CENTRAL SAVANNAH RIVER AREA REGIONAL COMMISSION

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Augusta, GA 30909
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MEMORANDUM

To: Local Governments, State Agencies and Other Affected Parties

From: Regina Pyles, AICP - Director of Planning, CSRA RC

RE: DRI #3084- Regional Review Notification - Greenpoint (Appling-Harlem Rd, Columbia County, GA)

Date: May 8, 2020

Under the Georgia Planning Act of 1989, the Department of Community Affairs (DCA) has established thresholds, rules, and procedures for the identification and review of certain developments that may have "potential impacts beyond the jurisdictional boundary of the local government in which it occurs." The purpose of the legislation is to facilitate wise development by enhancing intergovernmental communication and cooperation.

I have reviewed Columbia County's Request for Review of the proposed Greenpoint development along Appling-Harlem Rd. A request for rezoning triggered this DRI review. The CSRA RC finds that this development must be reviewed as a Development of Regional Impact. Therefore, this memorandum to local governments, state agencies and other affected parties will serve as notice of the initiation of the DRI regional review process.

Today, May 8, 2020 begins the comment period, and a DRI information packet is attached. Please review and return comments on the attached DRI Request for Comments Form by May 25, 2020 to me via email or mail as indicated on the form. Thank you for your time; please contact me at (706) 210-2000 if you need additional information.

Regina Pyles, AICP
Director of Planning
CSRA Regional Commission

DEVELOPMENT OF REGIONAL IMPACT

DRI Request for Comments Form

Columbia County – DRI #3084 Greenpoint

Sections A – D on this form are to be completed by the Regional Commission and will be submitted to all affected parties.

A. General Information

Date: 5/8/2020	**Return Form To (email preferred):**
Regional Commission: CSRA	Regina Pyles
RC Contact: Regina Pyles	CSRA Regional Commission
Phone Number: 706-210-2000	3626 Walton Way Extension, Suite 300
Email: rpyles@csrarc.ga.gov	Augusta, GA 30909
DRI #3084 - Greenpoint	**Return Deadline: May 25, 2020**

B. Instructions

The project described below has been submitted to the Regional Commission (RC) for review as a Development of Regional Impact (DRI). A DRI is a development project of sufficient scale or importance that it is likely to have impacts beyond the jurisdiction in which the project is actually located, such as adjoining cities or neighboring counties. We would like to consider your comments on this proposed development in our DRI review process. Therefore, please review the information about the project included on this form and give us your comments in the space provided. The completed form should be returned to the RC on or before the specified return deadline.

C. Project Description

See attached.

D. Preliminary Findings and Comments of the RDC and GRTA (if applicable)

See attached preliminary summary.

E. Comments from Affected Party (attach additional sheets as needed)

Developments of Regional Impact
Evaluation of Potential Impacts - Preliminary Summary
DRI#3084: Greenpoint
Columbia County

PROPOSED DEVELOPMENT

The proposed project is an approximately 834-acre mixed-use development consisting of single-family homes, townhomes, flats, commercial, and civic uses. This includes approximately 1,900 +/- housing units and approximately 180 +/- acres of commercial development.

PROJECT PHASING

The proposed project will be constructed in 5 phases at 5-year intervals, with the full build-out completed in 2045.

Phase I - Begin construction June 2020
Phase II - Begin construction March 2025
Phase III - Begin construction July 2030
Phase IV - Begin construction July 2035
Phase V - Begin construction July 2040

LOCATION

The proposed project is located entirely in unincorporated Columbia County generally along Appling-Harlem Road near the Appling Harlem exit on I-20. This development will occupy the following tracts: Tax Map 029 Parcels 037B, 057, 030, 034, 048B, 048A, 039A, 036, & 038, Tax Map 030 Parcels 083T & 08.

INITIAL ACTION REQUESTED OF THE LOCAL GOVERNMENT

A request for rezoning was submitted to Columbia County. The rezoning request is to rezone the parcels from R-A (Residential Agricultural), C-3 (Heavy Commercial), and M-1 (Light Industrial) to PUD (Planned Unit Development).

This rezoning is in coordination with the Greenpoint PRD Plan for 230 acres adjacent to Harlem Middle School and to the southwest of Appling-Harlem and Wrightsboro roads.

COMPATIBILITY WITH EXISTING PLANS

The proposed project is compatible with the Columbia County Vision 2035 Comprehensive Plan. The properties are located primarily within the Appling Harlem Employment Activity Center, with the portions south of Wrightsboro Road lying within the Neighborhoods Character Area. Activity Centers are intended to create concentrated commercial uses, employment centers, and mixed-use developments in defined areas, and are characterized by compact, walkable, higher density developments that provide additional employment opportunities and support higher density residential development. The primary uses identified for the Appling Harlem employment center are master planned business and industrial

parks, manufacturing, mid-rise offices, and research and development, with higher density residential uses supporting these business activities. The Neighborhoods Character Area is intended for the development of new neighborhoods and the protection of existing residential developments, with a target density of 1 to 4 units per acre. The Greenpoint subdivision which is already underway is completely within this Character Area and is representative of its intent. The proposed PUD includes a combination of commercial and mixed-use sections primarily fronting on Appling-Harlem Road within the Activity Center, with decreasing residential densities as the development proceeds away from the road. This step down in density, combined with the proposed buffers, should serve to protect surrounding residential developments, with the proposed commercial and mixed-use development meeting the intent of the Activity Center. The applicants are additionally proposing retention of open spaces, provision of parks, and pedestrian connectivity in keeping with the development characteristics proposed for Activity Centers under the current plan. The overall density of the development at 2.4 units per acre is well in line with the intent for this area, with the densest development along Appling-Harlem Road.

This project is a continuation of the previous DRI #2672. This proposed development is a phase of the larger Greenpoint development and represents 77% of it. Projected completion is 2045.

ECONOMIC

The proposed project's estimated value at build-out is $43,500,000; an estimated $482,797 in property tax is likely to be generated by this development.

The regional workforce is sufficient to fill the demand created by the proposed project. This development will not displace any existing uses.

NATURAL AND HISTORIC RESOURCES

There are wetlands and floodplain on the property. These could be impacted during development, but the applicant will be required by the county to follow any state, federal, or local ordinance that provides protection or mitigation for these resources.

INFRASTRUCTURE

Transportation

The proposed project may generate an estimated 3,500 peak hour vehicle trips per day. A traffic study has been completed and analysis the impacts of the initial two phases of development. Based on this analysis, transportation improvements are needed to serve the project. Turn lanes will be required on both Appling-Harlem and Wrightsboro Road. Improvements to the roundabout at Wrightsboro & Appling-Harlem may be warranted for the development as well. More information on this is available in the traffic study.

Traffic patterns should be monitored to determine the need for any additional signalization or roadway improvements.

Wastewater and Sewerage

The estimated sewage flow to be generated by the proposed project is +/- 0.55 MGD. Sufficient wastewater treatment capacity is not available to serve the proposed project. The existing sewer plant must be upgraded. No sewer line extension is needed.

Water Supply and Treatment

The estimated water supply demand to be generated by the proposed project is 0.7 MGD. Sufficient capacity is available to serve the proposed project, and no water line extension is required.

Solid Waste

Approximately 4,352 tons per year of solid waste will be generated by the proposed project. Sufficient landfill capacity is available to serve the project, and no hazardous waste will be generated by this development.

Stormwater

Approximately 17% of the site is projected to be impervious surface once the proposed development is constructed. The project will utilize buffers, detention ponds, and any other measures required by local ordinance to mitigate the project's impacts on stormwater management.

ADDITIONAL INFORMATION

Attached for your review are materials submitted to the CSRARC pertaining to this project:

- DRI initial and additional information forms
- Greenpoint narrative
- Greenpoint traffic engineering study
- Rezoning applications and supplemental information

Identified Interested Parties

The following parties were provided this project summary information packet and asked for their comments about any potential impacts the proposed development might have on their jurisdiction. Comments may be submitted via email to the contact listed on the DRI Request for Comments Form or mailed to the Regional Commission's office to the attention of the same contact.

City of Grovetown
City of Harlem
Augusta-Richmond County
McDuffie County
Georgia Department of Community Affairs
Georgia Department of Natural Resources
Georgia Department of Transportation
Georgia Soil and Water Conservation Commission
Georgia Environmental Finance Authority

The content of this preliminary summary is based on information submitted by the applicant for the purposes of this review. This DRI is available for review at: http://apps.dca.ga.gov/DRI/AppSummary.aspx?driid=3084

Developments of Regional Impact

DRI #3084

DEVELOPMENT OF REGIONAL IMPACT
Initial DRI Information

This form is to be completed by the city or county government to provide basic project information that will allow the RDC to determine if the project appears to meet or exceed applicable DRI thresholds. Refer to both the **Rules for the DRI Process** and the **DRI Tiers and Thresholds** for more information.

Local Government Information

Submitting Local Government:	Columbia
Individual completing form:	Will Butler
Telephone:	706-3121-7167
E-mail:	wbutler@columbiacountyga.gov

*Note: The local government representative completing this form is responsible for the accuracy of the information contained herein. If a project is to be located in more than one jurisdiction and, in total, the project meets or exceeds a DRI threshold, the local government in which the largest portion of the project is to be located is responsible for initiating the DRI review process.

Proposed Project Information

Name of Proposed Project:	Greenpoint
Location (Street Address, GPS Coordinates, or Legal Land Lot Description):	Tax Map 029 Parcels 037B, 057, 030, 034, 048B, 048A, 039A, 036, & 038, Tax Map 030 Parcels 083T & 08
Brief Description of Project:	A proposed mixed use development to include single family homes, townhomes, flats, commercial, and civic uses.

Development Type:

○(not selected)	○Hotels	○Wastewater Treatment Facilities
○Office	◉Mixed Use	○Petroleum Storage Facilities
○Commercial	○Airports	○Water Supply Intakes/Reservoirs
○Wholesale & Distribution	○Attractions & Recreational Facilities	○Intermodal Terminals
○Hospitals and Health Care Facilities	○Post-Secondary Schools	○Truck Stops
○Housing	○Waste Handling Facilities	○Any other development types
○Industrial	○Quarries, Asphalt & Cement Plants	

If other development type, describe:

Project Size (# of units, floor area, etc.):	834 +/- acres, approximately 1,900 +/- units, approximately 180 +/- acres of commercial development
Developer:	Pumpkin Center Properties, LLLP
Mailing Address:	4002 Enterprise Court
Address 2:	
	City:Martinez State: GA Zip:30907
Telephone:	706-407-4648
Email:	lprather@prathercompany.com
Is property owner different from developer/applicant?	○(not selected)○Yes◉No
If yes, property owner:	
Is the proposed project entirely located within your local government's jurisdiction?	○(not selected)◉Yes○No
If no, in what additional jurisdictions is the project located?	
	○(not selected)◉Yes○No

Is the current proposal a continuation or expansion of a previous DRI?	
If yes, provide the following information:	Project Name: Greenpoint Project ID: 2672
The initial action being requested of the local government for this project:	☑ Rezoning ☐ Variance ☐ Sewer ☐ Water ☐ Permit ☐ Other
Is this project a phase or part of a larger overall project?	○ (not selected) ◉ Yes ○ No
If yes, what percent of the overall project does this project/phase represent?	77%
Estimated Project Completion Dates:	This project/phase: 2045 Overall project: 2045

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DRI #3084

DEVELOPMENT OF REGIONAL IMPACT
Additional DRI Information

This form is to be completed by the city or county government to provide information needed by the RDC for its review of the proposed DRI. Refer to both the Rules for the DRI Process and the DRI Tiers and Thresholds for more information.

Local Government Information

Submitting Local Government:	Columbia
Individual completing form:	Will Butler
Telephone:	706-3121-7167
Email:	wbutler@columbiacountyga.gov

Project Information

Name of Proposed Project:	Greenpoint
DRI ID Number:	3084
Developer/Applicant:	Pumpkin Center Properties, LLLP
Telephone:	706-407-4648
Email(s):	lprather@prathercompany.com

Additional Information Requested

Has the RDC identified any additional information required in order to proceed with the official regional review process? (If no, proceed to Economic Impacts.)	○(not selected) ○Yes ◉No
If yes, has that additional information been provided to your RDC and, if applicable, GRTA?	◉(not selected) ○Yes ○No

If no, the official review process can not start until this additional information is provided.

Economic Development

Estimated Value at Build-Out:	$43,500,000
Estimated annual local tax revenues (i.e., property tax, sales tax) likely to be generated by the proposed development:	$482,797 (property tax)
Is the regional work force sufficient to fill the demand created by the proposed project?	○(not selected) ◉Yes ○No
Will this development displace any existing uses?	○(not selected) ○Yes ◉No

If yes, please describe (including number of units, square feet, etc):

Water Supply

Name of water supply provider for this site:	Columbia County Water Utility
What is the estimated water supply demand to be generated by the project, measured in Millions of Gallons Per Day (MGD)?	0.7 MGD

Is sufficient water supply capacity available to serve the proposed project?	○(not selected)◉Yes○No

If no, describe any plans to expand the existing water supply capacity:

Is a water line extension required to serve this project?	○(not selected)○Yes◉No

If yes, how much additional line (in miles) will be required?

Wastewater Disposal

Name of wastewater treatment provider for this site:	Columbia County Water Utility
What is the estimated sewage flow to be generated by the project, measured in Millions of Gallons Per Day (MGD)?	0.55 MGD
Is sufficient wastewater treatment capacity available to serve this proposed project?	○(not selected)○Yes◉No

If no, describe any plans to expand existing wastewater treatment capacity: Upgrading of existing sewer plant to meet anticipated sewage flow over the life of the project.

Is a sewer line extension required to serve this project?	○(not selected)○Yes◉No

If yes, how much additional line (in miles) will be required?

Land Transportation

How much traffic volume is expected to be generated by the proposed development, in peak hour vehicle trips per day? (If only an alternative measure of volume is available, please provide.)	3,500
Has a traffic study been performed to determine whether or not transportation or access improvements will be needed to serve this project?	○(not selected)◉Yes○No
Are transportation improvements needed to serve this project?	○(not selected)◉Yes○No

If yes, please describe below:Turn lanes will be required on both Appling-Harlem and Wrightsboro Road. Improvements to the roundabout at Wrightsboro & Appling-Harlem may be warranted for the development as well.

Solid Waste Disposal

How much solid waste is the project expected to generate annually (in tons)?	4,352
Is sufficient landfill capacity available to serve this proposed project?	○(not selected)◉Yes○No

If no, describe any plans to expand existing landfill capacity:

Will any hazardous waste be generated by the development?	○(not selected)○Yes◉No

If yes, please explain:

Stormwater Management

What percentage of the site is projected to be impervious surface once the proposed development has been constructed?	Approximately 17%

Describe any measures proposed (such as buffers, detention or retention ponds, pervious parking areas) to mitigate the project's impacts on stormwater management:The project will utilize buffers, detention ponds, and any other measures required by local ordinance to mitigate the project's impacts on stormwater management.

Environmental Quality

Is the development located within, or likely to affect any of the following:

1. Water supply watersheds?	○(not selected) ○Yes ◉No
2. Significant groundwater recharge areas?	○(not selected) ○Yes ◉No
3. Wetlands?	○(not selected) ◉Yes ○No
4. Protected mountains?	○(not selected) ○Yes ◉No
5. Protected river corridors?	○(not selected) ○Yes ◉No
6. Floodplains?	○(not selected) ◉Yes ○No
7. Historic resources?	○(not selected) ○Yes ◉No
8. Other environmentally sensitive resources?	○(not selected) ○Yes ◉No

If you answered yes to any question above, describe how the identified resource(s) may be affected:
There are wetlands and floodplain on the property. These could be impacted during development, but the applicant will be required to follow any state, federal, or local ordinance that provides protection or mitigation for these resources.

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GREENPOINT

A Planned Unit Development

Columbia County, Georgia

PROJECT INFORMATION

APPLICANT:

Pumpkin Center, LLC

Lionel Prather

4002 Enterprise Court
Martinez, Georgia 30907
lprather@prathercompany.com

APPLICANT REPRESENTATIVE:

Witmer Jones Keefer, Ltd.
23 Promenade St., Ste. 201
Bluffton, SC 29910

PROPERTY INFORMATION:

Owners	Parcel	Acreage
1. Pumpkin Center Properties	029:37B	479.70
2. Pumpkin Center Properties	029:057	18.90
3. Pumpkin Center Properties	029:030	38.00
4. Pumpkin Center Properties	029:34	68.49
5. Euchee Creek Development	029:048B	32.28
6. Euchee Creek Development	029:048A	41.81
7. Euchee Creek Development	030:83T	21.42
8. Pumpkin Center Properties	030:083(portion)	+/-12.0
9. Larry S. Prather Sr	029:039A	100.37
10. R Lionel & Larry Prather JR	029:036	13.63
11. Julia Prather	029:38	8.43
		834 Total AC

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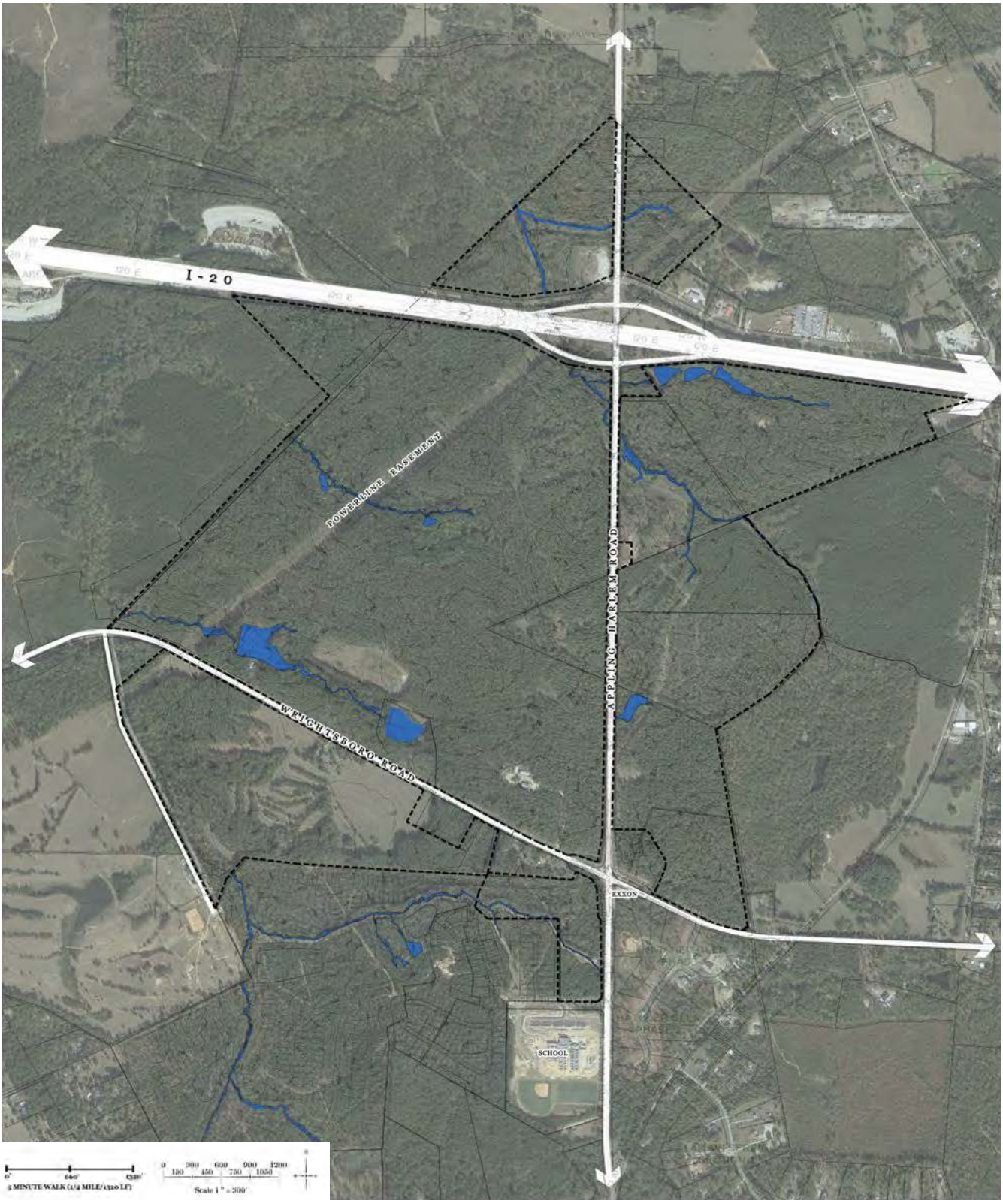
I. VICINITY MAP



II. INTRODUCTION

Pumpkin Center LLC is proposing an 834 Acre Planned Unit Development named Greenpoint on and near the Appling Harlem exit along the I-20 corridor. This mixed use development joins the previously approved 230 acre Greenpoint PRD Plan in providing a defined quality place at the entry into Columbia County in this strategic corridor.

The Vicinity map (page 4) shows the limits of the 834 acres that is the subject of this submittal.

The area being proposed for development has already been envisioned by the 2035 Growth Management Plan prepared by Columbia County and is consistent with that plan. The intent of this document is to provide a responsible development framework which can serve Greenpoint through its development cycle - expected to last anywhere from 20 to 25 years. This rezoning is in coordination with the previously approved Phase I Greenpoint PRD Plan for 230 acres adjacent to Harlem Middle School and to the southwest of Appling Harlem and Wrightsboro roads. This PUD will also provide the Columbia County Planning and Engineering Departments with guidelines to ensure the quality of the development within predetermined parameters. Listed on the following page are a selection of the Vision 2035 Plan goals as well as what we plan to do to to meet and exceed these goals.

II. INTRODUCTION

COMPLYING WITH 2035 VISION PLAN

- Development Patterns (DP)
  - **DP Goal 3 - *Promote high quality new construction***

    * Ensure a high quality of residential development with updated standards (E.G. enhanced open space and pedestrian connectivity standards)

  - What the Greenpoint Vision does

    * Greenpoint's vision is to connect residents to parks and greenspace as well as to commercial uses, schools, and civic sites through a network of streets, walkways, and trails designed for pedestrians first.

- Resource Conservation (RC)
  - **RC Goal 2: *Permanently protect 20% of the county's land as greenspace consistent with the Columbia County Greenspace Program***

  - What the Greenpoint Vision does

    * The Greenpoint Vision will provide as much greenspace as possible to meet and exceed the 20% goal of Columbia County

    * The plan will be developed to maximize greenspace that could be dedicated to the Columbia County Greenspace Program.

III. EXISTING CONDITIONS

The existing characteristics of the land must be considered first when determining how the land can be developed to best meet the goals of the proposed vision. The following list of considerations for the existing characteristics of Greenpoint have been given in the master planning process:

- The **environmentally sensitive areas** have been identified and located. The limits of these are identified on the Topography Map included on page 9. Our goal is to use the remaining land around these sensitive areas and establish a development envelope. The most environmentally sensitive areas of the land are the U.S. Army Corp of Engineers regulated wetlands and both buffered and non-buffered state waters. It is our priority to minimize impact to these areas due to their unique characteristics, the high cost of construction that would accompany any disturbance, and the environmental benefits of undisturbance such as:

    - the opportunity for natural “breaks” in the built environment
    - wildlife corridors
    - the preservation of native plant species

- The **topography** of the land is also a key component of a successful development. A plan that works with the natural flow of the land will handle drainage and minimize erosion better than one that attempts to go against it. The Greenpoint Vision works with the grade in the following ways:

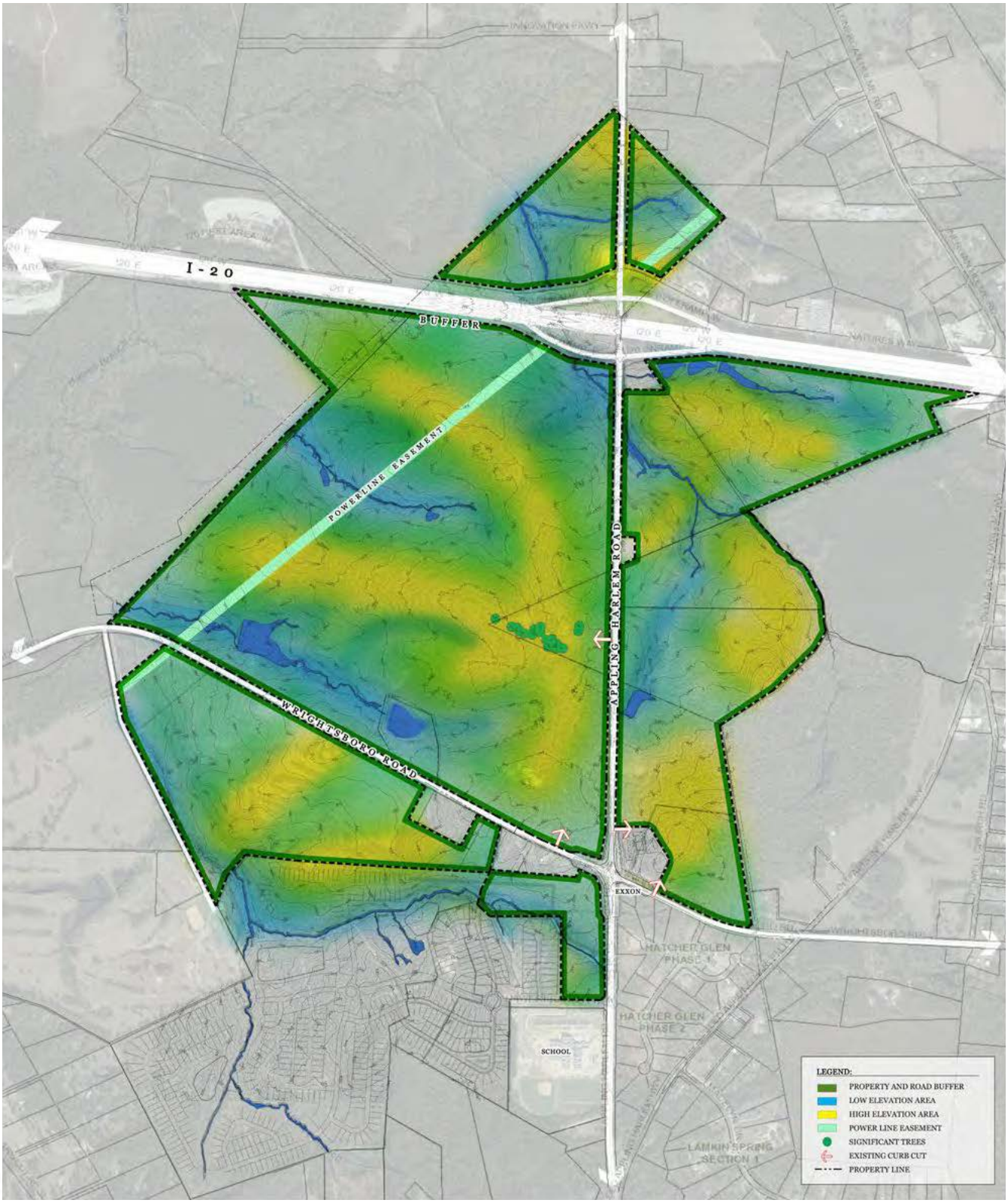
    - Land that has a slope of greater than 15% is generally avoided. These areas require much more grading and become much more prone to erosion. They are also much more expensive to develop and the cost to reward benefit drops remarkably.

III. EXISTING CONDITIONS

- The **tree cover** on these three tracts is generally planted pines. Where possible, the existing trees will be preserved to provide significant vegetative buffers to the adjacent properties and street frontages. A tree survey will be performed in accordance with the Columbia County Ordinance.

- **Utility infrastructure**. An existing power line easement splits the site which can be utilized as a natural trail corridor throughout the community.

III. EXISTING CONDITIONS - TOPOGRAPHY MAP



IV. DEVELOPMENT PROGRAM

The Greenpoint Vision seeks to create a complete PLACE in which people can live, work, and play. The following planning principles guide the vision toward creating a great place:

Establishing a Master Plan which is reasonably flexible and responsive to the changing marketplace, while maintaining the framework of major streets and open spaces.

Creating walkable communities - All districts will have access to sidewalks along lot frontages until a concept plan approved by Columbia County Planning and Zoning approves otherwise. Parkways will be built with a walking trail on one side of the parkway or the other and will tie into the neighborhood sidewalk system.

Developing a system of complete streets that connect neighborhoods to each other. Cul de sacs shall only be used when environmentally sensitive areas and topography prevent this from happening. The goal is to provide a functional street network that benefits the entire community. The interconnection of roads shall be achieved where possible. In order for streets to be complete, they must accomodate automotive traffic as well as non-automotive traffic. Pedestrian and bicycle safety is a priority in a complete street network.

Creating a system of connected open spaces that include greenways, environmental corridors, neighborhood parks, pedestrian and bicycle trails, and active and passive recreation areas. These corridors will be integrated into the master plan and will be designed to minimize unusable greenspace.

Supporting the existing and proposed Harlem Middle School as a key community asset, by connecting it to the development via a multimodal system of streets, sidewalks, and multi-use trails.

IV. DEVELOPMENT PROGRAM

Variety of Housing Types – A monoculture of housing types will restrict a community from becoming a complete place. Variety in size, type, and form of homes within a community accommodates a more robust housing market which translates into more interesting, energetic, and engaged neighborhoods that tend to take ownership of the place as a whole and add to its value over time. Typically, the more diversity there is in housing within a place, the more successful the non-residential uses are within the community.

Variety of Uses - In order for a community to feel like a place it must sustain a variety of on-site uses. These typically will include not only residential, but commercial and civic uses as well as parks and recreational amenities. The provision of the "Third Place," somewhere for people to gather that is neither home nor work in a community is typically what sets a true place apart from the conventional subdivision. Providing pedestrian access to this "Third Place" further encourages residents to connect and take ownership within their community. Children and seniors often benefit most from the ability to connect without dependence on the automobile.

Minimizes unnecessary impacts on the land - Major grading shall be used when necessary to provide a buildable lot, transition from the grading of the roadways, construction of drainage facilities, and meet the required vertical alignment set forth in the Columbia County Design Standards. Steep slopes will be replanted with pine seedlings to redefine the developed envelope of the land over time. Greenpoint will attempt to save existing tree canopy where possible to preserve buffering.

Maximize positive impact on surrounding community - A minimum 50' buffer along the sides of all outer property lines adjoining residential uses and a 30' buffer along the Appling Harlem and Wrighsboro road frontages for commercial and mixed use districts shall be established or supplemented as needed after consultation with the Columbia County Landscape Architect. Attempts shall be made to preserve existing trees and understory vegetation in this area if possible. The buffer zone shall

be maintained by the neighborhood home owners association. The developer may also work with the Columbia County Greenspace Committee to dedicate and add these buffers and preserved greenspace to their overall greenspace preservation program.

Design Standards – All construction in Greenpoint will be regulated by a comprehensive set of site and architectural standards. A pattern book that communicates the expectations of lot layout, building placement, setbacks, architectural guidelines, landscape, and hardscape requirements will be provided to all owners and builders for their information. These standards will be set in the spirit of simplifying the development process by incentivising low-impact design methods as well as pragmatic architectural design detailing that relates historically to the Augusta region. A practical and efficient design review process and construction close-out procedure will be required for all construction to ensure that the site and architectural standards are followed.

Greenpoint will have both a Commercial Development Standards document for CD districts and a Mixed Use and Residential pattern book for MUD and RD districts that will be provided to Columbia County prior to approval of the final plats for the first phase of development in these corresponding districts. A letter of approval will be provided from Greenpoint Commercial or Architectural Review with all submitted building permits.

Parking

Parking within the right of way or on-street parking will be allowed as an option in the majority of the planning districts within the Greenpoint development. In the less dense areas such as RD1, parking may be provided along a grassed, gravel or paved roadside shoulder interspersed between street trees. Where this occurs, care will be taken to ensure street trees and parking do not disrupt or hinder the long term maintenance of drainage swales. In the more dense areas such as the

MUD district, the parking will be a part of the paved street section with a curb drainage system adjacent to wide sidewalks where street trees will be in planters. In medium density areas such as R2 and R3 districts, typically, the parking will be on one side of the road adjacent to a curb drainage system with tree lawns and walkways behind the curb. In areas where green space permits, some common, off-street parking areas may be provided for guest use. In MUD districts, the interior service side of the block (not primary frontage) will incorporate space for trash and utility access as well as ADA and shared parking spaces for all of the surrounding uses and residents. Some examples of these types of conditions are shown on the following pages.

V. STREET SYSTEM

EXAMPLE PARKING TYPES:

V. STREET SYSTEM

EXAMPLE PARKING TYPES:

V. STREET SYSTEM

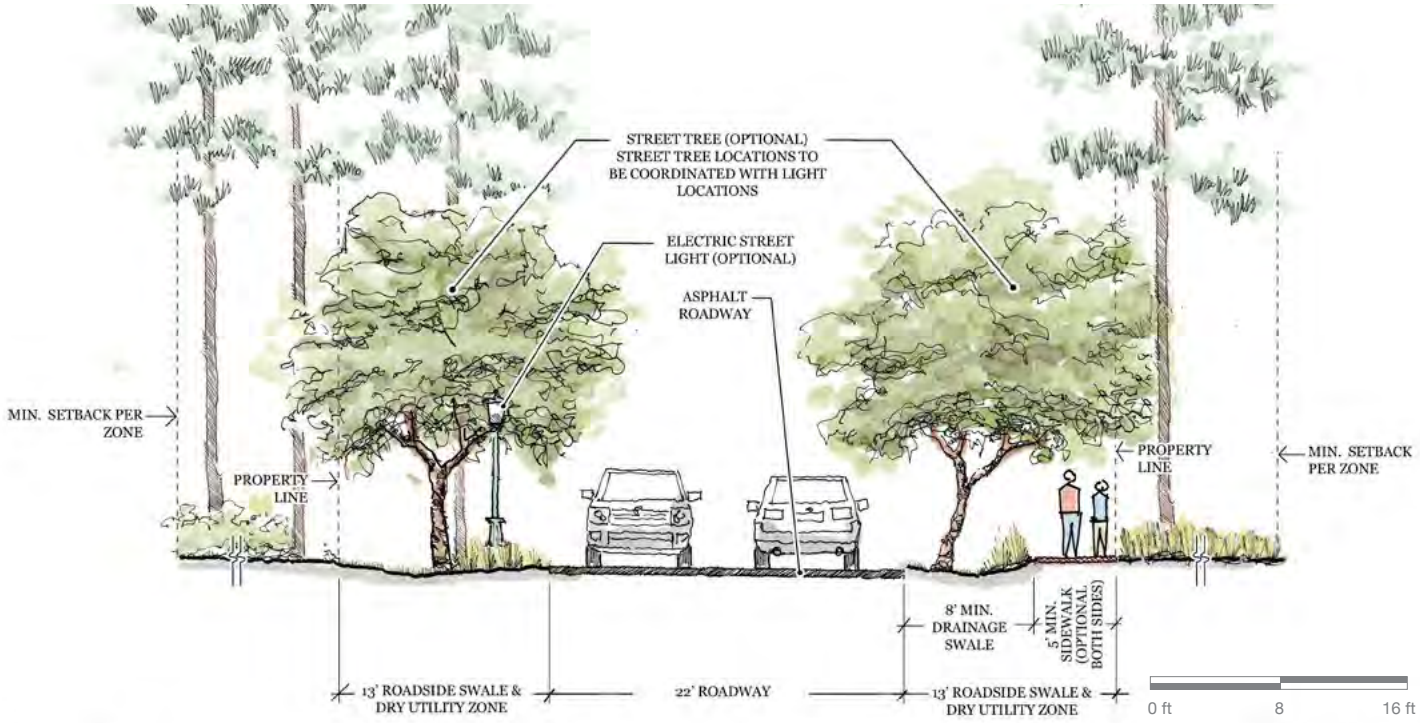
The street system will include public streets, dedicated to Columbia County, and potentially private streets owned and maintained by the neighborhood homeowner association. The streets will utilize similar landscape and lighting treatments within each neighborhood, which may vary in design from district to district. Public streets will conform to Columbia County Construction Specifications and Columbia County Geometric Design Specifications. Private streets will conform to Columbia County Construction Specifications, but may not always conform to the Columbia County Geometric Design Specifications. Landscaping in both public and private street rights of-way will be maintained by Greenpoint homeowner associations.

The guidelines are based upon the following objectives:

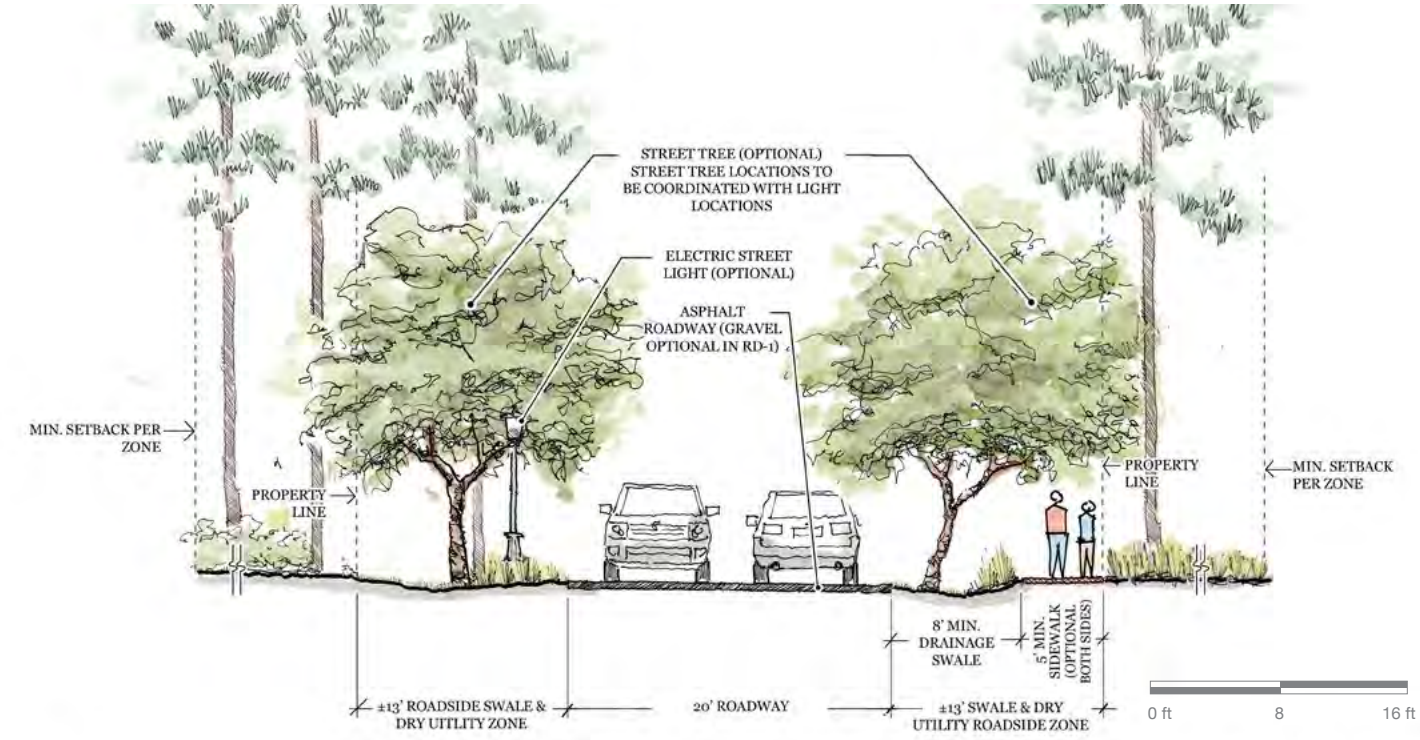
- To promote safety within the Greenpoint community, traffic speeds will be 25 mph or slower. A variety of traffic calming measures will be designed into the road system including a hierarchy of road types, reduction in long and excessively wide straightaways, compact network of blocks and intersections, narrow streets, street trees, reduced front setbacks for buildings, on-street parking, and other appropriate measures.
- ADA accessible ramps and warning strips will be provided at all crosswalks.
- Streets will be designed to allow for interconnectivity between neighborhoods where feasible
- Pedestrian and bicycle trails will be provided throughout the development
- On-street parking will be encouraged in certain higher density districts
- Consistent streetscaping will be planned to provide landscape unity. Street trees will be planted along all residential street right of ways. The street tree shall be a minimum of 2 in caliper and shall be spaced appropriately for the neighborhood where they are located. There may be some variance to this to accommodate driveway locations.
- Street lighting, where desirable and required, will be consistent in design. All neighborhoods will be added to the Columbia County Street Light Districts.
- Lighting in all districts will require full cut-off fixture types to preserve a dark sky for Greenpoint and the surrounding community.

