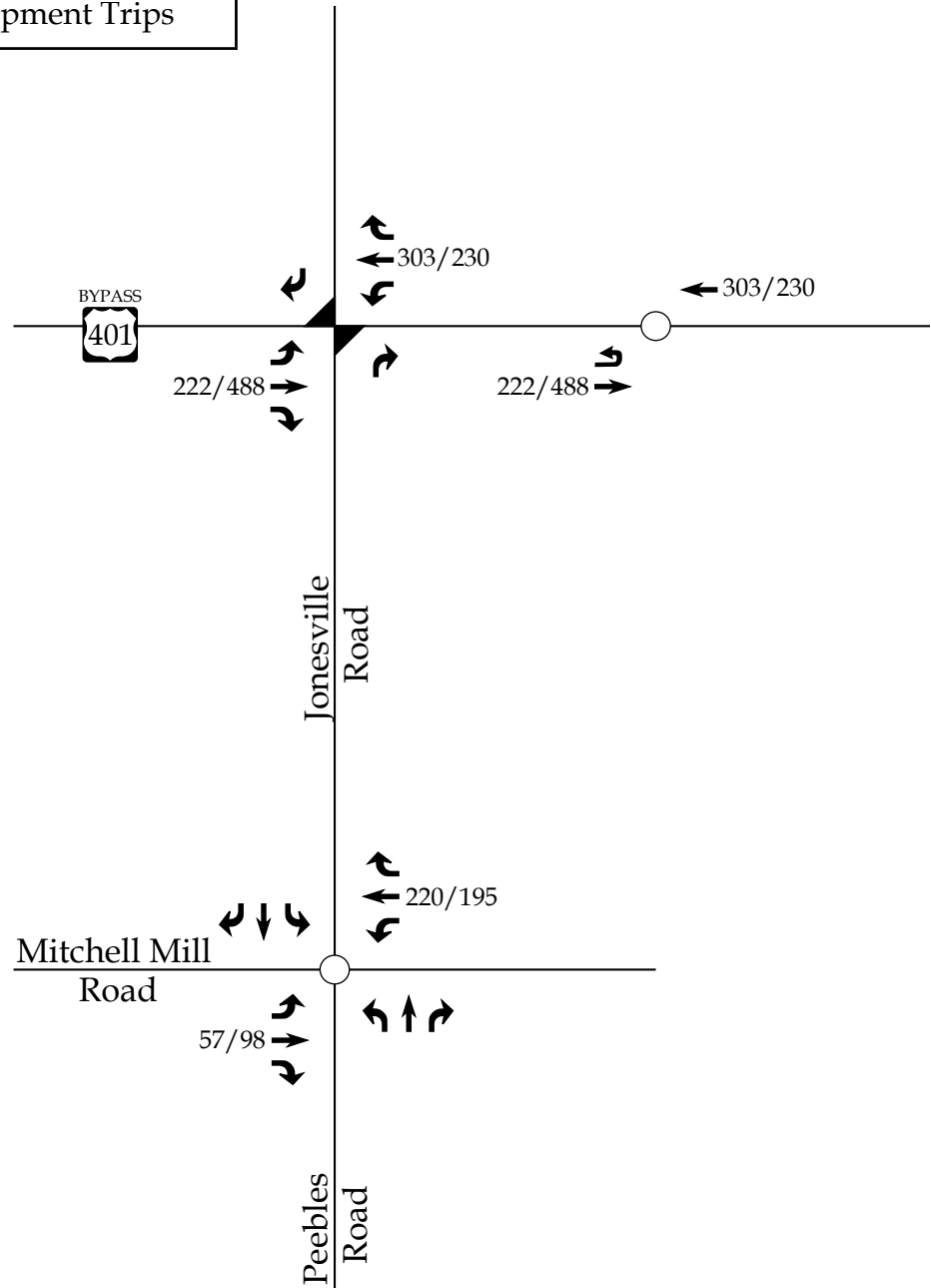
LEGEND

Unsignalized Intersection



Left-Over Intersection

X / Y → Weekday AM / PM Peak Hour
Adjacent Development Trips



Hills at Harris Creek
Rolesville, NC

Peak Hour Adjacent
Development Trips

Scale: Not to Scale

Figure 6

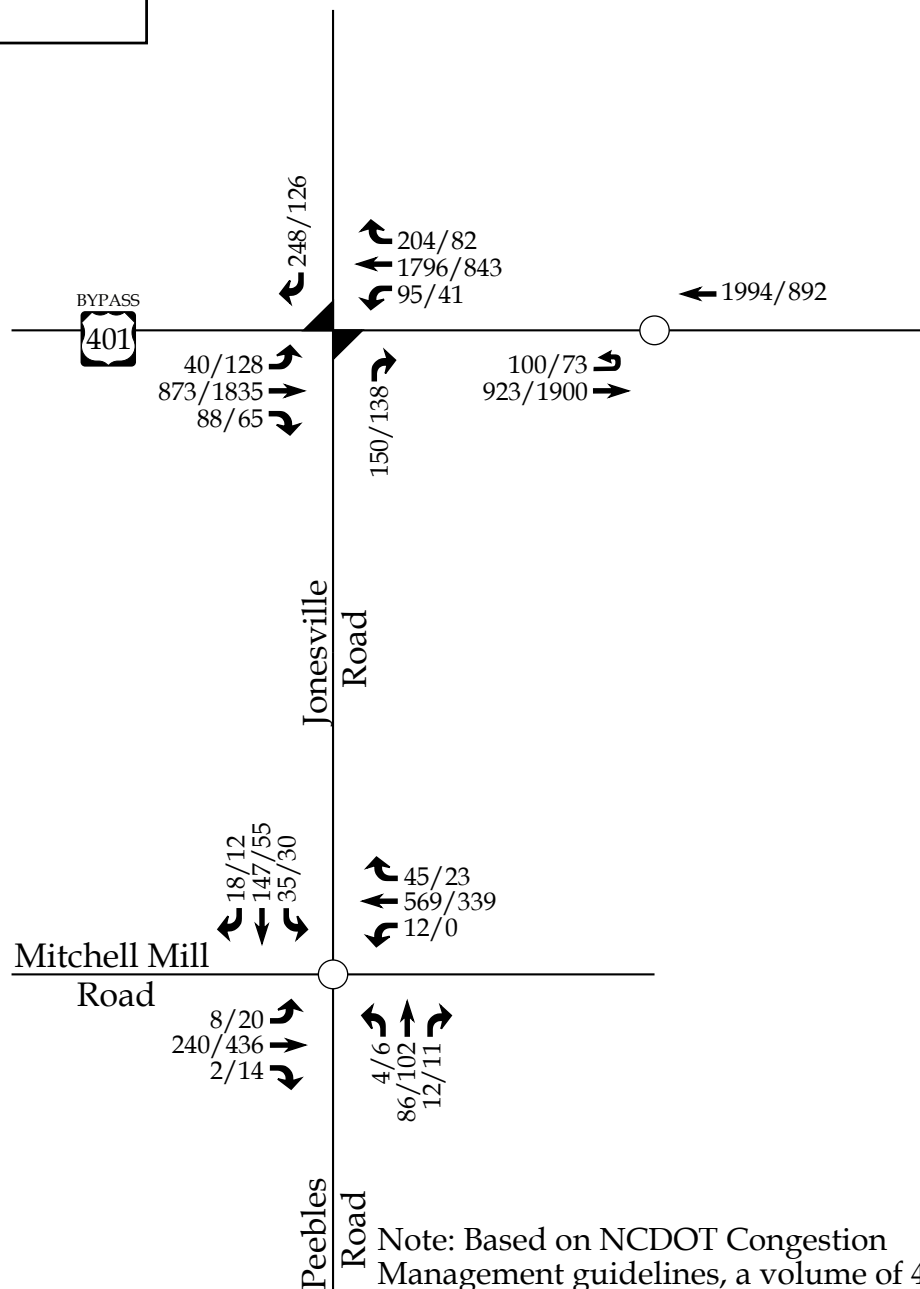
LEGEND

Unsignalized Intersection



Left-Over Intersection

X / Y →
Weekday AM / PM Peak
Hour Traffic



Hills at Harris Creek
Rolesville, NC

2027 No-Build
Peak Hour Traffic

Scale: Not to Scale

Figure 7

4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

