

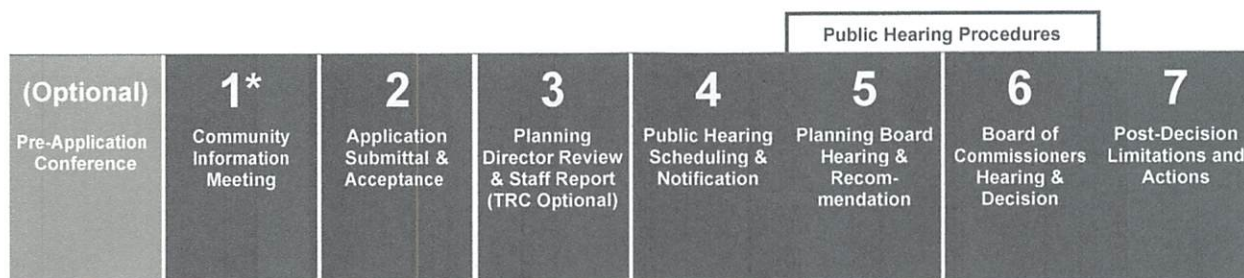
NEW HANOVER COUNT

DEPARTMENT OF PLANNING & LAND USE
230 Government Center Drive, Suite 110
Wilmington, North Carolina 28403
Telephone (910) 798-7165
FAX (910) 798-7053
planningdevelopment.nhcgov.com



SPECIAL USE PERMIT APPLICATION

This application form must be completed as part of a special use permit application submitted through the county's online COAST portal. The main procedural steps in the submittal and review of applications are outlined in the flowchart below. More specific submittal and review requirements, as well as the standards to be applied in reviewing the application, are set out in Section 10.3.5 of the Unified Development Ordinance.



*If the proposed use is classified as intensive industry, the applicant shall conduct a community information meeting in accordance with Section 10.2.3, Community Information Meeting.

1. Applicant and Property Owner Information

Applicant/Agent Name Plantation Village, Inc.	Owner Name (if different from Applicant/Agent) Same as Applicant
Company	Company/Owner Name 2
Address 1200 Porters Neck Rd.	Address
City, State, Zip Wilmington, NC 28411	City, State, Zip
Phone (910) 508-7476 (c/o Applicant's attorney Matt Nichols)	Phone
Email matt@mattnicholslaw.com (c/o Applicant's attorney Matt Nichols)	Email

2. Subject Property Information

Address/Location 1200 Porters Neck Rd.	Parcel Identification Number(s) *Please see attached list of parcel ID nos.	
Total Parcel(s) Acreage ±55.5 acres	Existing Zoning and Use(s) R-20 w/SUP; Continuing Care Retirement Community	Future Land Use Classification General Residential

Applicant Tracking Information (This section completed by staff)

Case Number:	Date/Time Received:	Received by:
---------------------	----------------------------	---------------------

3. Proposed Zoning, Use(s), & Narrative

Please list the proposed use(s) of the subject property, and provide the purpose of the special use permit and a project narrative (attach additional pages if necessary).

The proposed use is a modification of the existing Special Use Permit to allow a renovation and expansion of the Plantation Village Continuing Care Retirement Community. No change in zoning is requested or required. Please see attached Exhibit "A" for further explanation of the request.

4. Proposed Condition(s)

Please note: Within a special use permit proposal, additional conditions and requirements which represent greater restrictions on the development and use of the property than the corresponding zoning district regulations may be added. These conditions may assist in mitigating the impacts the proposed development may have on the surrounding community. Please list any conditions proposed to be included with this special use permit application below. Staff, the Planning Board, and Board of Commissioners may propose additional conditions during the review process that meet or exceed the minimum requirements of the Unified Development Ordinance.

Please see attached Exhibit "A".

5. Traffic Impact

Please provide the estimated number of trips generated for the proposed use(s) based off the most recent version of the Institute of Traffic Engineers (ITE) Trip Generation Manual. A Traffic Impact Analysis (TIA) must be completed for all proposed developments that generate more than 100 peak hour trips, and the TIA must be included with this application.

ITE Land Use: Please see attached Technical Memorandum dated 2/17/2020 from Davenport regarding traffic analysis.

Trip Generation Use and Variable (gross floor area, dwelling units, etc.)

AM Peak Hour Trips:

PM Peak Hour Trips:

6. Criteria Required for Approval of a Special Use Permit

A use designated as a special use in a particular zoning district is a use that may be appropriate in the district, but because of its nature, extent, and external impacts, requires special consideration of its location, design, and methods of operation before it can be deemed appropriate in the district and compatible with its surroundings. The purpose is to establish a uniform mechanism for the review of special uses to ensure they are appropriate for the location and zoning district where they are proposed.