V. STREET SYSTEM: ROAD TYPE SECTIONS

COLLECTOR ROAD 1:

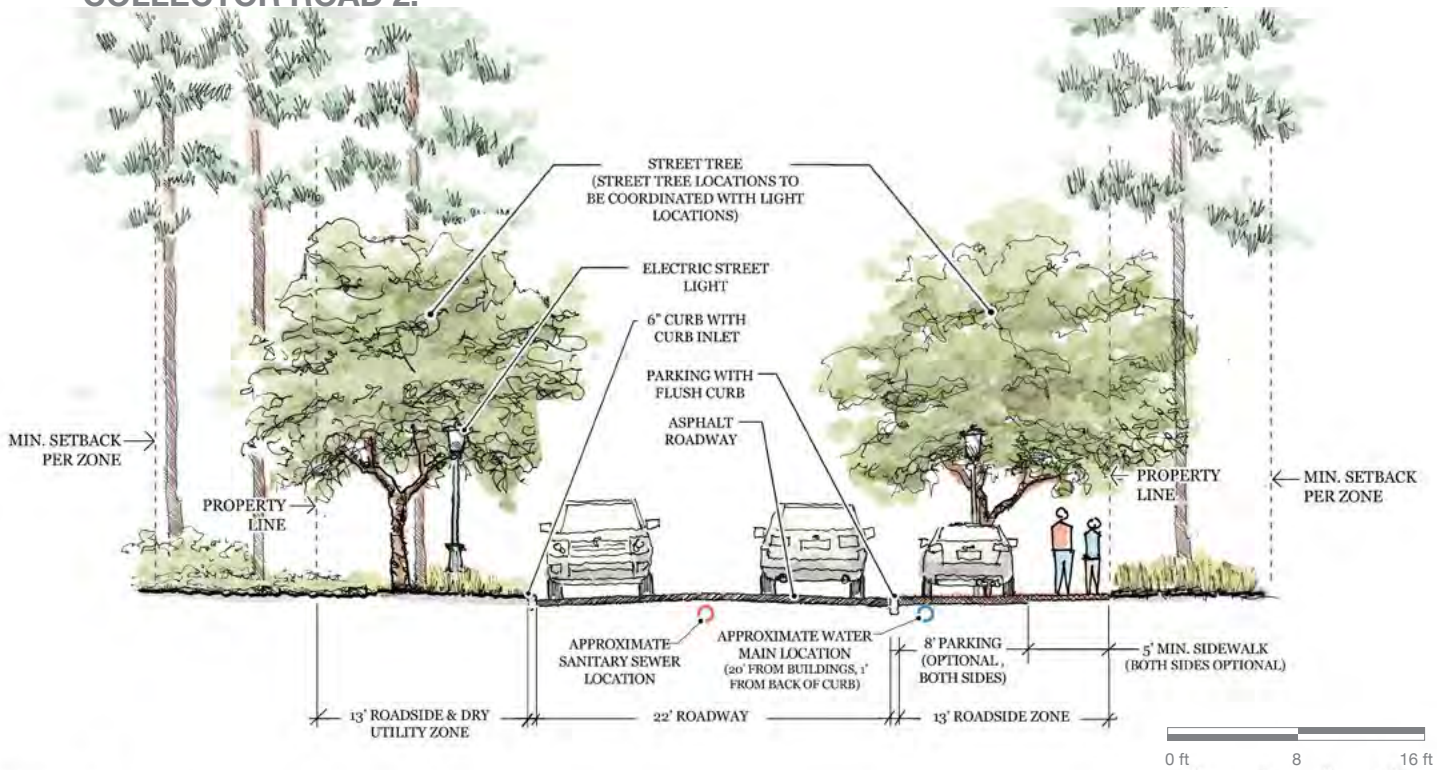


LOCAL ROAD 1:



V. STREET SYSTEM: ROAD TYPE SECTIONS

COLLECTOR ROAD 2:



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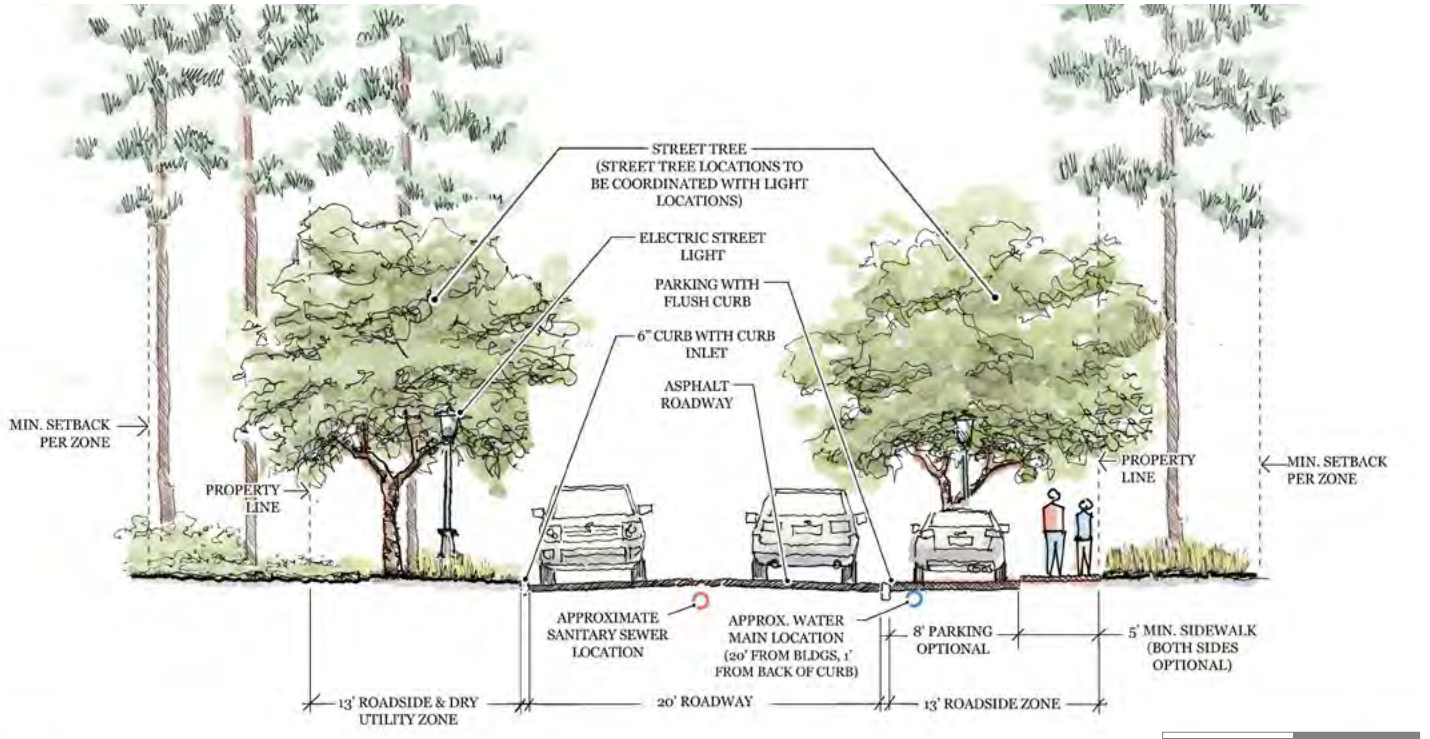
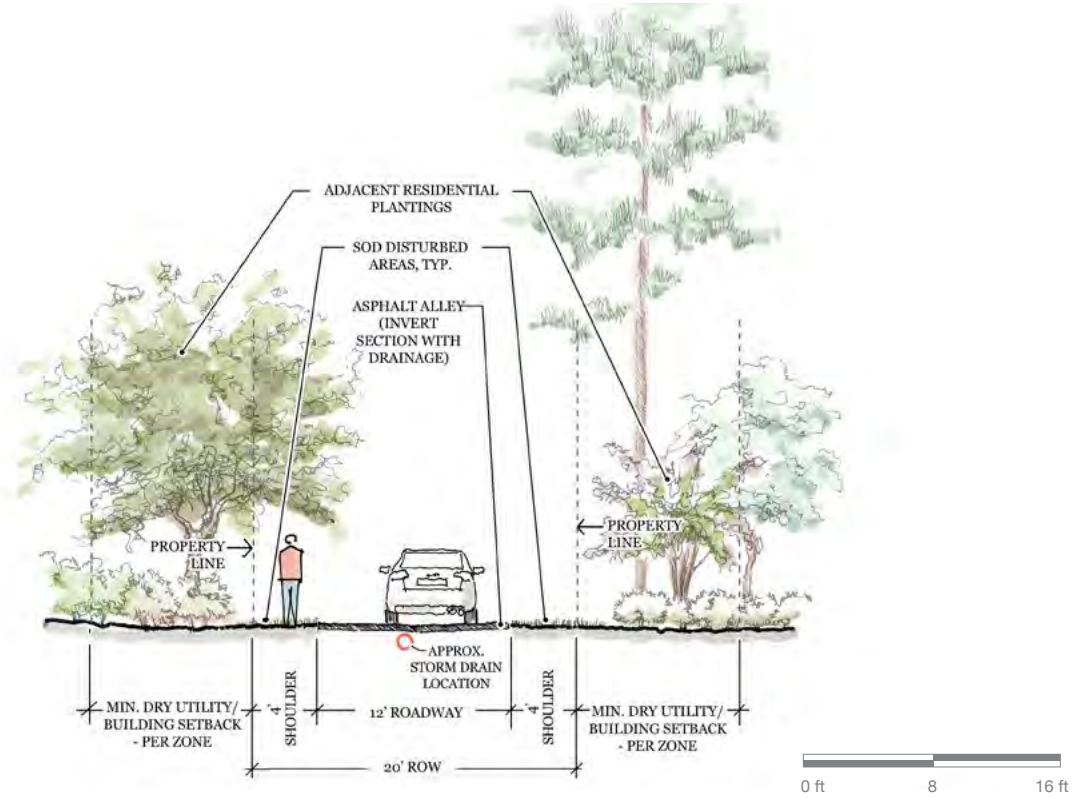


V. STREET SYSTEM: ROAD TYPE SECTIONS

LANE :



V. STREET SYSTEM: STREET ASSEMBLY TYPES

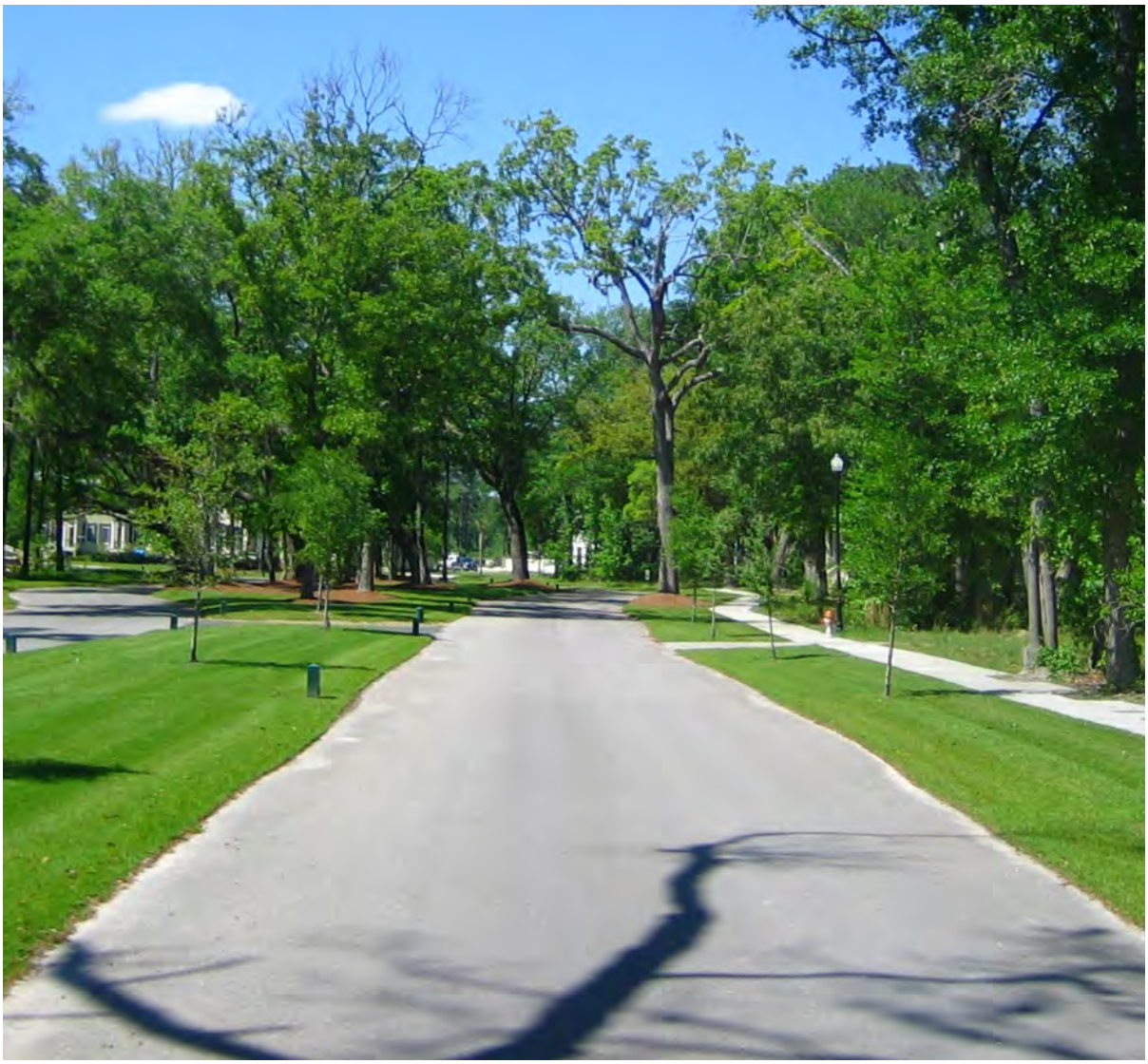
Public Street Designs

Street Assemby Types shall be based on the corresponding Development Districts in which they will be constructed. The Street Assembly Types are as follows:

RD-1: STREET TYPE OPTIONS

Collector Road 1

Local Road 1



RD-1: STREET TYPE OPTIONS

Collector Road 1

Local Road 1

RD-2: STREET TYPE OPTIONS

Collector Road 1 Local Road 1

Collector Road 2 Local Road 2

RD-2: STREET TYPE OPTIONS

Collector Road 1 Local Road 1

Collector Road 2 **Local Road 2**

RD-3: STREET TYPE OPTIONS

Collector Road 2 Lane

Local Road 2

RD-3: STREET TYPE OPTIONS

Collector Road 2 Lane

Local Road 2

RD-3: STREET TYPE OPTIONS

Collector Road 2 **Lane**

Local Road 2

MUD: STREET TYPE OPTIONS

Collector Road 2 Lane

Local Road 2

MUD: STREET TYPE OPTIONS

Collector Road 2 Lane

Local Road 2

MUD: STREET TYPE OPTIONS

Collector Road 2 **Lane**

Local Road 2

CD1 & 2: STREET TYPE OPTIONS

Collector Road 2 Lane

Local Road 2

CD1 & 2: STREET TYPE OPTIONS

Collector Road 2 Lane

Local Road 2

VI. OPEN SPACE

The Greenpoint community will dedicate a minimum of 20% or +/- 167 acres of its total acreage to open space. The open space acreage will be designated for a number of different uses. First, a connected network of green spaces will be integrated into the community with a greenway trail system, active and passive community park space, and preserved natural area. Second, a 50' undisturbed natural buffer will be preserved or planted along the boundaries of the PUD. This natural buffer will maintain a substantial visual and sound barrier along the major vehicular corridors surrounding the property and provide screening for adjacent properties. This 50' buffer can be included into the greenway trail system in areas where it is desirable. Environmentally sensitive wetland areas and areas that have excessive topography (either naturally or as a result of necessary site grading) will be included in the last open space category. On excessive slopes where site grading has been necessary fast growing native species will be planted to both stabilize the slope and act as a buffer between properties and uses. These areas will be preserved or naturalized and maintained as green space where wildlife and the native plant species can thrive.

A minimum 50 ft natural buffer will be preserved or planted along the boundaries of all RD Districts where they border the I-20, Appling Harlem Road and Wrightsboro road corridors bordering the Greenpoint PUD. Attempts shall be made to preserve existing trees and understory vegetation where possible. A 30 ft undisturbed buffer area will be maintained for the MUD and CD Districts along Appling Harlem road and Wrightsboro road. When disturbance is necessary in the buffer area it can be supplemented with new landscape plantings to act as a green foreground of landscape vegetation which softens the noise and visual impact of commercial development adjacent to these major highways. Generally, a clear view corridor from +/-5 ft to +/-15 ft above grade may be maintained to allow visibility into areas of development with commercial uses, which are dependent on visibility from the road. Where reasonable, the commercial frontage should contain understory and overstory tree canopy as well as low-maintenance shrubs to accomplish this requirement.

VI. OPEN SPACE

IV. OPEN SPACE

1. Parks - An important feature to the open space plan anticipates neighborhood parks. While not each and every neighborhood will be developed with a park, the Greenpoint Vision is for all residential neighborhoods to be no more than a 5 minute walk (or 1/8 mile distance) from a park or natural area. Each park will differ in design and use, but will represent a gathering place for the community.

2. Walking Trails - There will be side-walks incorporated into the streetscape as well as trails throughout the parks and open spaces that will connect neighborhoods from the edges of the community to the center. Pedestrian walks will also be used to break up long blocks and connect neighborhoods across natural areas. Walking trails may be concrete, asphalt, gravel, or natural mulch, depending on where they occur.

3. Neighborhood Amenities - Amenities properly sized to accomodate all residents of the various neighbor-hoods within the development will be provided as a part of the PUD. Pools, pavillions, parks, playgrounds, and other social activity spaces will be accessible by trails and sidewalks from all over the community. These active and passive recreational amenities will be provided throughout the community to provide

"Third Place" opportunities for residents to connect and enjoy.

4. Centralized Mail - As required by the United States Postal Service, Centralized Box Units or CBU's will be used in some areas of the community. The examples shown below are one way we may provide these for our residents. In higher density developments such as the Mixed-Use District, a community Post Office may be incorporated to accommodate the Centralized Mail requirement as well as provide another social connection opportunity to residents.

VII. THE PLANNED UNIT DEVELOPMENT PLAN (PUD)

The Planned Unit Development Vision for Greenpoint is to provide for flexibility to meet market demands while creating a density maximum for each of the Districts listed below. A District Plan showing general areas of zoning or district types along with connectivity is included.

The following paragraphs give a detailed description of the proposed zoning, density, use, and lot types for each district.

Residential Districts:
Greenpoint will offer a variety of residential housing types satisfying the broad housing needs within the Columbia county and Augusta markets. Residential density will average 2.6 units per acre across the district. Total residential density will range form 1800-2000 units. Service yards for electric meters and HVAC units shall be no closer than 3 ft to the property line on any detached single-family lots.

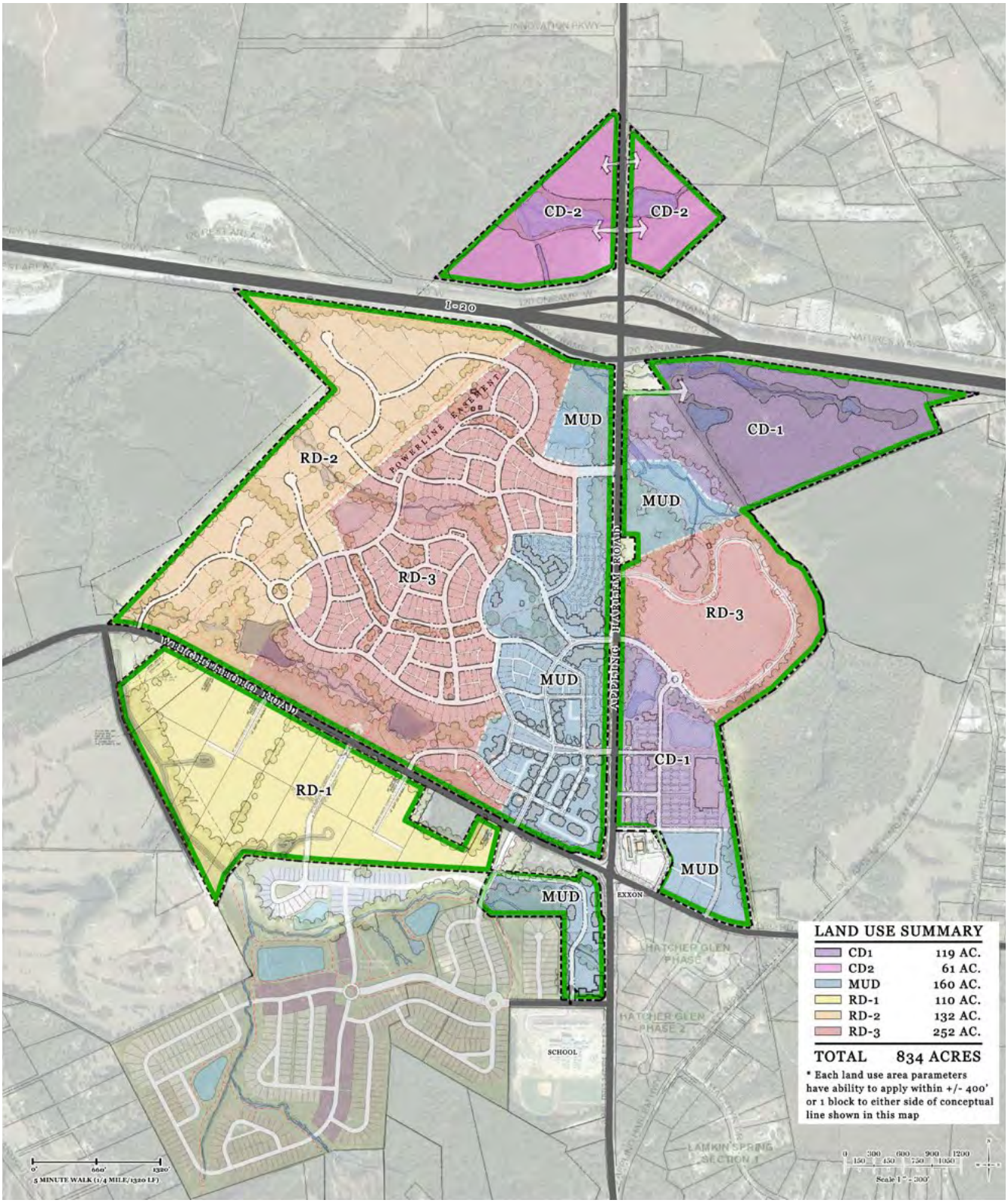
Non-Residential Districts:
Greenpoint will offer one non-residential development district to serve the residents and the greater Pumpkin Center Community. The Uses listed within the Columbia County Zoning Ordinance under the Zoning Classifications CC, C1, C2 are allowed within the CD District.

Steps that are not an extension of the architecture of the structure they provide access to will not be included as part of that structure and therefore are not subject to front yard setback requirements in all cases.

VII. THE PLANNED UNIT DEVELOPMENT PLAN (PUD)

Service yards for electric meters and HVAC units shall be no closer than 3 ft to the property line on any detached single family lots.

VII. THE PLANNED UNIT DEVELOPMENT PLAN (PUD)



VII. THE PLANNED UNIT DEVELOPMENT PLAN (PUD)

All setbacks listed are measured from the property line

1. Residential Development (RD-1)

Zoning: Similar to CCZO RA
Acreage: +/-110 AC - 22 AC Open Space = 88 AC
Approximate Density- +/- 1 unit per 5 acres (+/- 17 total units)
Rural in character
Large "farmstead" or family-compound type lots
**Refer to pattern book for ADU guidelines*

A. Lot size - 2.5 acre min.
Min. Frontage - 115 ft* at the front setback
Max. Building Height. – 2.5 stories
** Applies to non-radial lots - exceptions will be considered during ARB review*

Min. Setbacks

Front Yard	20 ft
Side Yard	10 ft
Rear Yard	25 ft for any structure over 400 SF
	10 ft for any structure 400 SF and under

**Refer to pattern book for ADU guidelines*

2. Residential Development (RD-2)

Zoning: Similar to CCZO R1A
Acreage: +/-132 AC - 26 AC Open Space: 106 AC
Approximate Density- +/- 2 units per acre (+/- 212 total units)
Large, estate type lots - suburban in character

A. Lot size - 20,000 SF min.
Min. Frontage - 100 ft at the front setback line
Max. Building Height. – 2.5 stories
**Applies to no-radial lots - exceptions will be considered during ARB review.*

Min. Setbacks
Front Yard 20 ft
Side Yard 10 ft
Rear Yard 25 ft for any structure over 400 SF
Rear Yard 10 ft for any structure 400 SF and under
**Refer to pattern book for ADU guidelines*

3. Residential Development (RD-3)
Zoning: Similar to CCZO R1A, R2, R3
Acreage: +/-252 AC - 50 AC Open Space: 202 AC
Maximum Density- +/- 4 units per acre (+/- 800 units)
Suburban to village residential in character

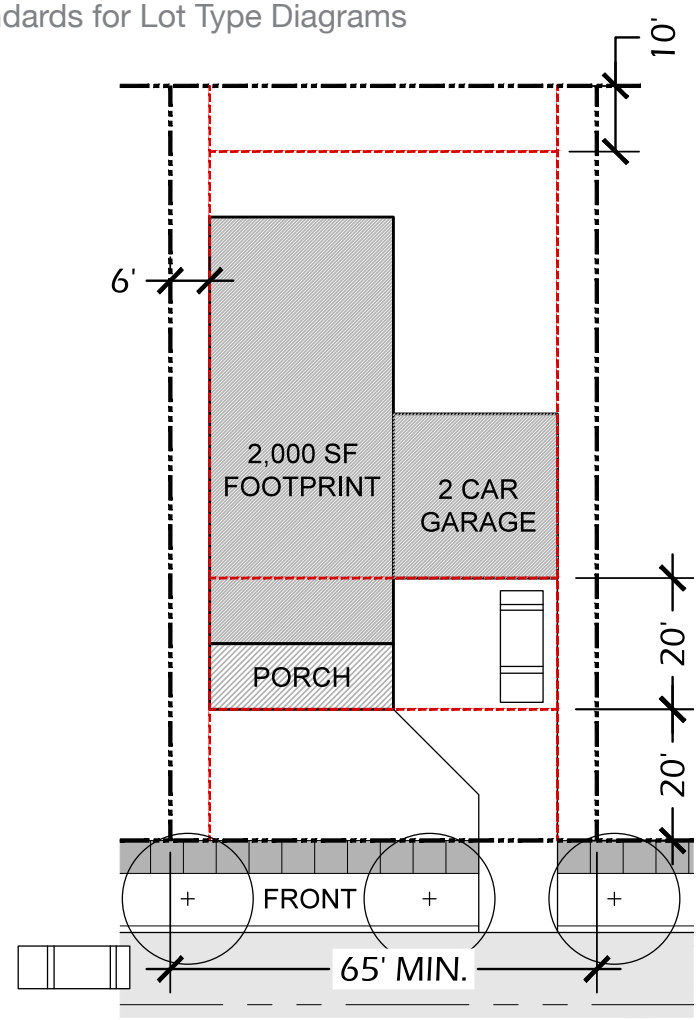
Multiple lot sizes in this district listed below with corresponding minimums:

A. Lot size 1 – 7,500 SF min.
Max. Building Height. – 2.5 stories
Min. Frontage (at front setback) - 65 ft for front or slip by drive access
55 ft for lane access

Min. Setbacks
Front Yard 10 ft for slip by drive or lane access
20 ft for front access
Side Yard 6 ft
Rear Yard 5 ft for slip by drive
10 ft for front access
20 ft with lane access

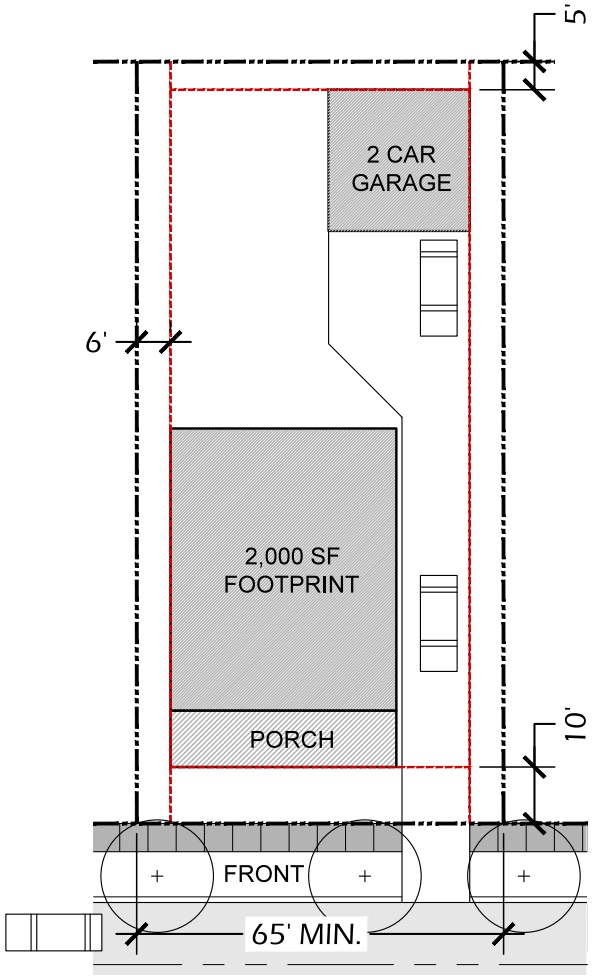
LOT SIZE 1 FRONT LOAD

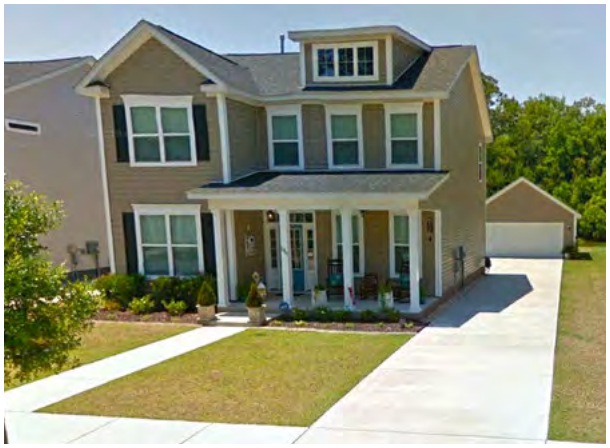
Minimum Standards for Lot Type Diagrams



LOT SIZE 1 SLIP BY DRIVE

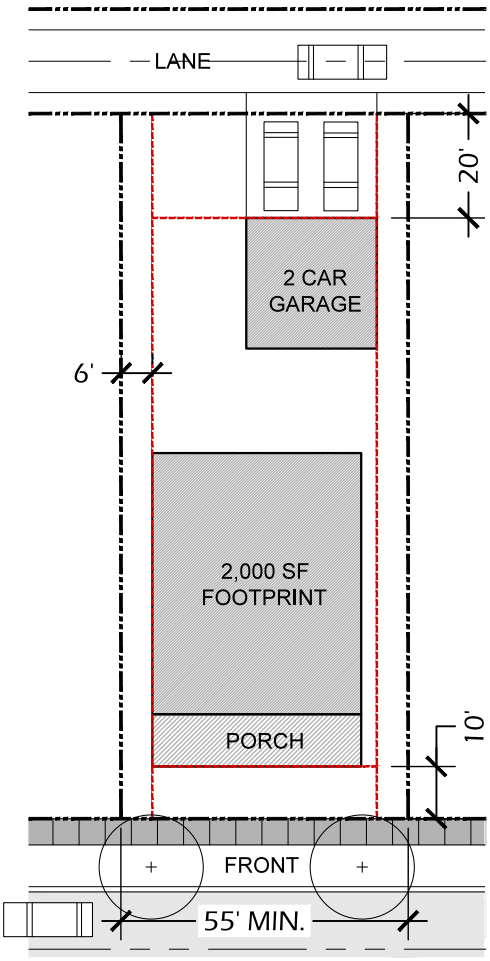
Minimum Standards for Lot Type Diagrams





LOT SIZE 1 REAR LOAD

Minimum Standards for Lot Type Diagrams



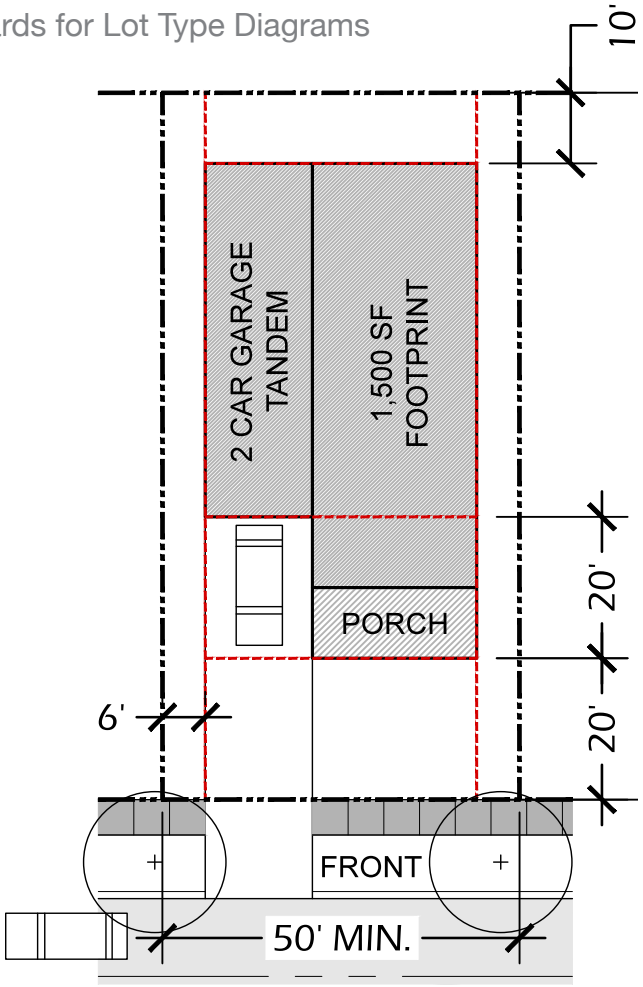
B. Lot size 2 – 5,000 SF min.
Max. Building Height. – 2.5 stories
Min. Frontage (at front setback) - 50 ft for front or slip by drive access
40 ft for lane access

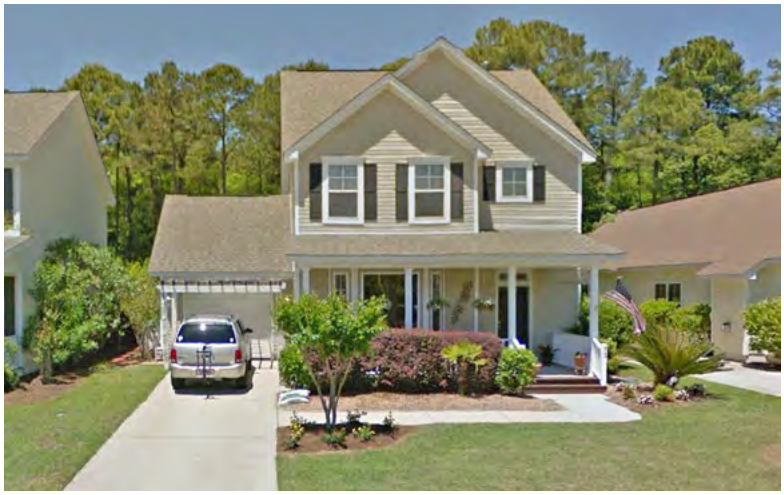
Min. Setbacks

Front Yard	10 ft for slip by drive or lane access
	20 ft for front access
Side Yard	6 ft
Rear Yard	5 ft for slip by drive
	10 ft front access
	20 ft with lane access

LOT SIZE 2 FRONT LOAD

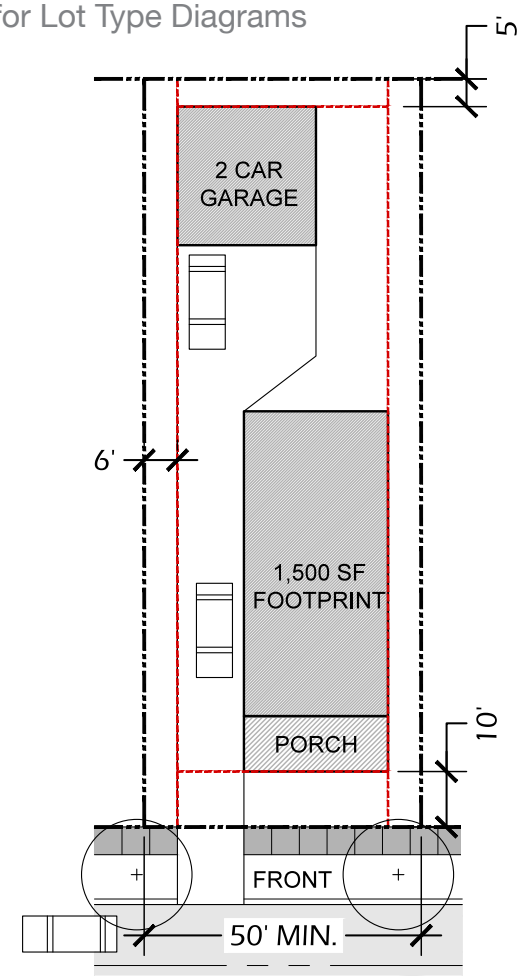
Minimum Standards for Lot Type Diagrams

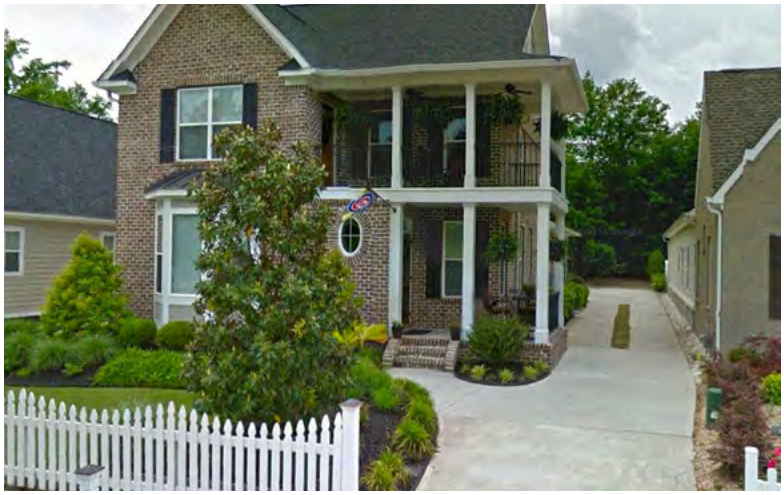




LOT SIZE 2 SLIP BY DRIVE

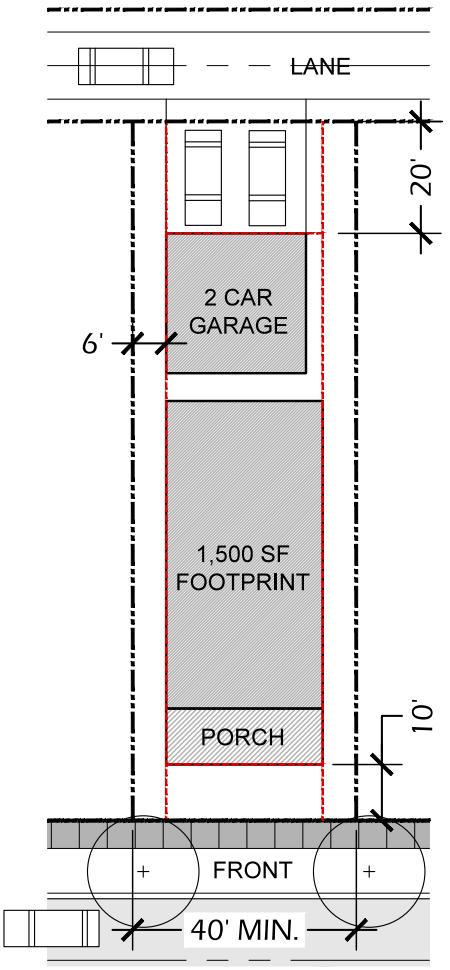
Minimum Standards for Lot Type Diagrams





LOT SIZE 2 REAR LOAD

Minimum Standards for Lot Type Diagrams



4. Mixed Use Development (MU)

The MU District is proposed as a mix or residential and non-residential uses in a variety of densities consistent with Traditional Neighborhood Design principles to encourage walkability. Commercial uses will be consistent with uses permitted in the Columbia County Zoning Sec. 90-97 Use Table for C1 and CC. Also to include Microbreweries and Brew Pubs.