The proposed development is assumed to consist of 220 single-family homes. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE Trip Generation Manual, 11th Edition. Table 3 provides a summary of the trip generation potential for the site.

Table 3: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single-Family Home (210)	220 DU	2,084	38	115	131	78

It is estimated that the proposed development will generate approximately 2,084 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 153 trips (38 entering and 115 exiting) will occur during the weekday AM peak hour and 209 trips (131 entering and 78 exiting) will occur during the weekday PM peak hour.

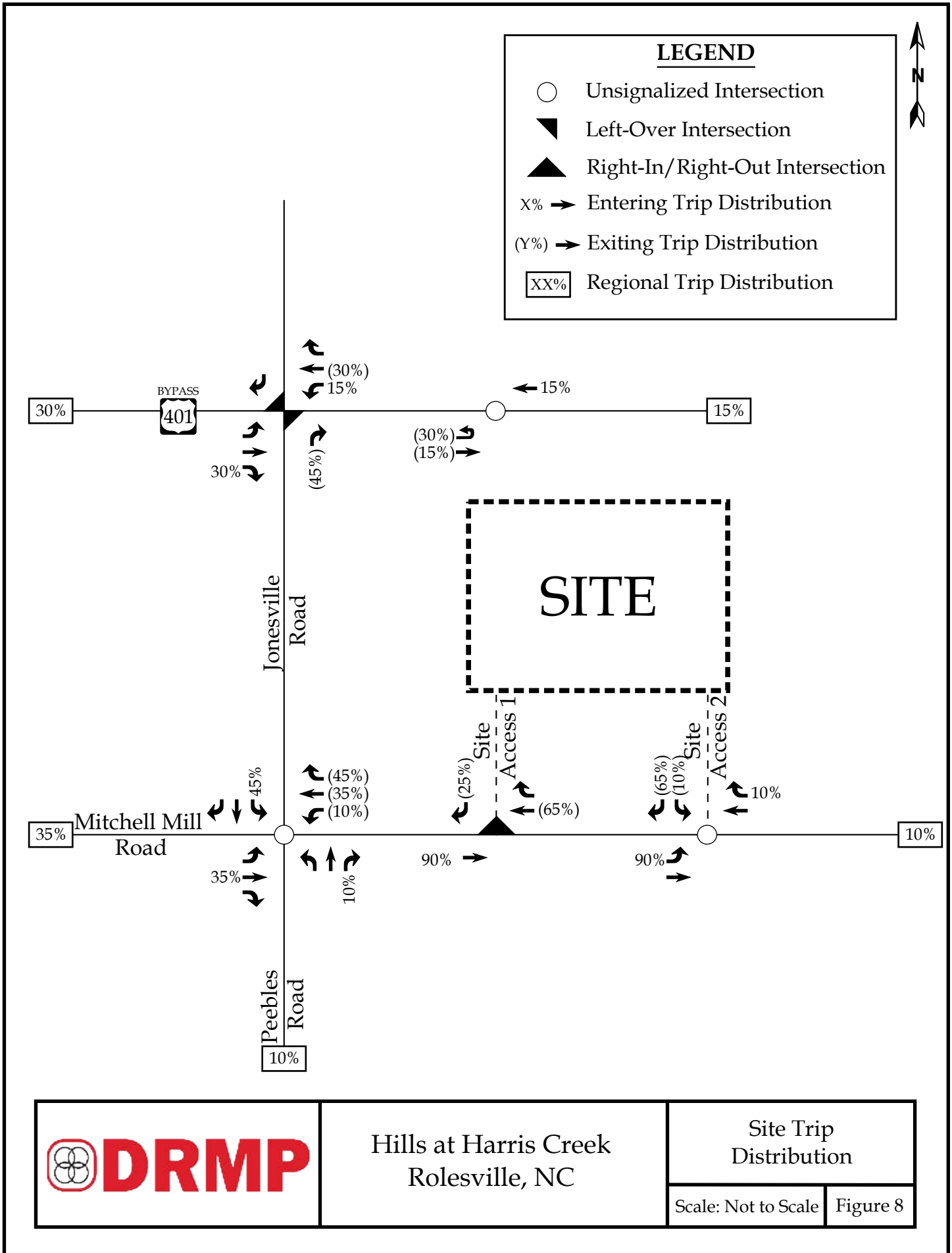
4.2. Site Trip Distribution and Assignment