For each of the four required conclusions listed below, include or attach a statement that explains how any existing conditions, proposed development features, or other relevant facts would allow the Board of County Commissioners to reach the required conclusion, and attach any additional documents or materials that provide supporting factual evidence. The considerations listed under each required conclusion are simply those suggested to help the applicant understand what may be considered in determining whether a required conclusion can be met. Any additional considerations potentially raised by the proposed use or development should be addressed.

1. The use will not materially endanger the public health or safety if located where proposed and approved.

Considerations:

- *Traffic conditions in the vicinity, including the effect of additional traffic on streets and street intersections, and sight lines at street intersections with curb cuts;*
- *Provision of services and utilities, including sewer, water, electrical, garbage collections, fire protection;*
- *Soil erosion and sedimentation;*
- *Protection of public, community, or private water supplies, including possible adverse effects on surface waters or groundwater; or*
- *Anticipated air discharges, including possible adverse effects on air quality.*

Please see attached Exhibit "A".

2. The use meets all required conditions and specifications of the Unified Development Ordinance.

Please see attached Exhibit "A".

3. The use will not substantially injure the value of adjoining or abutting property, or that the use is a public necessity.

Considerations:

- *The relationship of the proposed use and the character of development to surrounding uses and development, including possible conflicts between them and how these conflicts will be resolved (i.e. buffers, hours of operation, etc.).*
- *Whether the proposed development is so necessary to the public health, safety, and general welfare of the community or County as a whole as to justify it regardless of its impact on the value of adjoining property.*

Please see attached Exhibit "A".

4. The location and character of the use if developed according to the plan as submitted and approved will be in harmony with the area in which it is to be located and in general conformity with the New Hanover County Comprehensive Land Use Plan.

Considerations:

- *The relationship of the proposed use and the character of development to surrounding uses and development, including possible conflicts between them and how these conflicts will be resolved (i.e. buffers, hours of operation, etc.).*
- *Consistency with the Comprehensive Plan's goals, objectives for the various planning areas, its definitions of the various land use classifications and activity centers, and its locational standards.*

Please see attached Exhibit "A".

Staff will use the following checklist to determine the completeness of your application. Please verify all of the listed items are included and confirm by initialing under "Applicant Initial". If an item is not applicable, mark as "N/A". Applications determined to be incomplete must be corrected in order to be processed for further review; Staff will confirm if an application is complete within five business days of submittal.

Application Checklist

- ☐ This application form, completed and signed
- ☐ Application fee:
- \$500; \$250 if application pertains to a residential use (i.e. mobile home, duplex, family child care home).
- ☐ Traffic Impact Analysis (if applicable)
- ☒ Site Plan including the following elements:
- Tract boundaries and total area, location of adjoining parcels and roads
 - Proposed use of land, structures and other improvements
 - For residential uses, this shall include number, height, and type of units; area to be occupied by each structure; and/or subdivided boundaries.
 - For non-residential uses, this shall include approximate square footage and height of each structure, an outline of the area it will occupy, and the specific purposes for which it will be used.
 - Development schedule, including proposed phasing
 - Traffic and parking plan; including a statement of impact concerning local traffic near the tract; proposed right-of-way dedication; plans for access to and from the tract; location, width, and right-of-way for internal streets and locations; arrangement and access provisions for parking areas
 - All existing and proposed easements, reservations, required setbacks, rights-of-way, buffering, and signage
 - The location of Special Flood Hazard Areas, if applicable
 - The approximate location of US Army Corps of Engineers Clean Water Act Section 404 wetlands, Rivers and Harbors Act Section 10 wetlands, and wetlands under jurisdiction of the NC Department of Environmental Quality.
 - Location, species, and size (DBH) of regulated, significant, or specimen trees
 - Any additional conditions and requirements that represent greater restrictions on development and use of the tract than the corresponding general use district regulations or additional limitations on land that may be regulated by Federal or State law or local ordinance.
 - Any other information that will facilitate review of the proposed special use permit (Ref. Section 10.3.5, as applicable)
- ☐ Applications for uses in the intensive industry category must also submit:
- Community meeting written summary
 - A list of any local, state, or federal permits required for use
- One (1) hard copy of ALL documents AND 5 hard copies of the site plan. Additional
- ☐ hard copies may be required by staff depending on the size of the document/site plan.
- ☐ One (1) digital PDF copy of ALL documents AND plans

**Applicant
Initial**

Staff Initial

ZB

ZB

ZB

ZB

ZB

ZB

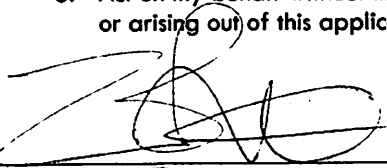
ZB

7. Acknowledgement and Signatures

By my signature below, I understand and accept all of the conditions, limitations, and obligations of the special use permit for which I am applying. I understand that the existing Official Zoning Map is presumed to be correct. I understand that I have the burden of proving that the proposal meets the four required conclusions. I certify that this application is complete and that all information presented in this application is accurate to the best of my knowledge, information, and belief.