Zoning: Similar to CCZO R3A, TR, AR-10, C1, CC, PI
Acreage: +/-160 AC - 32 AC Open Space: 128 AC
Maximum Density- +/- 6 units per acre or +/- 770 units
Village residential to Village Commercial in character

A. Single Family Residential Detached Lot size 1 – 3,600 SF min
Min. Frontage - 30 ft at the at front setback line
Max. Building Height - 2.5 stories
**Off street parking and access is required by lane*

Setbacks Primary Structure:

Front Yard	10 ft min.
Side Yard	6 ft
Rear Yard	20 ft

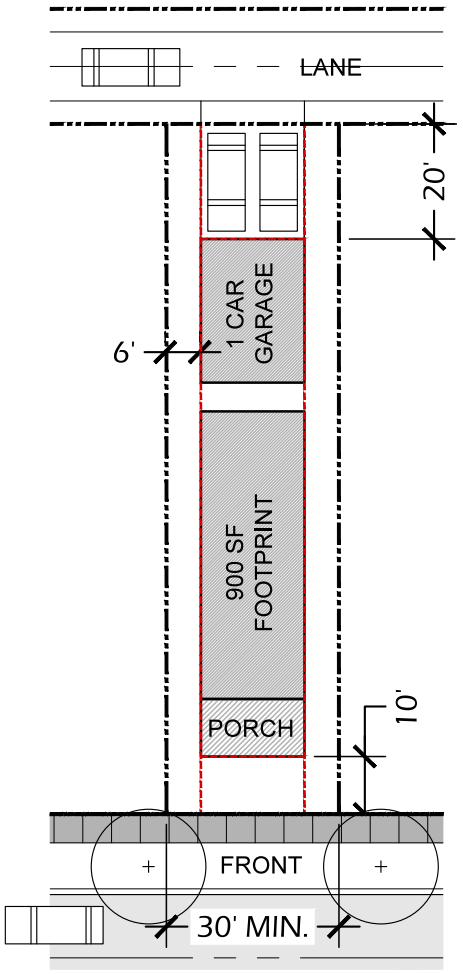
Setbacks Secondary (Garage or other Covered Parking) Structure*:

Front Yard	20 ft min. setback the front facing façade of the primary structure
Side Yard	5 ft min., no less than 15 ft combined**
Rear Yard	5 ft min. 25 ft max.

**secondary structure must be detached from primary structure and any garage doors must be facing lane*
***includes service yard*

A. SINGLE FAMILY RESIDENTIAL DETACHED LOT SIZE 1

Minimum Standards for Lot Type Diagrams



B. Attached Residential– 3600 SF min.

Min. Frontage - 44 ft per block of continuous units at the front setback line

Max. Building Height. – 2.5 stories

**Off street parking and access is required by lane*

Setbacks Primary Structure:

Front Yard	10 ft min.
Side Yard	6 ft
Rear Yard	20 ft min.

Setbacks Secondary (Garage or other Covered Parking) Structure*:

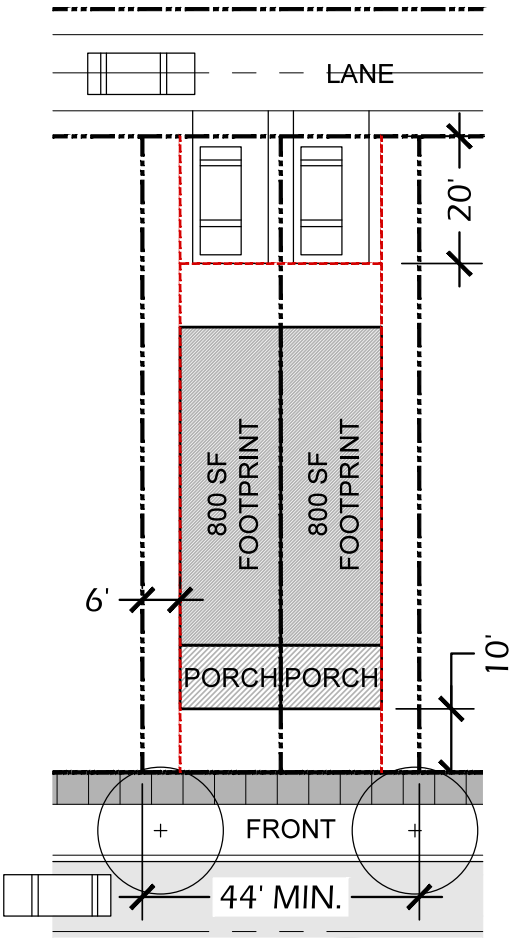
Front Yard	20 ft min. setback from the front facing façade of the primary structure
Side Yard	5 ft min., no less than 15 ft combined**
Rear Yard	5 ft min. 25 ft max.

**secondary structure must be detached from primary structure and any garage doors must be facing lane*

***includes service yard*

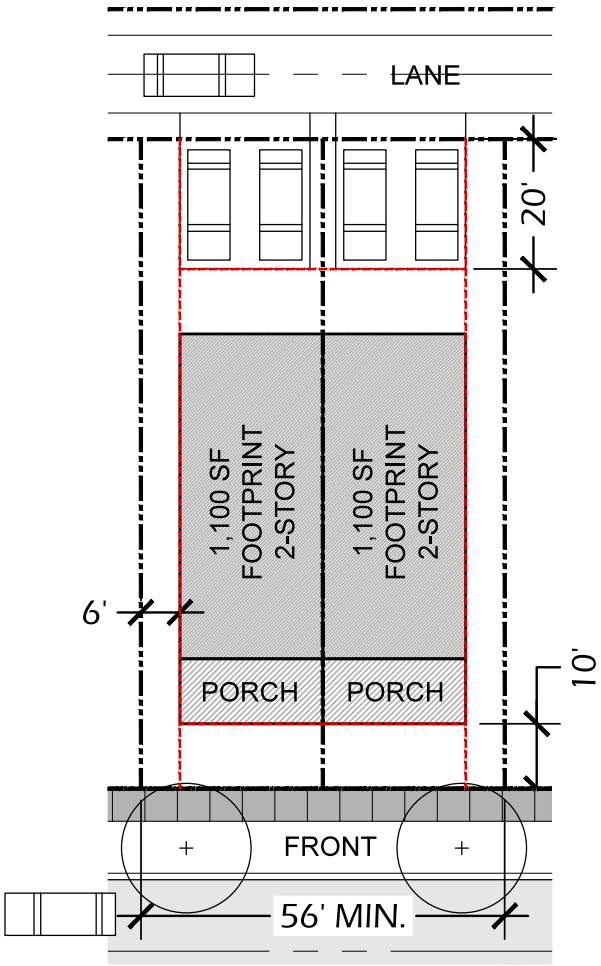
B. ATTACHED RESIDENTIAL X 2

Minimum Standards for Lot Type Diagrams



B. ATTACHED RESIDENTIAL X 4

Minimum Standards for Lot Type Diagrams



C. Cottage Court Single Family Detached – 20,000 min. (Shared lot with condo units)

Max. Density – 8 units/ ac.
Min. Frontage – 14 ft per unit
Max. Building Height. – 2.5 stories

Off street parking and access is required by lane

Setbacks Primary Structure:

Front Yard	10 ft min.
Side Yard	6 ft min.
Rear Yard	10 ft

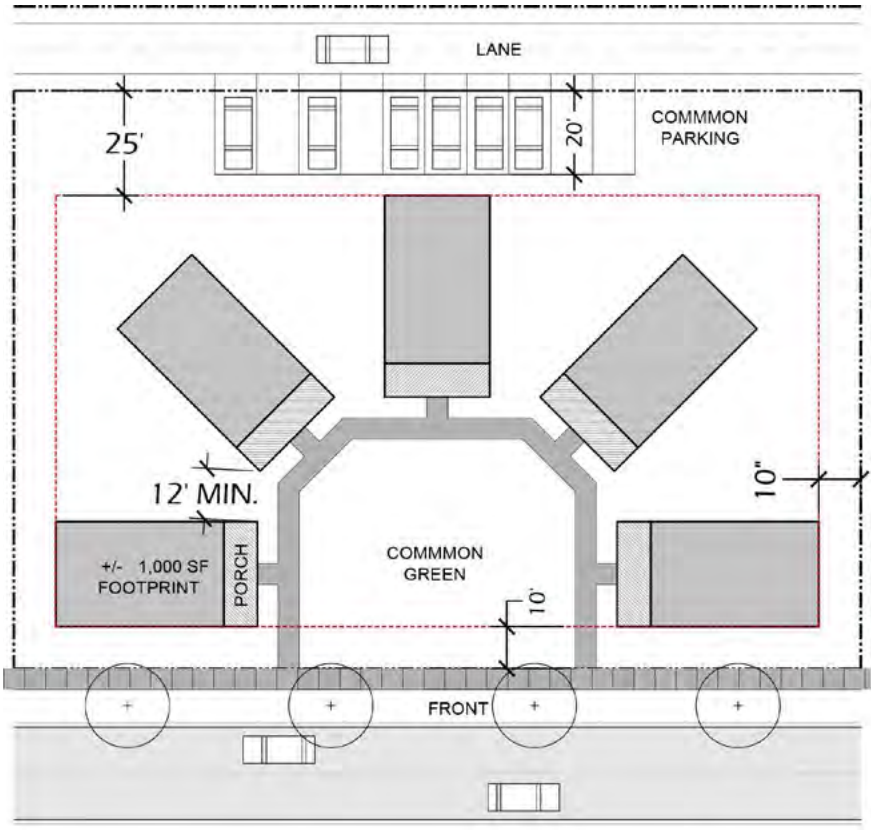
Setbacks Secondary (Garage or other Covered Parking) Structure*:

Front Yard	20 ft min. setback the front facing façade of the primary structure
Side Yard	5 ft min., no less than 15 ft combined**
Rear Yard	5 ft min. 25 ft max.

**secondary structure must be detached from primary structure and any garage doors must be facing lane*
***includes service yard*

C. COTTAGE COURT SINGLE FAMILY DETACHED

Minimum Standards for Lot Type Diagrams



D. Townhomes - 800 SF min.
Max. Density – 8 units/ ac
Min. Frontage – 16 ft
Max. Building Height. – 2.5 stories

Setbacks Primary Structure:

Front Yard	10 ft min.*
Side Yard	15 ft min. per every 5 units
Rear Yard	20 ft min.

**If off-street parking and access is not provided by lane, then min. front setback shall be 20 ft to accommodate parking and garage access.*

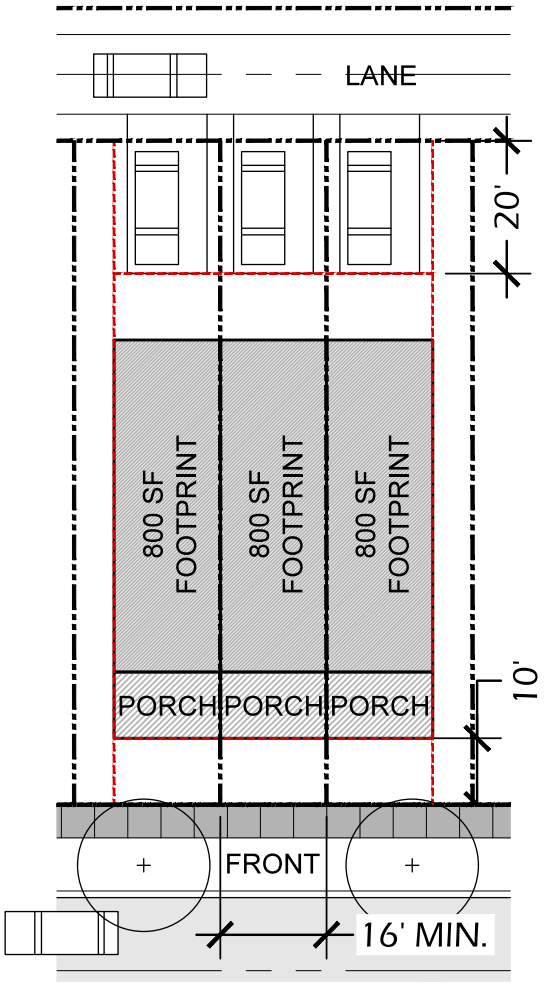
Setbacks Secondary (Garage or other Covered Parking) Structure*:

Front Yard	20 ft min. setback from the front facing façade of the primary structure
Side Yard	15 ft min. per every 5 units
Rear Yard	5 ft min.

**secondary structure must be detached from primary structure and any garage doors must be facing lane*
***includes service yard*

D. TOWNHOMES

Minimum Standards for Lot Type Diagrams



E. Live/ Work Units

Maximum Density – 12 units/ ac
Min. Frontage – 22 ft min.
Max. Building Height. – 55 ft

**The Live/Work Units will allow any use that is permitted in the CCZO under the CC use table. However, any development that is designated as both residential and commercial in use must qualify from a building code requirement first and foremost. In addition to this high level of code compliance, any financing or insurance that will be provided for a Live/ Work building will contain rigorous qualifying considerations. For these reasons it is certain that any Live/Work use that is developed as a part of Greenpoint will be of the highest quality in order to be accepted by the ARB.*

Parking:

1 Spaces/ unit required
1 space/ 1000 SF Commercial Gross Floor Area
On street parking spaces within 300 LF of building count for 25% parking req.

Off-street parking required behind primary structure
Off-street surface or garage parking is required

Setbacks Primary Structure:

Front Yard	0 ft min.
Side Yard	6 ft min.
Rear Yard	20 ft min.

Setbacks Secondary (Garage or other Covered Parking) Structure*:

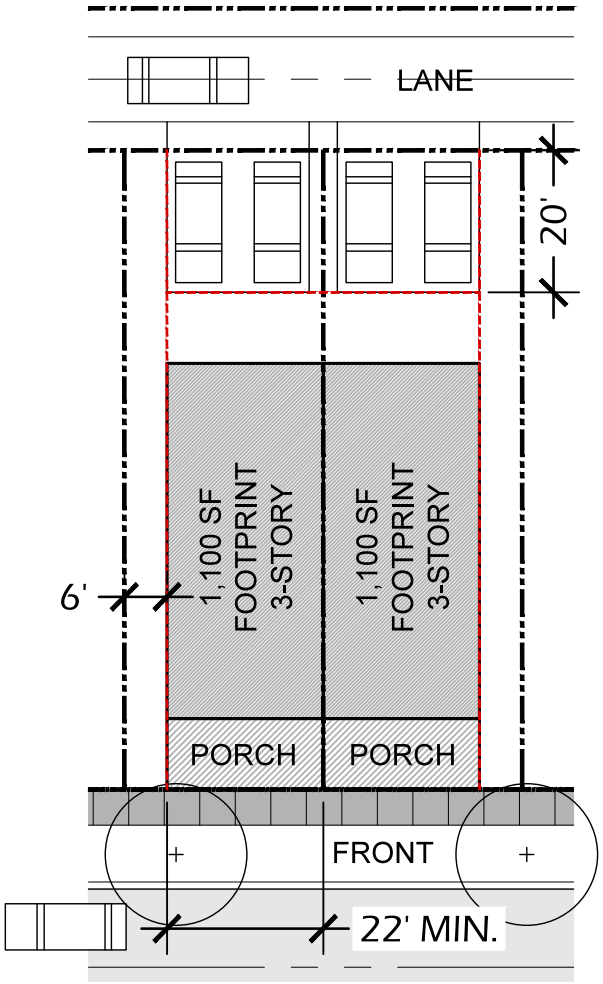
Side Yard	6 ft min.
Rear Yard	5 ft min. – 25 ft max.

**secondary structure must be detached from primary structure and any garage doors shall not face the front street of property*

**service yards shall be located in rear of property*

LIVE/WORK UNITS

Minimum Standards for Lot Type Diagrams



F. Flats

Max. Density – 14 units/ ac
Min. Frontage – N/A
Max. Building Height. – 55 ft

Parking:
1.5 Spaces/ unit required
On street parking spaces within 300 LF of building count for 25% parking req.
Off-street parking required behind primary structure
Off-street surface or garage parking is required

Setbacks Primary Structure:

Front Yard	0 ft
Side Yard	20 ft between buildings
Rear Yard	10 ft

Setbacks Secondary (Garage or other Covered Parking) Structure*:

Side Yard	6 ft min.
Rear Yard	5 ft min. – 25 ft max.

**secondary structure must be detached from primary structure and any garage doors must be facing lane*
**service yards shall be located in rear of property*

Non-Residential Lots

A. Village Commercial/ Institutional

Similar to CCZO CC, C1 and P1 to include the following uses:
Worship, Day Care, Parks and Recreation
Drive-thru windows are allowed as long as the window is not facing a major street. The ARB Pattern Book will address other restrictions within the Greenpoint ARB review process. The ARB must provide an approval letter to the County Building Permit Department conveying approval on a limited basis as outlined in the CC use table.

Additional buffering between residential and non-residential uses may be required per the community design standards and covenants provided by Greenpoint.

Max. Density – N/A
Min. Frontage – N/A
Max. Building Height. – 55 ft

Parking:
1 space/ 1000 SF Gross Floor Area
On-street parking spaces within 300 LF of building count for 25% parking req.
Off-street parking required behind primary structure

Setbacks Primary Structure:

Front Yard	0 ft
Side Yard	10 ft between buildings
Rear Yard	10 ft

B. CD1

The CD District is proposed as a non-residential use district within the Greenpoint Community. Commercial uses will be consistent with uses allowed in the Columbia County Zoning Ordinance under the Zoning Classifications C1, CC, C2 and P1.

In addition to the uses above in accordance with CCZO design standards per the use:
Car Dealership*
Drive-thru windows*
**Refer to Commercial Guidelines*

To exclude the following:
Tattoo Shop

Worship, Day Care, Parks and Recreation

Additional buffering between residential and non-residential uses may be required per the community design standards and covenants provided by Greenpoint.

Zoning: Similar to C1, CC, C2, P1
Acreage: +/-119 Ac

C. CD2

The CD District is proposed as a non-residential use district within the Greenpoint community. Commercial uses will be consistent with uses allowed in the Columbia County Zoning Ordinance under the Zoning Classifications C1, CC, C2, and P1.

VII. THE PLANNED UNIT DEVELOPMENT PLAN (PUD)

To include the following uses in addition to the uses above in accordance with CCZO design standards per the use:
Mini-storage, boat storage, and rv storage
CCZO development requirements (Article IV) by use shall apply to these uses

Commercial Uses similar to CCZO, C1, CC, C2 and P1
Zoning: Similar to C1, CC, C2, P1
Acreage: +/-61 Ac

VIII. SIGNAGE

A uniform signage plan for the entire development is proposed indicating consistency in quality and materials and consistent within all types of development in Greenpoint. Color and presentation of the signage is key. A master signage plan shall be done at the time the preliminary plat is submitted for Columbia County Planning Department's approval. The master signage plan shall be updated upon the submittal of each preliminary plat or sooner if necessary.

All signage is subject to the review of the Greenpoint Architectural Review Board with the exception of traffic control signage. All signage shall be done in accordance with the latest MUTCD published. Below is an example of how the uniform signage may appear. Decorative aluminum street poles may also be used.

A Greenpoint Master Signage Plan will be adopted and enforced within all districts which will ensure signage is attractive and functional for all aspects of the community.

IX. REPRESENTATIVE PHOTOS OF THE PRODUCT BY DISTRICT

This section of the narrative is intended to provide a representative idea of the building types proposed in the different districts.

IX. PUD - RD-1

This district includes small, farm sized lots arranged in a more rural, agrarian pattern to accommodate estate homes, family compounds, equestrian facilities, small-scale agriculture, or simply natural open space. Homes will typically be larger, but will adhere to local, vernacular architectural styles for the southeastern region. Ancillary structures which complement the primary structure in style and quality, are anticipated and encouraged in this neighborhood.

The homes pictured below provide a general idea of the styles of the homes. Exact home will vary in color and appearance.

IX. PUD - RD-2

This district will consist of larger lots within a more suburban residential lot pattern. These residences will have the space to include detached, ancillary structures such as garages and mother-in-law suites as well as generous private yards for outdoor living opportunities such as swimming pools, patios, etc. These homes will typically be larger and adhere to local vernacular architectural styles for the southeastern region. Ancillary structures which complement the primary structure in style and quality are permitted.

The homes pictured below provide a general idea of the styles of the homes. Exact home will vary in color and appearance.

IX. PUD - RD-3

The character of this district is a mix between sub-urban and village residential with a range of housing sizes and types. Because of the variety of housing type opportunities the neighborhood will accommodate similar housing types as RD-2 district. It will also include many modest homes for first time home buyers and buyers who desire to have less property to maintain. A mix of lot sizes will contain homes that are closer to one another and to the public realm of the street and the parks which encourages neighborhood interaction and positive activity. Architectural style can range from high level detailing to very simple; but, all will relate to the southeastern traditional styles and materials.

The homes pictured below provide a general idea of the styles of the homes. Exact home will vary in color and appearance.

IX. PUD - RD-3

IX. PUD - MUD

The character of this district is a village with a mix of residential and commercial uses constructed to complement one another. Low maintence, attached, single-family homes will be available for first-time home-buyers, renters, and retirees who place less value on large, private yards. Live/ work units will be available in this district as well so that efficient and flexible buildings can serve both community business and residential uses. These building types will enliven the streets in this district, fueling Greenpoint's sense of place: a place where people can live, work, and play without leaving the neighborhood. Architectural style can range from high level detailing to very simple; but, all will relate to the southeastern traditional styles and materials. The commercially-oriented buildings will incorporate architectural design that lend to easy, street-front access from public sidewalks as well as service areas which will be more discrete in nature and location.

IX. PUD - MUD

IX. PUD - CD1, CD2

The CD districts will consist of architectural styles and character that is typical of commercial and retail development. Local materials and southeastern traditional style will be encouraged in both districts; however, these districts will be more heavily focused on serving customers who are arriving by car. Consequently, access to adequate parking and visibility from the main highway network will be dominant features.

X. CONSTRUCTION PHASING

It's anticipated that construction will begin on Phase I in June of 2020. The remaining portion of the phasing is based on this start date.

Phase I - Begin construction June 2020
Phase II - Begin construction March 2025
Phase III - Begin construction July 2030
Phase IV - Begin construction July 2035
Phase V - Begin construction July 2040

**Phasing may change based on market demand or conditions.*

Witmer Jones Keefer Ltd.
landscape architecture
land planning

Prepared by: Witmer Jones Keefer, Ltd. • 23 Promenade St. Ste. 201 • Bluffton, SC 29910

GREENPOINT
COLUMBIA COUNTY, GEORGIA

TRAFFIC ENGINEERING STUDY

Prepared for:

PUMPKIN CENTER, LLC

Prepared by:

ISM

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MAY 4, 2020

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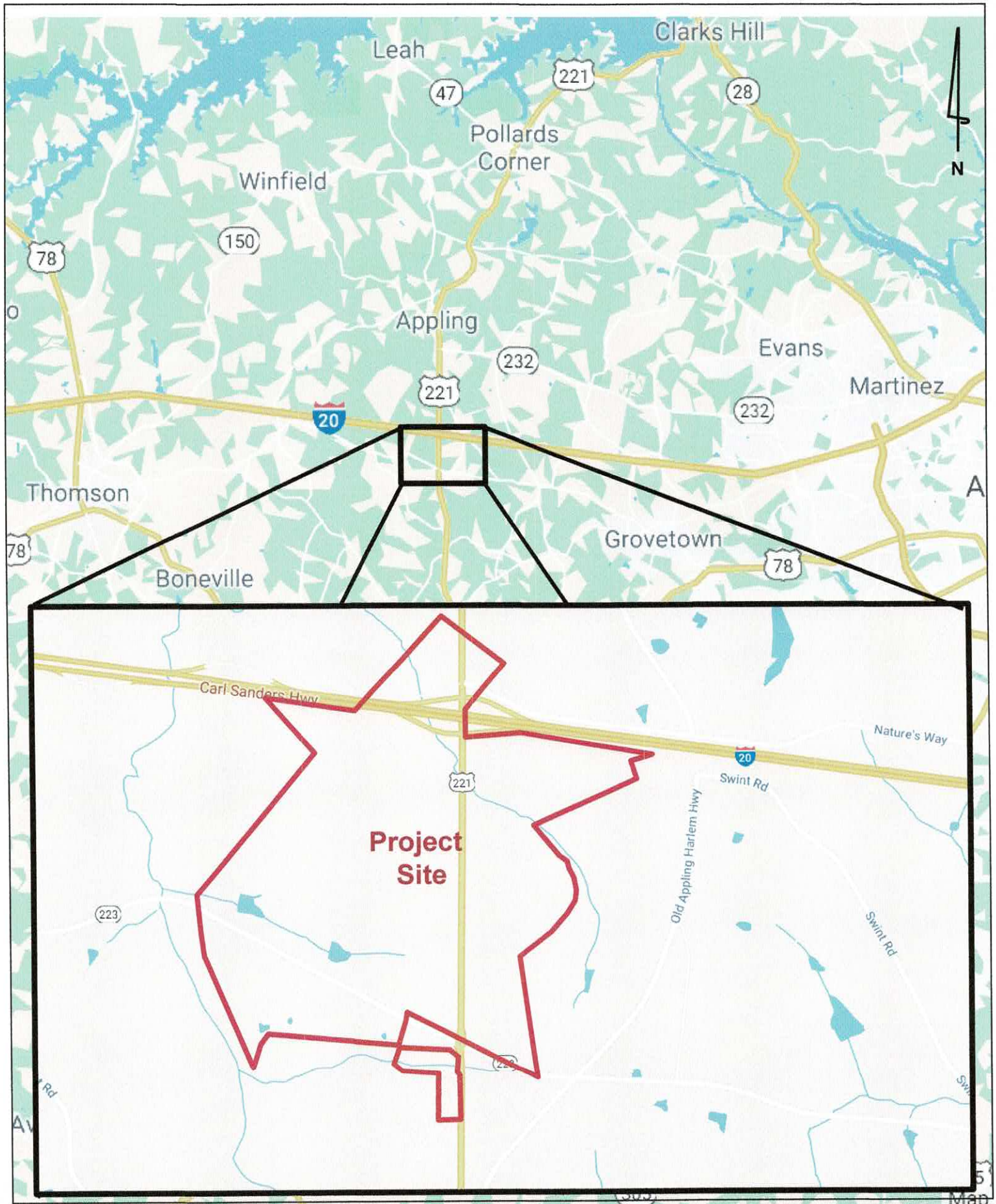
INTRODUCTION

This report analyzes and projects the traffic impact of the initial two phases of the proposed Greenpoint Planned Unit Development. At full build-out, Greenpoint will include a mix of residential, commercial, institutional, industrial, and recreational uses on an approximately 834-acre in west Columbia County generally-located along SR 47/Appling-Harlem Road between Interstate 20 (I-20) and SR 223/Wrightsboro Road. Figure 1 shows a map of the location of the site. Figure 2 shows aerial of the site and surrounding aerial.

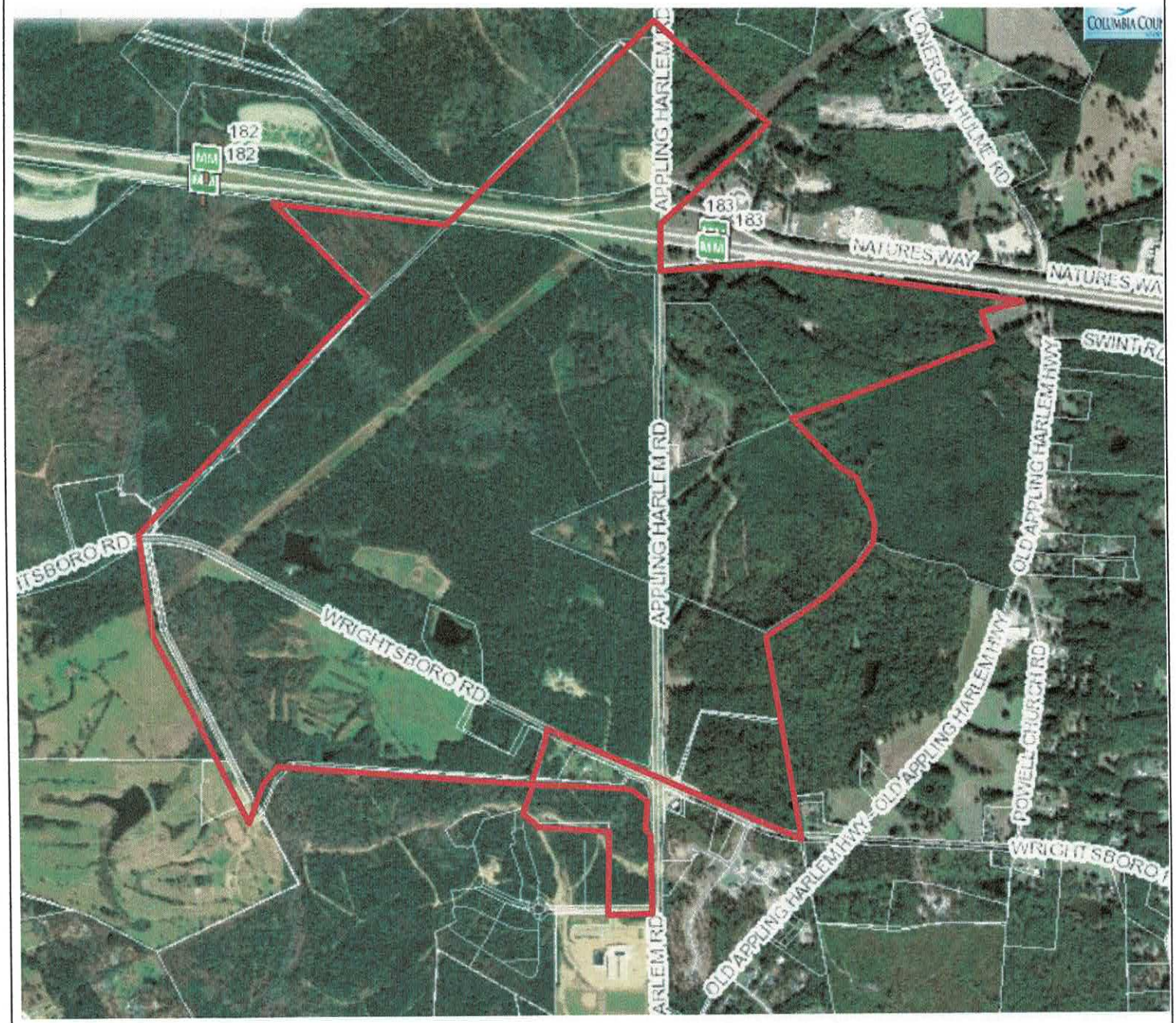
The development is proposed to be constructed in five phases beginning estimated to begin construction at 5-year intervals with first phase anticipated to begin in 2020 and the final phase beginning in 2040. Figure 3 shows an overlay of the proposed project Master Plan and layout of the proposed land uses.

The purpose of this study is to analyze and determine the impact to the surrounding roadways as well as each proposed access location for the first two phases of the development. Phase 1 will include 100 single-family homes, a gas station/convenience store, and approximately 30,000 sf of retail, beginning in 2020 and completed by 2025. Phase 2 will begin in 2025 and include an additional 140 single-family homes and approximately 50 townhomes. The first two phases will be generally located in the southern portion of the site and west of Appling-Harlem Road. Figure 4 shows the conceptual layout for the first two phases.

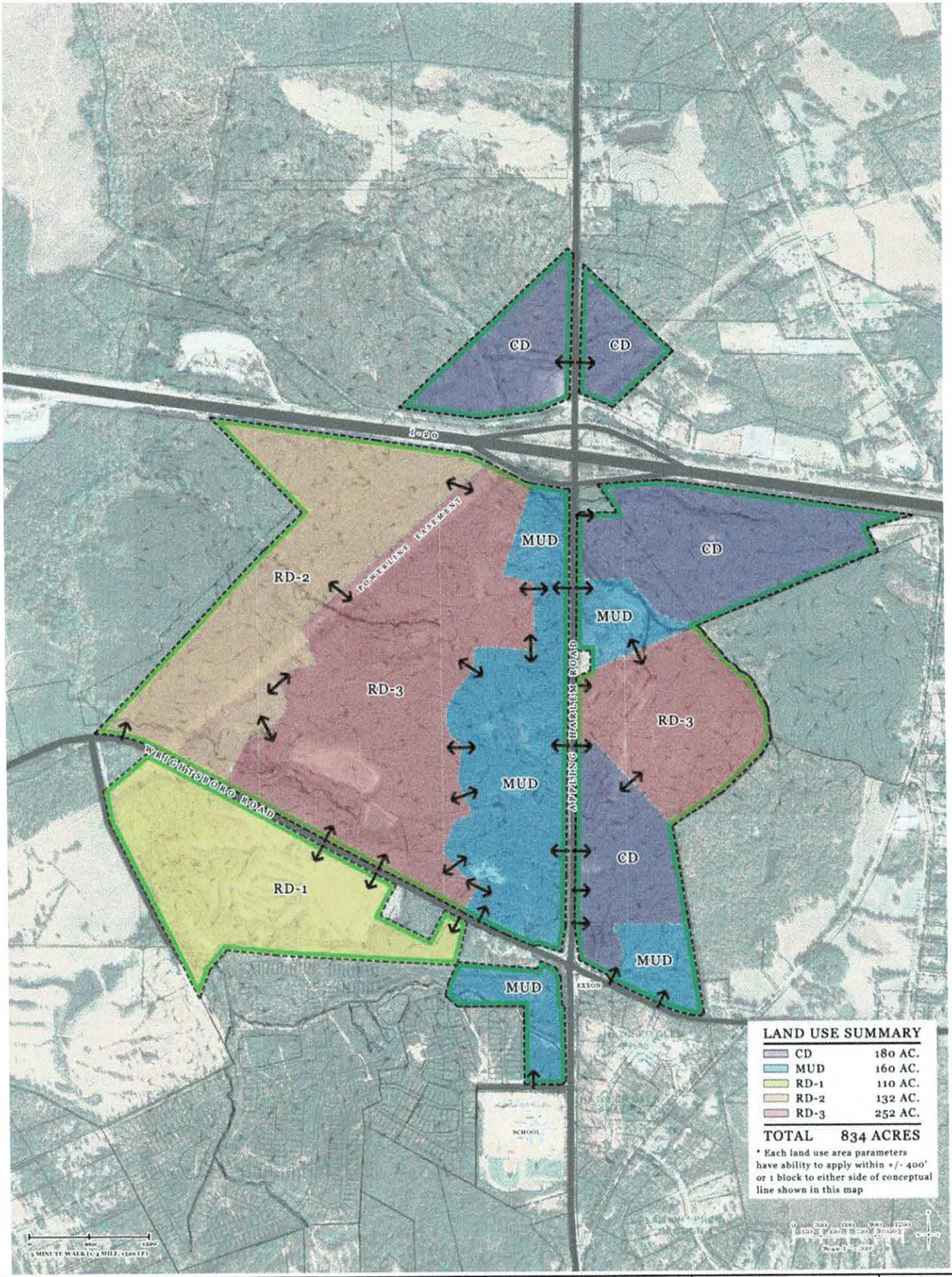
The sections that follow present the methodologies, analyses and findings for each phase of the development and includes analyses of the existing operations, projected growth, future background conditions that account for known and approved developments in the area for both 2025 and 2030 as well as the future conditions that includes traffic for each phase of the development.



ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	**Site Location**	**Figure 1** **Page 2**



ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	Site Aerial	Figure 2 Page 3



ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	**Master Plan**	**Figure 3** **Page 4**

ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	**Conceptual Phasing for Phase 1 and Phase 2**	**Figure 4** **Page 5**

CAPACITY ANALYSIS METHODOLOGY

Both *SIDRA Intersections* 8 and *Sychro 11* software were used to perform capacity analysis at each intersection within the study network in accordance with criteria set forth in the Transportation Research Board's Highway Capacity Manual, 2010 Edition (HCM). *SIDRA* was utilized for roundabout analyses and *Synchro* was utilized for all other intersections.

The capacity of an intersection is described in terms of Level of Service (LOS), which may be defined as a measure of average delay within a traffic stream and the perception of the condition by the general motoring public. The six levels of service are briefly described, as follows:

- LOS A – Little or no traffic delays;
- LOS B – Minimal to short traffic delays;
- LOS C – Average traffic delays;
- LOS D – Relatively long traffic delays;
- LOS E – Intersections are at or near the maximum capacity and traffic experiences long delays; and
- LOS F – Intersections are operating above their maximum capacity and traffic delays are long and unstable.

For signalized intersections, one overall intersection LOS is reported. At unsignalized intersections, the LOS for each controlled approach or movement (side-streets and main-street left-turns) is reported. Table 1 presents LOS criteria for signalized and unsignalized intersections.

Table 1
Level of Service Criteria

LOS	Average Control Delay (sec / veh)	
	Signalized Intersections	Unsignalized Intersections
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

Source: 2010 Highway Capacity Manual

For signalized intersections, a volume-to-capacity ratio (v/c) is also computed. The capacity of the intersection is calculated based on the geometry and signal green-time allocation. Intersection capacity is then compared to the volumes entering the intersection. A v/c ratio of less than 1.0 indicates that there is sufficient capacity for the traffic demand. A v/c ratio of more than 1.0 generally indicates the need for intersection improvements.

EXISTING CONDITIONS

An evaluation of existing conditions was performed at the intersection of Appling-Harlem Road (SR 47) and Wrightsboro Road (SR 223), known locally as "Pumpkin Center", in order to document existing operations and provide a basis for relative comparison for future conditions. The sections that follow describe existing roadway facilities, traffic volumes, and intersection operations.

Existing Roadway Facilities

Appling-Harlem Road (SR 47/US 221)

Appling-Harlem Road is a two-lane north-south, state-maintained minor arterial that is designated SR 47/US 221 in the vicinity of the site. In the immediate vicinity of the site, Appling-Harlem Road generally runs from Gordon Highway (SR 10/US 78) in Harlem, Georgia, north six miles, crossing I-20 and continuing another ten miles to it's intersection Washington Road (SR104 and SR 47) known locally as "Pollard's Corner" US 278.

Adjacent to the site, Appling-Harlem Road has a posted speed limit of 55 mph with the exception of the short sections approaching its intersection with SR 223, where the speed limit drops to 25 mph in advance of the roundabout entrance.

Historically, land uses along are primarily undeveloped with only the convenicence store and gas station located in the southeast quadrant of the intersection. However recent years has seen the construction of Harlem Middle School and the approval of a 484-unit residential development to the south of Wrightsboro Road.

The intersection of Appling-Harlem Road and Wrightsboro Road is controlled by a single-lane roundabout. At the roundabout the southbound approach of Appling Harlem Road includes an entrance lane and a bi-pass lane for right-turn traffic; the northobound approach includes one entrance lane.

In 2018, Georgia DOT reported an annual average daily traffic volume (AADT) of 9,330 vehicles per day (vpd) and 6,600 vpd north and south of SR 223, respectively. A bi-directional count performed for this study on September 17, 2019 recorded 10,793 vpd and 8,194 vpd north and south of SR 223, respectively.

Wrightsboro Road (SR 223)

Wrightsboro Road is two-lane east-west, state-maintained roadway that is designated as SR 223 and classified as a minor arterial to the east of Appling-Harlem Road and as a major collector to the west. In the vicinity of the site, SR 223 runs from it's intersection with SR 10 in Thomson, Georgia east for approximately 10 miles to it's intersection with SR 47 and continues east to its intersection with Harlem-Grovetown Road in Grovetown, Georgia at which point, SR 223

becomes East Robinson Avenue and continues approximately 2.5 miles to its terminus at its intersection with SR 10 and Fort Gordon's Gate 2.

Adjacent to the site, SR 223 has a posted speed limit of 55 mph with the exception of the short sections approaching its intersection with SR 223, where the speed limit drops to 25 mph in advance of the roundabout entrance.

The intersection of Appling-Harlem Road and Wrightsboro Road is controlled by a single-lane roundabout; both the eastbound and westbound SR 223 approaches include a single entrance lane with no by-pass.

In 2018, Georgia DOT reported an annual average daily traffic volume (AADT) of 3,170 vpd and 2,900 vpd east and west of SR 47, respectively. B-directional counts performed for this study on September 17, 2019 recorded 4,070 vpd and 3,784 vpd east and west of SR 47, respectively

Existing Traffic Volumes

As noted earlier counts, were performed on Tuesday, September 17, 2019 and, from these data, the peak hour volumes for the intersection of SR 47 and SR 223 were found to occur between 7:00 am and 8:00 am for the morning peak hour and between 5:00 pm and 6:00 pm for the evening peak hour.