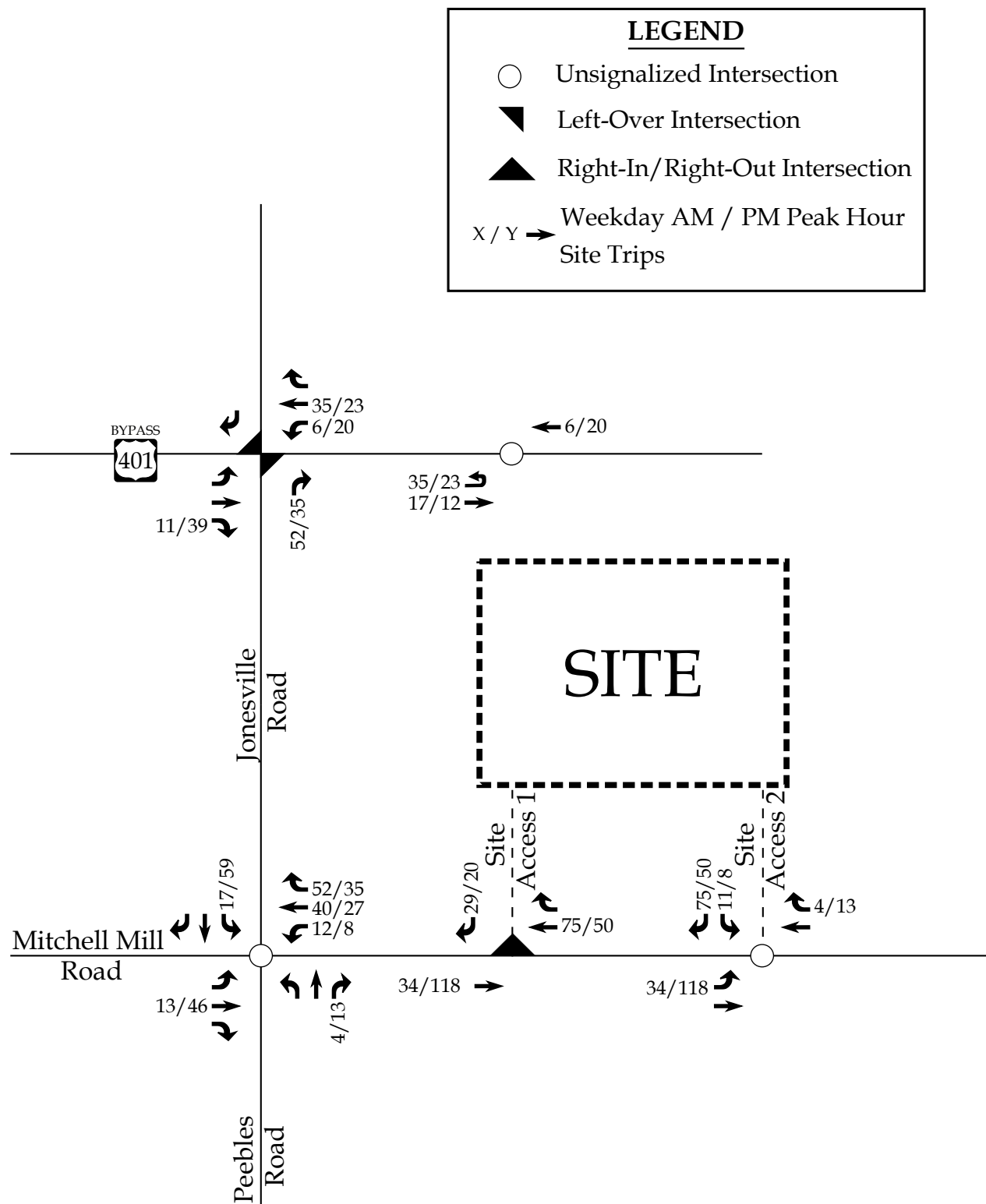
Trip distribution percentages used in assigning site traffic for this development were estimated based on a combination of existing traffic patterns, population centers adjacent to the study area, and engineering judgment.

It is estimated that the site trips will be regionally distributed as follows:

- 35% to/from the west via Mitchell Mill Road
- 30% to/from the west via US 401 Bypass
- 15% to/from the east via US 401 Bypass
- 10% to/from the south via Peebles Road
- 10% to/from the east via Mitchell Mill Road

The site trip distribution is shown in Figure 8. Refer to Figure 9 for the site trip assignment.