If applicable, I also appoint the applicant/agent as listed on this application to represent me and make decisions on my behalf regarding this application during the review process. The applicant/agent is hereby authorized on my behalf to:

1. Submit an application including all required supplemental information and materials;
2. Appear at public hearings to give representation and comments; and
3. Act on my behalf without limitations with regard to any and all things directly or indirectly connected with or arising out of this application.

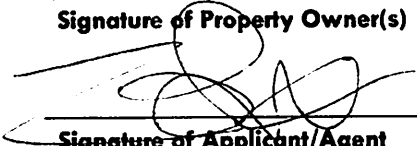


Signature of Property Owner(s)

Plantation Village, Inc. by:

Zane Bennett, Executive Director

Print Name(s)



Signature of Applicant/Agent

Zane Bennett, Executive Director

Print Name

Note: This form must be signed by the owner(s) of record. If there are multiple property owners, a signature is required for each owner of record.

The land owner or their attorney must be present for the application at the public hearings.

If an applicant requests delay of consideration from the Planning Board or Board of County Commissioners before notice has been sent to the newspaper, the item will be calendared for the next meeting and no fee will be required. If delay is requested after notice has been sent to the newspaper, the Board will act on the request at the scheduled meeting and are under no obligation to grant the continuance. If the continuance is granted, a fee in accordance with the adopted fee schedule as published on the New Hanover County Planning website will be required.

Applicant Tracking Information (This section completed by staff)			
Application Received:	Completeness Determination Required by (date):	Determination Performed on (date):	Planning Board Meeting:

EXHIBIT "A"

to Application for Modification to Special Use Permit S-603, 5/11

Project Narrative:

The Applicant and property owner, Plantation Village, Inc., is requesting a modification of its existing Special Use Permit (S-603, 5/11) in order to allow a renovation and expansion of the Plantation Village Continuing Care Retirement Community. The Subject Property consists of 6 contiguous parcels totaling approximately ±55 acres, located at or in the vicinity of 1200 Porters Neck Road, as generally shown below. The purpose of the request is to allow Plantation Village to renovate and redevelop some of its existing residential buildings, expand and improve amenities buildings, and continue to offer a very high quality of life through housing alternatives and recreational opportunities for New Hanover County's growing senior population.

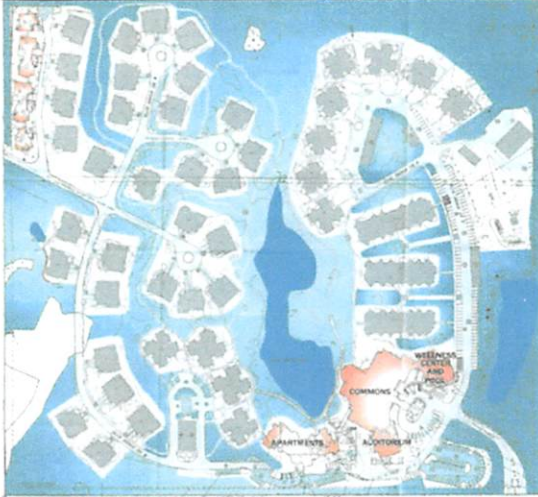



Plantation Village is a non-profit retirement community offering independent living and access to a continuum of care for residents as needed. The community is located on a tranquil and beautifully landscaped campus, which offers residents dining, salon services, indoor and outdoor recreational opportunities and classes, a fitness center, library, resident care center and many other amenities. Plantation Village and its residents have been a vital part of the Porters Neck community since the 1980s.

Plantation Village was originally granted a Special Use Permit in 1983 as a Nursing & Personal Care Facility under the New Hanover County Zoning ordinance existing at

that time. Modifications to the original Special Use Permit were made over time, and in 2011 the New Hanover County Board of Commissioners issued the existing Special Use Permit for the facility as a Continuing Care Retirement Community to replace the previous Special Use Permit and more accurately reflect the use under updated zoning ordinances.

The Applicant is requesting a modification to the existing Special Use Permit to allow for the renovation and expansion of its existing facilities. As illustrated on the proposed revised Master Plan, the plan includes a net increase of 54 independent living homes, enhancements to existing indoor amenity spaces, replacement of a hobby shop and maintenance building, and new outdoor/game amenities. The maximum number of residential units requested is 315 (during the Phase 2 surplus). This results in a net increase in density of a little more than one unit per acre from the existing density of 4.45 units per acre to the proposed 5.67 units per acre. This density is consistent with the General Residential Future Land Use placetype and will allow Plantation Village to serve more residents in New Hanover County's growing senior population.

<p>Existing Master Plan (2011)</p>	
<p>Proposed Master Plan (2020)</p>	

Criteria Required for Approval of a Special Use Permit

1. The use will not materially endanger the public health or safety if located where proposed and approved.

The proposed use will not materially endanger the public health or safety if located where proposed and approved. The best evidence of this is Plantation Village's long history and outstanding reputation through the region. Plantation Village has existed and operated for decades on its current campus with no negative impacts on public health or safety, and no negative impacts to neighboring property owners and uses. On the contrary, Plantation Village has been an asset to the Porters Neck area for more than 30 years.