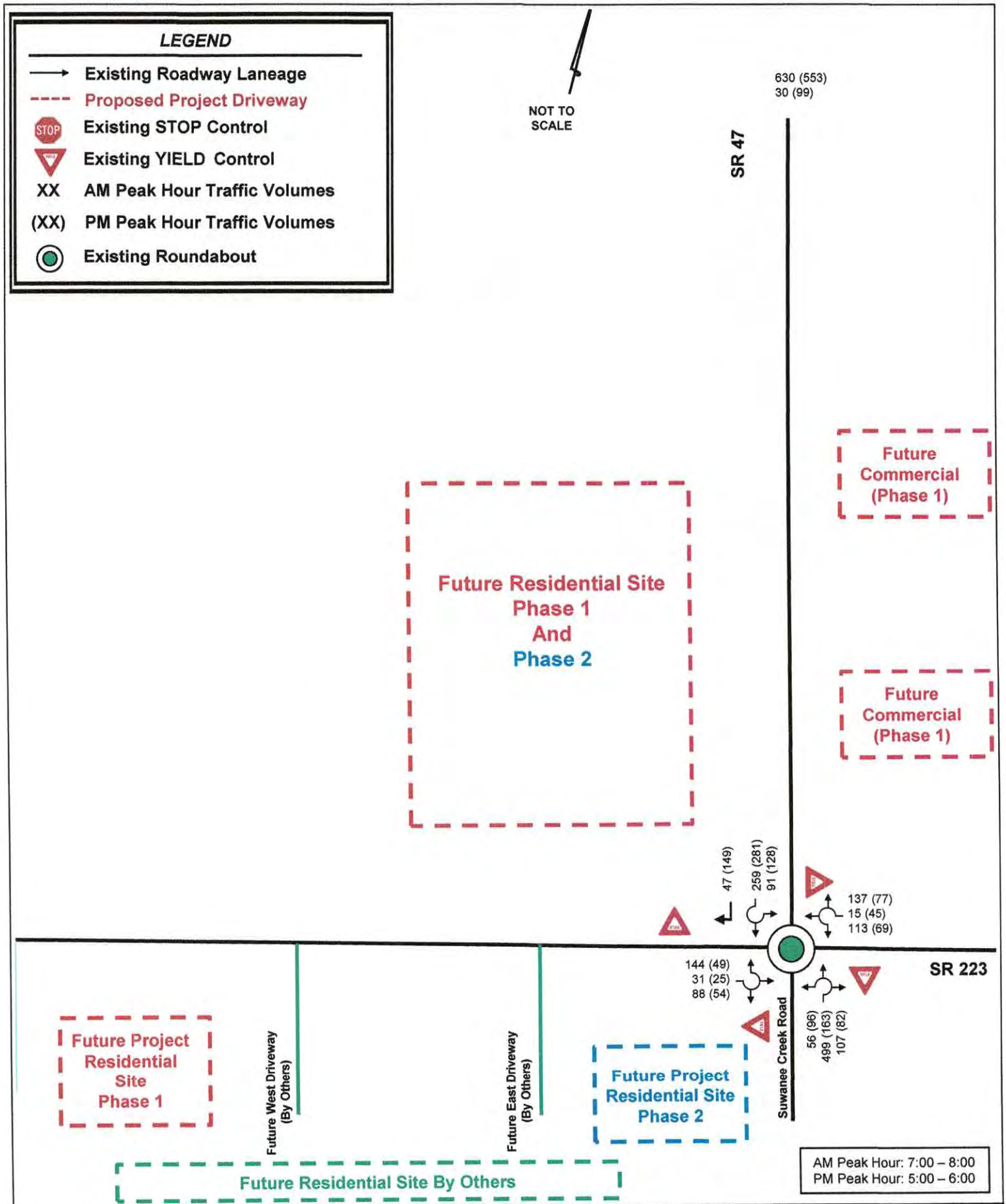
Existing morning and peak hour volumes as well as lane configurations are shown in Figure 5.

Existing Conditions

Existing intersection operations were analyzed to determine current traffic conditions and identify existing deficiencies that should be addressed. Peak hour intersection traffic volumes and existing intersection geometries were used in the analysis and the results are presented in Table 2.

Table 2
Existing Intersection Operations

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	**D**	**29.0**	**A**	**7.1**
- eastbound approach	B	14.0	A	7.0
- westbound approach	C	24.8	A	6.6
- northbound approach	E	48.2	B	10.2
- southbound approach	A	9.6	B	10.3



ISM Infrastructure Systems Management, LLC	*Greenpoint Traffic Impact Analysis*	Existing 2020 Conditions	Figure 5
			Page 9

Based on analysis, the roundabout is currently operating below LOS C during the morning peak hour. This operation is primarily attributed to the heavy northbound approach volume that results in that approach operation at LOS E during the morning peak hour.

Because this constraint currently exists, it is considered a "system" deficiency and not a result of the proposed development. Further, improvements to correct this deficiency would be considered a "system improvement" and not the responsibility of the developer.

In order to improve this approach to LOS C standard, a short northbound right-turn by-pass lane would need to be constructed. Figure 6 shows a conceptual layout of the roundabout with this improvement and Table 3 shows the projected intersection operation with the addition of the northbound right-turn lane.

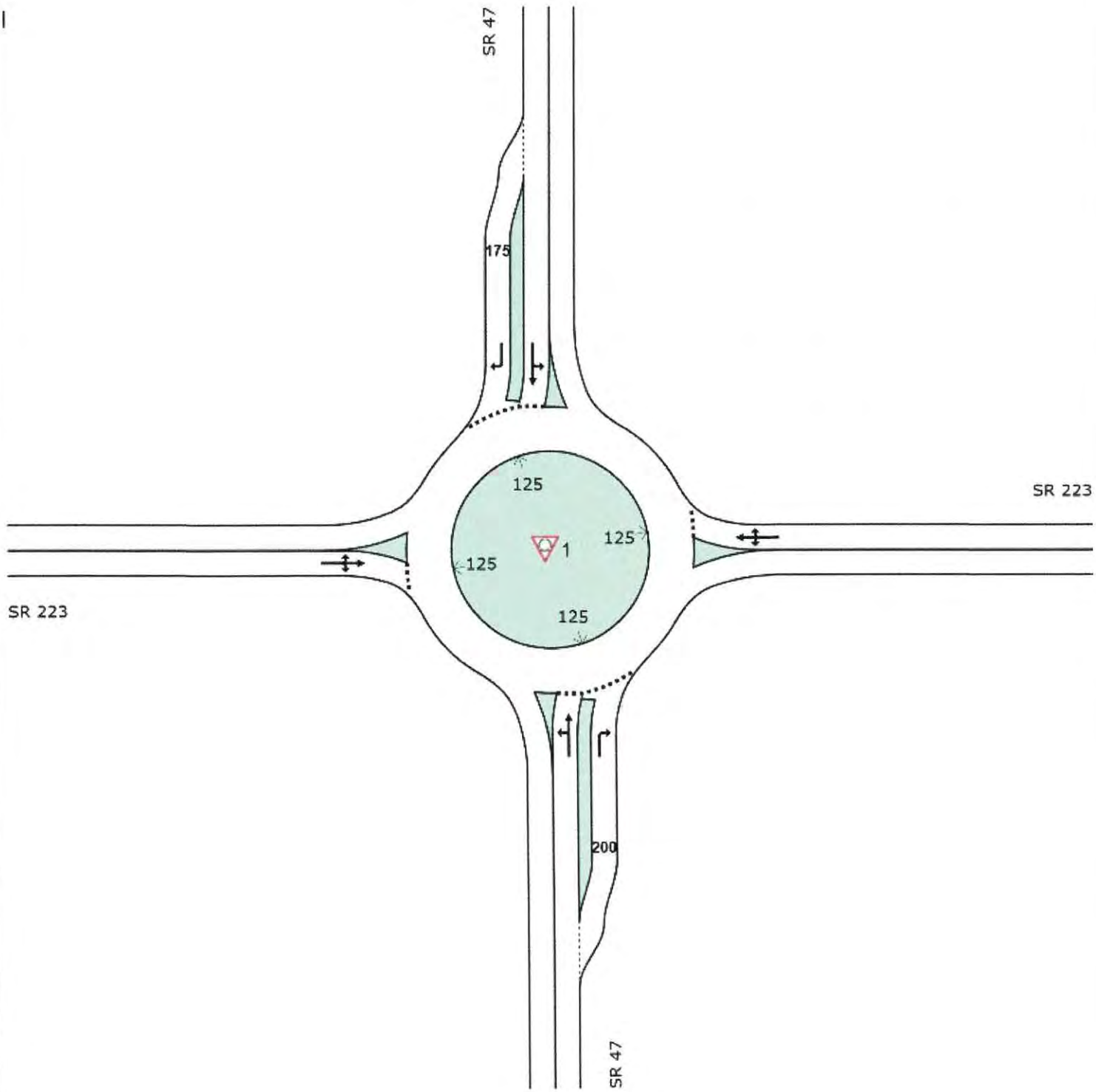
Table 3
Projected Existing Intersection Operations with System Improvements

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	**C**	**18.3**	**A**	**9.1**
- eastbound approach	B	14.0	A	8.9
- westbound approach	C	24.8	A	8.5
- northbound approach	C	22.5	A	7.6
- southbound approach	A	9.6	A	10.3

As shown by the results in Table 3, analysis shows that with the system improvement in place, the northbound approach will operate at LOS C.

It should be noted that a review of 24-hour volume data shows that the morning peak hour for the northbound SR 47 approach is somewhat of an anomaly during the day in that has is almost 200% higher than any other hour the next highest hour throughout the day. Therefore, while this improvement would improve the morning peak hour flow, careful consideration should be given to the cost-benefit of providing an improvement of this magnitude that only has a measurable benefit for one hour per day.

It is also worth noting that the concept report approved by Georgia DOT for PI 0004732 was researched and found to have recommended this by-pass lane be included in the original project, but no documentation could be found as to why it was removed from the construction plans.



ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	**Existing Condition System Improvement**	**Figure 6** **Page 11**

2025 Background Condition

Background (no-build) traffic volumes were projected for the year 2025, which is considered the build year for the first phase of this development. In order to estimate background growth, historical traffic volumes from Georgina DOT were reviewed.

Georgia DOT maintains several count stations along both SR 47 and SR 223 in the vicinity of the site with data available between 2009 and 2018. The 2018 daily traffic volumes and calculated growth rates are presented in Table 4 for the count stations closest to the site.

Table 4
Traffic Growth in the Study Area

Route	Location	2018 ADT	10-year Average Annual Growth	5-year Average Annual Growth	2-year Average Annual Growth
SR 47	South of SR 223	6,570	3.40%	6.44%	0.46%
SR 223	3 miles west of SR 47	1,340	-5.93%	-9.88%	-1.49%
SR 47	North of SR 223	8,770	5.91%	8.03%	6.39%
SR 223	West of SR 47	2,890	-0.56%	2.37%	0.35%
SR 223	East of SR 47	6,570	3.40%	6.44%	0.46%
	Overall Average		2.88%	5.16%	2.33%

As shown by the data in Table 4, growth in the immediate vicinity been somewhat steady in the area surrounding the site. While the 5-year average growth shows a significant rate, analysis of the data shows that this is due to a steep decline in traffic volumes that occurred in 2013 that stabilized in subsequent years as shown by the 2-year growth rate.

In addition to the background growth, projected traffic volumes from the approved 484-unit single-family development is also included in the background analysis, therefore, a background traffic growth rate of 2.5% was used. For the approved residential development, it was assumed that it would be 50% built out in 2025, so traffic from 242 single-family homes was projected and added to background growth.

In order to project traffic from this development, trip generation rates used were taken from the 10th edition of the Institute of Transportation Engineers' (ITE) Trip Generation report and is based on *ITE Land Use 220 – Single-Family Detached Housing.* Table 5 presents the projected trip generation for this background development.

Table 5
2025 Background Development Generation

Land Use	A.M. Peak Hour			P.M. Peak Hour			24-hour 2-way
	Enter	Exit	Total	Enter	Exit	Total	
Single Family Detached (242)	44	133	177	150	87	237	2,344

The projected traffic that will be generated by this project was assigned to the study area based on a previous study done for the that showed the following:

- 43.5% to and from the north towards Appling;
- 33% to and from the south towards Harlem;
- 17% to and from the west towards Grovetown; and
- 6.5% to and from the west towards Thomson.

This development is proposed to have one access location along Wrightsboro Road and one along Appling-Harlem Road. However, since the proposed project will not significantly contribute traffic to either that would result in a change in configuration or traffic control, they were not included in the analyses.

The total projected background volumes includes the background growth rate applied to the existing traffic volumes in the study area for five years and traffic projected from the 242 single family homes that were assigned to the roadway network and added to the network as well.

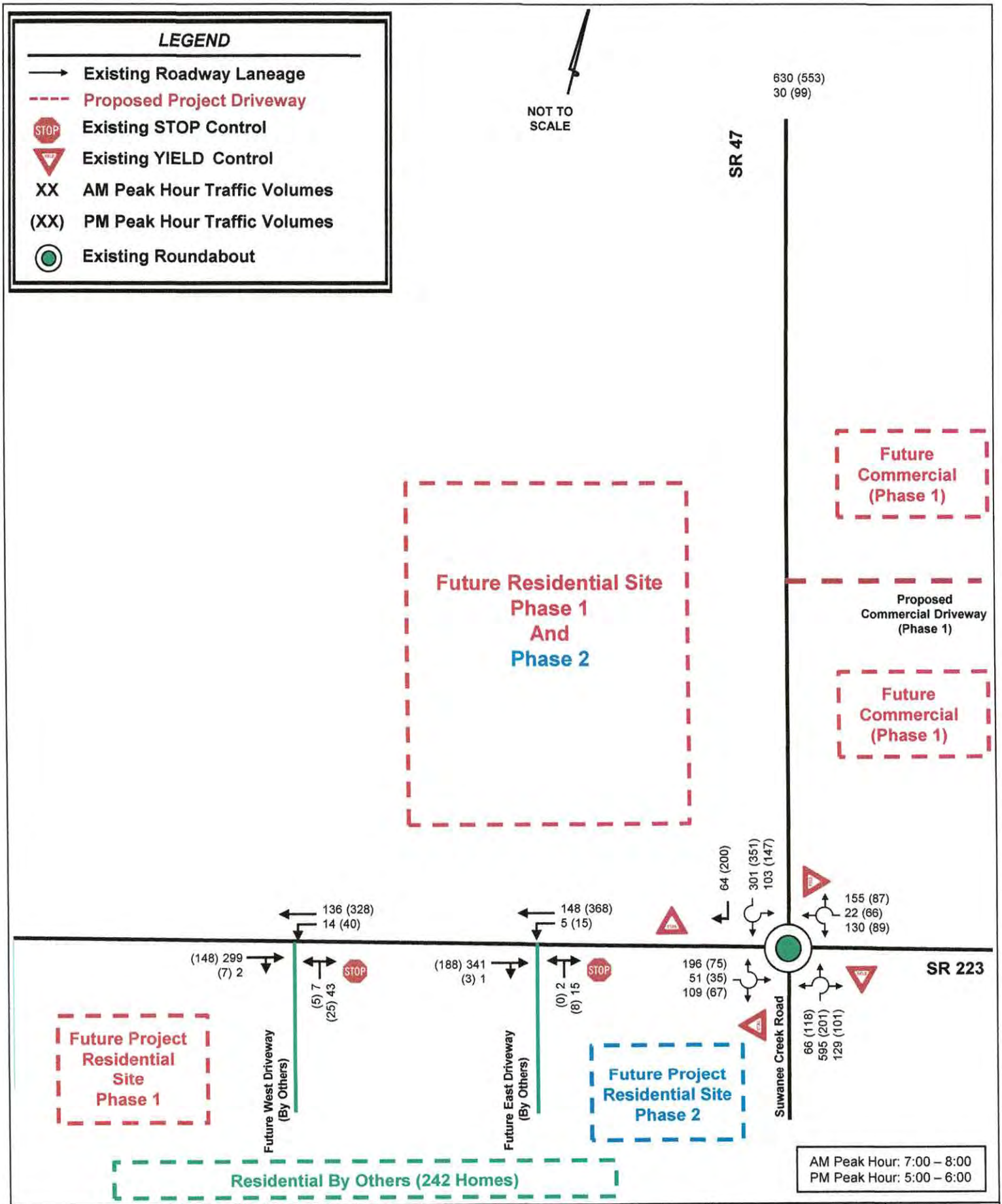
These volumes were used to analyze the 2025 background traffic conditions surrounding the site with no changes to geometry of the roundabout. The 2025 background traffic volumes and lane configurations used in this analysis are shown in Figure 7 and the results of this analysis are presented in Table 5.

Table 5
Projected 2025 Background Intersection Operations

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	**F**	**74.9**	**B**	**13.7**
- eastbound approach	C	22.8	B	12.3
- westbound approach	E	35.3	B	11.3
- northbound approach	F	149.4	B	14.0
- southbound approach	B	10.6	B	14.9

As would be expected with the increase in traffic volumes from background growth, analysis of projected 2025 background conditions shows increased delay at the roundabout for the SR 47 and SR 223 intersection. As with the existing condition, these delays are only notable during the morning peak hour when the overall operation is projected to be LOS F. Additionally, these delays are primarily attributed to the relatively heavy northbound volumes during this time.

Because this constraint exists without the addition of project traffic, it is considered a "system" deficiency and not a result of the proposed development. Therefore, improvements to correct this deficiency would be considered a "system improvement" and not the responsibility of the developer.



ISM
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Greenpoint Traffic Impact Analysis

Phase 1 (2025) Background Traffic

Figure 7

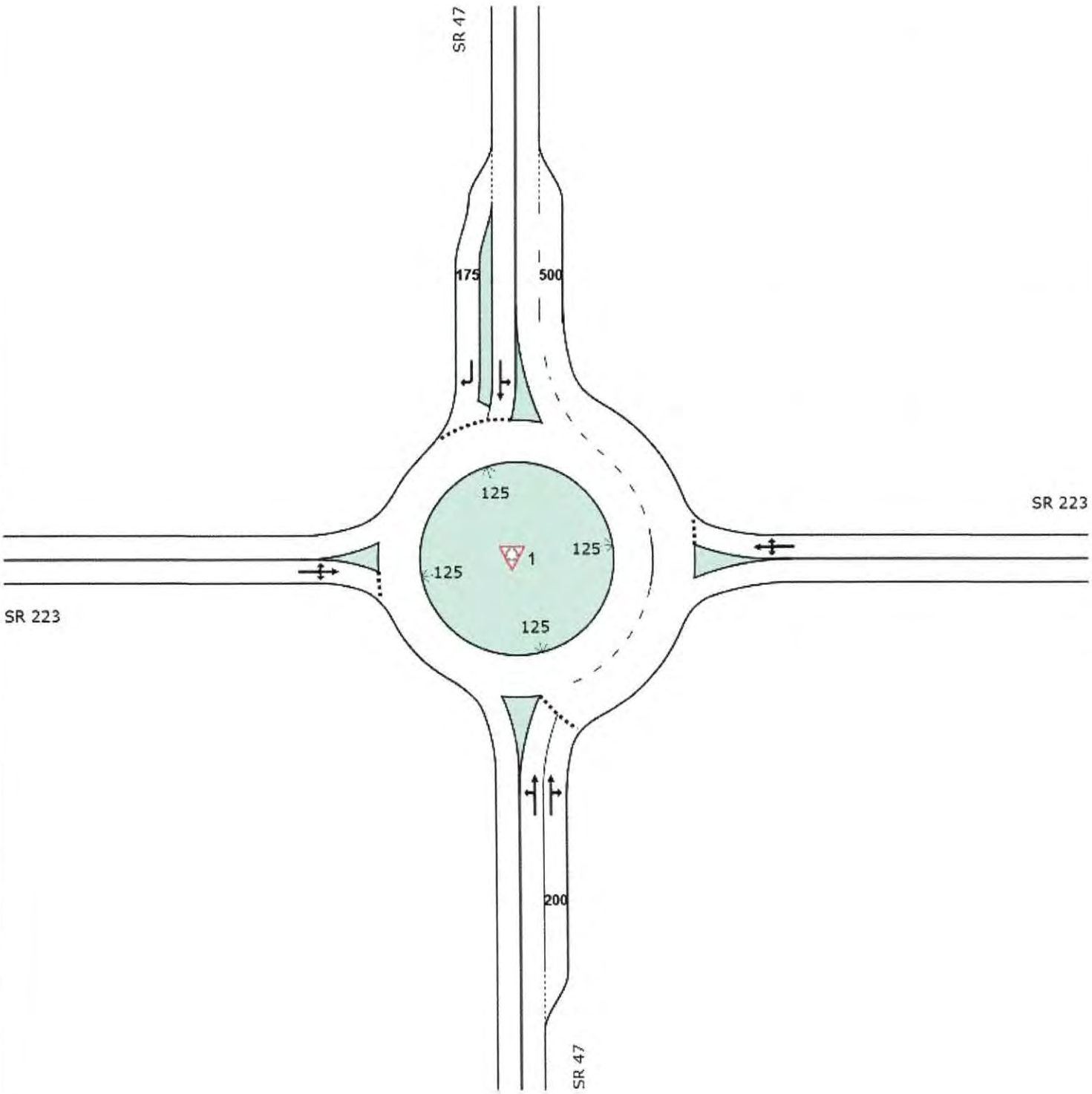
Using an iterative approach to potential improvements to the roundabout, it was found that providing addition capacity for the northbound through movement provided the most overall benefit to the intersection operations. This additional capacity would also require modifying or widening the eastern portion of the roundabout as well as a second receiving lane on the north leg of the roundabout. Figure 8 shows a conceptual layout of the roundabout with this improvement and the result of this analysis is presented in Table 6.

Table 6
Projected 2025 Background Intersection Operations with System Improvements

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	C	17.6	B	11.7
- eastbound approach	C	22.8	B	12.3
- westbound approach	C	23.4	A	9.2
- northbound approach	C	16.8	A	8.0
- southbound approach	B	10.9	B	14.9

The results in Table 6 show that providing this improvement will allow the intersection to operate at LOS C.

However, as noted previously in the Existing Conditions, observed volumes during morning peak hour along the northbound approach and at the intersection are significantly higher during the morning peak hour than any other hour throughout the day. Therefore, while this improvement would improve the morning peak hour flow, careful consideration should be given to the cost-benefit of providing an improvement of this magnitude that only has a measurable benefit for one hour per day.



ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	2025 Background System Improvement	Figure 8
			Page 16

PHASE 1 FUTURE TRAFFIC CONDITIONS

Phase 1 of Greenpoint will include 100 single-family homes, a gas station/convenience store, and approximately 30,000 sf of retail. The single-family homes will be split into two sections, the north section will include 83 homes and be located north of SR 223 with access being proposed at one location along SR 47. The remaining 17 homes will be located along Wrightsboro Road as individual lots with shared driveways at several locations serving up to four lots each.

The retail and gas station/convenience store portions of the development were previously approved to be located in the northeast quadrant of the intersection of SR 47 and SR 223. Two access locations were approved for this portion of the development and include one shared access along SR 47 north of SR 223 and one along SR 223 east of SR 47. Completion of Phase 1 is expected by 2025.

Figure 9 shows a conceptual layout both phase 1 and 2 of the development as well as anticipated access locations and intersections included in the study network.

Phase 1 Future Traffic Volumes

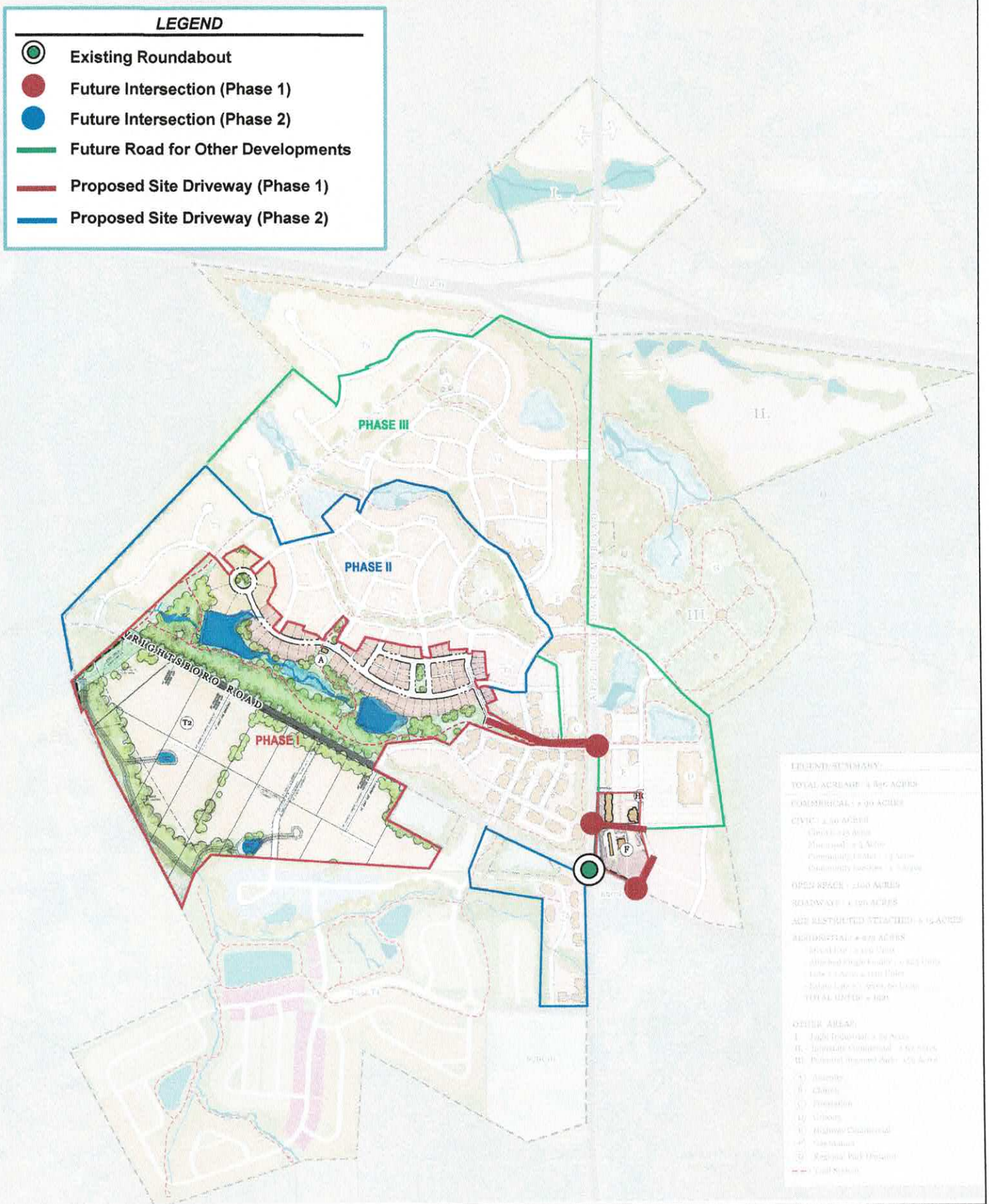
Future traffic volumes used in this analysis are made up of the 2025 Background traffic volumes presented in the previous section with the addition of projected site-generated traffic for Phase 1. Projections for trip generation and traffic assignment are discussed in the following sections.

Trip Generation

Traffic that will be generated by the proposed development was projected based on trip generation characteristics for similar land uses nationwide. The trip generation rates used in this study were taken from the 10th edition of the Institute of Transportation Engineers' (ITE) Trip Generation report utilizing the following land-uses: *ITE Land Use 220 – Single-Family Detached Housing, 820 Shopping Center,* and *853 – Convenience Market with Gas Pumps.*

In addition to calculating the raw trip generation, ITE methodology makes allowance to account for pass-by trips for retail developments. Whereas trips for residential uses are destination-oriented and new trips to the roadway network, pass-by trips are trips that are already on the roadway network and visit the site en route to a primary destination. Pass-by trips are subtracted from the overall trip generation assigned to the network, however, they included and assigned to the retail driveways as new turning movements. Pass-by trip percentages used for this study were obtained for the ITE Trip Generation Handbook (3rd edition)

Table 8 presents a summary of the projected trip generation and pass-by reductions for the Phase 1 of Greenpoint.



ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	**Phase 1 Study Intersections**	**Figure 9** **Page 18**

Table 7 Phase 1 Trip Generation							
Land Use	A.M. Peak Hour			P.M. Peak Hour			24-hour
	Enter	Exit	Total	Enter	Exit	Total	2-way
Single Family Detached (83 units)	16	48	64	54	31	85	876
Single Family Detached (17 units)	4	13	17	12	7	19	204
Convenience Market with Gas Pumps	83	83	166	92	92	184	2,580
- pass-by trips	*-52*	*-52*	*-104*	*-61*	*-61*	*-122*	*-206*
Shopping Center (30,000 sf)	104	63	167	98	125	223	2,651
- pass-by trips	0	0	0	-33	-42	-75	-75
Gross Trips	**207**	**207**	**414**	**256**	**255**	**511**	**6,311**
Total Pass-by Trips	***-52***	***-52***	***-104***	***-94***	***-103***	***-197***	***-301***
Net Site Phase 1 Trip Generation	**155**	**155**	**310**	**162**	**152**	**314**	**6,010**

Trip Distribution and Traffic Assignment

Trip distribution describes the direction drivers will be going to and coming from when they turn into and depart from the development. Since this development will be similar in character as the other developments within the surrounding area, it is believed that using the existing travel patterns in the area will most closely approximate the trip distribution for this site.

To establish existing traffic patterns, the directions which vehicles approach and depart the intersection of SR 47 and SR 223. This exercise resulted in the trip distribution shown in Figure 9. The projected traffic that will be generated by this project was assigned to the study area based on this distribution. Phase 1 site-generated volumes for the weekday morning and evening peak hours are shown in Figure 10.

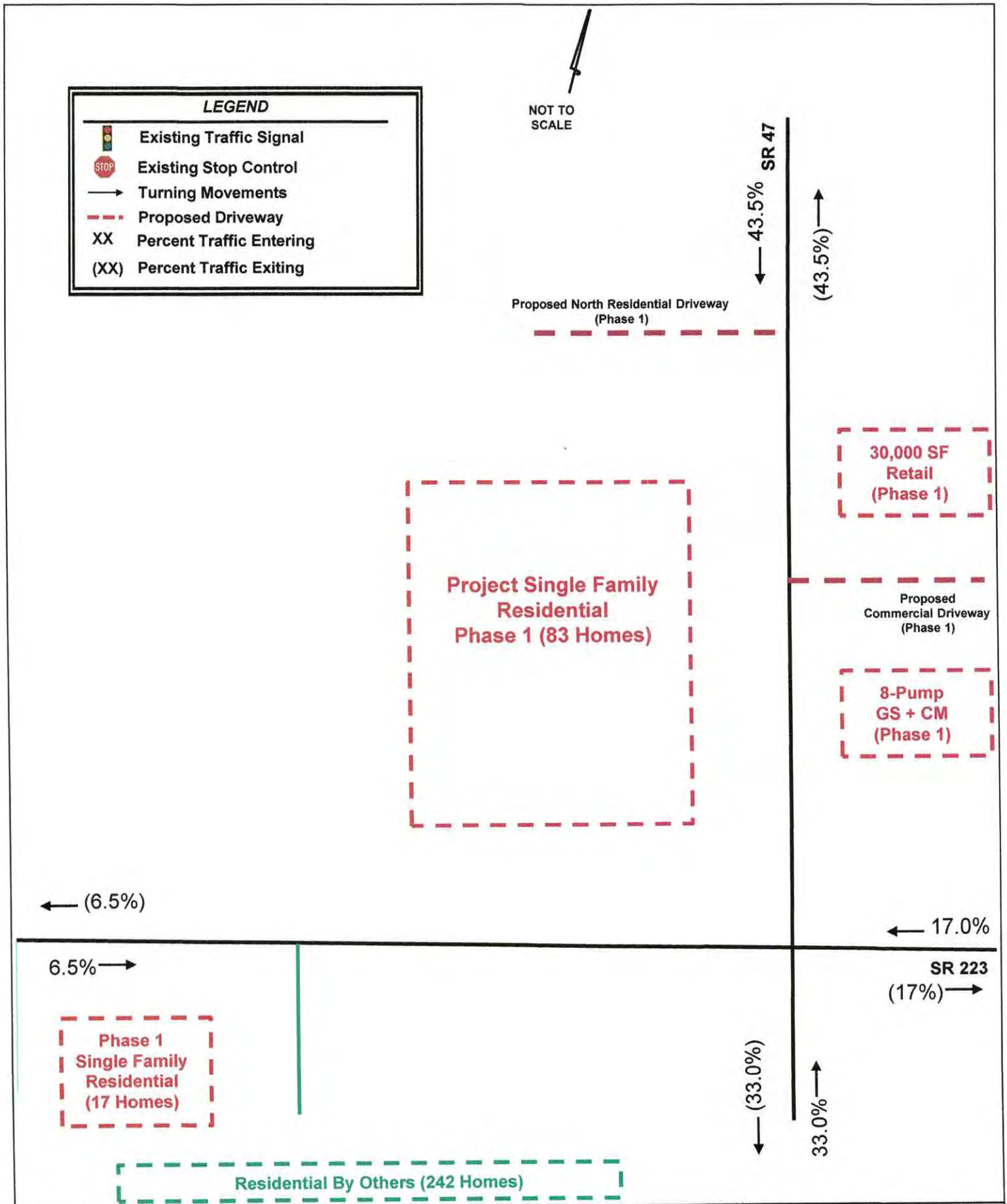
Phase 1 Future Total Traffic Volumes

Future traffic volumes for the Phase 1 build-out in the year 2025 are made up of the 2025 Background Traffic volumes, presented in the previous section (Figure 7), and the site generated volumes shown in Figure 10. Projected Phase 1 Future Traffic Volumes are shown in Figure 11.

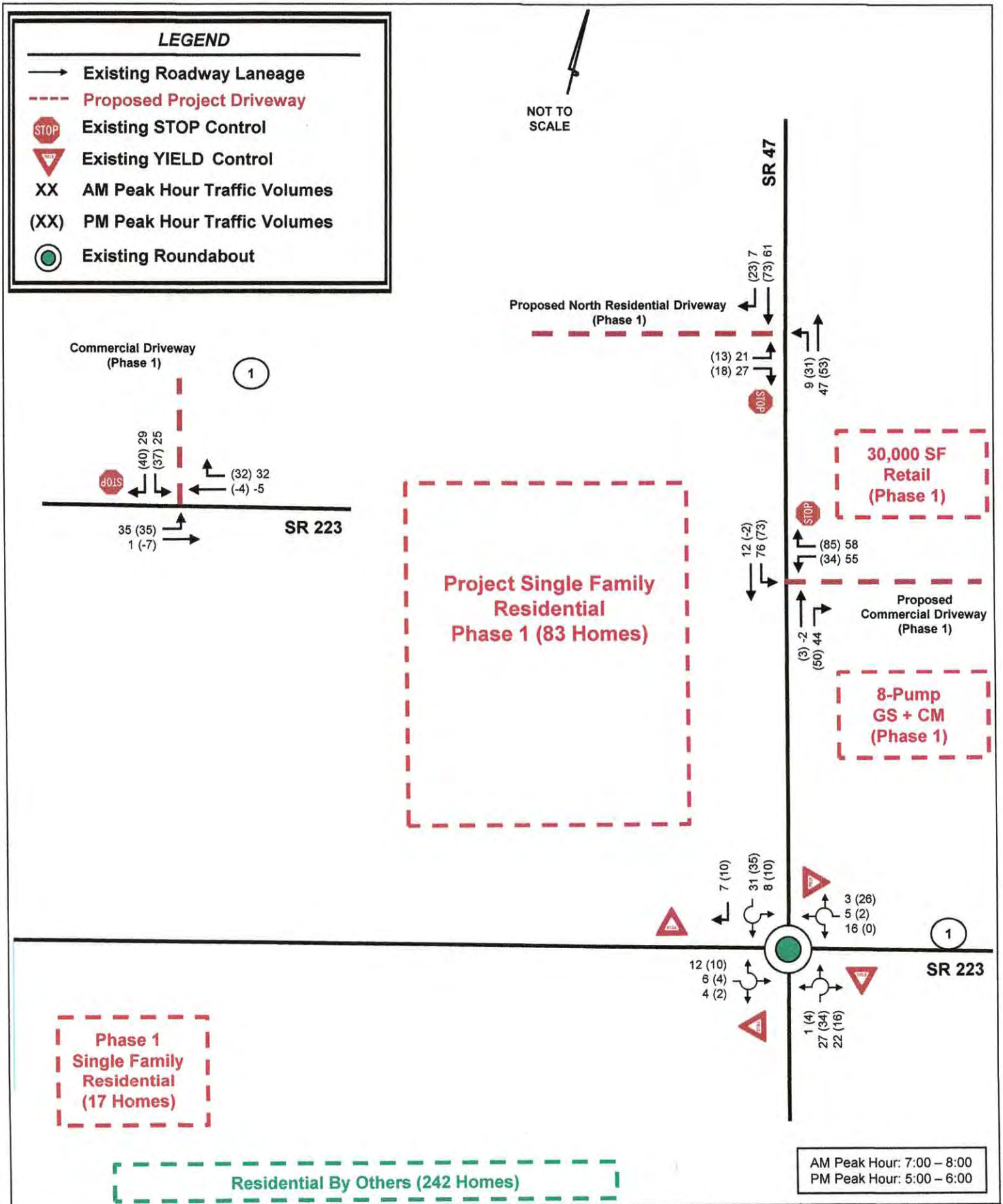
Phase 1 Driveway Configurations

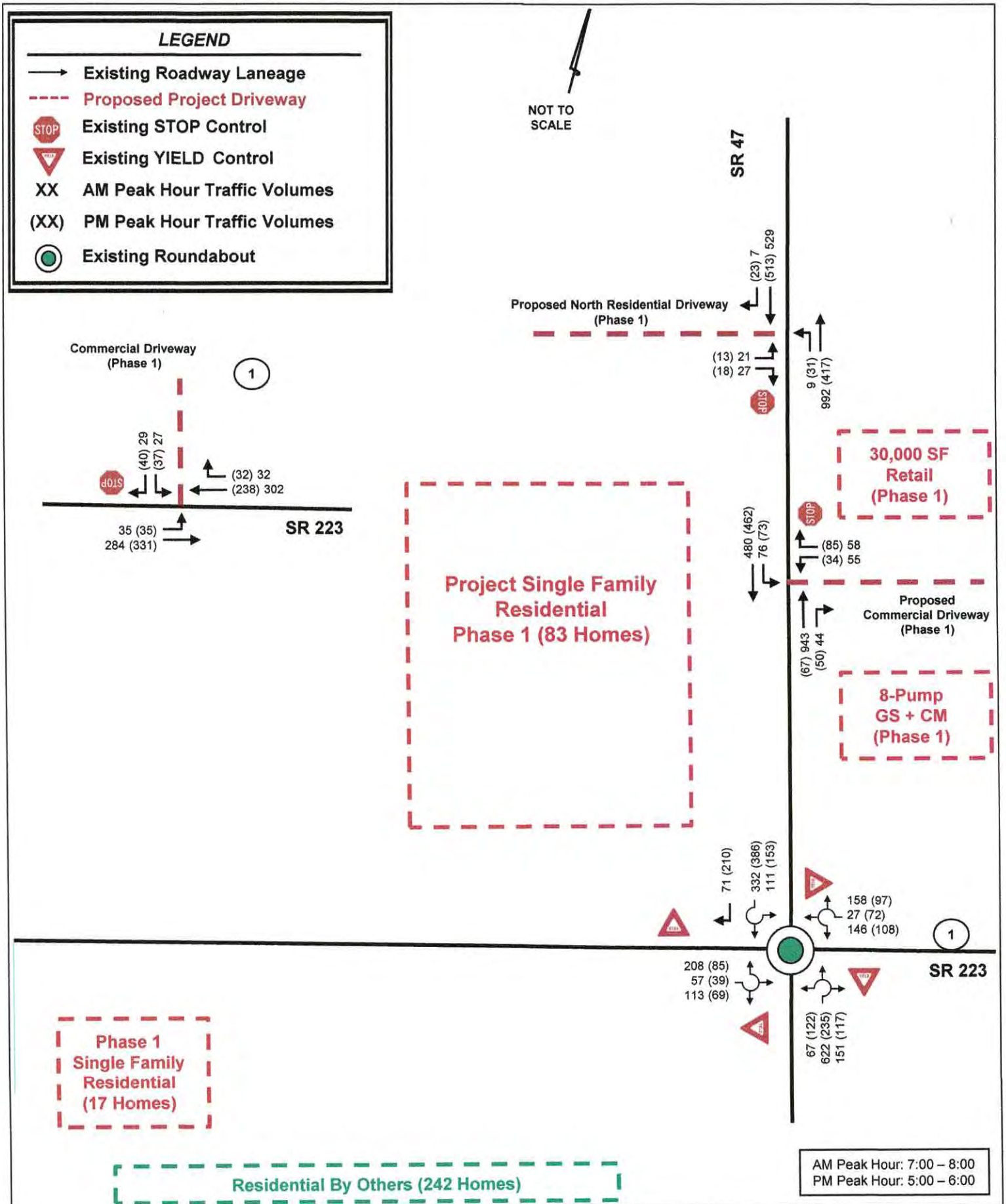
For the proposed residential driveway, an evaluation was performed using the projected daily turning movement volumes to the criteria set forth in the Georgia DOT Regulations for Driveway and Encroachment Control, *Section 4.9*. Based on this manual for a two-lane, 55 mph road with an AADT of >6,000 vpd a right-turn deceleration lane is required if there are more than 50 right-turning vehicles per day. For a left-turn lane, the minimum volume is 150 left-turning vehicles per day.

The residential drive is projected to have 190 and 248 daily right-turns and left-turns, respectively. Hence, it is anticipated that Georgia DOT will require left-turn and right-turn lanes at this intersection.