Hills at Harris Creek
Rolesville, NC

Site Trip
Assignment

Scale: Not to Scale

Figure 9

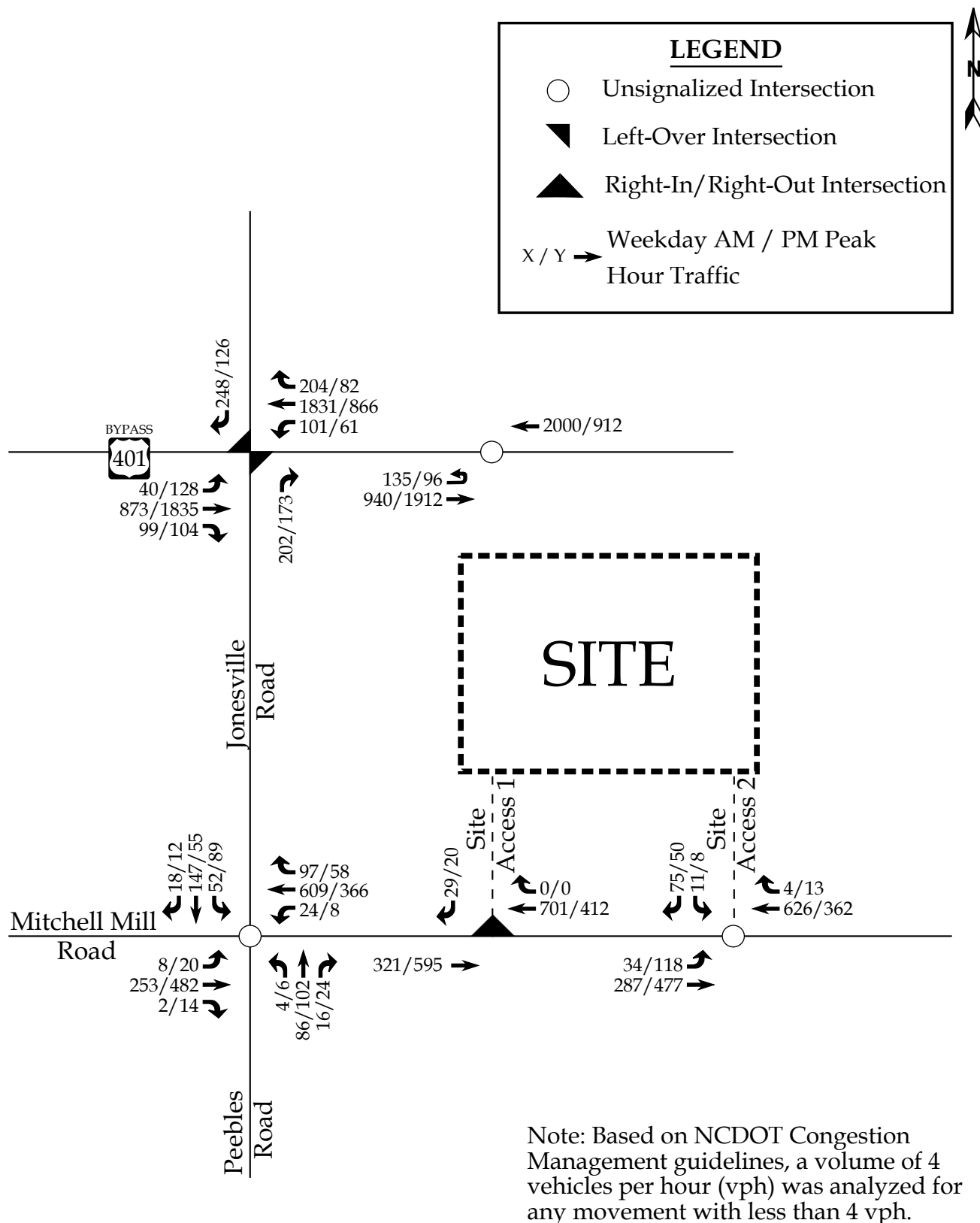
5. 2027 BUILD TRAFFIC CONDITIONS

5.1. 2027 Build Peak Hour Traffic Volumes

To estimate traffic conditions with the site fully built-out, the site trips were added to the 2027 no-build traffic volumes to determine the 2027 build traffic volumes. Refer to Figure 10 for an illustration of the 2027 build peak hour traffic volumes with the proposed site fully developed.

5.2. Analysis of 2027 Build Peak Hour Traffic Conditions

Study intersections were analyzed with the 2027 build traffic volumes using the same methodology previously discussed for existing and no-build traffic conditions. Intersections were analyzed with improvements necessary to accommodate future traffic volumes. The results of the capacity analysis for each intersection are presented in Section 7 of this report.



Hills at Harris Creek
Rolesville, NC

2027 Build
Peak Hour Traffic

Scale: Not to Scale Figure 10

6. TRAFFIC ANALYSIS PROCEDURE

Study intersections were analyzed using the methodology outlined in the *Highway Capacity Manual* (HCM), 6th Edition published by the Transportation Research Board. Capacity and level of service are the design criteria for this traffic study. A computer software package, Synchro (Version 11.1), was used to complete the analyses for the study area intersections. Please note that the unsignalized capacity analysis does not provide an overall level of service for an intersection; only delay for an approach with a conflicting movement.

The HCM defines capacity as “the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions.” Level of service (LOS) is a term used to represent different driving conditions and is defined as a “qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers.” Level of service varies from Level “A” representing free flow, to Level “F” where breakdown conditions are evident. Refer to Table 4 for HCM levels of service and related average control delay per vehicle for both signalized and unsignalized intersections. Control delay as defined by the HCM includes “initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay”. An average control delay of 50 seconds at a signalized intersection results in LOS “D” operation at the intersection.