Additionally, it should be noted that in 2011, in granting the existing Special Use Permit, the New Hanover County Board of Commissioners found that the use would not materially endanger the public health or safety if located and developed according to the existing Master Plan. No change in the type of use is proposed with this modification request. As stated above, the proposed expansion generally consists of the renovation and relocation of some buildings within the existing campus and a slight density increase (along with required parking for same) as illustrated in the proposed revised Master Plan.

Plantation Village has adequate existing services and utilities, including sewer, water, electrical, garbage collections, and fire protection. The community adheres to all applicable State and County health and safety regulations and fire codes, and the Residential Care Center provides nurses available 24/7 for residents.

With respect to anticipated traffic impacts, the increased density proposed is relatively low, and because this is a retirement community, it is anticipated that residents are less likely to travel at AM and PM peak traffic hours. Additionally, Plantation Village does not have any impact on student enrollment to the New Hanover County school system.

The existing Plantation Village site has a NCDEQ State Stormwater Permit (SW8 030203) which was originally issued in 2003 and was modified in 2013. Stormwater treatment occurs in one on-site retention pond and one on-site infiltration basin. The retention pond has excess capacity to treat up to 64,573 square feet of new impervious surface and the infiltration basin has excess capacity to treat up to 42,233 square feet of new impervious surface. Because the areas draining to the existing stormwater features will have impervious area removed and replaced with impervious surfaces within the existing permitted parameters there will not be any modification to the existing features.

Based on the proposed Master Plan there will be an increase in impervious surface in the currently undeveloped portion of the site. A new stormwater infiltration basin is proposed that will meet or exceed both NCDEQ and New Hanover County requirements.

2. The use meets all required conditions and specifications of the Unified Development Ordinance.

As illustrated by the proposed revised Master Plan, the proposed Special Use Permit modification meets the requirements of UDO Sec. 4.3.2.2. as follows:

- A minimum lot size of 20 acres.
- Minimum parking spaces of 1.5 per independent living unit plus one space per employee on the largest shift.
- Maximum impervious area will not exceed 40% for the total development.
- There are no commercial uses on site. All amenities are private amenities for the benefit of the residents of the CCRC.
- Height will not exceed 50 feet.
- Plantation Village is served by sewer and water utilities through Cape Fear Public Utility Authority.
- The proposed modification will meet all open space and improved recreational space requirements.
- The modification will meet all buffering and setback requirements.
- Porters Neck Road is a Collector Road as designated on the WMPO Functional Road Classification Map.
- All other applicable required local state or federal permits or authorizations will be met.

3. The use will not substantially injure the value of adjoining or abutting property, or that the use is a public necessity.

The proposed use will not substantially injure the value of adjoining or abutting property. As the New Hanover County Commissioners found in the issuance of the existing Special Use Permit in 2011, “[t]he proposed use is a continuation and expansion of existing uses on the campus.” The proposed modification is not substantially different from that previous request. The use and operation of the facility will remain the same with some renovations, replacements and expansions of existing buildings, a slight increase in density of a little more than 1 unit per acre, and an increase in parking to meet the requirements for the new units.

For decades, Plantation Village has been a vital part of the Porters Neck community and a good neighbor. The properties adjacent to the east and to the south across Porters Neck Road are golf courses and residential golf course communities. The property adjacent to the west is an assisted living and nursing home facility. To the north of the project area is Hunter Green Phase II, a single-family residential neighborhood.

Based upon the Hunter Green Phase II subdivision map (Map Book 35 at Page 133, New Hanover County Registry), the lots in Hunter Green Phase II average approximately 9,823 sq. ft. (rounding up). The proposed density of the Special Use Permit Modification is only slightly over one additional unit per acre (5.67 units/ acre) than currently allowed. This proposed slight increase in density will not substantially injure the value of adjoining or abutting property.

4. The location and character of the use if developed according to the plan as submitted and approved will be in harmony with the area in which it is to be located and in general conformity with the New Hanover County Comprehensive Land Use Plan.

The proposed modification is in harmony with the area. Plantation Village is an existing residential use that provides additional alternative housing types for seniors in the County. Plantation Village's campus has been in existence for decades and is an integral part of the Porters Neck Community. As seen in the photos below it is a beautiful campus that is very well maintained and carefully landscaped for the enjoyment of residents and their guests. It offers:

Aesthetically pleasing entrance and streetview.



Very high-quality community buildings and water features.



Beautifully designed residences and open spaces.



Landscaped walking trails.