ISM Infrastructure Systems Management, LLC	*Greenpoint Traffic Impact Analysis*	Phase 1 Trip Distribution	Figure 10
			Page 20


LEGEND
Existing Roadway Laneage
Proposed Project Driveway
Existing STOP Control
Existing YIELD Control
XX AM Peak Hour Traffic Volumes
(XX) PM Peak Hour Traffic Volumes
Existing Roundabout
NOT TO SCALE
SR 47
SR 223
Commercial Driveway (Phase 1)
Proposed North Residential Driveway (Phase 1)
Project Single Family Residential Phase 1 (83 Homes)
30,000 SF Retail (Phase 1)
Proposed Commercial Driveway (Phase 1)
8-Pump GS + CM (Phase 1)
Phase 1 Single Family Residential (17 Homes)
Residential By Others (242 Homes)
(23) 7
(73) 61
(13) 21
(18) 27
9 (31)
47 (53)
(40) 29
(37) 25
(32) 32
(-4) -5
35 (35)
1 (-7)
12 (-2)
76 (73)
(85) 58
(34) 55
(3) -2
(50) 44
7 (10)
31 (35)
8 (10)
3 (26)
5 (2)
16 (0)
12 (10)
6 (4)
4 (2)
1 (4)
27 (34)
22 (16)
AM Peak Hour: 7:00 – 8:00
PM Peak Hour: 5:00 – 6:00



ISM Infrastructure Systems Management, LLC	*Greenpoint Traffic Impact Analysis*	**Phase 1 Future Traffic**	**Figure 12**
			Page 22

The two commercial driveways were previously approved to include right-turn deceleration lanes at both. The driveway along SR 47 will also include a southbound left-turn lane; the driveway along SR 223 will provide a "horseshoe" lane to allow through traffic to go around left-turning vehicles.

Phase 1 Future Intersection Operations

Using the projected Phase 1 Future traffic volumes, shown in Figure 12, and the proposed driveway configuration, a capacity analysis was performed for the future morning and evening peak hours at each intersection within the study network. Results of the future conditions analysis are presented in Table 8.

Table 8
Phase 1 Future Intersection Operations

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	**F**	**98.7**	**B**	**10.8**
- eastbound approach	D	31.1	B	10.9
- westbound approach	E	39.9	B	10.2
- northbound approach	F	201.9	B	11.7
- southbound approach	B	12.2	B	10.5
SR 47 at North Residential Driveway				
- northbound left-turn	A	8.7	A	8.8
- eastbound approach	D	28.5	C	16.0
SR 47 at Commercial Driveway				
- southbound left-turn	B	11.3	A	8.5
- westbound approach	F	63.7	C	1.9
SR 223 at Commercial Driveway				
- southbound approach	B	13.0	B	12.5
- eastbound left-turn	A	8.1	A	7.9

For the driveways, the analysis does show some potential delay for the side street approaches during the morning peak hour. This level is not uncommon or unexpected for a stop-controlled approach to an arterial roadway during the morning peak hour and, therefore, no improvements beyond separate left-turn and right-turn exiting the residential drive or those required by Georgia DOT are recommended. For the commercial drives, the delays projected for the drive along SR 47 will balance with the low delays projected at the SR 223 over time.

As would be expected with the addition of site generated traffic to the background growth, with the existing roundabout geometry at the SR 47 at SR 223, delays continue to increase during the morning peak hour.

Using an iterative approach to potential improvements to the roundabout, it was found that providing the system improvements identified in the 2025 Background Condition, were also sufficient to improve overall roundabout operations to LOS C. To recap, the system improvements identified in the 2025 Background conditions included: addition capacity for the northbound, widening the eastern portion of the roundabout to provide a second circulating lane in that portion of the roundabout, and add a second receiving lane on the north leg of the

roundabout. Refer to Figure 7, presented previously for a conceptual layout of the system improvements. The results of this analysis are presented in Table 9.

Table 9
Phase 1 Future Intersection Operations with System Improvements

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	**C**	**21.9**	**A**	**9.58**
- eastbound approach	D	31.2	B	13.0
- westbound approach	D	29.5	A	8.5
- northbound approach	C	20.0	A	6.6
- southbound approach	B	12.7	B	10.5

As shown by the above results, providing the system improvements necessary to improve the 2025 Background condition without traffic from the development, is also sufficient to allow the roundabout to operate at LOS C after the addition of traffic from Phase 1 of Greenpoint.

However, as noted previously, observed volumes during morning peak hour along the northbound approach and at the intersection are significantly higher during the morning peak hour than any other hour throughout the day. Therefore, while this improvement would improve the morning peak hour flow, careful consideration should be given to the cost-benefit of providing an improvement of this magnitude that only has a measurable benefit for one hour per day.

2030 Background Condition

To project traffic volumes for the 2030 Background Condition, the background growth rate, which was calculated previously at 2.5%, was applied to the existing traffic volumes for ten years.

Additionally, it is assumed that approved 484-unit single-family development mentioned previously, will be fully built out, by 2030 and is included in the background analysis.

In order to project traffic from this development, trip generation rates used were taken from the 10th edition of the Institute of Transportation Engineers' (ITE) Trip Generation report and is based on *ITE Land Use 220 – Single-Family Detached Housing.* Table 10 presents the projected trip generation for this background development.

Table 10
2030 Background Development Generation

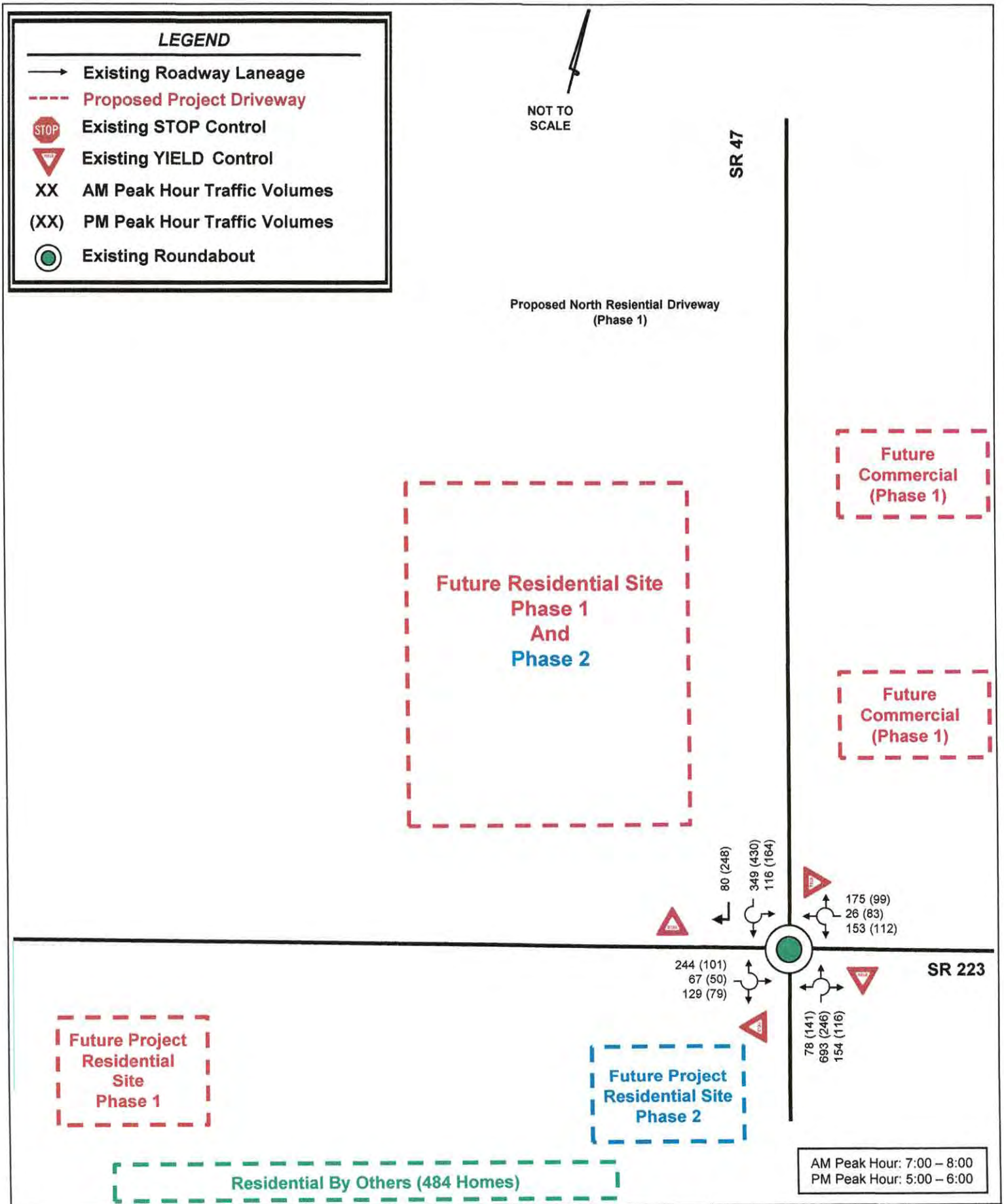
Land Use	A.M. Peak Hour			P.M. Peak Hour			24-hour 2-way
	Enter	Exit	Total	Enter	Exit	Total	
Single Family Detached (484)	87	261	348	291	171	462	4,436

The projected traffic that will be generated by this project was assigned to the study area based on existing travel patterns.

The total projected background volumes includes the background growth rate applied to the existing traffic volumes in the study area for five years and traffic projected from the 484 single family homes that were assigned to the roadway network and added to the network as well.

These volumes were used to analyze the 2030 background traffic conditions surrounding the site with no changes to geometry of the roundabout. As noted previously, this development is proposed to have one access location along Wrightsboro Road and one along Appling-Harlem Road. However, since the proposed project will not significantly contribute traffic to either that would result in a change in configuration or traffic control, they were not included in the analyses.

The 2030 background traffic volumes and lane configurations used in this analysis are shown in Figure 13 and the results of this analysis are presented in Table 11.



ISM Infrastructure Systems Management, LLC	*Greenpoint Traffic Impact Analysis*	Phase 2 (2030) Background Traffic	Figure 13
			Page 26

Table 11 Projected 2030 Background Intersection Operations				
	A.M. Peak Hour		P.M. Peak Hour	
Intersection	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	**F**	**147.6**	**B**	**12.9**
- eastbound approach	F	54.4	B	13.8
- westbound approach	F	51.2	B	11.7
- northbound approach	F	303.2	B	13.8
- southbound approach	B	12.9	B	12.6

As would be expected with the increase in traffic volumes from background growth, analysis of projected 2030 background conditions shows increased delay at the roundabout for the SR 47 and SR 223 intersection. As with the existing condition, these delays are only notable during the morning peak hour when the overall operation is projected to be LOS F.

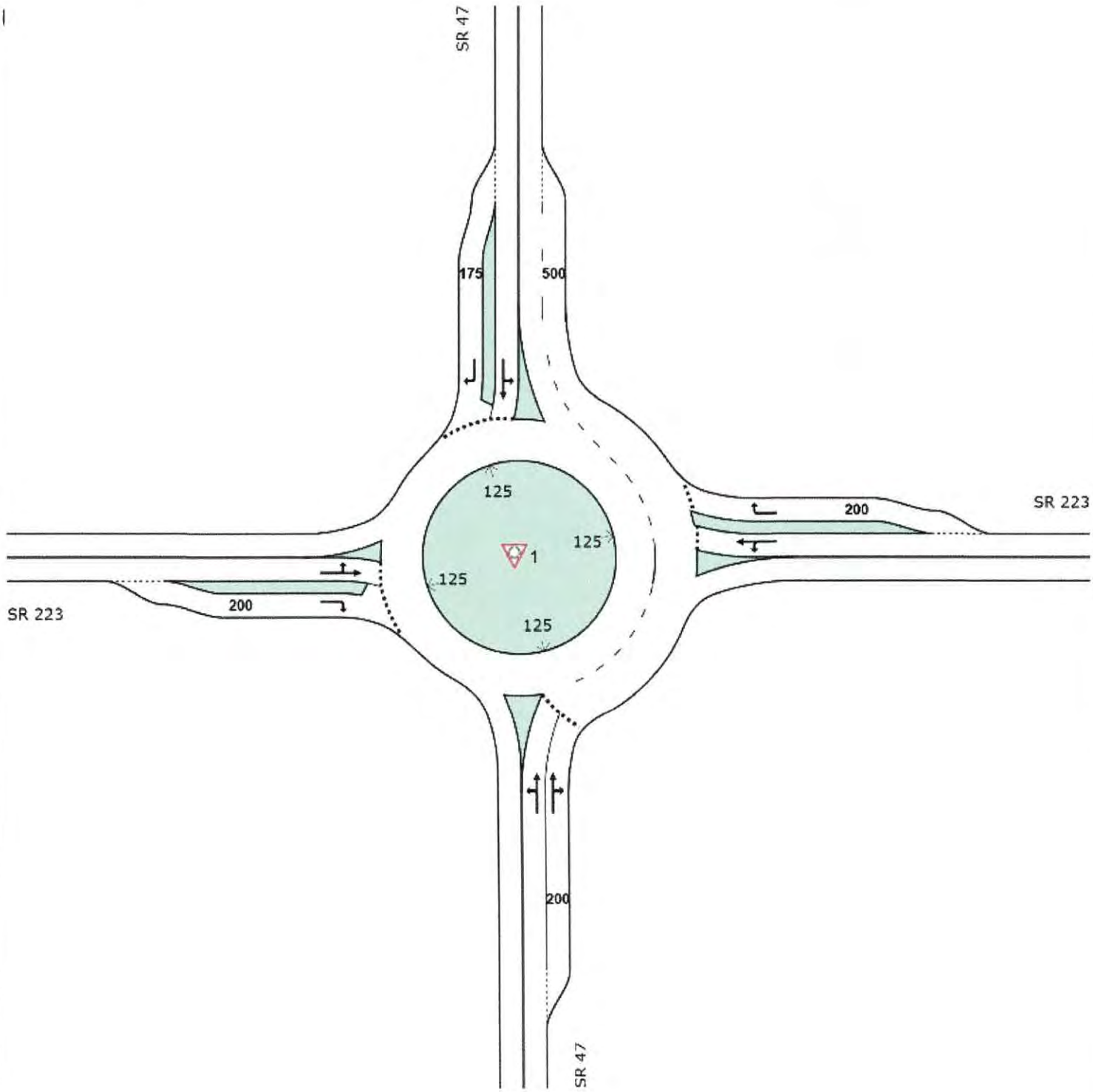
Because this constraint exists without the addition of project traffic, it is considered a "system" deficiency and not a result of the proposed development. Therefore, improvements to correct this deficiency would be considered a "system improvement" and not the responsibility of the developer

Using an iterative approach to potential improvements to the roundabout, it was found that, in addition to the system improvements required for the 2025 Background condition, right-turn by-pass lanes would be required along both the eastbound and westbound approaches. Figure 14 shows a conceptual layout of the roundabout with this improvement and the results of this analysis are presented in Table 12.

Table 12 Projected 2030 Background Intersection Operations with System Improvements				
	A.M. Peak Hour		P.M. Peak Hour	
Intersection	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	**C**	**21.9**	**A**	**9.6**
- eastbound approach	C	19.5	A	8.4
- westbound approach	C	17.2	A	7.1
- northbound approach	D	29.3	A	6.8
- southbound approach	B	14.0	B	12.6

The results in Table 6 show that providing this improvement will allow the intersection to operate at LOS C.

However, as noted previously in previous conditions, observed volumes during morning peak hour along the northbound approach and at the intersection are significantly higher during the morning peak hour than any other hour throughout the day. Therefore, while this improvement would improve the morning peak hour flow, careful consideration should be given to the cost-benefit of providing an improvement of this magnitude that only has a measurable benefit for one hour per day.



ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	2030 Background System Improvement	Figure 14
			Page 28

PHASE 2 FUTURE TRAFFIC CONDITIONS

In addition to the development shown in Phase 1, Phase 2 will include an additional 140 single-family homes and 50 townhomes. The additional single-family homes will be constructed in the section located north of SR 223 with an additional access being proposed on the western end of the site to SR 223. The townhomes will be located in the southwest quadrant of the intersection of SR 47 and SR 223 and will access via the east driveway of the proposed background development. Completion of Phase 2 is expected in 2030.

Figure 15 shows a conceptual layout both phase 1 and 2 of the development as well as anticipated access locations and intersections included in the study network.

Phase 2 Future Traffic Volumes

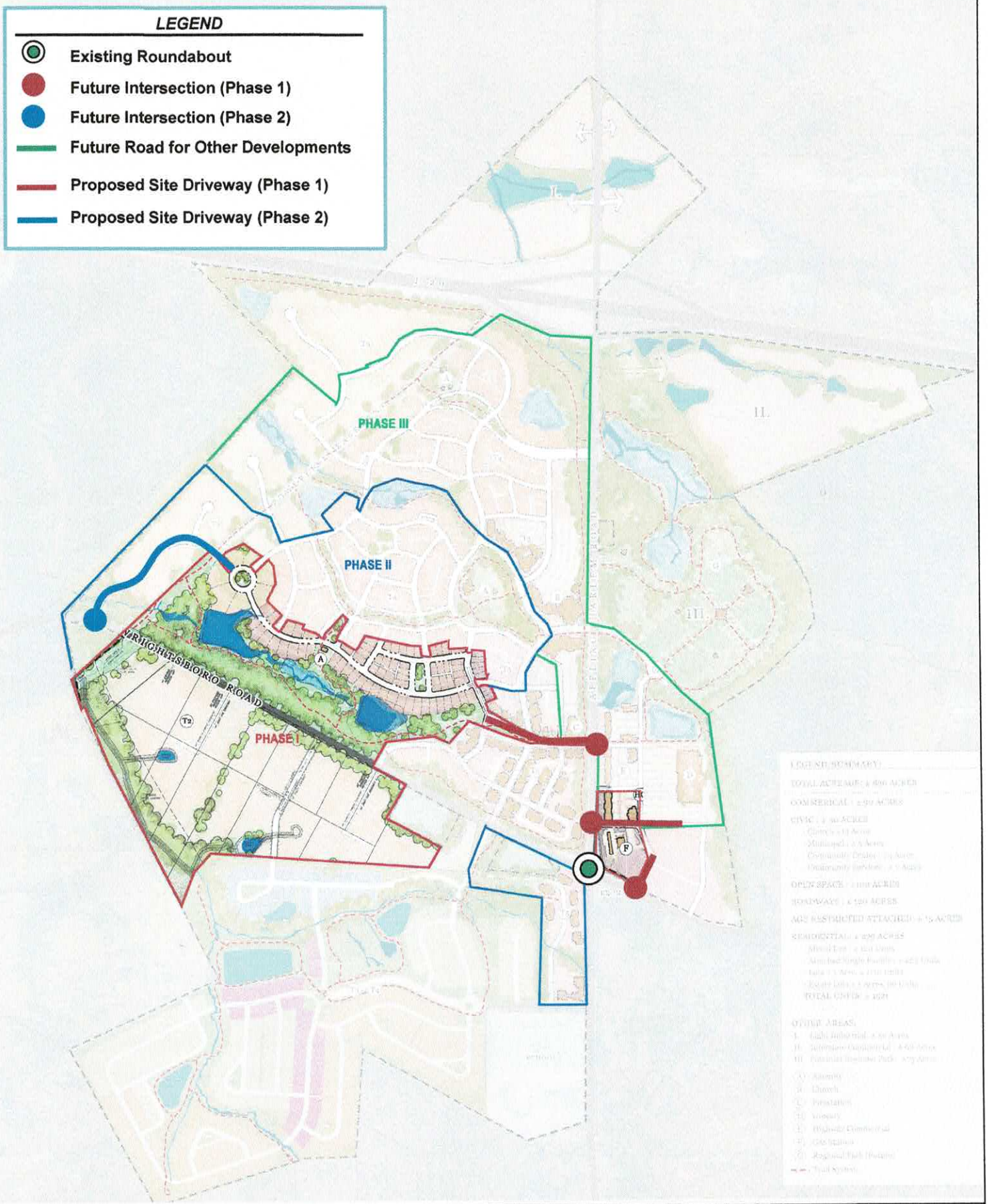
Future traffic volumes used in this analysis are made up of the 2030 Background traffic volumes presented in the previous section with the addition of projected site-generated traffic for Phase 2. Projections for trip generation and traffic assignment are discussed in the following sections.

Trip Generation

Traffic that will be generated by the proposed development was projected based on trip generation characteristics for similar land uses nationwide. The trip generation rates used in this study were taken from the 10th edition of the Institute of Transportation Engineers' (ITE) Trip Generation report utilizing the following land-uses: *ITE Land Use 210 – Single-Family Detached Housing, 820 Shopping Center, 853 – Convenience Market with Gas Pumps, and 220 – Multi-Family (Low Rise).*

In addition to calculating the raw trip generation, ITE methodology makes allowance to account for pass-by trips for retail developments. Whereas trips for residential uses are destination-oriented and new trips to the roadway network, pass-by trips are trips that are already on the roadway network and visit the site en route to a primary destination. Pass-by trips are subtracted from the overall trip generation assigned to the network, however, they included and assigned to the retail driveways as new turning movements. Pass-by trip percentages used for this study were obtained for the ITE Trip Generation Handbook (3rd edition)

Table 13 presents a summary of the projected trip generation and pass-by reductions for the Phase 2 of Greenpoint.



ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	**Phase 2 Study Intersections**	**Figure 15** Page 30

Table 13 Phase 2 Trip Generation							
Land Use	A.M. Peak Hour			P.M. Peak Hour			24-hour
	Enter	Exit	Total	Enter	Exit	Total	2-way
Single Family Detached (223 units)	41	122	163	138	81	219	2,175
Single Family Detached (17 units)	4	13	17	12	7	19	204
Townhomes (50 units)	6	19	25	20	12	32	337
Convenience Market with Gas Pumps	83	83	166	92	92	184	2,580
- pass-by trips	*-52*	*-52*	*-104*	*-61*	*-61*	*-122*	*-206*
Shopping Center (30,000 sf)	104	63	167	98	125	223	2,651
- pass-by trips	0	0	0	-33	-42	-75	-75
Gross Trips	**238**	**300**	**538**	**360**	**317**	**677**	**7,947**
Total Pass-by Trips	***-52***	***-52***	***-104***	***-94***	***-103***	***-197***	***-301***
Net Site Phase 1 Trip Generation	**186**	**248**	**434**	**266**	**214**	**480**	**7,646**

Trip Distribution and Traffic Assignment

The trip distribution is not anticipated to change from that presented previously for Phase 1 (refer to Figure 10). However, due to the additional driveway proposed on the west end of the site along Wrightsboro Road, the trip assignment was adjusted to account for utilization of the new driveway. Projected trip generation for Phase 2 was assigned to the study area based on this distribution and is shown in Figure 16.

Phase 2 Future Total Traffic Volumes

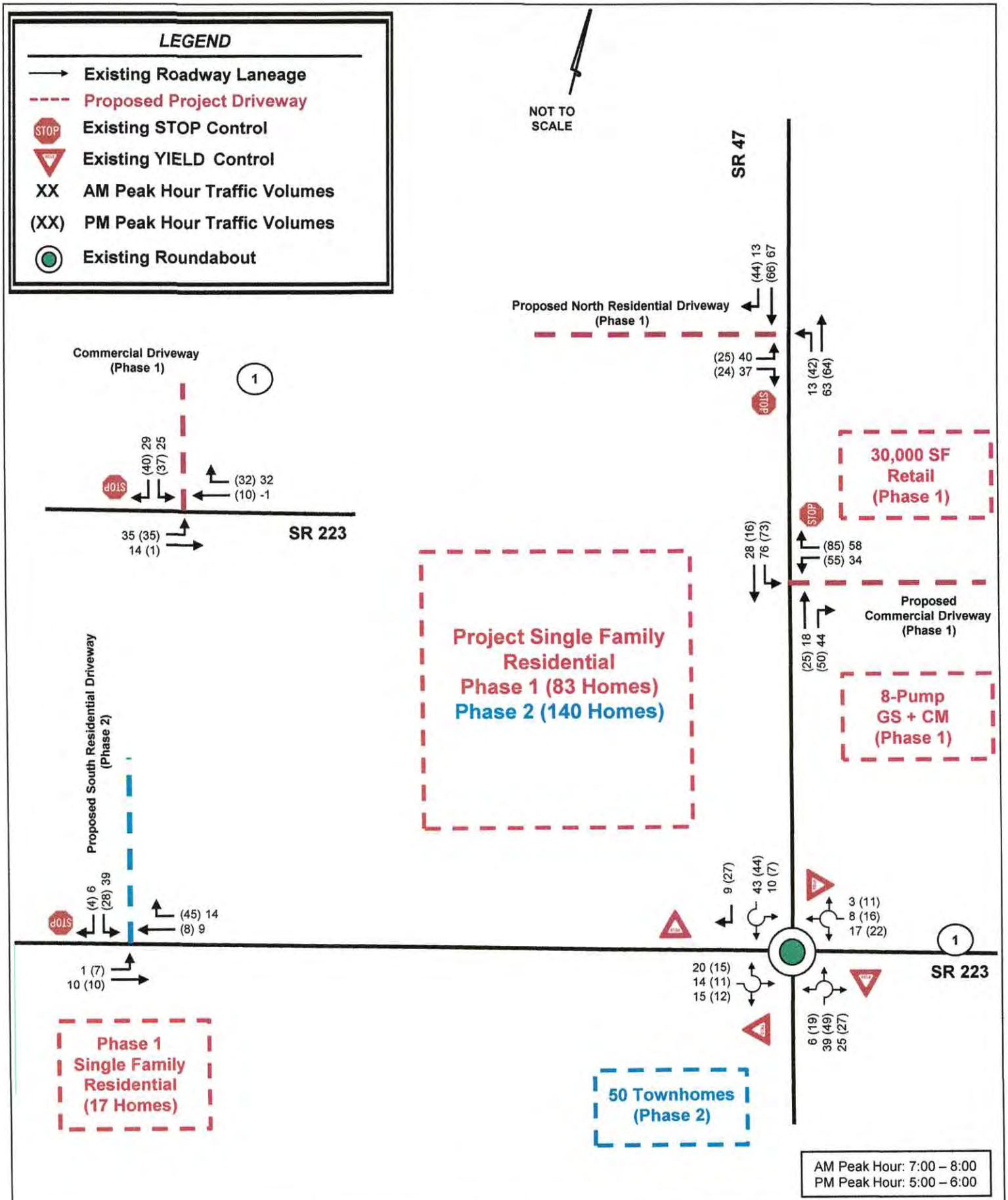
Future traffic volumes for the Phase 2 build-out in the year 2030 are made up of the 2030 Background Traffic volumes, presented in the previous section (Figure 13), and the site generated volumes shown in Figure 16. Projected Phase 2 Future Traffic Volumes are shown in Figure 17.

Phase 2 Driveway Configurations

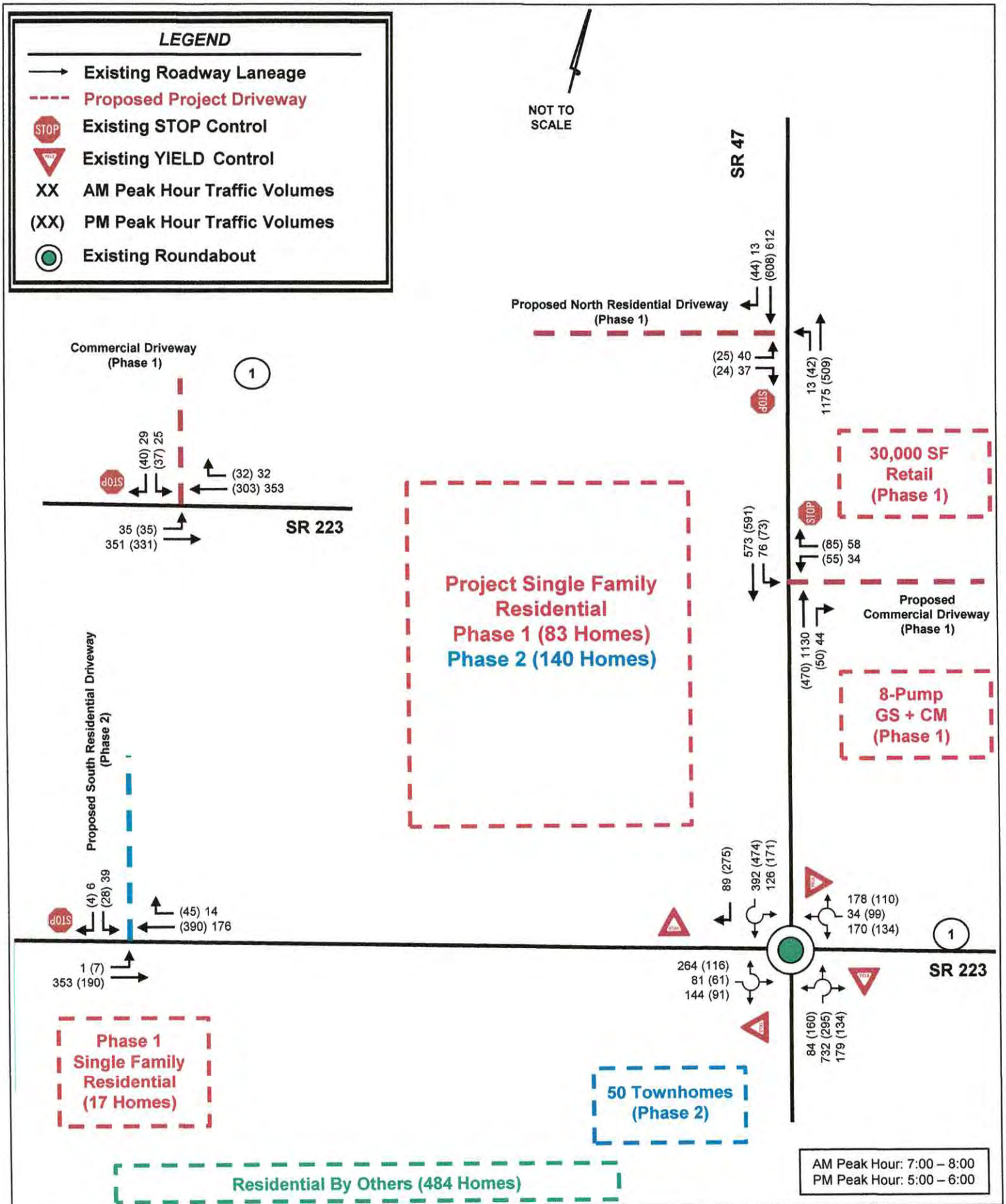
The proposed residential driveways and previously-approved commercial driveways for Phase 1 were evaluated previously and assumed the configurations, presented were used for the Phase 2 analyses.

For the new residential driveway proposed along SR 223 in Phase 2, an evaluation was performed using the projected daily turning movement volumes to the criteria set forth in the Georgia DOT Regulations for Driveway and Encroachment Control, *Section 4.9*. Based on this manual for a two-lane, 55 mph road with an AADT of >6,000 vpd a right-turn deceleration lane is required if there are more than 50 right-turning vehicles per day. For a left-turn lane, the minimum volume is 150 left-turning vehicles per day.

Based on the estimated daily traffic assignment for this development, this drive is projected to have 297 and 122 daily right-turns and left-turns, respectively. Hence, it is anticipated that Georgia DOT will require left-turn and right-turn lanes at this driveway as well.



ISM Infrastructure Systems Management, LLC	*Greenpoint Traffic Impact Analysis*	Phase 2 Site Generate Traffic	Figure 16
			Page 32



ISM Infrastructure Systems Management, LLC	*Greenpoint Traffic Impact Analysis*	Phase 2 Future Traffic	Figure 17
			Page 33

Phase 2 Future Intersection Operations

Using the projected Phase 2 Future traffic volumes, shown in Figure 18, and the proposed driveway configurations, a capacity analysis was performed for the future morning and evening peak hours at each intersection within the study network. Results of the Phase 2 future conditions analysis are presented in Table 14.

Table 14
Phase 2 Future Intersection Operations

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	**F**	**182.6**	**C**	**18.3**
- eastbound approach	F	112.6	C	18.8
- westbound approach	F	58.8	C	16.6
- northbound approach	F	360.3	C	20.5
- southbound approach	C	16.3	C	17.3
SR 47 at North Residential Driveway				
- northbound left-turn	A	9.0	A	9.3
- eastbound approach	F	71.2	C	22.2
SR 47 at Commercial Driveway				
- southbound left-turn	B	12.8	A	8.9
- westbound approach	F	157.1	D	31.4
SR 223 at Commercial Driveway				
- southbound approach	B	14.3	B	14.0
- eastbound left-turn	A	8.3	A	8.1
SR 223 at South Driveway				
- eastbound left-turn	A	7.6	A	8.3
- southbound approach	B	12.8	B	13.6

For the driveways, the analysis does show some potential delay for the side street approaches during the morning peak hour. This level is not uncommon or unexpected for a stop-controlled approach to an arterial roadway during the morning peak hour. Therefore, no further recommendations beyond those recommended in Phase 1 or by Georgia DOT are recommended.

As would be expected with the addition of site generated traffic to the background growth, with the existing roundabout geometry at the SR 47 at SR 223, delays continue to increase during the morning peak hour.

Using an iterative approach to potential improvements to the roundabout, it was found that providing the system improvements identified in the 2030 Background Condition, would only improve the roundabout to LOS C, so additional capacity is required to improve the roundabout to LOS C. To recap, the system improvements identified in the 2030 Background conditions included: addition capacity for the northbound approach, widening the eastern portion of the roundabout to provide a second circulating lane in that portion of the roundabout, add a second receiving lane on the north leg of the roundabout, and right-turn by-pass lanes along both the eastbound and westbound approaches (Refer to Figure 14). Additional capacity to improve the overall operations to LOS C for the Phase 2 Future conditions would be the addition of a right-

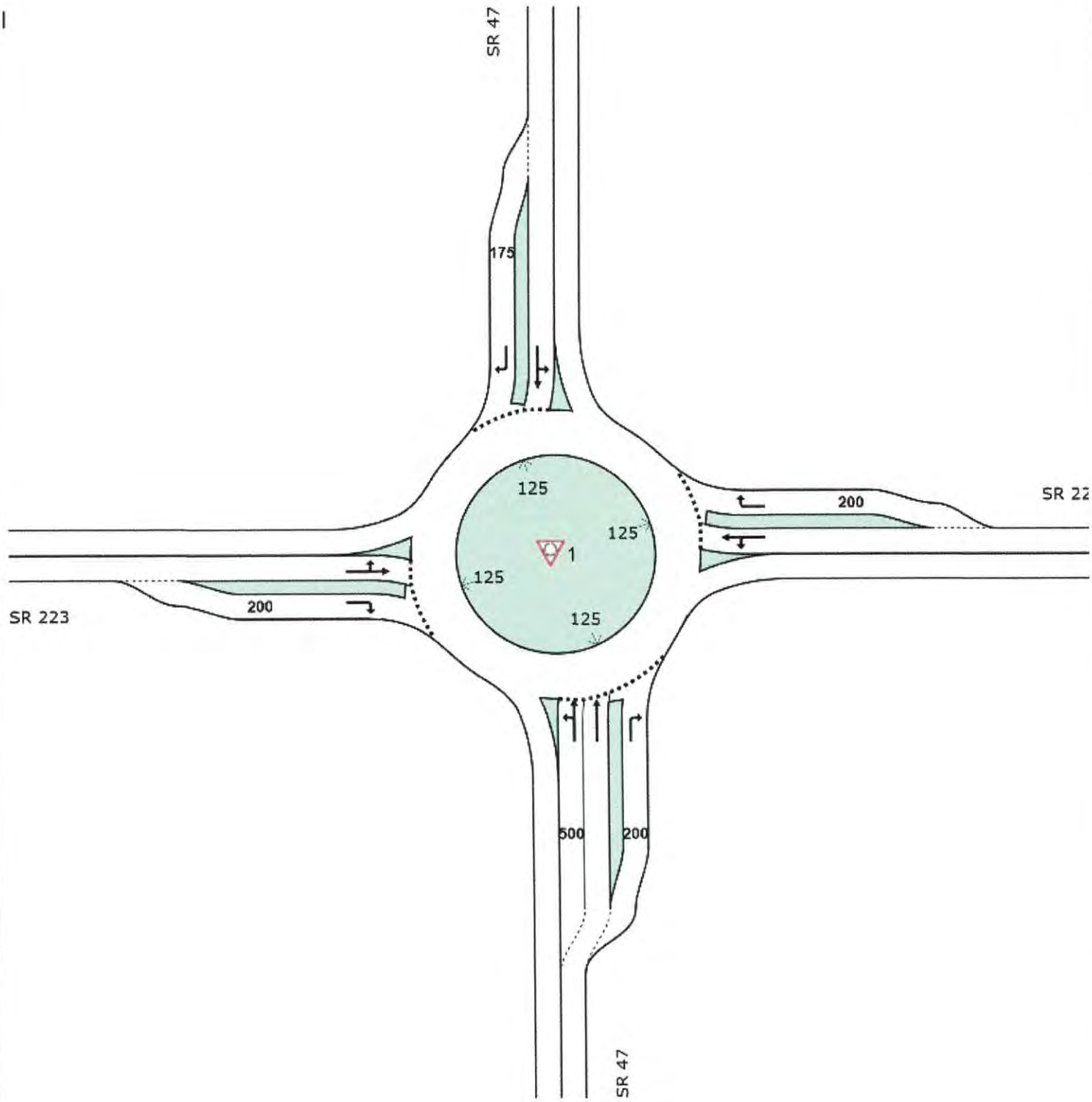
turn by-pass lane to the northbound approach. Figure 19 shows a conceptual layout of the roundabout with this improvement and the results of this analysis are presented in Table 15.

Table 15
Phase 2 Future Intersection Operations with System Improvements

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
SR 47 at SR 223	**C**	**22.8**	**B**	**12.2**
- eastbound approach	D	27.8	A	10.0
- westbound approach	C	18.6	A	8.9
- northbound approach	D	25.1	A	7.7
- southbound approach	C	17.4	C	17.3

As shown by the above results, providing these improvements will allow the roundabout to operate at LOS C.

However, as noted previously, observed volumes during morning peak hour along the northbound approach and at the intersection are significantly higher during the morning peak hour than any other hour throughout the day. Therefore, while these improvements would improve the morning peak hour flow, careful consideration should be given to the cost-benefit of providing an improvement of this magnitude that only has a measurable benefit for one hour per day.



ISM INFRASTRUCTURE SYSTEMS MANAGEMENT, LLC	*Greenpoint Traffic Impact Analysis*	**Phase 2 System and Project Improvements**	**Figure 18** **Page 36**

Figure 18. Phase 2 Future Improvements.

STUDY FINDINGS AND RECOMMENDATION SUMMARY

This report analyzes and projects the traffic impact of the initial two phases of the proposed Greenpoint Planned Unit Development. The development is proposed to be constructed in five phases beginning estimated to begin construction at 5-year intervals and, at full build-out, will include a mix of residential, commercial, institutional, industrial, and recreational uses on an approximately 834-acre in west Columbia County generally-located along SR 47/Appling-Harlem Road between Interstate 20 (I-20) and SR 223/Wrightsboro Road.

Phase 1 will include 100 single-family homes, a gas station/convenience store, and approximately 30,000 sf of retail, beginning in 2020 and completed by 2025. Phase 2 will include an additional 140 single-family homes and approximately 50 townhomes, beginning in 2025 and completed by 2030.

The study analyzed traffic conditions of the existing and future roadway network in the vicinity of the proposed site including the existing roundabout at the intersection of Appling-Harlem Road (SR 47) and Wrightsboro Road (SR 223). For each scenario analyzed, traffic operations were determined with the existing configuration and, if operations were projected to be below LOS C, capacity improvements necessary to improve operations to LOS C were identified. The five conditions analyzed included:

- Existing Conditions
- 2025 Background Conditions (with background growth only)
- Phase 1 Future (2025 Background traffic plus traffic from Greenpoint)
- 2030 Background Conditions (with background growth only)
- Phase 1 Future (2025 Background traffic plus traffic from Greenpoint)

The study was performed in accordance with both Institute of Transportation Engineers (ITE) and Highway Capacity Manual (HCM) methodologies.

Below is a summary of the findings for each intersection and site driveway within the study network:

Appling-Harlem Road (SR 47) at Wrightsboro Road (SR 223) Findings

Currently, this intersection is controlled by a single-lane roundabout with single-lane entry approaches along three approaches. The lone exception is the northbound approach which includes a right-turn by-pass lane as well.

Based on the existing traffic volumes collected at this intersection and the analysis performed, the morning peak hour, especially the northbound approach, has existing capacity constraints that result in operations below LOS C for the morning peak hour only.

Based on review of traffic volumes throughout the 24-hour period, it appears that the morning peak hour is an anomaly in that during the morning peak hour, which occurred between 7:00 am and 8:00 am, the northbound approach volumes are very high compared to any other hour throughout the day, and almost 200% higher than any other hour. This is likely due to the Harlem Middle School morning drop-off time occurring during this hour.