Table 4: Highway Capacity Manual – Levels-of-Service and Delay

UNSIGNALIZED INTERSECTION		SIGNALIZED INTERSECTION	
LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
A	0-10	A	0-10
B	10-15	B	10-20
C	15-25	C	20-35
D	25-35	D	35-55
E	35-50	E	55-80
F	>50	F	>80

6.1. Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to the NCDOT Congestion Management Guidelines.

7. CAPACITY ANALYSIS

The following study intersections were analyzed under 2022 existing, 2027 no-build, and 2027 build traffic conditions:

- US 401 Bypass and Jonesville Road
- US 401 Bypass and Eastern U-Turn Location
- Mitchell Mill Road and Jonesville Road / Peebles Road

All proposed site driveways were analyzed under 2027 build traffic conditions. Refer to Tables 5-9 for a summary of capacity analysis results. Refer to Appendices D-H for the Synchro capacity analysis reports and SimTraffic queueing reports.

7.1. US 401 Bypass and Jonesville Road

The existing unsignalized intersection of US 401 Bypass Road and Jonesville Road was analyzed under 2022 existing, 2027 no-build, and 2027 build traffic conditions with the lane configurations and traffic control shown in Table 5. Refer to Table 5 for a summary of the analysis results. Refer to Appendix D for the Synchro capacity analysis reports.

Table 5: Analysis Summary of US 401 Bypass and Jonesville Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	EB WB* NB	2 TH, 1 RT 1 LT 1 RT	-- C ¹ B ²	N/A	-- E ¹ C ²	N/A
	EB** WB SB	1 LT 2 TH, 1 RT 1 RT	F ¹ -- E ²	N/A	C ¹ -- B ²	N/A
2027 No-Build	EB WB* NB	2 TH, 1 RT 1 LT 1 RT	-- D ¹ B ²	N/A	-- F ¹ E ²	N/A
	EB** WB SB	1 LT 2 TH, 1 RT 1 RT	F ¹ -- F ²	N/A	E ¹ -- B ²	N/A
2027 Build	EB WB* NB	2 TH, 1 RT 1 LT 1 RT	-- D ¹ C ²	N/A	-- F ¹ F ²	N/A
	EB** WB SB	1 LT 2 TH, 1 RT 1 RT	F ¹ -- F ²	N/A	E ¹ -- B ²	N/A

*Synchro analyzed the WB left-turns as SB through movements due to the nature of the superstreet and synchro limitations.

**Synchro analyzed the EB left-turns as NB through movements due to the nature of the superstreet and synchro limitations.

1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

Capacity analysis of 2022 existing traffic conditions indicates that the major-street left-turn movements and minor-street approaches are expected to operate at LOS C or better with the exception of the eastbound left-turn movement during the weekday AM peak hour (LOS F), the westbound left-turn movement during the weekday PM peak hour (LOS E), and the southbound minor-street approach during the weekday AM peak hour (LOS E).

Under 2027 no-build and 2027 build traffic conditions, the major-street left-turn movements are expected to operate at LOS E/F during the weekday AM and PM peak hours with the exception of the westbound left-turn movement during the weekday AM peak hour (LOS D) under 2027 no-build and 2027 build traffic conditions. The minor-street approaches are expected to operate at LOS E/F during the weekday AM and PM peak hours with the exception of the northbound approach during the weekday AM peak hour (LOS B/C) and the southbound approach during the weekday PM peak hour (LOS B) under 2027 no-build and 2027 build traffic conditions. It should be noted that the proposed development is expected to account for approximately 3% of the total traffic at this intersection during both the weekday AM and PM peak hours. The proposed development is expected to account for approximately 26% and 20% of the overall northbound approach traffic at this intersection during the weekday AM and PM peak hours, respectively.

Due to the poor levels-of-service expected at this intersection, a traffic signal was considered under 2027 build traffic conditions to achieve acceptable levels of service. Weekday AM and PM peak hour traffic volumes were utilized in evaluating the potential need for signalization based on the guidelines contained within the Manual on Uniform Traffic Control Devices (MUTCD) and within the Guidelines for Signalization of Intersections with Two or Three Approaches Final Report, published by ITRE. Based on a review of signal warrants at this intersection, the peak hour warrant (warrant 3) from the MUTCD is expected to be met for both the weekday AM and PM peak hours under 2027 no-build and build traffic conditions. It is not expected that this intersection would satisfy the MUTCD 8-hour (warrant 1) or 4-hour (warrant 2) warrants, which NCDOT favors for installation of a traffic signal. These longer period warrants are not typically met for residential areas due to the distinct peak traffic periods for these types of development. Based on a review of ITRE 95th percentile queue length calculations, the northbound right-turn movement demand is expected to exceed capacity during the weekday PM peak hour

under 2027 no-build and 2027 build traffic conditions. Refer to Appendix J for a copy of the MUTCD warrants and the ITRE 95th percentile queue length calculations.

Based on the Town's LDO, improvements must be identified to maintain no-build levels-of-service under build traffic conditions or to limit the degradation to less than a five percent increase in total delay on any approach for those operating at failing levels-of-service under no-build traffic conditions. Therefore, additional turn-lanes were considered for the northbound right-turn and westbound left-turn movements at this intersection to achieve acceptable operation per the Town's LDO. However, additional turn-lanes are not a realistic or practical improvement at an unsignalized intersection operating with superstreet configurations.

Based on the Town's LDO, it is recommended that this intersection be monitored for signalization and a full signal warrant analysis be conducted prior to the full build-out of the proposed development and install a traffic signal if warranted and approved by the Town and NCDOT. With signalization, it is expected that this intersection will operate at acceptable levels-of-service during the weekday AM and PM peak hours.