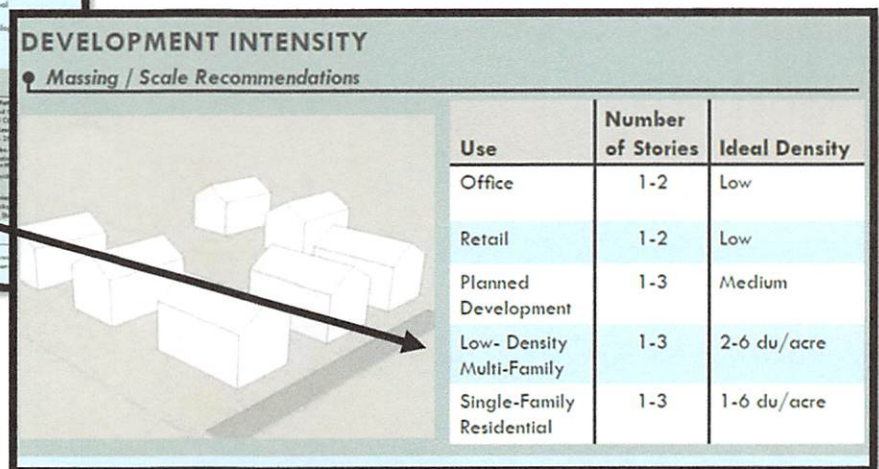
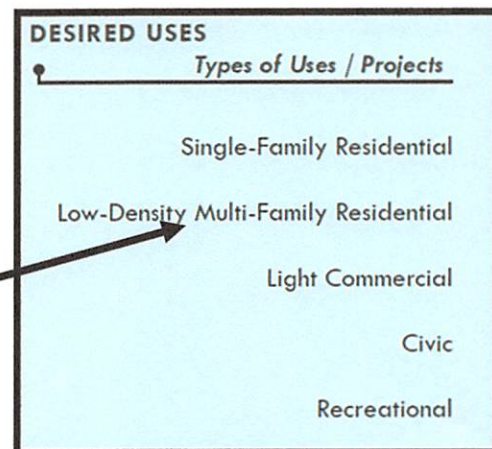


Opportunities to enjoy nature.



The Plantation Village campus is an example of careful planning, consideration and preservation of green space and is an asset to the Porters Neck area. It complements the surrounding neighborhoods and golf courses.

Additionally, the proposed modification is consistent with the New Hanover County Comprehensive Plan. The Subject Property, along with the surrounding area is designated as a "General Residential" placetype on the Comprehensive Plan Future Land Use Map. As illustrated below, the General Residential placetype is intended for residential uses (including low-density multi-family residential) as well as recreational uses, both of which Plantation Village provides to its residents. Additionally, the ideal density for low-density multi- and single-family residential is 1-6 du/acre, which is consistent with the requested modification. Comprehensive Plan: Visualizing the Future p. 5 states "[t]he ideal density for multi- and single family residential is low (ranging up to approximately eight units per acre)."



The proposal is also consistent with the Comprehensive Plan goal of providing a range of housing types, opportunities and choices and is consistent with the following implementation guidelines:

- **XV.A.3** Review zoning regulations where appropriate to accommodate populations with special needs such as the elderly and disabled.
- **XVIII.A.2** Encourage the inclusion of areas for physical activity in the design of residential open space areas.
- **XX.B.1** Sidewalks, pedestrian amenities, and residential common areas should be designed to be inclusive of persons with limited mobility.
- **IX.D.2** Encourage infill development to maximize use of previously developed sites for highest and best use.

In summary, the proposed modification to the existing Special Use Permit meets all of the required Special Use Permit criteria, is consistent with the Comprehensive Plan, allows Plantation Village to improve its community spaces and residences and supports the need for housing alternatives for the County's growing senior population.



**NEW HANOVER COUNTY
PLANNING & LAND USE
AUTHORITY FOR
APPOINTMENT OF AGENT**

230 Government Center Drive
Suite 110
Wilmington, NC 28403
910-798-7165 phone
910-798-7053 fax
www.nhcgov.com

Please note that for quasi-judicial proceedings, either the land owner or an attorney must be present for the case at the public hearing.

The undersigned owner does hereby appoint an authorized the agent described herein as their exclusive agent for the purpose of petitioning New Hanover County for a variance, special use permit, rezoning request, and/or an appeal of Staff decisions applicable to the property described in the attached petition. The Agent is hereby authorized to, on behalf of the property owner:

1. Submit a proper petition and the required supplemental information and materials
2. Appeal at public meetings to give representation and commitments on behalf of the property owner
3. Act on the property owner's behalf without limitations with regard to any and all things directly or indirectly connected with or arising out of any petition applicable to the New Hanover County Zoning Ordinance.