This observation is most apparent by the fact that the evening peak hour, which had the second highest intersection volume throughout the day, operates with very little delay.

Taking that into account, this study identified that the morning peak hour operation could be improved to LOS C with the construction of a northbound by-pass lane.

While this is considered to be a system improvement and not the result of any traffic from Greenpoint PUD, it is worth noting that the original approved concept report approved by Georgia DOT for PI 0004732 include this by-pass lane in the original project, but no documentation could be found as to why it was omitted from the construction plans.

As would be expected with the increases in traffic for future projections, the common theme throughout the study was the need to address capacity constraints for the morning peak hour only. Improvements identified to address these constraints ultimately resulted in the need for a second through lane for the northbound approach as well as by-pass lanes for the eastbound and westbound approach.

To that end, while this improvements were identified within the study to improve the morning peak hour flow, ISM believes that careful consideration should be given to the cost-benefit of providing an improvement of this magnitude that only has a measurable benefit for one hour per day, especially utilizing 10-year traffic projections. This caution is under-scored by the fact that the analysis showed that the evening peak hour, which had the second highest intersection volume during each scenario, operated at LOS C or better during every scenario analyzed.

Therefore, ISM's recommendation would be to continue to monitor this roundabout in the future as this development and other growth occurs. Furthermore, it would be recommended for the County approach Georgia DOT to pursue the installation of the northbound right-turn by-pass lane that was identified by in the original concept report for the roundabout as it likely provides the most cost-benefit for the foreseeable future.

Proposed Site Driveways

Currently, the first phase of development will include three driveways: one along the west side of Appling-Harlem Road, north of Wrightsboro Road that will serve the residential portions of the development and two previously-approved driveways for the commmericial portions of the development, one each along Appling-Harlem Road and Wrightsboro Road, respectively.

Phase 2 will include a second entrance along the north side of Wrightsboro Road on the west end of the development that will provide access to the residential portions of the development, connecting Phase 1 and Phase 2.

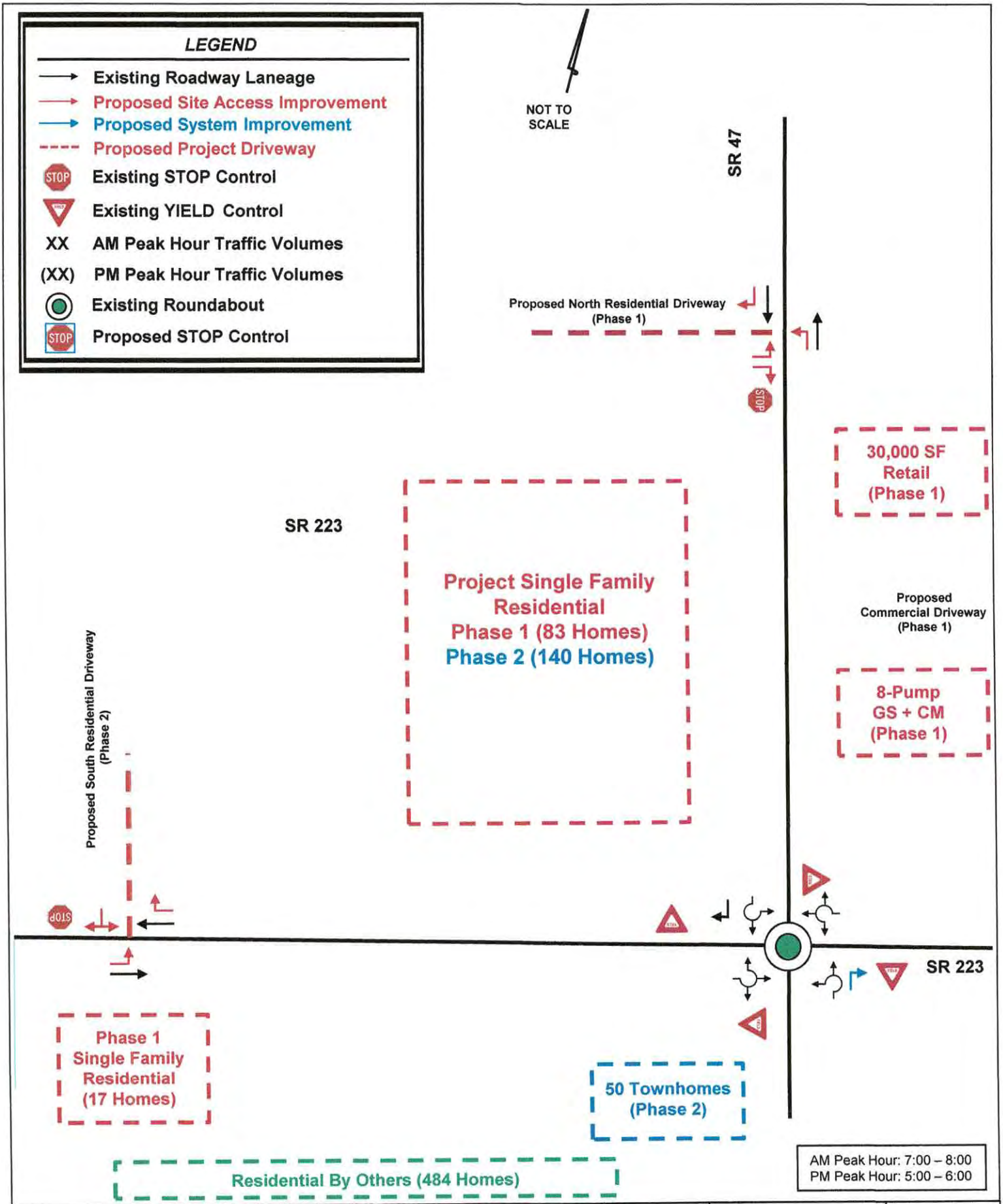
The previously-approved commercial drives both include left-turn and right-turn treatments entering the development, analysis found these to be adequate to serve the commercial portion of the site.

Both proposed residential driveways were evaluated for the need for right-turn and left-turn lanes based on the criteria in set forth in the Georgia DOT Regulations for Driveway and Encroachment Control, *Section 4.9.* Based on this evaluation, each drive will likely be required to construct left-turn and right-turn lanes.

Additionally, based on analysis, it would be recommended to provide separate left-turn and right-turn lanes for the exiting approach for the residential drive along Appling-Harlem Road

It would also be recommended that consideration be given to providing additional site driveways and traffic analysis as the development progresses in order to continue to "right-size" future access points.

Figure 19 shows recommended improvements for the future.



ISM Infrastructure Systems Management, LLC	*Greenpoint Traffic Impact Analysis*	Road Improvement Recommendations	Figure 19
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APPENDIX

Infrastructure Systems Management, LLC

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ISM

TRAFFIC DATA

Infrastructure Systems Management, LLC

Tel 706-836-5160 1557 Broad Street Augusta, GA 30904 www.ismllc-engr.com scassell@ismllc-engr.com

ISM

All Traffic Data Services, Inc

alltrafficdata.net

Site Code: 4
Station ID: 4
WRIGHTSBORO ROAD EAST OF APPLING HARLEM

Start Time	17-Sep-19 Tue	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	21			1	16				
12:15		2	16			3	23				
12:30		2	25			3	30				
12:45		2	28	7	90	3	29	10	98	17	188
01:00		1	24			1	25				
01:15		5	19			2	35				
01:30		0	26			1	30				
01:45		0	20	6	89	1	30	5	120	11	209
02:00		2	20			0	35				
02:15		3	37			2	41				
02:30		2	38			2	38				
02:45		1	37	8	132	3	42	7	156	15	288
03:00		1	33			2	37				
03:15		4	26			3	34				
03:30		2	46			1	36				
03:45		1	31	8	136	6	35	12	142	20	278
04:00		3	41			3	33				
04:15		3	42			1	42				
04:30		2	28			3	45				
04:45		3	32	11	143	6	43	13	163	24	306
05:00		9	50			8	56				
05:15		8	45			13	39				
05:30		15	50			10	42				
05:45		7	47	39	192	12	54	43	191	82	383
06:00		11	31			18	29				
06:15		27	44			25	35				
06:30		28	26			38	29				
06:45		20	30	86	131	44	21	125	114	211	245
07:00		44	27			90	32				
07:15		50	29			92	34				
07:30		44	22			44	21				
07:45		34	26	172	104	39	21	265	108	437	212
08:00		31	18			39	16				
08:15		32	24			40	15				
08:30		27	14			36	20				
08:45		17	15	107	71	27	17	142	68	249	139
09:00		25	13			19	17				
09:15		12	14			23	9				
09:30		30	9			27	9				
09:45		21	4	88	40	21	5	90	40	178	80
10:00		34	10			25	15				
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10:30		14	8			28	4				
10:45		23	7	91	35	23	6	106	35	197	70
11:00		25	5			21	5				
11:15		23	7			22	6				
11:30		21	7			28	5				
11:45		14	3	83	22	33	6	104	22	187	44
Total		706	1185			922	1257			1628	2442
Percent		37.3%	62.7%			42.3%	57.7%			40.0%	60.0%
Grand Total		706	1185			922	1257			1628	2442
Percent		37.3%	62.7%			42.3%	57.7%			40.0%	60.0%
ADT		ADT 4,070		AADT 4,070							

All Traffic Data Services, Inc

alltrafficdata.net

Site Code: 3
Station ID: 3
APPLING HARLEM ROAD SOUTH OF WRIGHSBORO

Start Time	17-Sep-19 Tue	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		3	45			10	36				
12:15		1	40			5	50				
12:30		4	40			3	55				
12:45		2	37	10	162	5	43	23	184	33	346
01:00		0	29			1	42				
01:15		2	53			2	35				
01:30		1	44			1	62				
01:45		4	44	7	170	2	58	6	197	13	367
02:00		2	62			0	54				
02:15		2	49			5	82				
02:30		2	65			2	104				
02:45		1	100	7	276	2	82	9	322	16	598
03:00		5	119			2	94				
03:15		4	55			0	62				
03:30		3	72			3	56				
03:45		4	80	16	326	1	81	6	293	22	619
04:00		4	57			3	81				
04:15		5	74			4	76				
04:30		15	75			5	84				
04:45		13	61	37	267	1	85	13	326	50	593
05:00		16	94			10	108				
05:15		25	77			14	108				
05:30		24	93			10	96				
05:45		48	77	113	341	11	111	45	423	158	764
06:00		37	75			15	82				
06:15		60	51			23	102				
06:30		69	56			44	78				
06:45		94	29	260	211	68	59	150	321	410	532
07:00		116	45			172	55				
07:15		199	32			210	58				
07:30		209	33			65	52				
07:45		138	51	662	161	44	50	491	215	1153	376
08:00		79	20			65	46				
08:15		75	29			75	47				
08:30		88	27			65	40				
08:45		80	19	322	95	28	28	233	161	555	256
09:00		53	13			36	28				
09:15		56	8			29	25				
09:30		41	16			36	29				
09:45		55	12	205	49	37	14	138	96	343	145
10:00		48	20			38	17				
10:15		38	11			45	21				
10:30		43	21			49	18				
10:45		37	6	166	58	42	15	174	71	340	129
11:00		48	4			41	9				
11:15		42	5			36	10				
11:30		47	5			33	7				
11:45		40	5	177	19	37	7	147	33	324	52
Total		1982	2135			1435	2642			3417	4777
Percent		48.1%	51.9%			35.2%	64.8%			41.7%	58.3%
Grand Total		1982	2135			1435	2642			3417	4777
Percent		48.1%	51.9%			35.2%	64.8%			41.7%	58.3%
ADT		ADT 8,194		AADT 8,194							

All Traffic Data Services, Inc

alltrafficdata.net

Site Code: 2
Station ID: 2
WRIGHTSBORO ROAD WEST OF APPLING HARLEM

Start Time	17-Sep-19 Tue	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	19			1	19				
12:15		1	20			3	19				
12:30		2	30			2	16				
12:45		3	26	6	95	1	17	7	71	13	166
01:00		0	23			0	26				
01:15		3	20			3	40				
01:30		0	31			4	25				
01:45		1	18	4	92	1	27	8	118	12	210
02:00		0	20			2	27				
02:15		2	29			1	35				
02:30		3	35			0	26				
02:45		0	28	5	112	1	36	4	124	9	236
03:00		1	19			2	46				
03:15		2	21			0	41				
03:30		6	31			0	43				
03:45		3	25	12	96	3	52	5	182	17	278
04:00		4	25			4	39				
04:15		6	20			2	53				
04:30		7	25			1	55				
04:45		15	28	32	98	1	42	8	189	40	287
05:00		14	29			4	57				
05:15		12	41			4	48				
05:30		30	28			4	61				
05:45		21	30	77	128	5	58	17	224	94	352
06:00		30	24			3	43				
06:15		53	33			9	52				
06:30		60	31			18	45				
06:45		64	21	207	109	22	28	52	168	259	277
07:00		65	15			20	33				
07:15		79	21			31	33				
07:30		64	12			17	29				
07:45		55	22	263	70	22	29	90	124	353	194
08:00		45	16			12	22				
08:15		47	13			15	18				
08:30		33	7			25	22				
08:45		31	8	156	44	16	21	68	83	224	127
09:00		32	6			15	14				
09:15		26	9			12	14				
09:30		20	4			19	7				
09:45		26	1	104	20	10	8	56	43	160	63
10:00		27	3			15	13				
10:15		28	2			23	4				
10:30		21	4			19	5				
10:45		24	3	100	12	19	4	76	26	176	38
11:00		30	2			15	5				
11:15		18	5			22	5				
11:30		20	0			21	3				
11:45		27	0	95	7	23	3	81	16	176	23
Total		1061	883			472	1368			1533	2251
Percent		54.6%	45.4%			25.7%	74.3%			40.5%	59.5%
Grand Total		1061	883			472	1368			1533	2251
Percent		54.6%	45.4%			25.7%	74.3%			40.5%	59.5%
ADT		ADT 3,784		AADT 3,784							

All Traffic Data Services, Inc

alltrafficdata.net

Site Code: 1
Station ID: 1
APPLING HARLEM ROAD NORTH OF WRIGHTSBORO

Start Time	17-Sep-19 Tue	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		3	50			8	55				
12:15		4	62			3	58				
12:30		2	67			6	67				
12:45		5	64	14	243	1	59	18	239	32	482
01:00		1	48			2	59				
01:15		2	78			3	72				
01:30		1	56			4	66				
01:45		5	55	9	237	3	66	12	263	21	500
02:00		2	76			8	67				
02:15		5	69			7	93				
02:30		4	85			1	102				
02:45		5	116	16	346	3	102	19	364	35	710
03:00		7	107			3	111				
03:15		7	74			5	98				
03:30		11	90			4	102				
03:45		11	95	36	366	6	111	18	422	54	788
04:00		11	85			9	114				
04:15		13	90			5	127				
04:30		24	86			4	124				
04:45		30	83	78	344	6	110	24	475	102	819
05:00		29	107			17	134				
05:15		41	93			11	139				
05:30		56	89			16	139				
05:45		65	90	191	379	12	146	56	558	247	937
06:00		76	94			18	123				
06:15		106	63			34	135				
06:30		140	72			70	100				
06:45		149	50	471	279	84	91	206	449	677	728
07:00		183	58			143	76				
07:15		251	46			136	73				
07:30		197	46			53	83				
07:45		168	53	799	203	65	61	397	293	1196	496
08:00		119	34			70	75				
08:15		126	44			67	58				
08:30		123	22			76	61				
08:45		103	30	471	130	43	51	256	245	727	375
09:00		77	18			44	41				
09:15		90	17			37	43				
09:30		76	20			57	26				
09:45		62	14	305	69	53	24	191	134	496	203
10:00		73	21			55	24				
10:15		63	14			49	22				
10:30		67	18			60	26				
10:45		56	11	259	64	52	19	216	91	475	155
11:00		61	7			50	13				
11:15		66	7			48	12				
11:30		64	7			60	15				
11:45		73	5	264	26	41	9	199	49	463	75
Total		2913	2686			1612	3582			4525	6268
Percent		52.0%	48.0%			31.0%	69.0%			41.9%	58.1%
Grand Total		2913	2686			1612	3582			4525	6268
Percent		52.0%	48.0%			31.0%	69.0%			41.9%	58.1%
ADT		ADT 10,793		AADT 10,793							

TRAFFIC VOLUME WORKSHEETS

Infrastructure Systems Management, LLC

Tel 706-836-5160 1557 Broad Street Augusta, GA 30904 www.ismllc-engr.com scassell@ismllc-engr.com

ISM

Appling Harlem Road and Wrightsboro Road

Columbia County
September 17, 2019

AM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**56**	**499**	**107**	**662**	**91**	**259**	**47**	**397**	**144**	**31**	**88**	**263**	**113**	**15**	**137**	**265**	**1587**
PHF	0.79	0.79	0.79	0.79	0.69	0.69	0.88	0.88	0.83	0.83	0.83	0.83	0.74	0.74	0.74	0.74	
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	63	565	121	749	103	293	53	449	163	35	100	298	128	17	155	300	1796
Ph 1 background dev	3	30	8	41	0	8	11	19	33	16	9	58	2	5	0	7	125
Total Base - Phase 1	**66**	**595**	**129**	**790**	**103**	**301**	**64**	**468**	**196**	**51**	**109**	**356**	**130**	**22**	**155**	**307**	**1921**
Ph 2 background growth	72	639	137	848	116	332	60	508	184	40	113	337	145	19	175	339	2032
Ph 2 background dev	6	54	17	77	0	17	20	37	60	27	16	103	8	7	0	15	232
Total Base - Phase 2	**78**	**693**	**154**	**925**	**116**	**349**	**80**	**545**	**244**	**67**	**129**	**440**	**153**	**26**	**175**	**354**	**2264**
P1 Site Gen Single Fam	1	5	0	6	8	16	5	29	7	2	4	13	0	1	3	4	
P1 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Site Gen Comm	0	22	22	44	0	15	2	17	5	4	0	9	16	4	0	20	
P1 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 1	**1**	**27**	**22**	**50**	**8**	**31**	**7**	**46**	**12**	**6**	**4**	**22**	**16**	**5**	**3**	**24**	**142**
P2 Site Gen Single Fam	5	9	0	14	10	25	7	42	15	10	15	40	0	4	3	7	
P2 Site Gen Multi Fam	1	8	3	12	0	3	0	3	0	0	0	0	1	0	0	1	
P2 Site Gen Comm	0	22	22	44	0	15	2	17	5	4	0	9	16	4	0	20	
P2 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 2	**6**	**39**	**25**	**70**	**10**	**43**	**9**	**62**	**20**	**14**	**15**	**49**	**17**	**8**	**3**	**28**	**209**
Future - Phase 1	**67**	**622**	**151**	**840**	**111**	**332**	**71**	**514**	**208**	**57**	**113**	**378**	**146**	**27**	**158**	**331**	**2063**
Future - Phase 2	**84**	**732**	**179**	**995**	**126**	**392**	**89**	**607**	**264**	**81**	**144**	**489**	**170**	**34**	**178**	**382**	**2473**

Appling Harlem Road and Wrightsboro Road

Columbia County
September 17, 2019

PM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**96**	**163**	**82**	**341**	**128**	**281**	**149**	**558**	**49**	**25**	**54**	**128**	**69**	**45**	**77**	**191**	**1218**
PHF	0.91	0.91	0.91	0.91	0.96	0.96	0.96		0.78	0.78	0.78		0.85	0.85	0.85		
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	109	184	93	386	145	318	169	632	55	28	61	144	78	51	87	216	1378
Ph 1 background dev	9	17	8	34	0	33	31	64	20	7	6	33	11	15	0	26	157
Total Base - Phase 1	**118**	**201**	**101**	**420**	**145**	**351**	**200**	**696**	**75**	**35**	**67**	**177**	**89**	**66**	**87**	**242**	**1535**
Ph 2 background growth	123	209	105	437	164	360	191	715	63	32	69	164	88	58	99	245	1561
Ph 2 background dev	18	37	11	66	0	70	57	127	38	18	10	66	24	25	0	49	308
Total Base - Phase 2	**141**	**246**	**116**	**503**	**164**	**430**	**248**	**842**	**101**	**50**	**79**	**230**	**112**	**83**	**99**	**294**	**1869**
P1 Site Gen Single Fam	4	18	0	22	5	11	7	23	7	1	2	10	0	2	5	7	
P1 Site Gen Multi Fam	0	0	0	0	3	6	0	9	0	0	0	0	0	0	5	5	
P1 Site Gen Comm	0	16	16	32	0	18	3	21	3	3	0	6	19	4	0	23	
P1 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 1	**4**	**34**	**16**	**54**	**8**	**35**	**10**	**53**	**10**	**4**	**2**	**16**	**19**	**6**	**10**	**35**	**158**
P2 Site Gen Single Fam	18	28	0	46	7	17	15	39	12	8	11	31	0	12	11	23	
P2 Site Gen Multi Fam	1	5	2	8	0	9	9	18	0	0	1	1	3	0	0	3	
P2 Site Gen Comm	0	16	16	44	0	18	3	17	3	3	0	9	19	4	0	20	
P2 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 2	**19**	**49**	**18**	**86**	**7**	**44**	**27**	**78**	**15**	**11**	**12**	**38**	**22**	**16**	**11**	**49**	**251**
Future - Phase 1	**122**	**235**	**117**	**474**	**153**	**386**	**210**	**749**	**85**	**39**	**69**	**193**	**108**	**72**	**97**	**277**	**1693**
Future - Phase 2	**160**	**295**	**134**	**589**	**171**	**474**	**275**	**920**	**116**	**61**	**91**	**268**	**134**	**99**	**110**	**343**	**2120**

Wrightsboro Road and Commericial Dr

Columbia County
September 17, 2019

AM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**229**	**0**	**229**	**0**	**265**	**0**	**265**	**494**
PHF	0	0	0		0	0	0		0.9	0.9	0.9		0.9	0.9	0.9		
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	0	0	0	0	0	0	0	0	0	259	0	259	0	300	0	300	559
Ph 1 background dev	0	0	0	0	0	0	0	0	0	24	0	24	0	7	0	7	31
Total Base - Phase 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**283**	**0**	**283**	**0**	**307**	**0**	**307**	**590**
Ph 2 background growth	0	0	0	0	0	0	0	0	0	293	0	293	0	339	0	339	632
Ph 2 background dev	0	0	0	0	0	0	0	0	0	44	0	44	0	15	0	15	59
Total Base - Phase 2	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**337**	**0**	**337**	**0**	**354**	**0**	**354**	**691**
P1 Site Gen Single Fam	0	0	0	0	0	0	0	0	0	10	0	10	0	4	0	4	
P1 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Site Gen Comm	0	0	0	0	16	0	20	36	26	0	0	26	0	0	23	23	
P1 Pass-By	0	0	0	0	9	0	9	18	9	-9	0	0	0	-9	9	0	
Site Generated - Phase 1	**0**	**0**	**0**	**0**	**25**	**0**	**29**	**54**	**35**	**1**	**0**	**36**	**0**	**-5**	**32**	**27**	**117**
P2 Site Gen Single Fam	0	0	0	0	0	0	0	0	0	20	0	20	0	7	0	7	
P2 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	3	0	3	0	1	0	1	
P2 Site Gen Comm	0	0	0	0	16	0	20	36	26	0	0	26	0	0	23	23	
P2 Pass-By	0	0	0	0	9	0	9	18	9	-9	0	0	0	-9	9	0	
Site Generated - Phase 2	**0**	**0**	**0**	**0**	**25**	**0**	**29**	**54**	**35**	**14**	**0**	**49**	**0**	**-1**	**32**	**31**	**134**
Future - Phase 1	**0**	**0**	**0**	**0**	**25**	**0**	**29**	**54**	**35**	**284**	**0**	**319**	**0**	**302**	**32**	**334**	**707**
Future - Phase 2	**0**	**0**	**0**	**0**	**25**	**0**	**29**	**54**	**35**	**351**	**0**	**386**	**0**	**353**	**32**	**385**	**825**

Wrightsboro Road and Commericial Dr

Columbia County
September 17, 2019

PM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**235**	**0**	**235**	**0**	**191**	**0**	**191**	**426**
PHF	0	0	0		0	0	0		0.9	0.9	0.9		0.9	0.9	0.9		
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	0	0	0	0	0	0	0	0	0	266	0	266	0	216	0	216	482
Ph 1 background dev	0	0	0	0	0	0	0	0	0	15	0	15	0	26	0	26	41
Total Base - Phase 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**281**	**0**	**281**	**0**	**242**	**0**	**242**	**523**
Ph 2 background growth	0	0	0	0	0	0	0	0	0	301	0	301	0	244	0	244	545
Ph 2 background dev	0	0	0	0	0	0	0	0	0	29	0	29	0	49	0	49	78
Total Base - Phase 2	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**330**	**0**	**330**	**0**	**293**	**0**	**293**	**623**
P1 Site Gen Single Fam	0	0	0	0	0	0	0	0	0	6	0	6	0	7	0	7	
P1 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	3	0	3	0	5	0	5	
P1 Site Gen Comm	0	0	0	0	20	0	23	43	19	0	0	19	0	0	16	16	
P1 Pass-By	0	0	0	0	17	0	17	34	16	-16	0	0	0	-16	16	0	
Site Generated - Phase 1	**0**	**0**	**0**	**0**	**37**	**0**	**40**	**77**	**35**	**-7**	**0**	**28**	**0**	**-4**	**32**	**28**	**133**
P2 Site Gen Single Fam	0	0	0	0	0	0	0	0	0	15	0	15	0	23	0	23	
P2 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	2	0	2	0	3	0	3	
P2 Site Gen Comm	0	0	0	0	20	0	23	43	19	0	0	19	0	0	16	16	
P2 Pass-By	0	0	0	0	17	0	17	34	16	-16	0	0	0	-16	16	0	
Site Generated - Phase 2	**0**	**0**	**0**	**0**	**37**	**0**	**40**	**77**	**35**	**1**	**0**	**36**	**0**	**10**	**32**	**42**	**155**
Future - Phase 1	**0**	**0**	**0**	**0**	**37**	**0**	**40**	**77**	**35**	**274**	**0**	**309**	**0**	**238**	**32**	**270**	**347**
Future - Phase 2	**0**	**0**	**0**	**0**	**37**	**0**	**40**	**77**	**35**	**331**	**0**	**366**	**0**	**303**	**32**	**335**	**778**

Appling Harlem Road and Commericial Dr

Columbia County
September 17, 2019

AM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**0**	**780**	**0**	**780**	**0**	**397**	**0**	**397**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1177**
PHF	0.9	0.69	0.9		0.9	0.69	0.9		0.9	0.9	0.9		0.9	0.9	0.9		
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	0	882	0	882	0	449	0	449	0	0	0	0	0	0	0	0	1331
Ph 1 background dev	0	63	0	63	0	19	0	19	0	0	0	0	0	0	0	0	82
Total Base - Phase 1	**0**	**945**	**0**	**945**	**0**	**468**	**0**	**468**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1413**
Ph 2 background growth	0	998	0	998	0	508	0	508	0	0	0	0	0	0	0	0	1506
Ph 2 background dev		114		114		37		37	0	0	0	0	0	0	0	0	151
Total Base - Phase 2	**0**	**1112**	**0**	**1112**	**0**	**545**	**0**	**545**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1657**
P1 Site Gen Single Fam	0	15	0	15	0	29	0	29	0	0	0	0	0	0	0	0	
P1 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Site Gen Comm	0	0	27	27	59	0	0	59	0	0	0	0	17	0	41	58	
P1 Pass-By	0	-17	17	0	17	-17	0	0	0	0	0	0	17	0	17	34	
Site Generated - Phase 1	**0**	**-2**	**44**	**42**	**76**	**12**	**0**	**88**	**0**	**0**	**0**	**0**	**34**	**0**	**58**	**92**	**222**
P2 Site Gen Single Fam	0	27	0	27	0	42	0	42	0	0	0	0	0	0	0	0	
P2 Site Gen Multi Fam	0	8	0	8	0	3	0	3	0	0	0	0	0	0	0	0	
P2 Site Gen Comm	0	0	27	27	59	0	0	59	0	0	0	0	17	0	41	58	
P2 Pass-By	0	-17	17	0	17	-17	0	0	0	0	0	0	17	0	17	34	
Site Generated - Phase 2	**0**	**18**	**44**	**62**	**76**	**28**	**0**	**104**	**0**	**0**	**0**	**0**	**34**	**0**	**58**	**92**	**258**
Future - Phase 1	**0**	**943**	**44**	**987**	**76**	**480**	**0**	**556**	**0**	**0**	**0**	**0**	**34**	**0**	**58**	**92**	**1635**
Future - Phase 2	**0**	**1130**	**44**	**1174**	**76**	**573**	**0**	**649**	**0**	**0**	**0**	**0**	**34**	**0**	**58**	**92**	**1915**

Appling Harlem Road and Commericial Dr

Columbia County
September 17, 2019

PM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**0**	**289**	**0**	**289**	**0**	**350**	**0**	**350**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**639**
PHF	0.9	0.96	0.9		0.9	0.96	0.9		0.9	0.9	0.9		0.9	0.9	0.9		
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	0	327	0	327	0	396	0	396	0	0	0	0	0	0	0	0	723
Ph 1 background dev	0	37	0	37	0	64	0	64	0	0	0	0	0	0	0	0	101
Total Base - Phase 1	**0**	**364**	**0**	**364**	**0**	**460**	**0**	**460**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**824**
Ph 2 background growth	0	370	0	370	0	448	0	448	0	0	0	0	0	0	0	0	818
Ph 2 background dev		75		75		127		127	0	0	0	0	0	0	0	0	202
Total Base - Phase 2	**0**	**445**	**0**	**445**	**0**	**575**	**0**	**575**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1020**
P1 Site Gen Single Fam	0	34	0	34	0	23	0	23	0	0	0	0	0	0	0	0	
P1 Site Gen Multi Fam	0	0	0	0	0	10	0	10	0	0	0	0	0	0	0	0	
P1 Site Gen Comm	0	0	19	19	42	0	0	42	0	0	0	0	21	0	50	71	
P1 Pass-By	0	-31	31	0	31	-31	0	0	0	0	0	0	34	0	35	69	
Site Generated - Phase 1	**0**	**3**	**50**	**53**	**73**	**2**	**0**	**75**	**0**	**0**	**0**	**0**	**55**	**0**	**85**	**140**	**268**
P2 Site Gen Single Fam	0	51	0	51	0	39	0	39	0	0	0	0	0	0	0	0	
P2 Site Gen Multi Fam	0	5	0	5	0	8	0	8	0	0	0	0	0	0	0	0	
P2 Site Gen Comm	0	0	19	19	42	0	0	42	0	0	0	0	21	0	50	71	
P2 Pass-By	0	-31	31	0	31	-31	0	0	0	0	0	0	34	0	35	69	
Site Generated - Phase 2	**0**	**25**	**50**	**75**	**73**	**16**	**0**	**89**	**0**	**0**	**0**	**0**	**55**	**0**	**85**	**140**	**304**
Future - Phase 1	**0**	**367**	**50**	**417**	**73**	**462**	**0**	**535**	**0**	**0**	**0**	**0**	**55**	**0**	**85**	**140**	**1147**
Future - Phase 2	**0**	**470**	**50**	**520**	**73**	**591**	**0**	**664**	**0**	**0**	**0**	**0**	**55**	**0**	**85**	**140**	**1324**

Appling Harlem Road and North Residential Drive

Columbia County
September 17, 2019

AM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**0**	**780**	**0**	**780**	**0**	**397**	**0**	**397**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1177**
PHF	0.9	0.69	0.9		0.9	0.69	0.9		0.9	0.9	0.9		0.9	0.9	0.9		
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	0	882	0	882	0	449	0	449	0	0	0	0	0	0	0	0	1331
Ph 1 background dev	0	63	0	63	0	19	0	19	0	0	0	0	0	0	0	0	82
Total Base - Phase 1	**0**	**945**	**0**	**945**	**0**	**468**	**0**	**468**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1413**
Ph 2 background growth	0	998	0	998	0	508	0	508	0	0	0	0	0	0	0	0	1506
Ph 2 background dev		114		114		37		37	0	0	0	0	0	0	0	0	151
Total Base - Phase 2	**0**	**1112**	**0**	**1112**	**0**	**545**	**0**	**545**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1657**
P1 Site Gen Single Fam	9	6	0	15	0	2	7	9	21	0	27	48	0	0	0	0	
P1 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Site Gen Comm	0	41	0	41	0	59	0	59	0	0	0	0	0	0	0	0	
P1 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 1	**9**	**47**	**0**	**56**	**0**	**61**	**7**	**68**	**21**	**0**	**27**	**48**	**0**	**0**	**0**	**0**	**172**
P2 Site Gen Single Fam	13	14	0	27	0	5	13	18	40	0	37	77	0	0	0	0	
P2 Site Gen Multi Fam	0	8	0	8	0	3	0	3	0	0	0	0	0	0	0	0	
P2 Site Gen Comm	0	41	0	41	0	59	0	59	0	0	0	0	0	0	0	0	
P2 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 2	**13**	**63**	**0**	**76**	**0**	**67**	**13**	**80**	**40**	**0**	**37**	**77**	**0**	**0**	**0**	**0**	**233**
Future - Phase 1	**9**	**992**	**0**	**1001**	**0**	**529**	**7**	**536**	**21**	**0**	**27**	**48**	**0**	**0**	**0**	**0**	**1585**
Future - Phase 2	**13**	**1175**	**0**	**1188**	**0**	**612**	**13**	**625**	**40**	**0**	**37**	**77**	**0**	**0**	**0**	**0**	**1890**

Appling Harlem Road and North Residential Drive

Columbia County
September 17, 2019

PM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**0**	**289**	**0**	**289**	**0**	**350**	**0**	**350**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**639**
PHF	0.9	0.96	0.9		0.9	0.96	0.9		0.9	0.9	0.9		0.9	0.9	0.9		
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	0	327	0	327	0	396	0	396	0	0	0	0	0	0	0	0	723
Ph 1 background dev		37		37	0	44	0	44	0	0	0	0	0	0	0	0	81
Total Base - Phase 1	**0**	**364**	**0**	**364**	**0**	**440**	**0**	**440**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**804**
Ph 2 background growth	0	370	0	370	0	448	0	448	0	0	0	0	0	0	0	0	818
Ph 2 background dev		75		75	0	94	0	94	0	0	0	0	0	0	0	0	169
Total Base - Phase 2	**0**	**445**	**0**	**445**	**0**	**542**	**0**	**542**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**987**
P1 Site Gen Single Fam	31	3	0	34	0	31	23	54	13	0	18	31	0	0	0	0	
P1 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Site Gen Comm	0	50	0	50	0	42	0	42	0	0	0	0	0	0	0	0	
P1 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 1	**31**	**53**	**0**	**84**	**0**	**73**	**23**	**96**	**13**	**0**	**18**	**31**	**0**	**0**	**0**	**0**	**211**
P2 Site Gen Single Fam	42	9	0	51	0	15	44	59	25	0	24	49	0	0	0	0	
P2 Site Gen Multi Fam	0	5	0	5	0	9	0	9	0	0	0	0	0	0	0	0	
P2 Site Gen Comm	0	50	0	50	0	42	0	42	0	0	0	0	0	0	0	0	
P2 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 2	**42**	**64**	**0**	**106**	**0**	**66**	**44**	**110**	**25**	**0**	**24**	**49**	**0**	**0**	**0**	**0**	**265**
Future - Phase 1	**31**	**417**	**0**	**448**	**0**	**513**	**23**	**536**	**13**	**0**	**18**	**31**	**0**	**0**	**0**	**0**	**1015**
Future - Phase 2	**42**	**509**	**0**	**551**	**0**	**608**	**44**	**652**	**25**	**0**	**24**	**49**	**0**	**0**	**0**	**0**	**1252**

Wrightsboro Road at South Residential Dr

Columbia County
September 17, 2019

AM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**263**	**0**	**263**	**0**	**118**	**0**	**118**	**381**
PHF	0.9	0.9	0.9		0.9	0.9	0.9		0.9	0.83	0.9		0.9	0.83	0.9		
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	0	0	0	0	0	0	0	0	0	298	0	298	0	134	0	134	432
Ph 1 background dev	0	0	0	0	0	0	0	0	0	3	0	3	0	9	0	9	12
Total Base - Phase 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**301**	**0**	**301**	**0**	**143**	**0**	**143**	**444**
Ph 2 background growth	0	0	0	0	0	0	0	0	0	337	0	337	0	151	0	151	488
Ph 2 background dev	0	0	0	0	0	0	0	0	0	6	0	6	0	16	0	16	22
Total Base - Phase 2	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**343**	**0**	**343**	**0**	**167**	**0**	**167**	**510**
P1 Site Gen Single Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Site Gen Comm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
P2 Site Gen Single Fam	0	0	0	0	39	0	6	45	1	1	0	2	0	2	14	16	
P2 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
P2 Site Gen Comm	0	0	0	0	0	0	0	0	0	9	0	9	0	6	0	6	
P2 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 2	**0**	**0**	**0**	**0**	**39**	**0**	**6**	**45**	**1**	**10**	**0**	**11**	**0**	**9**	**14**	**23**	**79**
Future - Phase 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**301**	**0**	**301**	**0**	**143**	**0**	**143**	**444**
Future - Phase 2	**0**	**0**	**0**	**0**	**39**	**0**	**6**	**45**	**1**	**353**	**0**	**354**	**0**	**176**	**14**	**190**	**589**

Wrightsboro Road at South Residential Dr

Columbia County
September 17, 2019

PM Peak

	Northbound				Southbound				Eastbound				Westbound				Intersection
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	Total
Existing	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**128**	**0**	**128**	**0**	**290**	**0**	**290**	**418**
PHF	0.9	0.9	0.9		0.9	0.9	0.9		0.9	0.78	0.9		0.9	0.78	0.9		
Growth	2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		2.50%	2.50%	2.50%		
Years growth - Phase 1	5	5	5		5	5	5		5	5	5		5	5	5		
Years growth - Phase 2	10	10	10		10	10	10		10	10	10		10	10	10		
Ph 1 background growth	0	0	0	0	0	0	0	0	0	145	0	145	0	328	0	328	473
Ph 1 background dev	0	0	0	0	0	0	0	0	0	10	0	10	0	5	0	5	15
Total Base - Phase 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**155**	**0**	**155**	**0**	**333**	**0**	**333**	**488**
Ph 2 background growth	0	0	0	0	0	0	0	0	0	164	0	164	0	371	0	371	535
Ph 2 background dev	0	0	0	0	0	0	0	0	0	16	0	16	0	11	0	11	27
Total Base - Phase 2	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**180**	**0**	**180**	**0**	**382**	**0**	**382**	**562**
P1 Site Gen Single Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Site Gen Comm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
P1 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
P2 Site Gen Single Fam	0	0	0	0	28	0	4	32	7	3	0	10	0	0	45	45	
P2 Site Gen Multi Fam	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	
P2 Site Gen Comm	0	0	0	0	0	0	0	0	0	6	0	6	0	7	0	7	
P2 Pass-By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Site Generated - Phase 2	**0**	**0**	**0**	**0**	**28**	**0**	**4**	**32**	**7**	**10**	**0**	**17**	**0**	**8**	**45**	**53**	**102**
Future - Phase 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**155**	**0**	**155**	**0**	**333**	**0**	**333**	**488**
Future - Phase 2	**0**	**0**	**0**	**0**	**28**	**0**	**4**	**32**	**7**	**190**	**0**	**197**	**0**	**390**	**45**	**435**	**664**

EXISTING INTERSECTION OPERATIONS

Infrastructure Systems Management, LLC

Tel 706-836-5160 1557 Broad Street Augusta, GA 30904 www.ismllc-engr.com scassell@ismllc-engr.com

ISM

DELAY (CONTROL)

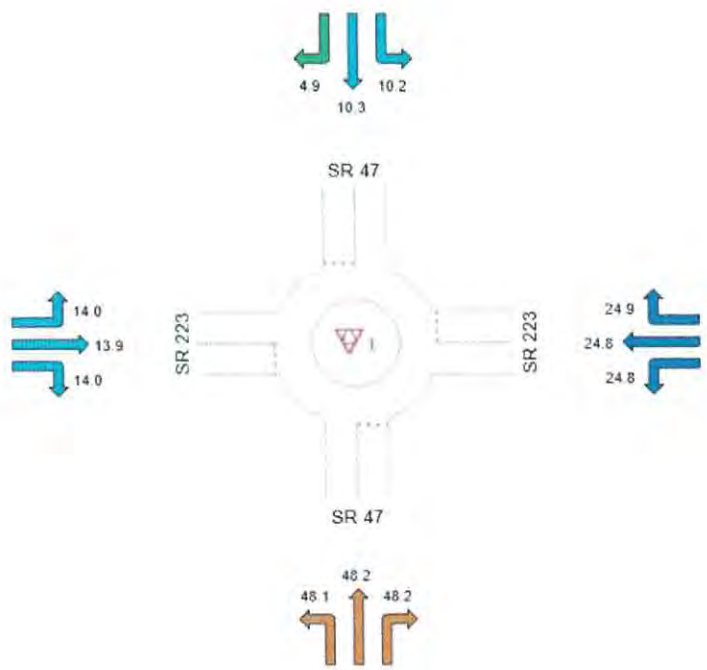
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Existing AM]