7.2. US 401 Bypass and Eastern U-Turn Location

The existing unsignalized intersection of US 401 Bypass and Eastern U-Turn Location was analyzed under 2022 existing, 2027 no-build, and 2027 build traffic conditions with the lane configurations and traffic control shown in Table 6. Refer to Table 6 for a summary of the analysis results. Refer to Appendix E for the Synchro capacity analysis reports.

Table 6: US 401 Bypass and Eastern U-Turn Location

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2023 Existing	EB* WB	1 UT 2 TH	C¹ --	N/A	B¹ --	N/A
2028 No-Build	EB* WB	1 UT 2 TH	E¹ --	N/A	B¹ --	N/A
2028 Build	EB* WB	1 UT 2 TH	F¹ --	N/A	B¹ --	N/A

*Synchro analyzed the EB u-turn as a NB left-turn movement due to the nature of the superstreet and synchro limitations.

1. Level of service for major-street U-turn movement.

Capacity analysis of 2022 existing and 2027 no-build traffic conditions indicates that the major-street U-turn movement is expected to operate at LOS C or better during the weekday AM and PM peak hours, with the exception of the weekday AM peak hour under 2027 no-build conditions (LOS E).

Under 2027 build traffic conditions, the major-street u-turn movement is expected to operate at LOS F during the weekday AM peak hour and at LOS B during the weekday PM peak hour. It should be noted that the proposed development is expected to account for approximately 2% of the total traffic at this intersection during the weekday AM and PM peak hours. The proposed development is expected to account for approximately 26% and 24% of the overall northbound approach traffic at this intersection during the weekday AM and PM peak hours, respectively.

Due to the poor levels-of-service expected at this intersection, a traffic signal was considered under 2027 build traffic conditions to achieve acceptable levels of service. Weekday AM and PM peak hour traffic volumes were utilized in evaluating the potential need for signalization based on the guidelines contained within the Manual on Uniform Traffic Control Devices (MUTCD) and within the Guidelines for Signalization of Intersections with Two or Three Approaches Final Report, published by ITRE. Based on a review of signal warrants at this intersection, the peak hour warrant (warrant 3) from the MUTCD is expected to be met for the weekday AM peak hour under 2027 no-build and 2027 build traffic conditions. It is not expected that this intersection would satisfy the MUTCD 8-hour (warrant 1) or 4-hour (warrant 2) warrants, which NCDOT favors for installation of a traffic signal. These longer period warrants are not typically met for residential areas due to the distinct peak traffic periods for these types of development. Based on a review of ITRE 95th percentile queue length calculations, the eastbound u-turn movement demand is expected to exceed capacity during the weekday AM peak hour under 2027 no-build and 2027 build traffic conditions. Refer to Appendix J for a copy of the MUTCD warrants and the ITRE 95th percentile queue length calculations.

Based on the Town's LDO, improvements must be identified to maintain no-build levels-of-service under build traffic conditions or to limit the degradation to less than a five percent increase in total delay on any approach for those operating at failing levels-of-service under no-build traffic conditions. Therefore, additional turn-lanes were considered for the eastbound u-turn movement at this intersection to achieve acceptable operation per the Town's LDO. However, additional turn-lanes are not a realistic or practical improvement at an unsignalized intersection operating with superstreet configurations.

Based on the Town's LDO, it is recommended that this intersection be monitored for signalization and a full signal warrant analysis be conducted prior to the full build-out of the proposed development and install a traffic signal if warranted and approved by the Town and NCDOT. With signalization, it is expected that this intersection will operate at acceptable levels-of-service during the weekday AM and PM peak hours.

7.3. Mitchell Mill Road and Jonesville Road / Peebles Road

The existing unsignalized intersection of Mitchell Mill Road and Jonesville Road / Peebles Road was analyzed under 2022 existing, 2027 no-build, and 2027 build traffic conditions with the lane configurations and traffic control shown in Table 7. Refer to Table 7 for a summary of the analysis results. Refer to Appendix F for the Synchro capacity analysis reports.

Table 7: Analysis Summary of Mitchell Mill Road and Jonesville Road / Peebles Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	B ¹ B ¹ B ¹ B ¹	B (13)	B ¹ A ¹ A ¹ A ¹	B (11)
2027 No-Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	C ¹ F ¹ B ¹ B ¹	F (51)	C ¹ C ¹ B ¹ B ¹	C (19)
2027 Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	C ¹ F ¹ B ¹ C ¹	F (97)	F ¹ D ¹ B ¹ C ¹	E (39)
2027 Build - Improved	EB WB NB SB	1 LT-TH-RT 1 LT-TH, <u>1 RT</u> 1 LT-TH-RT <u>1 LT</u> , 1 TH-RT	C ¹ F ¹ B ¹ B ¹	F (82)	F ¹ D ¹ C ¹ B ¹	E (50)

Improvements to lane configurations by adjacent development are shown underlined.

1. Level of service for all-way stop controlled approach.

Capacity analysis of 2022 existing and 2027 no-build traffic conditions indicates that the intersection is expected to operate at an overall LOS C or better during the weekday AM and PM peak hours, with the exception of the weekday AM peak hour under 2027 no-build

traffic conditions (LOS F). Under 2027 build traffic conditions, this intersection is expected to operate at an overall LOS F during the weekday AM and PM peak hours. It should be noted that the proposed development is expected to account for approximately 10% and 15% of the total traffic at this intersection during the weekday AM and PM peak hours, respectively. The proposed development is expected to account for approximately 5% and 9% of the overall eastbound approach traffic and 14% and 16% of the overall westbound approach at this intersection during the weekday AM and PM peak hours, respectively.