Agent Information	Property Owner(s)	Subject Property
Name Matthew A. Nichols	Owner Name Plantation Village, Inc.	Address 1200 Porters Neck Rd.
Company Law Office of Matthew A. Nichols	Owner Name 2	City, State, Zip Wilmington, NC 28411
Address 3205 Randall Pkwy, Suite 104	Address 1200 Porters Neck Rd.	Parcel ID R03700-002-015-000, R03700-002-014-000 R03700-002-013-000 R03700-002-012-000
City, State, Zip Wilmington, NC 28403	City, State, Zip Wilmington, NC 28411	R03700-002-011-000 R03700-002-002-002
Phone (910) 508-7476	Phone 866-825-3806	
Email matt@mattnicholslaw.com	Email	
Application Tracking Information (Staff Only)		
Case Number Reference:	Date/Time received:	Received by:

This document was willfully executed on the 5 day of August, 2020.

Plantation Village, Inc.



Owner 1 Signature

By: Zane Bennett, Executive Director

Owner 2 Signature

TECHNICAL MEMORANDUM

Plantation Village

New Hanover County, NC

Prepared for Plantation Village, Inc.





Technical Memorandum

Plantation Village New Hanover County, NC

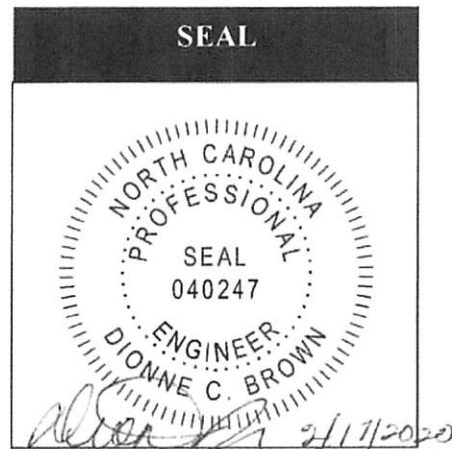
Prepared for Plantation Village, Inc.
February 17, 2020

Analysis by: Tou Lee, EI
Dionne C. Brown, PE

Drafting/Graphics by: Tou Lee, EI

Reviewed by: Andrew Hayes, PE

Sealed by: Dionne C. Brown, PE



This report is printed on recycled paper with 30% post-consumer content. All paper is FSC Certified. The entire document, including binding, is 100% recyclable.



This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT shall be without liability to DAVENPORT and shall be a violation of the agreement between DAVENPORT and the client.

Home Office:
119 Brookstown Ave. Suite PH1
Winston-Salem NC 27101
Main: 336.744.1636 Fax: 336.458.9377

Wilmington Regional Office:
3722 Shipyard Boulevard, Suite E
Wilmington, NC 28403
Main: 910.251.8912 Fax: 336.458.9377

Serving the Southeast since 2002



**Intersection Capacity Analysis for Plantation Village
Technical Memorandum
DAVENPORT Project Number 200204
Prepared for Plantation Village, Inc.
February 17, 2020**

Introduction

DAVENPORT was retained to determine the potential traffic impacts of the Plantation Village project and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic.

The proposed project is to be located west of the existing Plantation Village in New Hanover County, NC. The project proposes 114 senior adult housing dwelling units. The development will be constructed in phases, **Phase 1** will consist of 44 dwelling units and **Phase 2** will consist of 70 dwelling units. The development will utilize the existing site access, Plantation Village Drive.

Methodology

Figure 1 in the Supporting Documents illustrates the site plan. The vicinity map and the existing lane geometry are illustrated in Figure 2 and Figure 3 respectively. Quality Counts staff collected existing traffic counts at the study intersection on November 5, 2019. The traffic counts were projected to 2020 with a 1.0% growth rate. Approved developments are developments that have been recently approved in the area, but not yet constructed. There are two (2) approved developments to be considered in this analysis.

The first is Oaks at Murray Farm (previously known as Porters Neck Development) located north of Porters Neck Road and west of Shiraz Way. This development consists of 58 single family homes and 348 multi-family housing units to be built by 2023. The second approved development is Waterstone Development located on Edgewater Club Road and south of Porters Neck Road. This development consists of 151 single family homes to be built by 2020.

Phase 1: Existing volumes were projected out to a future analysis year of 2022 by applying an 1% annual traffic growth rate and adding the approved development trips. Existing volumes and 2022 future no build volumes are shown for AM and PM peaks in Figures 4 and 5, respectively.

The trip generation potential for this site was projected based on the 10th edition of ITE Trip Generation Manual. Table 1 presents the results. Phase 1 site trips for this project were distributed based on the existing traffic patterns and engineering judgment. The trip distribution model is shown in Figure 6. The 2022 Phase 1 build-out traffic volumes were obtained by summing the 2022 future no build volumes, and site trips generated by the proposed project. Phase 1 site trips are shown in Figure 7. The 2022 Phase 1 future build volumes are shown for AM and PM peaks in Figure 8.



Phase 2: Existing volumes were projected out to a future analysis year of 2023 by applying an 1% annual traffic growth rate and adding the approved development trips. 2023 future no build volumes are shown for AM and PM peaks in Figure 10.