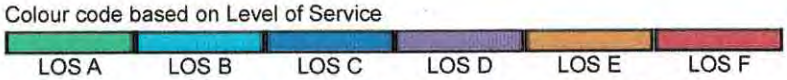
Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	48.2	24.8	9.6	14.0	29.0
LOS	E	C	A	B	D



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

DELAY (CONTROL)

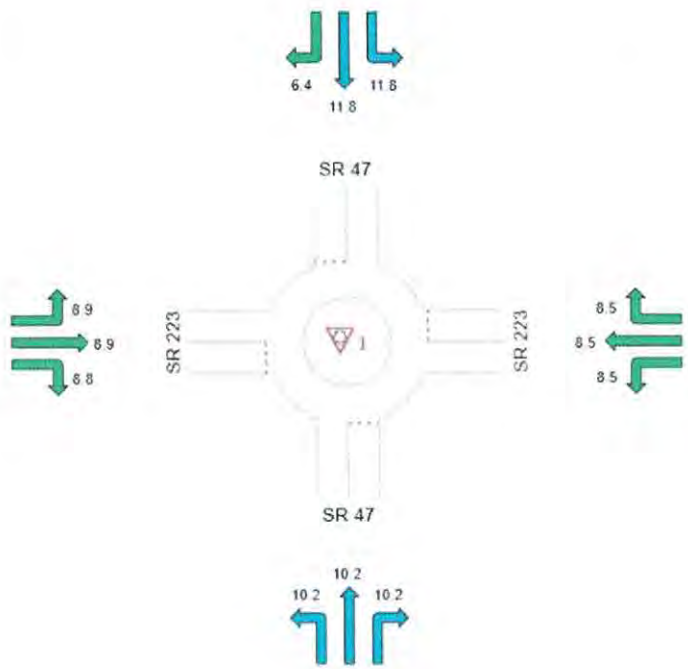
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Existing PM]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	10.2	8.5	10.3	8.9	9.8
LOS	B	A	B	A	A



Colour code based on Level of Service

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

EXISTING INTERSECTION OPERATIONS WITH IMPROVEMENTS

Infrastructure Systems Management, LLC

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ISM

DELAY (CONTROL)

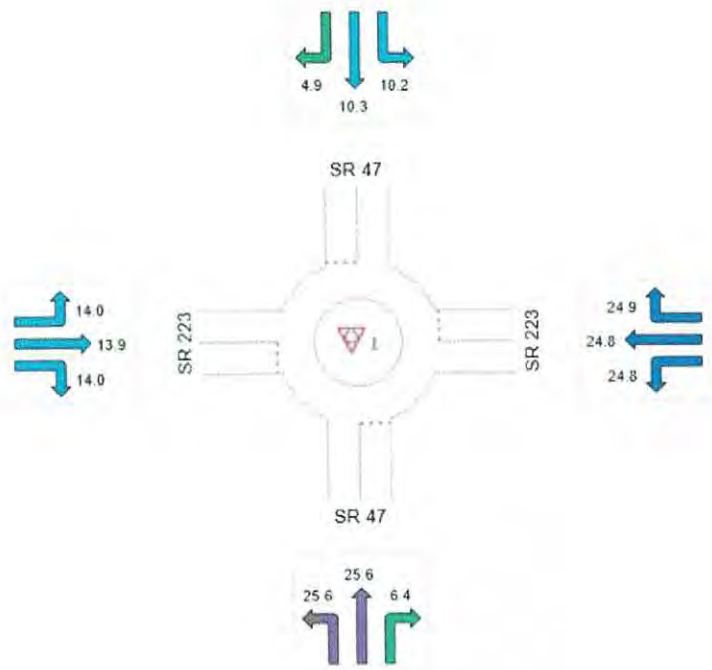
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Existing AM - improved]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	22.5	24.8	9.6	14.0	18.3
LOS	C	C	A	B	C



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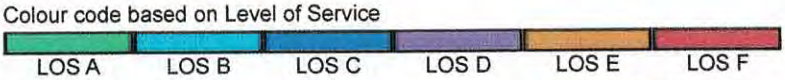


Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

DELAY (CONTROL)

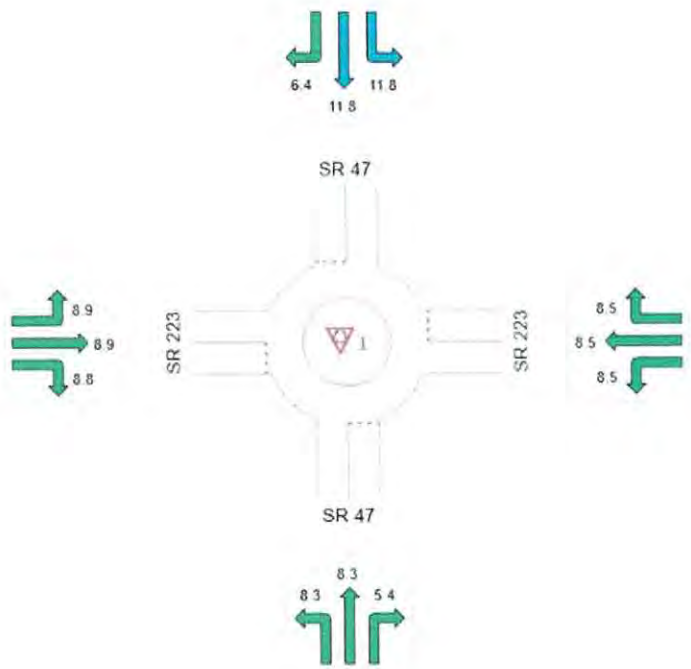
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Existing PM - improved]

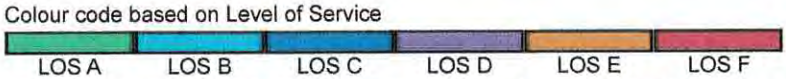
Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	7.6	8.5	10.3	8.9	9.1
LOS	A	A	B	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
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Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

2025 Background Intersection Operations

Infrastructure Systems Management, LLC

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ISM

DELAY (CONTROL)

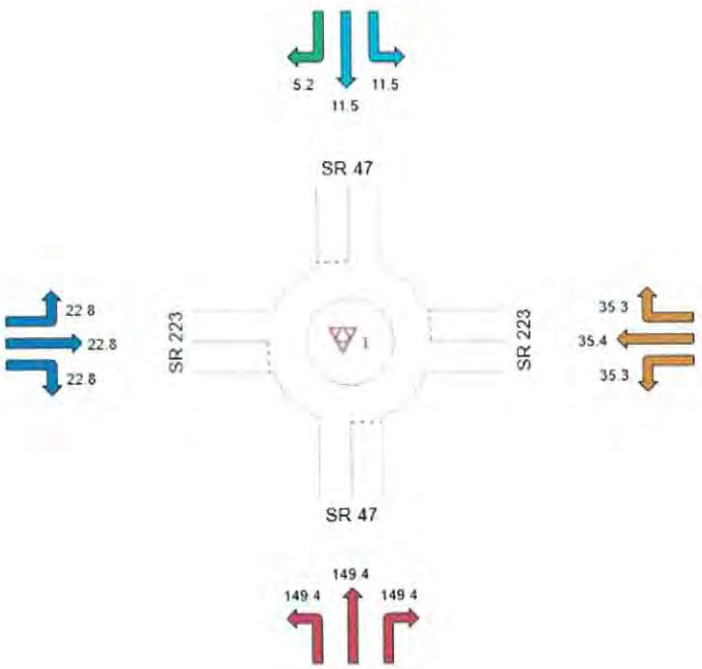
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [2025 Background AM]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	149.4	35.3	10.6	22.8	74.9
LOS	F	E	B	C	F



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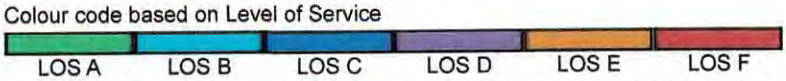


Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	341	1	5	148	2	15
Future Vol, veh/h	341	1	5	148	2	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	371	1	5	161	2	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	372	0	543	372
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	171	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1186	-	501	674
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	859	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1186	-	499	674
Mov Cap-2 Maneuver	-	-	-	-	499	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	647	-	-	1186	-
HCM Lane V/C Ratio	0.029	-	-	0.005	-
HCM Control Delay (s)	10.7	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	299	2	14	136	7	43
Future Vol, veh/h	299	2	14	136	7	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	325	2	15	148	8	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	327	0	504	326
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1233	-	528	715
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1233	-	522	715
Mov Cap-2 Maneuver	-	-	-	-	522	-
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	843	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	680	-	-	1233	-
HCM Lane V/C Ratio	0.08	-	-	0.012	-
HCM Control Delay (s)	10.8	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

DELAY (CONTROL)

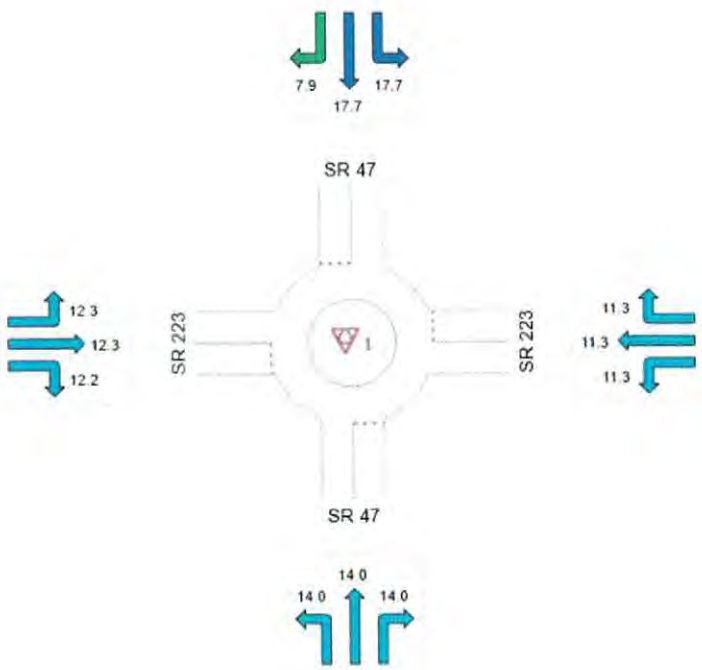
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [2025 Background PM]

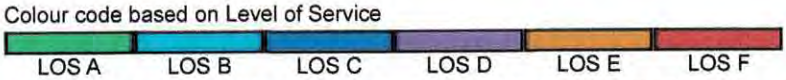
Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	14.0	11.3	14.9	12.3	13.7
LOS	B	B	B	B	B



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	170	3	15	368	0	8
Future Vol, veh/h	170	3	15	368	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	185	3	16	400	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	188	0	619	187
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	432	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1386	-	452	855
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	655	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1386	-	447	855
Mov Cap-2 Maneuver	-	-	-	-	447	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	647	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	855	-	-	1386	-
HCM Lane V/C Ratio	0.01	-	-	0.012	-
HCM Control Delay (s)	9.3	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	148	7	40	328	5	25
Future Vol, veh/h	148	7	40	328	5	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	161	8	43	357	5	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	169	0	608	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	443	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1409	-	459	879
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1409	-	445	879
Mov Cap-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	627	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	756	-	-	1409	-
HCM Lane V/C Ratio	0.043	-	-	0.031	-
HCM Control Delay (s)	10	-	-	7.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

2025 Background Intersection Operations With Systems Improvements

Infrastructure Systems Management, LLC

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ISM

DELAY (CONTROL)

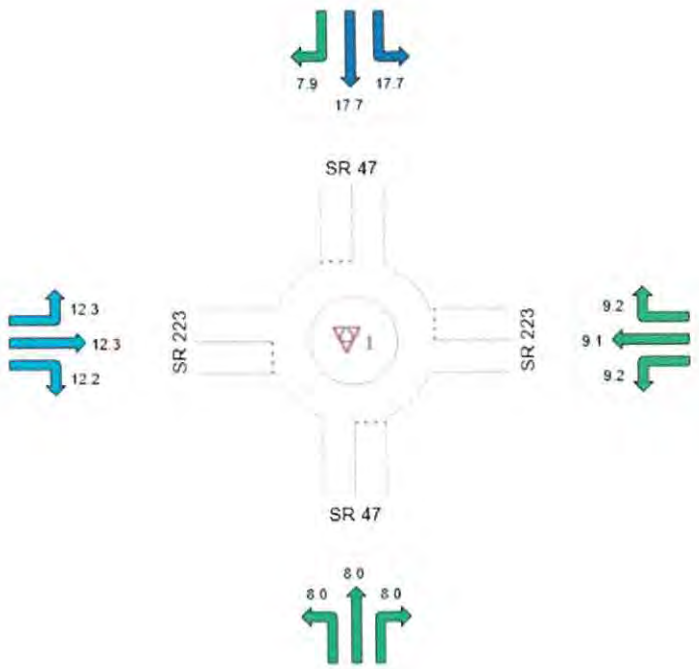
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [2025 Background PM - improved]

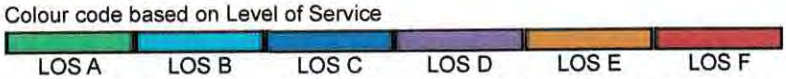
Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	8.0	9.2	14.9	12.3	11.7
LOS	A	A	B	B	B



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

DELAY (CONTROL)

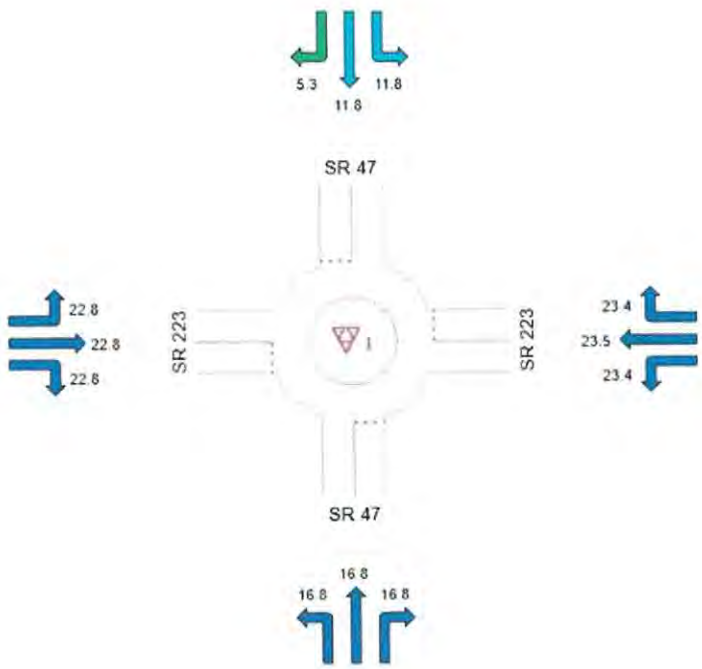
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [2025 Background AM Improved]

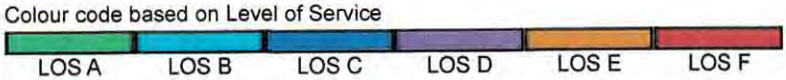
Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	16.8	23.4	10.9	22.8	17.6
LOS	C	C	B	C	C



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

PHASE 1 FUTURE INTERSECTION OPERATIONS

Infrastructure Systems Management, LLC

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ISM

DELAY (CONTROL)

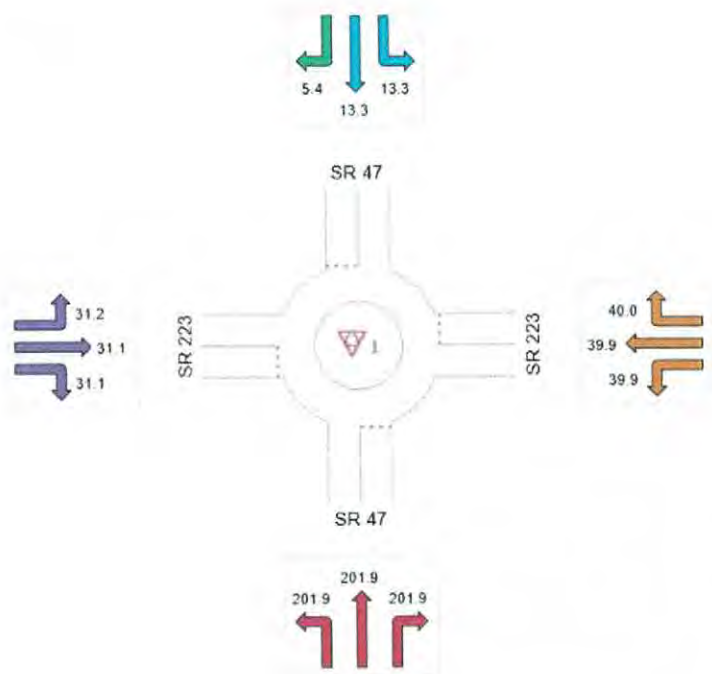
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Phase 1 Future AM]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	201.9	39.9	12.2	31.1	98.7
LOS	F	E	B	D	F



Colour code based on Level of Service

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	27	9	992	529	7
Future Vol, veh/h	21	27	9	992	529	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	310	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	29	10	1078	575	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1673	575	583	0	-	0
Stage 1	575	-	-	-	-	-
Stage 2	1098	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	105	518	991	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	104	518	991	-	-	-
Mov Cap-2 Maneuver	104	-	-	-	-	-
Stage 1	557	-	-	-	-	-
Stage 2	319	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.5	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	991	-	104	518	-	-
HCM Lane V/C Ratio	0.01	-	0.219	0.057	-	-
HCM Control Delay (s)	8.7	-	49.1	12.4	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0	-	0.8	0.2	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	58	943	44	76	480
Future Vol, veh/h	34	58	943	44	76	480
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	175	310	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	63	1025	48	83	522

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1713	1025	0	0	1073	0
Stage 1	1025	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	99	285	-	-	650	-
Stage 1	346	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	86	285	-	-	650	-
Mov Cap-2 Maneuver	86	-	-	-	-	-
Stage 1	346	-	-	-	-	-
Stage 2	435	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	63.7	0	1.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	154	650	-
HCM Lane V/C Ratio	-	-	0.649	0.127	-
HCM Control Delay (s)	-	-	63.7	11.3	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	3.6	0.4	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	284	302	32	25	29
Future Vol, veh/h	35	284	302	32	25	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	250	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	309	328	35	27	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	363	0	-	0	713	328
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	385	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1196	-	-	-	398	713
Stage 1	-	-	-	-	730	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1196	-	-	-	385	713
Mov Cap-2 Maneuver	-	-	-	-	385	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1196	-	-	-	511
HCM Lane V/C Ratio	0.032	-	-	-	0.115
HCM Control Delay (s)	8.1	0	-	-	13
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

DELAY (CONTROL)

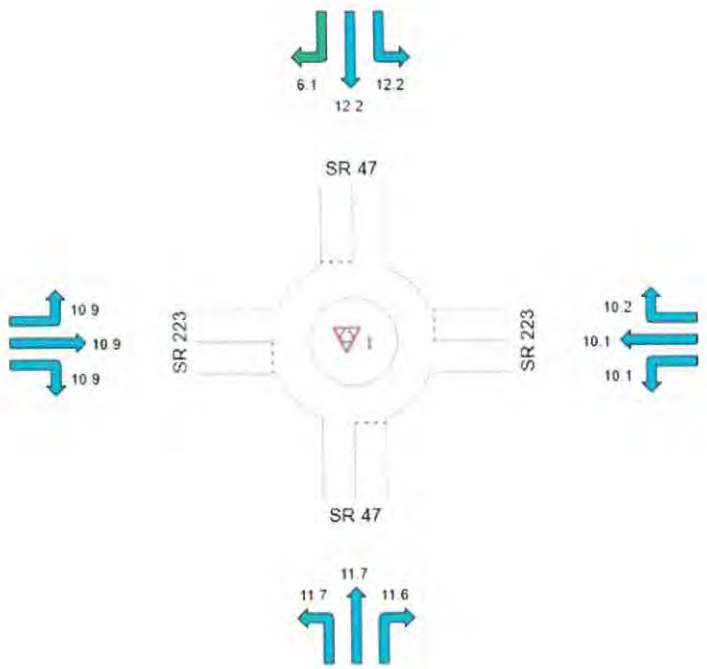
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Phase 1 Future PM]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	11.7	10.2	10.5	10.9	10.8
LOS	B	B	B	B	B



Colour code based on Level of Service

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	18	31	417	513	23
Future Vol, veh/h	13	18	31	417	513	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	310	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	20	34	453	558	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1079	558	583	0	-	0
Stage 1	558	-	-	-	-	-
Stage 2	521	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	242	529	991	-	-	-
Stage 1	573	-	-	-	-	-
Stage 2	596	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	234	529	991	-	-	-
Mov Cap-2 Maneuver	234	-	-	-	-	-
Stage 1	554	-	-	-	-	-
Stage 2	596	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	991	-	234	529	-	-
HCM Lane V/C Ratio	0.034	-	0.06	0.037	-	-
HCM Control Delay (s)	8.8	-	21.4	12.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	85	367	50	73	462
Future Vol, veh/h	55	85	367	50	73	462
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	175	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	92	399	54	79	502

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1059	399	0	0	453	0
Stage 1	399	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	249	651	-	-	1108	-
Stage 1	678	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	231	651	-	-	1108	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	478	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.7	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	380	1108	-
HCM Lane V/C Ratio	-	-	0.4	0.072	-
HCM Control Delay (s)	-	-	20.7	8.5	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.2	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	274	238	32	37	40
Future Vol, veh/h	35	274	238	32	37	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	250	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	298	259	35	40	43

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	294	0	-	0	633	259
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	374	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1268	-	-	-	444	780
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1268	-	-	-	431	780
Mov Cap-2 Maneuver	-	-	-	-	431	-
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	696	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1268	-	-	-	562
HCM Lane V/C Ratio	0.03	-	-	-	0.149
HCM Control Delay (s)	7.9	-	-	-	12.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

PHASE 1 FUTURE INTERSECTION OPERATIONS WITH IMPROVEMENTS

Infrastructure Systems Management, LLC

Tel 706-836-5160 1557 Broad Street Augusta, GA 30904 www.ismllc-engr.com scassell@ismllc-engr.com

ISM

DELAY (CONTROL)

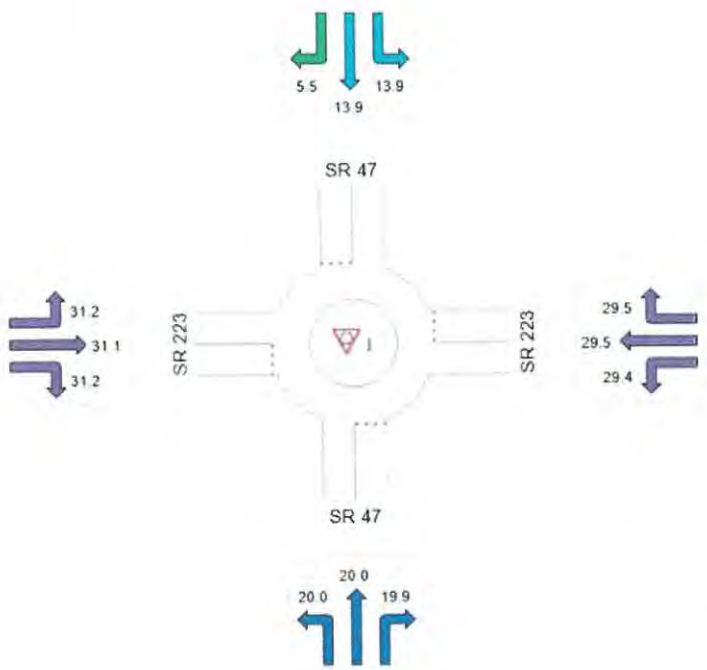
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Phase 1 Future AM Improved]

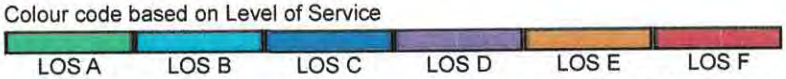
Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	20.0	29.5	12.7	31.2	21.9
LOS	C	D	B	D	C



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

DELAY (CONTROL)

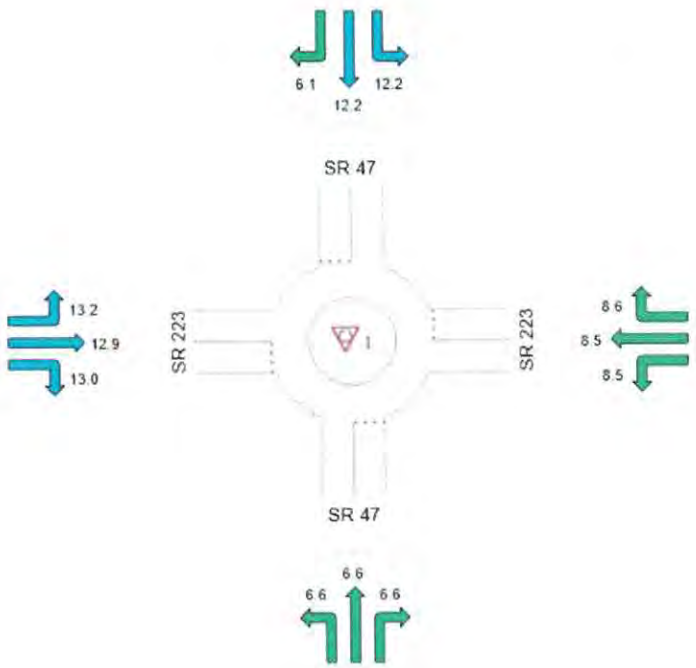
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Phase 1 Future PM Improved]

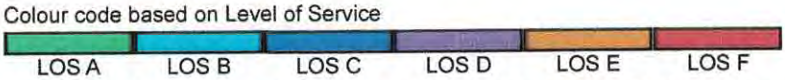
Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	6.6	8.5	10.5	13.0	9.5
LOS	A	A	B	B	A



Colour code based on Level of Service



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LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
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Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

2030 Background Operations

Infrastructure Systems Management, LLC

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ISM

DELAY (CONTROL)

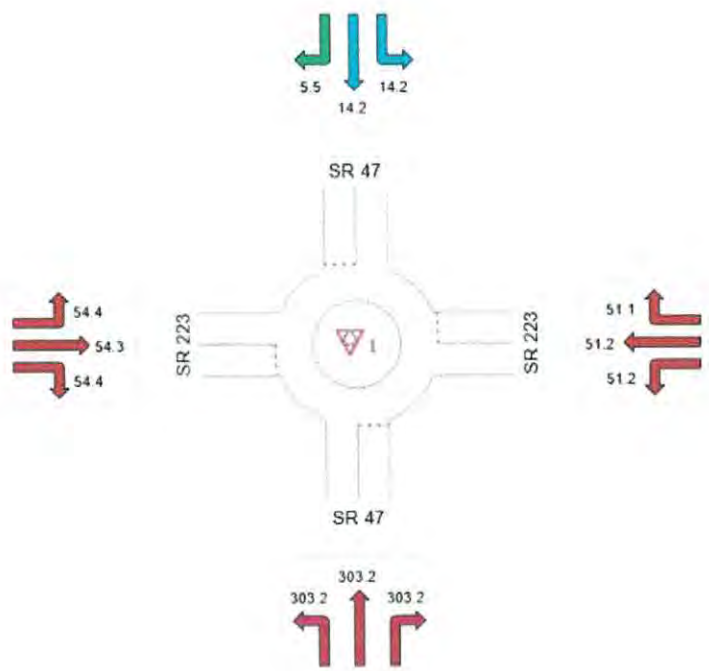
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [2030 Background AM]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	303.2	51.2	12.9	54.4	147.6
LOS	F	F	B	F	F



Colour code based on Level of Service

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	413	1	8	176	3	27
Future Vol, veh/h	413	1	8	176	3	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	449	1	9	191	3	29

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	450	0	659	450
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	209	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1110	-	429	609
Stage 1	-	-	-	-	642	-
Stage 2	-	-	-	-	826	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1110	-	426	609
Mov Cap-2 Maneuver	-	-	-	-	426	-
Stage 1	-	-	-	-	642	-
Stage 2	-	-	-	-	819	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	584	-	-	1110	-
HCM Lane V/C Ratio	0.056	-	-	0.008	-
HCM Control Delay (s)	11.5	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	338	5	25	154	13	76
Future Vol, veh/h	338	5	25	154	13	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	367	5	27	167	14	83

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	372	0	588	367
Stage 1	-	-	-	-	367	-
Stage 2	-	-	-	-	221	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1186	-	471	678
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	816	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1186	-	460	678
Mov Cap-2 Maneuver	-	-	-	-	460	-
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	797	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	634	-	-	1186	-
HCM Lane V/C Ratio	0.153	-	-	0.023	-
HCM Control Delay (s)	11.7	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

DELAY (CONTROL)

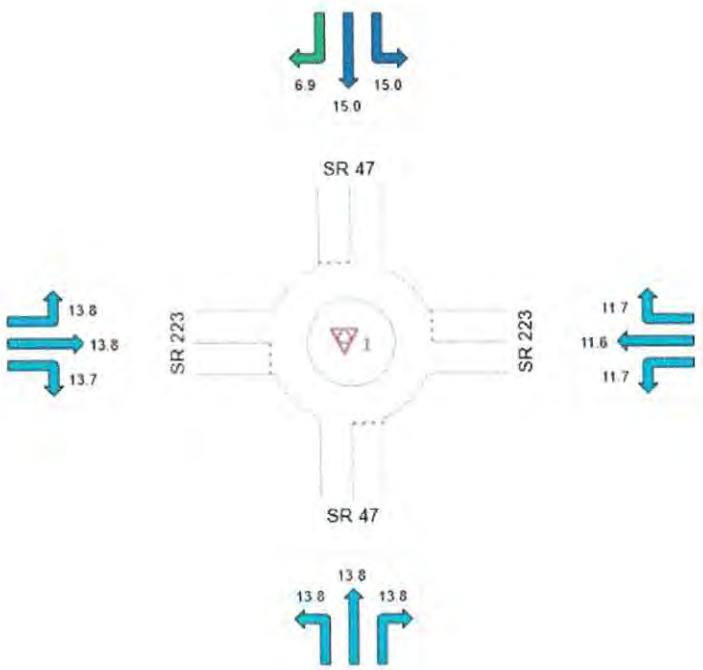
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [2030 Background PM]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	13.8	11.7	12.6	13.8	12.9
LOS	B	B	B	B	B



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	206	4	28	443	3	16
Future Vol, veh/h	206	4	28	443	3	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	224	4	30	482	3	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	228	0	768	226
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	542	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1340	-	370	813
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	583	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1340	-	362	813
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	570	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	679	-	-	1340	-
HCM Lane V/C Ratio	0.03	-	-	0.023	-
HCM Control Delay (s)	10.5	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	168	12	72	374	8	5
Future Vol, veh/h	168	12	72	374	8	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	310	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	183	13	78	407	9	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	196	0	753	190
Stage 1	-	-	-	-	190	-
Stage 2	-	-	-	-	563	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1377	-	377	852
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	570	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1377	-	356	852
Mov Cap-2 Maneuver	-	-	-	-	356	-
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	538	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	459	-	-	1377	-
HCM Lane V/C Ratio	0.031	-	-	0.057	-
HCM Control Delay (s)	13.1	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

2030 Background Intersection Operations With System Improvements

Infrastructure Systems Management, LLC

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ISM

DELAY (CONTROL)

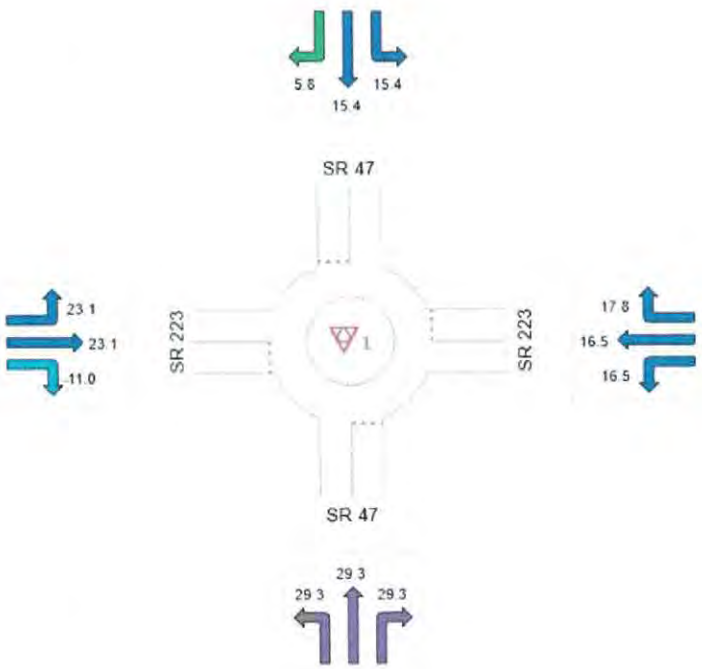
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [2030 Background AM Improved]

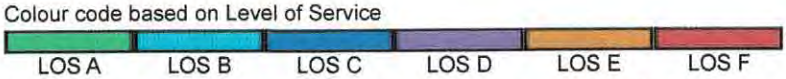
Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	29.3	17.2	14.0	19.5	21.9
LOS	D	C	B	C	C



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

DELAY (CONTROL)

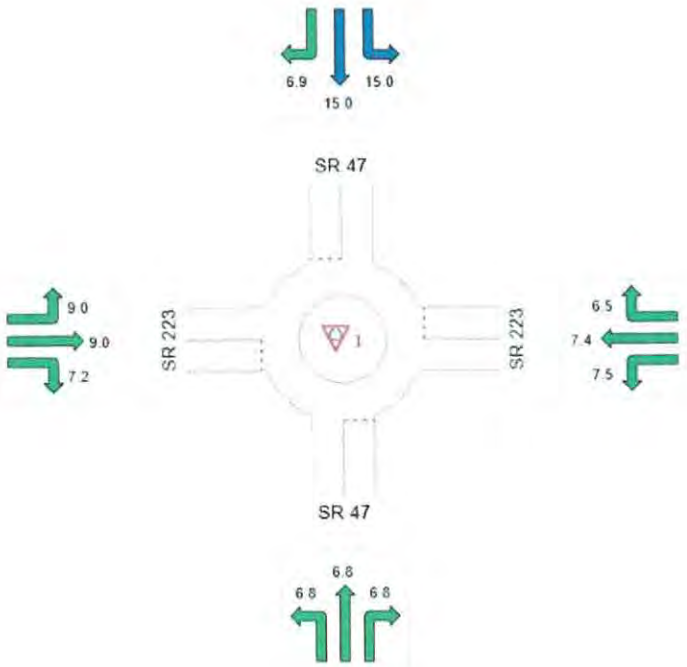
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [2030 Background PM Improved]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	6.8	7.1	12.6	8.4	9.6
LOS	A	A	B	A	A



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

PHASE 2 FUTURE INTERSECTION OPERATIONS

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ISM

DELAY (CONTROL)

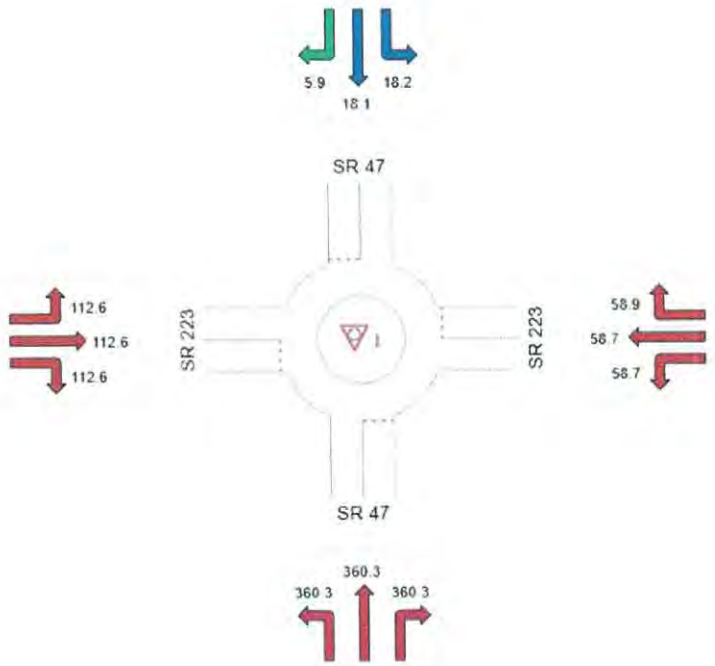
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Phase 2 Future AM]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	360.3	58.8	16.3	112.6	182.6
LOS	F	F	C	F	F



Colour code based on Level of Service

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	37	13	1175	612	13
Future Vol, veh/h	40	37	13	1175	612	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	310	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	40	14	1277	665	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1970	665	679	0	-	0
Stage 1	665	-	-	-	-	-
Stage 2	1305	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	69	460	913	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	254	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	68	460	913	-	-	-
Mov Cap-2 Maneuver	68	-	-	-	-	-
Stage 1	503	-	-	-	-	-
Stage 2	254	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	71.2	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	913	-	68	460	-	-
HCM Lane V/C Ratio	0.015	-	0.639	0.087	-	-
HCM Control Delay (s)	9	-	124.5	13.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0	-	2.8	0.3	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	1	353	176	14	39	6
Future Vol, veh/h	1	353	176	14	39	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	180	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	384	191	15	42	7

Major/Minor	Major1			Major2		Minor2	
Conflicting Flow All	206	0	-	0	577	191	
Stage 1	-	-	-	-	191	-	
Stage 2	-	-	-	-	386	-	
Critical Hdwy	4.12	-	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1365	-	-	-	478	851	
Stage 1	-	-	-	-	841	-	
Stage 2	-	-	-	-	687	-	
Platoon blocked, %		-	-	-			
Mov Cap-1 Maneuver	1365	-	-	-	478	851	
Mov Cap-2 Maneuver	-	-	-	-	478	-	
Stage 1	-	-	-	-	840	-	
Stage 2	-	-	-	-	687	-	

Approach	EB	WB	SW
HCM Control Delay, s	0	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	1365	-	-	-	508
HCM Lane V/C Ratio	0.001	-	-	-	0.096
HCM Control Delay (s)	7.6	-	-	-	12.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	351	353	32	25	29
Future Vol, veh/h	35	351	353	32	25	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	250	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	382	384	35	27	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	419	0	-	0	842	384
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	458	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1140	-	-	-	334	664
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1140	-	-	-	323	664
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	665	-
Stage 2	-	-	-	-	637	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1140	-	-	-	446
HCM Lane V/C Ratio	0.033	-	-	-	0.132
HCM Control Delay (s)	8.3	0	-	-	14.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	8.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	58	1130	44	76	573
Future Vol, veh/h	34	58	1130	44	76	573
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	175	310	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	63	1228	48	83	623

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2017	1228	0	0	1276	0
Stage 1	1228	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	64	217	-	-	544	-
Stage 1	277	-	-	-	-	-
Stage 2	448	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	54	217	-	-	544	-
Mov Cap-2 Maneuver	54	-	-	-	-	-
Stage 1	277	-	-	-	-	-
Stage 2	379	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	157.1	0	1.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	103	544	-
HCM Lane V/C Ratio	-	-	0.971	0.152	-
HCM Control Delay (s)	-	-	157.1	12.8	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	5.9	0.5	-

DELAY (CONTROL)

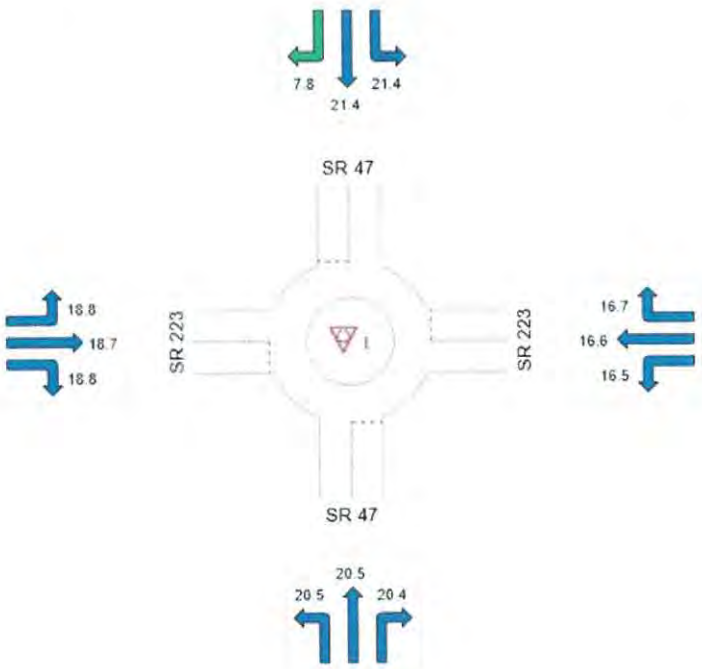
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Phase 2 Future PM]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	20.5	16.6	17.3	18.8	18.3
LOS	C	C	C	C	C