Turn lanes were considered at this intersection in order to mitigate the proportional impact that the proposed site traffic is expected to have at this intersection and to improve overall operations. An exclusive left-turn lane on the southbound approach (Jonesville Road) and right-turn lane on the westbound approach (Mitchell Mill Road) are recommended by the developer. Both turn lanes are recommended to have 100 feet of storage. It should be noted that an exclusive southbound left-turn lane was also identified in the 5109 Mitchell Mill Road TIA. With these improvements, the intersection is expected to continue operating at an overall LOS F during the weekday AM and PM peak hours.

It should be noted that the overall intersection delay is expected to increase during the weekday PM peak hour as a result of the recommended improvements to the southbound and westbound approaches. This increase in delay is attributable to minor increases in delays for all approaches caused by adding additional lanes to an all-way stop-controlled intersection. No feasible improvements other than signalization would be expected to decrease delays further at this intersection.

Due to the poor levels-of-service expected at this intersection, a traffic signal was considered under 2027 build traffic conditions to achieve acceptable levels-of-service. The peak hour warrant (warrant 3) from the Manual on Uniform Traffic Control Devices (MUTCD) was considered. Based on a review of the peak hour signal warrant at this intersection, the intersection is expected to meet the peak hour warrant for the weekday AM peak hour under 2027 no-build traffic conditions and both the weekday AM and PM peak hours under 2027 build traffic conditions. It is not expected that this intersection would satisfy the MUTCD 8-hour (warrant 1) or 4-hour (warrant 2) warrants, which NCDOT favors for installation of a traffic signal. These longer period warrants are not typically met for residential areas due to the distinct peak traffic periods for these types of development. Refer to Appendix J for a copy of the MUTCD warrants.

Based on the Town's LDO, it is recommended that this intersection be monitored for signalization and a full signal warrant analysis be conducted prior to the full build-out of the proposed development and install a traffic signal if warranted and approved by the Town and NCDOT. With signalization, it is expected that this intersection will operate at acceptable levels-of-service during the weekday AM and PM peak hours.

7.4. Mitchell Mill Road and Site Access 1

The proposed intersection of Mitchell Mill Road and Site Access 1 was analyzed under 2027 build traffic conditions with the lane configurations and traffic control shown in Table 8. Refer to Table 8 for a summary of the analysis results. Refer to Appendix G for the synchro capacity analysis reports.

Table 8: Analysis Summary of Mitchell Mill Road and Site Access 1

ANALYSIS SCENARIO	A P P R O A C H	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2027 Build	EB WB SB	1 TH 1 TH-<u>RT</u> 1 <u>RT</u>	-- -- B¹	N/A	-- -- B¹	N/A

Improvements to lane configurations are shown underlined.

1. Level of service for minor-street approach.

Capacity analysis of 2027 build traffic conditions indicates that the minor-street approach is expected to operate at LOS B during the weekday AM and PM peak hours.

Based on the estimated low volume of right-turn movements into the proposed development at this intersection, an exclusive right-turn lane is not recommended. See Appendix I for the turn lane warrants.

7.5. Mitchell Mill Road and Site Access 2

The proposed intersection of Mitchell Mill Road and Site Access 1 was analyzed under 2027 build traffic conditions with the lane configurations and traffic control shown in Table 8. Refer to Table 8 for a summary of the analysis results. Refer to Appendix G for the synchro capacity analysis reports.

Table 8: Analysis Summary of Mitchell Mill Road and Site Access 1

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2027 Build	EB WB SB	<u>1 LT, 1 TH</u> <u>1 TH, 1 RT</u> <u>1 LT-RT</u>	A¹ -- C²	N/A	A¹ -- B²	N/A

Improvements to lane configurations are shown underlined.

1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

Capacity analysis of 2027 build traffic conditions indicates that the minor-street approach is expected to operate at LOS B during the weekday AM and PM peak hours.

The NCDOT driveway manual states that turn lanes should be considered when the major street carries 4,000 vehicles per day or more. Mitchell Mill Road carries 4,100 vehicles per day. Based on this and previous comments from NCDOT, left and right turn lanes on Mitchell Mill Road are recommended. Both turn lanes are recommended to have 100 feet of storage. See Appendix I for the turn lane warrants.

8. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the proposed Hills at Harris Creek development located north of Mitchell Mill Road, west of Manly Farm Road, and east of Gro Peg Lane in Rolesville, North Carolina. The development is expected to consist of 220 single-family homes and to be built-out in 2027. Site access is proposed via one (1) full-movement and one (1) right-in/right-out driveway connection along Mitchell Mill Road.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2027 No-Build Traffic Conditions
- 2027 Build Traffic Conditions

Trip Generation

It is estimated that the proposed development will generate approximately 153 primary trips (38 entering and 115 exiting) during the weekday AM peak hour and 209 primary trips (131 entering and 78 exiting) during the weekday PM peak hour.

Rolesville Community Transportation Plan

Per the Rolesville Community Transportation Plan (CTP), the ultimate cross-section of Mitchell Mill Road is identified as a 4-lane median-divided roadway. It is recommended that the proposed development widen one-half section of Mitchell Mill Road along the site frontage in accordance with the Town's CTP.

Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to NCDOT Congestion Management Guidelines. Refer to section 6.1 of this report for a detailed description of any adjustments to these guidelines made throughout the analysis.

Intersection Capacity Analysis Summary

All the study area intersections (including the proposed site driveways) are expected to operate at acceptable levels-of-service under existing and future year conditions with the exception of those identified in Section 7 of this report.

9. RECOMMENDATIONS

Based on the findings of this study, specific geometric improvements have been identified and are recommended to accommodate future traffic conditions. See a more detailed description of the recommended improvements below. Refer to Figure 14 for an illustration of the recommended lane configuration for the proposed development.

Recommended Improvements by Developer

Required Frontage Improvements per Rolesville Community Transportation Plan

- Widen one-half section of Mitchell Mill Road along the site frontage to this roadway's ultimate section (4-lane median divided).