Phase 2 site trips for this project were distributed based on the existing traffic patterns and engineering judgment. The trip distribution model remains the same as Phase 1 in Figure 6. The 2023 Phase 2 build-out traffic volumes were obtained by summing the 2023 future no build volumes, and site trips generated by the proposed project. Phase 2 site trips are shown in Figure 11. The 2023 Phase 2 future build volumes are shown for AM and PM peaks in Figure 12.

Synchro traffic software and SIDRA 8.0 were used to determine the level of service of the study intersection. Queue lengths were reviewed based on the SimTraffic simulation. In general, the analysis for this project was conducted utilizing commonly accepted NCDOT standards.

Table 1 - ITE Trip Generation									
Plantation Village Development									
Average Weekday Driveway Volumes					24 Hour	AM Peak Hour		PM Peak Hour	
					Two-Way				
Land Use	ITE Land Code	Size	Method/Type	Volume	Enter	Exit	Enter	Exit	Exit
Phase 1									
Senior Adult Housing	252	44	Dwelling Units	Adjacent/Equation	152	3	6	7	6
Phase 2									
Senior Adult Housing	252	70	Dwelling Units	Adjacent/Equation	256	5	9	10	9
Total Trips					408	8	15	17	15

The following intersections were included in the study:

1. Porters Neck Road at Shiraz Way / Edgewater Club Road (ROUNDAABOUT)
2. Porters Neck Road at Champ Davis Road
3. Porters Neck Road at Plantation Village Drive

The intersections were analyzed during the AM (7-9 am) and PM (4-6 pm) peaks for the following conditions:

- 2020 Conditions
- 2022 Future No-Build Conditions
- 2022 Phase 1 Build Conditions
- 2023 Future No-Build Conditions
- 2023 Phase 2 Build Conditions

Capacity Analysis

Overall, the study intersections currently operate at level of service (LOS) A or B during the AM and PM peak hours, as shown in Table 2 through Table 4. The 2022 future no build conditions (without the project site trips) remain at the same levels of service. In 2022 future build conditions (which includes the proposed project site trips) the studied intersections remain at the same levels of service. Overall, a slight increase (less than a second) in delay is expected at all intersections.

A summary of the queue length analysis is shown in Table 5. No queuing issues are expected based upon the analysis results. Based on the NCDOT turn lane warrant charts, no turn lanes are warranted. Therefore, no improvements are recommended. Figures 9 and 13 shows the recommended improvements for Phase 1 and Phase 2, respectively.