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	7	190	390	45	28	4
Future Vol, veh/h	7	190	390	45	28	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	180	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	207	424	49	30	4

Major/Minor	Major1			Major2		
Conflicting Flow All	473	0	-	0	647	424
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	223	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	436	630
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	433	630
Mov Cap-2 Maneuver	-	-	-	-	433	-
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	814	-

Approach	EB	WB	SW
HCM Control Delay, s	0.3	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	1089	-	-	-	451
HCM Lane V/C Ratio	0.007	-	-	-	0.077
HCM Control Delay (s)	8.3	-	-	-	13.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	331	303	32	37	40
Future Vol, veh/h	35	331	303	32	37	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	250	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	360	329	35	40	43

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	364	0	-	0	765	329			
Stage 1	-	-	-	-	329	-			
Stage 2	-	-	-	-	436	-			
Critical Hdwy	4.12	-	-	-	6.42	6.22			
Critical Hdwy Stg 1	-	-	-	-	5.42	-			
Critical Hdwy Stg 2	-	-	-	-	5.42	-			
Follow-up Hdwy	2.218	-	-	-	3.518	3.318			
Pot Cap-1 Maneuver	1195	-	-	-	371	712			
Stage 1	-	-	-	-	729	-			
Stage 2	-	-	-	-	652	-			
Platoon blocked, %		-	-	-					
Mov Cap-1 Maneuver	1195	-	-	-	359	712			
Mov Cap-2 Maneuver	-	-	-	-	359	-			
Stage 1	-	-	-	-	706	-			
Stage 2	-	-	-	-	652	-			

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1195	-	-	-	484
HCM Lane V/C Ratio	0.032	-	-	-	0.173
HCM Control Delay (s)	8.1	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	24	42	509	608	44
Future Vol, veh/h	25	24	42	509	608	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	310	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	26	46	553	661	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1306	661	709	0	-	0
Stage 1	661	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	176	462	890	-	-	-
Stage 1	514	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	167	462	890	-	-	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	522	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.2	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	890	-	167	462	-	-
HCM Lane V/C Ratio	0.051	-	0.163	0.056	-	-
HCM Control Delay (s)	9.3	-	30.7	13.3	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	0.2	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	85	470	50	73	591
Future Vol, veh/h	55	85	470	50	73	591
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	175	310	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	92	511	54	79	642

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1311	511	0	0	565	0
Stage 1	511	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	175	563	-	-	1007	-
Stage 1	602	-	-	-	-	-
Stage 2	442	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	161	563	-	-	1007	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.4	0	1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	284	1007	-
HCM Lane V/C Ratio	-	-	0.536	0.079	-
HCM Control Delay (s)	-	-	31.4	8.9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	2.9	0.3	-

PHASE 2 FUTURE INTERSECTION OPERATIONS WITH IMPROVEMENTS

Infrastructure Systems Management, LLC

Tel 706-836-5160 1557 Broad Street Augusta, GA 30904 www.ismllc-engr.com scassell@ismllc-engr.com

ISM

DELAY (CONTROL)

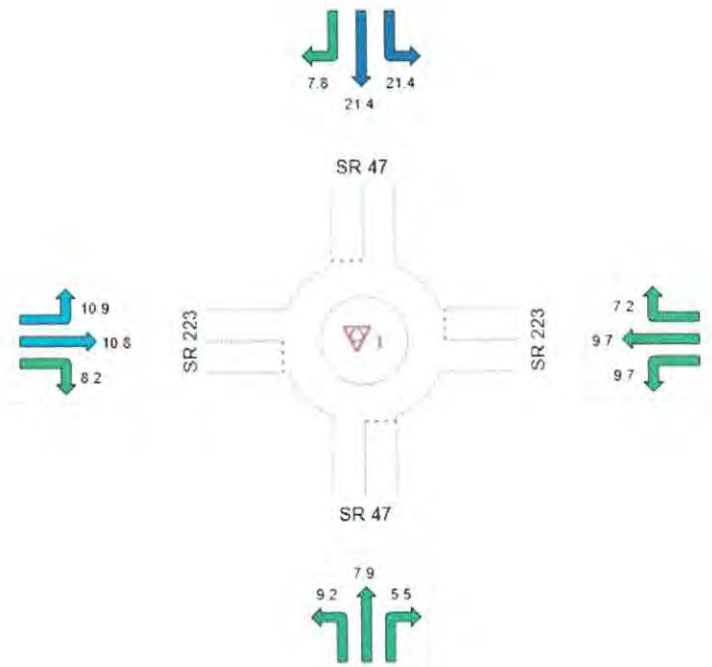
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Phase 2 Future PM Improved]

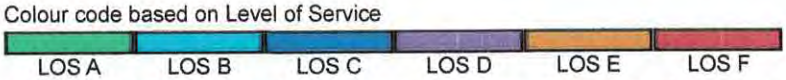
Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	7.7	8.9	17.3	10.0	12.2
LOS	A	A	C	A	B



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

DELAY (CONTROL)

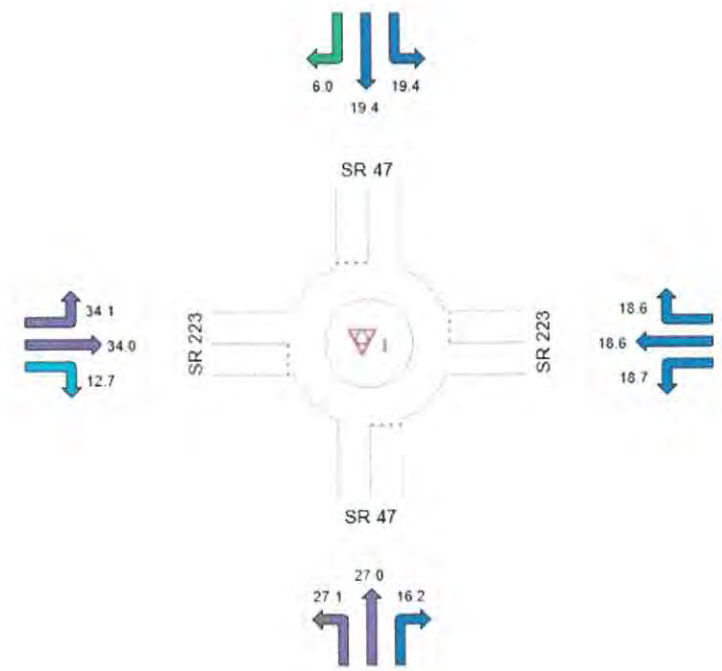
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 1 [Phase 2 Future AM Improved]

Roundabout with 1-lane approaches and circulating road, and an extra turn lane
MUTCD (FHWA 2009) example number: 3C-3
Roundabout Guide (TRB 2010) example number: A-2
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	25.1	18.6	17.4	27.8	22.8
LOS	D	C	C	D	C

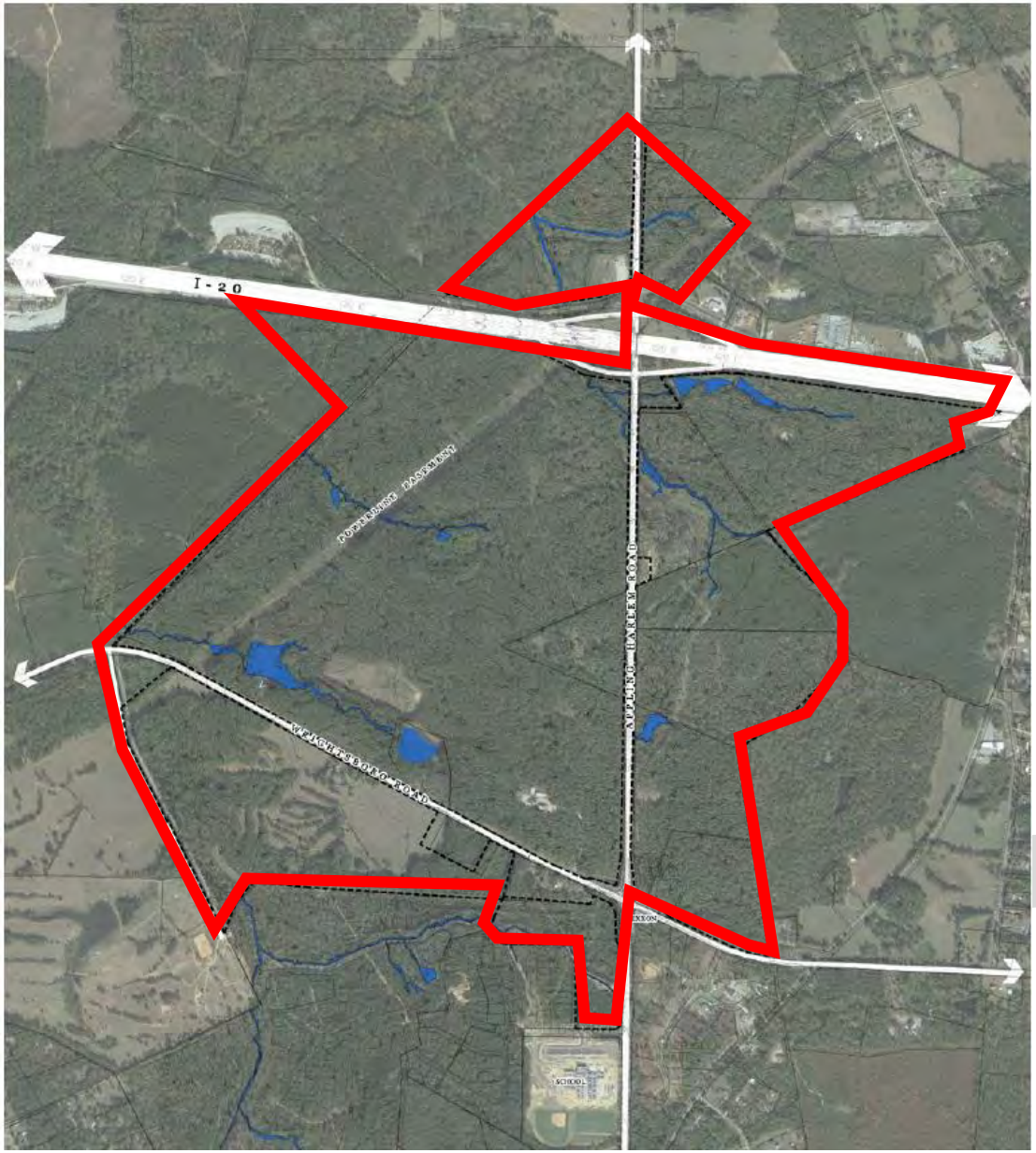


Colour code based on Level of Service

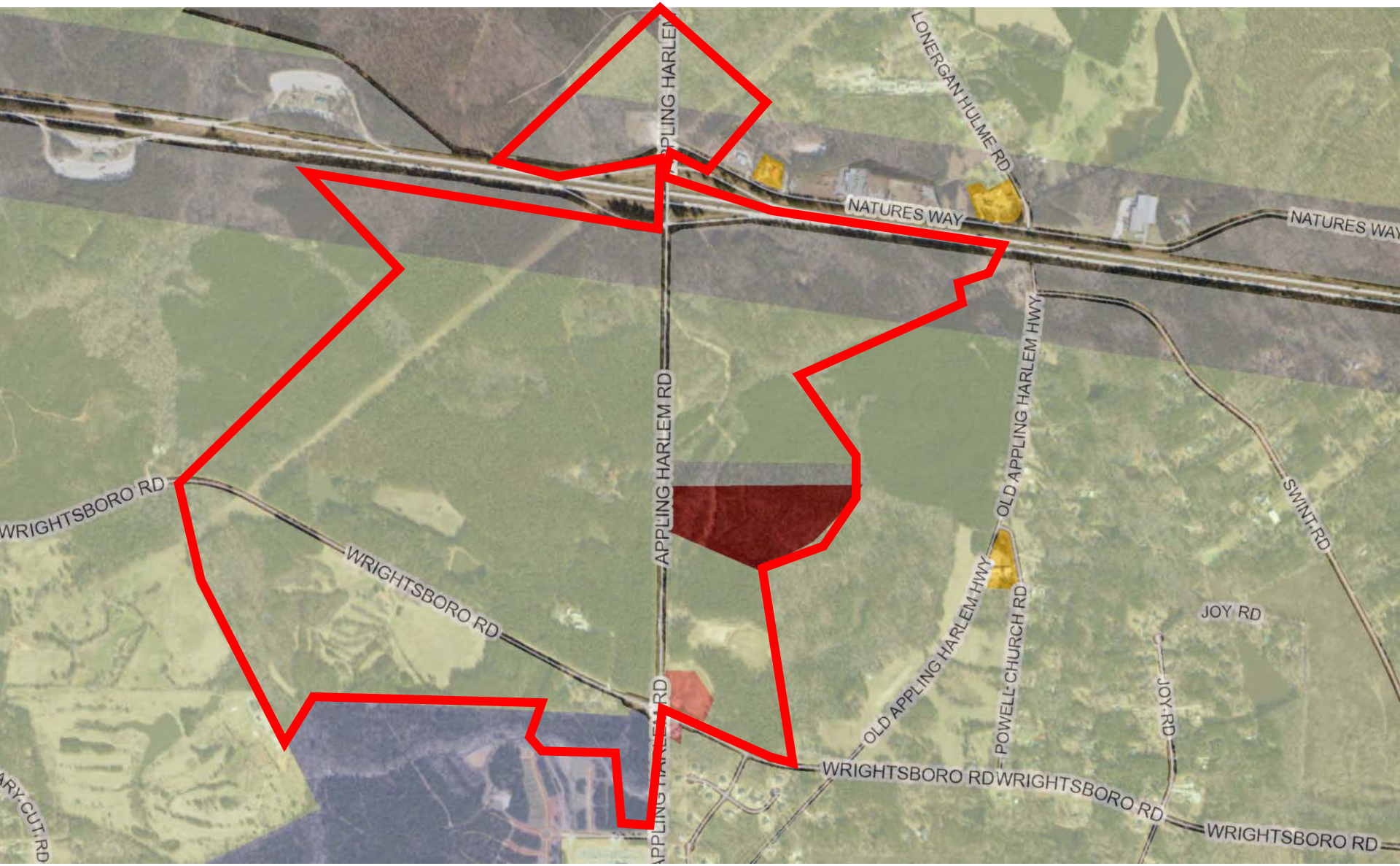
Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

REZONING RZ20-04-02

- Tax Map 029 Parcels 037B, 057, 030, 034, 048A, 048B, 039A, 036, and 038
- Tax Map 030 Parcels 083 and 083T
- Location: Appling Harlem Road
- Acreage: 832 +/- Acres
- Current Zoning: R-A (Residential Agricultural), M-1 (Light Industrial), & C-3 (Heavy Commercial)
- Existing Use: Vacant
- Request: PUD (Planned Unit Development)
- Applicant: R Lionel Prather

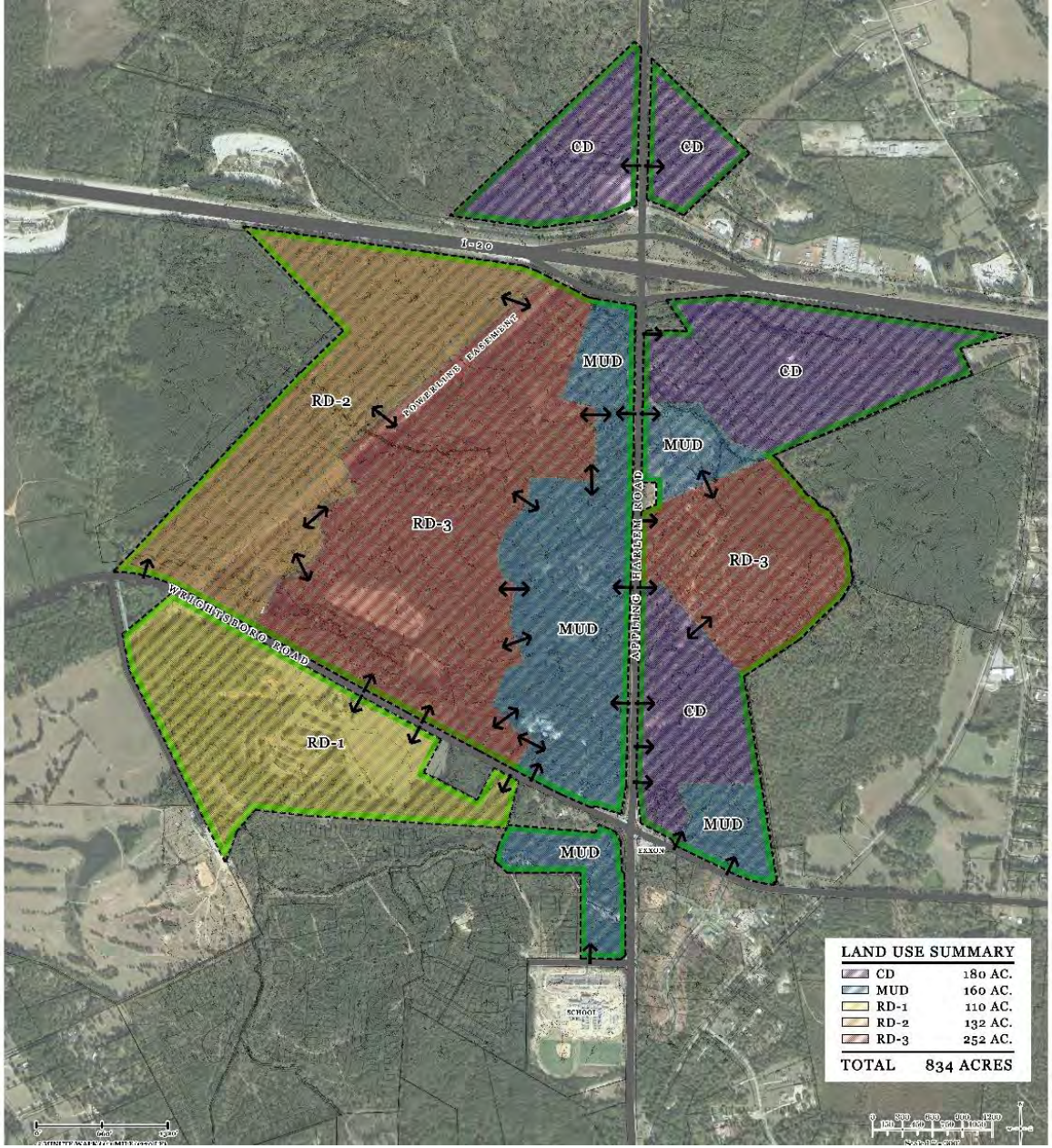


RZ20-04-02 LOCATION

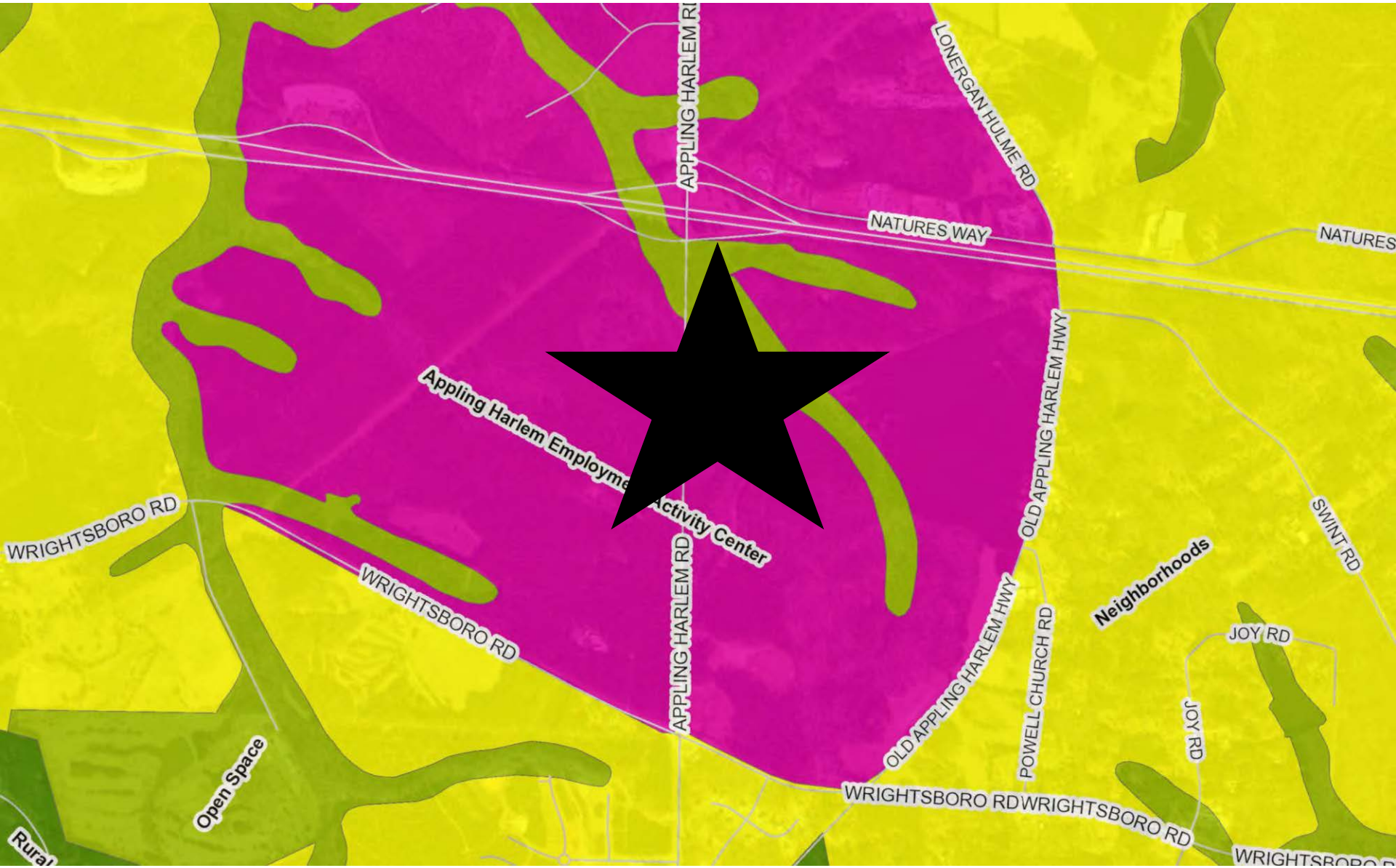


RZ20-04-02 ZONING

RZ20-04-02 AERIAL



RZ20-04-02 SITE PLAN



RZ20-04-02 FUTURE LAND USE

Office Use Only
Date Received:
Public Hearing Date:
File #
BOC Meeting Date:
Commission District:

ZONING APPLICATION

COLUMBIA COUNTY, GEORGIA

PLEASE SELECTION ONE

Type of Application: ☑ Rezoning ☐ Plan Revision ☐ Variance ☐ Variation ☐ Conditional Use

Date of Application: MAR. 6, 2020

Rezoning: The undersigned requests that the property described be rezoned from RA, C3 to PUD.

Plan Revision[1]: The undersigned requests a revision to the current _____ zoning.

Variance[2]: The undersigned requests a variance to Section _____ of the Columbia County Code of Ordinances.

Variation[3]: The undersigned requests a variation to Section _____ of the Columbia County Code of Ordinances.

NOTE: Please see footnotes on the backside of this sheet.

PROPERTY INFORMATION: SEE ATTACHED

Tax Map #_____ Parcel # _____ Address: _____
(For multiple properties, please use a separate sheet of paper.) Road Frontage:_____feet on the North / South / East / West (circle one) side of _____. Property area is approximately _____ acres and is located _____feet from the intersection of _____.The attached plat for the property was prepared by_____and dated_____

PROPOSED USE (for rezoning):
If approved, the property will be used for the following purpose(s): PLANNED UNIT DEVELOPMENT/ MIXED USE

OWNERSHIP AND APPLICANT INFORMATION:

OWNER: EUCHEE CREEK DEVELOPMENT CO.
ADDRESS: 4002 ENTERPRISE CT.
CITY: MARTINEZ STATE: GA ZIP: 30907
PHONE #: 706-799-9286
Email (or) Fax: lprather@prathercompany.com

APPLICANT: R. LIONEL PRATHER
ADDRESS: 4002 ENTERPRISE CT.
CITY: MARTINEZ STATE: GA ZIP: 30907
PHONE#: 706-799-9286
Email (or) Fax: lprather@prathercompany.com

DISCLOSURE
Does any local government official or member of their family have a financial interest in the property, or has the applicant made campaign contributions in the aggregate of $250 or more within the past two years to any local government official? (Yes or No). **If yes, a full written disclosure must be submitted with this application.**

I hereby depose and say under the penalty of perjury that all of the statements contained in or submitted with this application are true.

_____ Owner's Signature

R. LIONEL PRATHER, SEC.
Printed Name

_____ Applicant's Signature

R. LIONEL PRATHER
Printed Name

Subscribed and sworn to before me on 5 day of MAR 20 20.
By: _____ Notary Public

JAMES B. TROTTER NOTARY PUBLIC RICHMOND COUNTY, GA My Commission Expires August 28, 2021

Please return original notarized application with all supporting documentation and fees, to the Columbia County Planning Department, P.O. Box 498, Evans, GA 30809. Refer to *Fee Schedule*.

Zoning Application – Supplement

Euchee Creek Development Co.

Property Information:

Tax Map and Parcel Nos:

1.	Parcel 029 048A	41.81 acres	Euchee Creek Development Co.
2.	Parcel 029 048B	32.28 acres	Euchee Creek Development Co.
3.	Parcel 030 083T	21.42 acres	Euchee Creek Development Co.

Disclosure:

Euchee Creek Development Co.'s shareholders and officers have made the following campaign contributions:

1.	Larry S. Prather, Sr.	$2,000 to Doug Duncan on 9/26/17
		$1,500 to Doug Duncan on 4/26/18
		$1,000 to Dewey Galeas on 3/22/18
		$1,500 to Connie Melear on 4/26/18
2.	R. Lionel Prather	$500 to Doug Duncan on 12/8/17
3.	Larry S. Prather, Jr.	$500 to Doug Duncan (date unknown)

Office Use Only
Date Received:
Public Hearing Date:
File #
BOC Meeting Date:
Commission District:

ZONING APPLICATION

COLUMBIA COUNTY, GEORGIA

PLEASE SELECTION ONE

Type of Application: ☑ **Rezoning** ☐ **Plan Revision** ☐ **Variance** ☐ **Variation** ☐ **Conditional Use**

Date of Application: 3-6-2020

Rezoning: The undersigned requests that the property described be rezoned from R-A to PUD.

Plan Revision[1]: The undersigned requests a revision to the current _____ zoning.

Variance[2]: The undersigned requests a variance to Section _____ of the Columbia County Code of Ordinances.

Variation[3]: The undersigned requests a variation to Section _____ of the Columbia County Code of Ordinances.

NOTE: Please see footnotes on the backside of this sheet.

PROPERTY INFORMATION:

Tax Map # 29 Parcel # 038 Address: 6367 Wrightsboro Road - Harlem, Ga

(For multiple properties, please use a separate sheet of paper.) Road Frontage: 492 feet on the North / South / East / West (circle one) side of Wrightsboro Road. Property area is approximately 8.00 acres and is located 1800' feet from the intersection of Wrightsboro / Appling Harlem Road. The attached plat for the property was prepared by _____ and dated _____

PROPOSED USE (for rezoning):

If approved, the property will be used for the following purpose(s): PLANNED UNIT DEVELOPMENT/ MIXED USE

OWNERSHIP AND APPLICANT INFORMATION:

OWNER: Julia Prather	APPLICANT: Rhonel Prather
ADDRESS: 6367 Wrightsboro Road	ADDRESS: 4602 Enterprise Ct
CITY: Harlem STATE: Ga ZIP: 30814	CITY: North 12 STATE: GA ZIP: 31907
PHONE #: 706 550-6707	PHONE#: 706 799 2880
Email (or) Fax: _____	Email (or) Fax: prather@prathercompany.com

DISCLOSURE

Does any local government official or member of their family have a financial interest in the property, or has the applicant made campaign contributions in the aggregate of $250 or more within the past two years to any local government official? (Yes or No). **If yes, a full written disclosure must be submitted with this application.**

I hereby depose and say under the penalty of perjury that all of the statements contained in or submitted with this application are true.

Julia Prather
Owner's Signature

Julia D. Prather
Printed Name

RPre
Applicant's Signature

Rhonel Prather
Printed Name

Subscribed and sworn to before me on 4 day of MAR 20 20

By: _____ Notary Public

JAMES B. TROTTER NOTARY PUBLIC RICHMOND COUNTY, GA My Commission Expires August 25, 2021

Please return original notarized application with all supporting documentation and fees, to the Columbia County Planning Department, P.O. Box 498, Evans, GA 30809. Refer to *Fee Schedule.*

Office Use Only
Date Received:
Public Hearing Date:
File #
BOC Meeting Date:
Commission District:

ZONING APPLICATION

COLUMBIA COUNTY, GEORGIA

PLEASE SELECTION ONE

Type of Application: ☑ Rezoning ☐ Plan Revision ☐ Variance ☐ Variation ☐ Conditional Use

Date of Application: 3-6-2020

Rezoning: The undersigned requests that the property described be rezoned from R-A to PUD.

Plan Revision[1]: The undersigned requests a revision to the current _____ zoning.

Variance[2]: The undersigned requests a variance to Section _____ of the Columbia County Code of Ordinances.

Variation[3]: The undersigned requests a variation to Section _____ of the Columbia County Code of Ordinances.

NOTE: Please see footnotes on the backside of this sheet.

PROPERTY INFORMATION:

Tax Map # 029 Parcel # 039A Address: 6392 Wrightsboro Road Harlem

(For multiple properties, please use a separate sheet of paper.) Road Frontage: 2560' feet on the North / South / East / West (circle one) side of Wrightsboro Rd. Property area is approximately 100 acres and is located 1300 feet from the intersection of W Rightsboro Road / Appling Harlem. The attached plat for the property was prepared by James Swift and dated 2/20/2019

PROPOSED USE (for rezoning):

If approved, the property will be used for the following purpose(s):

Residential Lots

OWNERSHIP AND APPLICANT INFORMATION:

OWNER: Larry S. Prather
ADDRESS: 1001 Sawgrass Drive
CITY: Martinez STATE: GA ZIP: 30907
PHONE #: 706 556-6271
Email (or) Fax: _____

APPLICANT: R. Lionel Prather
ADDRESS: 4002 Enterprise Ct.
CITY: Martinez STATE: GA ZIP: 30907
PHONE#: _____
Email (or) Fax: _____

DISCLOSURE

Does any local government official or member of their family have a financial interest in the property, or has the applicant made campaign contributions in the aggregate of $250 or more within the past two years to any local government official? (Yes or No). **If yes, a full written disclosure must be submitted with this application.**

I hereby depose and say under the penalty of perjury that all of the statements contained in or submitted with this application are true.

Larry S Prather
Owner's Signature

R Lionel Prather
Applicant's Signature

LARRY S PRATHER
Printed Name

R Lionel Prather
Printed Name

Subscribed and sworn to before me on 3 day of MARCH 20 20

By: _____ Notary Public

JAMES B. TROTTER NOTARY PUBLIC RICHMOND COUNTY, GA My Commission Expires August 26, 2021

Please return original notarized application with all supporting documentation and fees, to the Columbia County Planning Department, P.O. Box 498, Evans, GA 30809. Refer to *Fee Schedule.*

Zoning Application – Supplement

Larry S. Prather, Sr.

Larry S. Prather, Sr. has made the following campaign contributions:

Larry S. Prather, Sr.	$2,000 to Doug Duncan on 9/26/17
	$1,500 to Doug Duncan on 4/26/18
	$1,000 to Dewey Galeas on 3/22/18
	$1,500 to Connie Melear on 4/26/18

Office Use Only
Date Received:
Public Hearing Date:
File #
BOC Meeting Date:
Commission District:

ZONING APPLICATION

COLUMBIA COUNTY, GEORGIA

PLEASE SELECTION ONE

Type of Application: ☑ **Rezoning** ☐ **Plan Revision** ☐ **Variance** ☐ **Variation** ☐ **Conditional Use**

Date of Application: MAR. 6, 2020

Rezoning: The undersigned requests that the property described be rezoned from RA, M1 to PUD.

Plan Revision[1]**:** The undersigned requests a revision to the current _____ zoning.

Variance[2]**:** The undersigned requests a variance to Section _____ of the Columbia County Code of Ordinances.

Variation[3]**:** The undersigned requests a variation to Section _____ of the Columbia County Code of Ordinances.

NOTE: Please see footnotes on the backside of this sheet.

PROPERTY INFORMATION: SEE ATTACHED

Tax Map #_____ Parcel # _____ Address: _____
(For multiple properties, please use a separate sheet of paper.) Road Frontage:_____feet on the North / South / East / West (circle one) side of _____. Property area is approximately _____ acres and is located _____feet from the intersection of _____.The attached plat for the property was prepared by_____and dated_____

PROPOSED USE (for rezoning):
If approved, the property will be used for the following purpose(s): PLANNED UNIT DEVELOPMENT; MIXED USE

OWNERSHIP AND APPLICANT INFORMATION:

OWNER: PUMPKIN CENTER PROPERTIES, LLP	APPLICANT: R. LIONEL PRATHER
ADDRESS: 4002 ENTERPRISE CT	ADDRESS: 4002 ENTERPRISE CT.
CITY: MARTINEZ STATE: GA ZIP: 30907	CITY: MARTINEZ STATE: GA ZIP: 30907
PHONE #: 706·799·9286	PHONE#: 706·799·9286
Email (or) Fax: lprather@prathercompany.com	Email (or) Fax: lprather@prathercompany.com

DISCLOSURE
Does any local government official or member of their family have a financial interest in the property, or has the applicant made campaign contributions in the aggregate of $250 or more within the past two years to any local government official? (Yes or No). **If yes, a full written disclosure must be submitted with this application.**

I hereby depose and say under the penalty of perjury that all of the statements contained in or submitted with this application are true.

_____	_____
Owner's Signature	Applicant's Signature
R. LIONEL PRATHER, AS PARTNE	R. LIONEL PRATHER
Printed Name	Printed Name

Subscribed and sworn to before me on 5 day of MAR. 20 20.

By: _____ Notary Public

JAMES B. TROTTER NOTARY PUBLIC RICHMOND COUNTY, GA My Commission Expires August 28, 2021

Please return original notarized application with all supporting documentation and fees, to the Columbia County Planning Department, P.O. Box 498, Evans, GA 30809. Refer to *Fee Schedule*.

Zoning Application – Supplement

Pumpkin Center Properties, LLLP

Property Information:

Tax Map and Parcel Nos:

1.	Parcel 029 037B	479.70 acres	Pumpkin Center Properties, LLLP
2.	Parcel 029 057	18.90 acres	Pumpkin Center Properties, LLLP
3.	Parcel 029 030	38.00 acres	Pumpkin Center Properties, LLLP
4.	Parcel 029 034	68.49 acres	Pumpkin Center Properties, LLLP
5.	Parcel 030 083	Approx 12 ac.	Pumpkin Center Properties, LLLP

Disclosure:

Pumpkin Center Properties, LLLP's partners have made the following campaign contributions:

1.	Larry S. Prather, Sr.	$2,000 to Doug Duncan on 9/26/17
		$1,500 to Doug Duncan on 4/26/18
		$1,000 to Dewey Galeas on 3/22/18
		$1,500 to Connie Melear on 4/26/18
2.	R. Lionel Prather	$500 to Doug Duncan on 12/8/17
3.	Larry S. Prather, Jr.	$500 to Doug Duncan (date unknown)

Office Use Only	
Date Received:	
Public Hearing Date:	
File #	
BOC Meeting Date:	
Commission District:	

ZONING APPLICATION

COLUMBIA COUNTY, GEORGIA

PLEASE SELECTION ONE

Type of Application: ☑ Rezoning ☐ Plan Revision ☐ Variance ☐ Variation ☐ Conditional Use

Date of Application: MAR. 6, 2020

Rezoning: The undersigned requests that the property described be rezoned from RA to PUD.

Plan Revision[1]**:** The undersigned requests a revision to the current _____ zoning.

Variance[2]**:** The undersigned requests a variance to Section _____ of the Columbia County Code of Ordinances.

Variation[3]**:** The undersigned requests a variation to Section _____ of the Columbia County Code of Ordinances.

NOTE: Please see footnotes on the backside of this sheet.

PROPERTY INFORMATION:

Tax Map # 029 Parcel # 036 Address: 1382 APPLING HARLEM RD

(For multiple properties, please use a separate sheet of paper.) Road Frontage: 1044 feet on the North / South / East / West (circle one) side of APPLING-HARLEM RD. Property area is approximately 13.63 acres and is located _____ feet from the intersection of _____. The attached plat for the property was prepared by JOHN M. HARRISS and dated 1994

PROPOSED USE (for rezoning):

If approved, the property will be used for the following purpose(s): PLANNED UNIT DEVELOPMENT/ MIXED USE

OWNERSHIP AND APPLICANT INFORMATION:

OWNER: R. LIONEL PRATHER	APPLICANT: SAME
ADDRESS: 4002 ENTERPRISE CT	ADDRESS:
CITY: MARTINEZ STATE: GA ZIP: 30907	CITY: STATE: ZIP:
PHONE #: 706.799.9286	PHONE#:
Email (or) Fax: lprather@prathercompany.com	Email (or) Fax:

DISCLOSURE

Does any local government official or member of their family have a financial interest in the property, or has the applicant made campaign contributions in the aggregate of $250 or more within the past two years to any local government official? (Yes or No). **If yes, a full written disclosure must be submitted with this application.**

I hereby depose and say under the penalty of perjury that all of the statements contained in or submitted with this application are true.

Owner's Signature	Applicant's Signature
R. LIONEL PRATHER	R. LIONEL PRATHER
Printed Name	Printed Name

Subscribed and sworn to before me on 5 day of MAR 20 20.

By: _____ Notary Public

JAMES B. TROTTER NOTARY PUBLIC RICHMOND COUNTY, GA My Commission Expires August 28, 2021

Please return original notarized application with all supporting documentation and fees, to the Columbia County Planning Department, P.O. Box 498, Evans, GA 30809. Refer to *Fee Schedule*.

Date Received: _____
Public Hearing Date: _____
File # _____

ZONING APPLICATION

COLUMBIA COUNTY, GEORGIA

ADDITIONAL OWNERSHIP INFORMATION:

OWNER: Larry Prather Jr
ADDRESS: 304 Valhalla Ct.
CITY: Martinez STATE: GA ZIP: 30907
PHONE #: 706-799-7864
Email (or) Fax: Lar Prath @ Bellsouth. Net

OWNER: _____
ADDRESS: _____
CITY: _____ STATE: ____ ZIP: _____
PHONE#: _____
Email (or) Fax: _____

DISCLOSURE

Does any local government official or member of their family have a financial interest in the property, or has the applicant made campaign contributions in the aggregate of $250 or more within the past two years to any local government official? (Yes or No). **If yes, a full written disclosure must be submitted with this application.**

I hereby depose and say under the penalty of perjury that all of the statements contained in or submitted with this application are true.

Larry Prather
Owner's Signature

Larry Prather Jr.
Printed Name

_____
Owner's Signature

_____
Printed Name

Subscribed and sworn to before me on 5 day of Mar 20 20.

By: _____ Notary Public

JAMES B. TROTTER NOTARY PUBLIC My Commission Expires August 28, 2021 RICHMOND COUNTY, GA

ADDITIONAL OWNERSHIP INFORMATION:

OWNER: _____
ADDRESS: _____
CITY: _____ STATE: ____ ZIP: _____
PHONE #: _____
Email (or) Fax: _____

OWNER: _____
ADDRESS: _____
CITY: _____ STATE: ____ ZIP: _____
PHONE#: _____
Email (or) Fax: _____

DISCLOSURE

Does any local government official or member of their family have a financial interest in the property, or has the applicant made campaign contributions in the aggregate of $250 or more within the past two years to any local government official? (Yes or No). **If yes, a full written disclosure must be submitted with this application.**

I hereby depose and say under the penalty of perjury that all of the statements contained in or submitted with this application are true.

_____
Owner's Signature

_____
Printed Name

_____
Owner's Signature

_____
Printed Name

Subscribed and sworn to before me on _____ day of _____ 20____.

By: _____ Notary Public

R:drive: Planning and Development/Forms Zoning and Variance Application
Additional Ownership

Revised 2011

Zoning Application – Supplement

R. Lionel Prather and Larry S. Prather, Jr.

Disclosure:

The owners have made the following campaign contributions:

1.	R. Lionel Prather	$500 to Doug Duncan on 12/8/17
2.	Larry S. Prather, Jr.	$500 to Doug Duncan (date unknown)