US 401 Bypass and Jonesville Road

- Conduct a full signal warrant analysis prior to full build-out of the proposed development and install a traffic signal if warranted and approved by NCDOT and the Town.

US 401 Bypass and Eastern U-Turn Location

- Conduct a full signal warrant analysis prior to full build-out of the proposed development and install a traffic signal if warranted and approved by NCDOT and the Town.

Mitchell Mill Road and Jonesville Road / Peebles Road

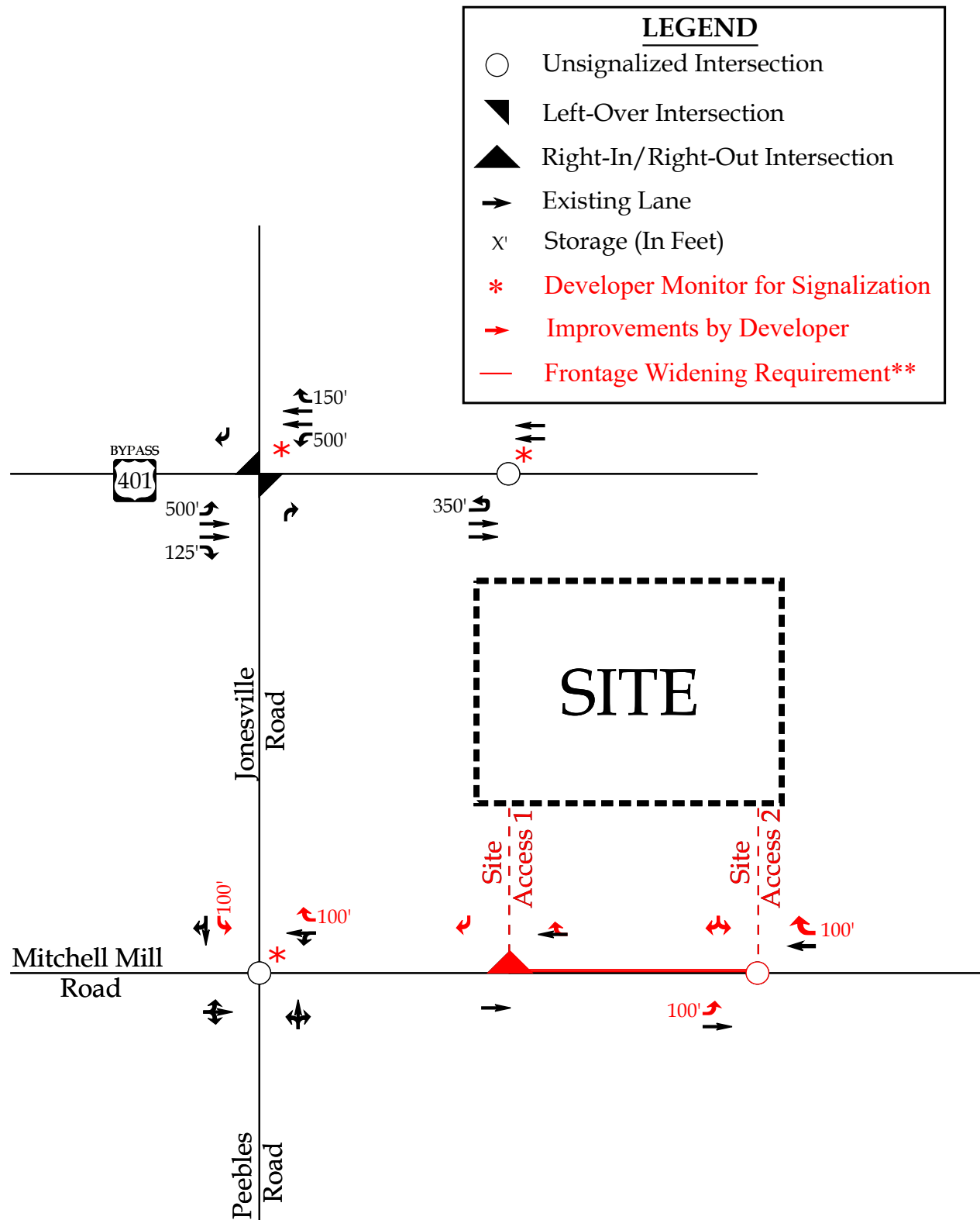
- Construct a southbound (Jonesville Road) left-turn lane with at least 100 feet of storage and appropriate decel and taper.
 - It should be noted that this improvement was also identified by the 5109 Mitchell Mill Road TIA.
- Construct a westbound (Mitchell Mill Road) right-turn lane with at least 100 feet of storage and appropriate decel and taper.
- Conduct a full signal warrant analysis prior to full build-out of the proposed development and install a traffic signal if warranted and approved by NCDOT and the Town.

Mitchell Mill Road and Site Access 1

- Construct the southbound approach (Site Access 1) as a right-in/right-out with one ingress lane and one egress lane.
- Provide stop-control for the southbound approach (Site Access 1).
- Construct a concrete median on Mitchell Mill Road that restricts access to right-in/right-out.

Mitchell Mill Road and Site Access 2

- Construct the southbound approach (Site Access 2) with one ingress lane and one egress lane.
- Provide stop-control for the southbound approach (Site Access 2).
- Construct an eastbound (Mitchell Mill Road) left-turn lane with at least 100 feet of storage and appropriate decel and taper.
- Construct a westbound (Mitchell Mill Road) right-turn lane with at least 100 feet of storage and appropriate decel and taper.



**Refer to Section 9 of the report for more information



Hills at Harris Creek
Rolesville, NC

Recommended Lane
Configurations

Scale: Not to Scale Figure 11