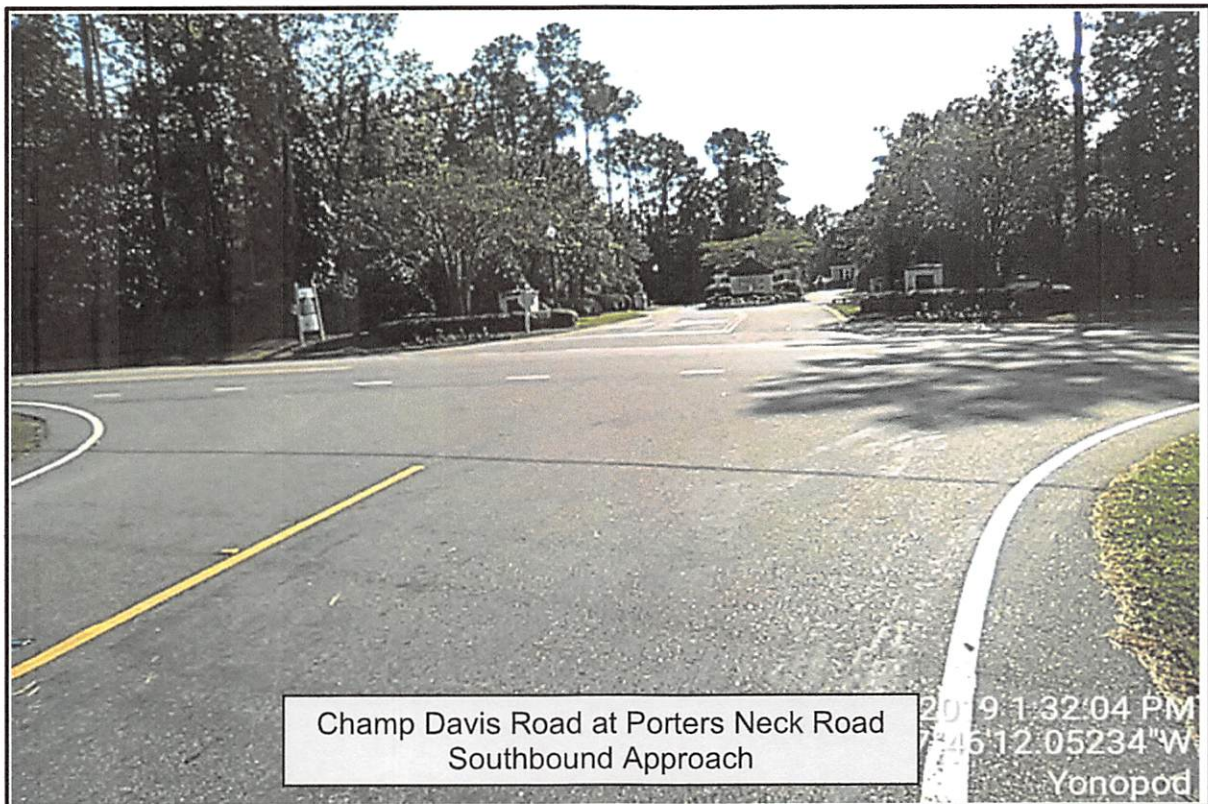




Table 2 - Porters Neck Road at Shiraz Way / Edgewater Club Road (ROUNDBABOUT)

Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)											
		Eastbound			Westbound			Northbound			Southbound		
AM Peak Hour													
2020 Existing	A (7.4)	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.3)	A (7.3)	A (7.3)	A (7.5)	A (7.5)	A (7.5)	A (7.6)	A (7.6)	A (7.6)	A (7.2)	A (7.2)	A (7.2)
		A (7.3)			A (7.5)			A (7.6)			A (7.2)		
2022 Future No Build	A (9.2)	L	T	R	L	T	R	L	T	R	L	T	R
		A (8.2)	A (8.2)	A (8.2)	A (9.2)	A (9.2)	A (9.2)	A (9.9)	A (9.9)	A (9.9)	B (10.6)	B (10.6)	B (10.6)
		A (8.2)			A (9.2)			A (9.9)			B (10.6)		
2022 Future Phase 1 Build	A (9.3)	L	T	R	L	T	R	L	T	R	L	T	R
		A (8.3)	A (8.3)	A (8.3)	A (9.3)	A (9.3)	A (9.3)	A (9.9)	A (9.9)	A (9.9)	B (10.7)	B (10.7)	B (10.7)
		A (8.3)			A (9.3)			A (9.9)			B (10.7)		
2023 Future No Build	A (9.3)	L	T	R	L	T	R	L	T	R	L	T	R
		A (8.3)	A (8.3)	A (8.3)	A (9.3)	A (9.3)	A (9.3)	A (10.0)	A (10.0)	A (10.0)	B (10.7)	B (10.7)	B (10.7)
		A (8.3)			A (9.3)			A (10.0)			B (10.7)		
2023 Future Phase 2 Build	A (9.5)	L	T	R	L	T	R	L	T	R	L	T	R
		A (8.4)	A (8.4)	A (8.4)	A (9.5)	A (9.5)	A (9.5)	A (10.1)	A (10.1)	A (10.1)	B (10.9)	B (10.9)	B (10.9)
		A (8.4)			A (9.5)			A (10.1)			B (10.9)		
PM Peak Hour													
2020 Existing	A (8.6)	L	T	R	L	T	R	L	T	R	L	T	R
		A (8.7)	A (8.7)	A (8.7)	A (8.2)	A (8.2)	A (8.2)	A (8.9)	A (8.9)	A (8.9)	A (7.8)	A (7.8)	A (7.8)
		A (8.7)			A (8.2)			A (8.9)			A (7.8)		
2022 Future No Build	B (12.6)	L	T	R	L	T	R	L	T	R	L	T	R
		B (12.8)	B (12.8)	B (12.8)	B (13.0)	B (13.0)	B (13.0)	B (12.5)	B (12.5)	B (12.5)	B (11.5)	B (11.5)	B (11.5)
		B (12.8)			B (13.0)			B (12.5)			B (11.5)		
2022 Future Phase 1 Build	B (12.8)	L	T	R	L	T	R	L	T	R	L	T	R
		B (13.0)	B (13.0)	B (13.0)	B (13.3)	B (13.3)	B (13.3)	B (12.7)	B (12.7)	B (12.7)	B (11.7)	B (11.7)	B (11.7)
		B (13.0)			B (13.3)			B (12.7)			B (11.7)		
2023 Future No Build	B (12.8)	L	T	R	L	T	R	L	T	R	L	T	R
		B (12.9)	B (12.9)	B (12.9)	B (13.2)	B (13.2)	B (13.2)	B (12.7)	B (12.7)	B (12.7)	B (11.7)	B (11.7)	B (11.7)
		B (12.9)			B (13.2)			B (12.7)			B (11.7)		
2023 Future Phase 2 Build	B (13.1)	L	T	R	L	T	R	L	T	R	L	T	R
		B (13.3)	B (13.3)	B (13.3)	B (13.7)	B (13.7)	B (13.7)	B (13.0)	B (13.0)	B (13.0)	B (11.9)	B (11.9)	B (11.9)
		B (13.3)			B (13.7)			B (13.0)			B (11.9)		



Table 3 - Champ Davis Road at Porters Neck Road

Scenario	LOS of Worst Approach	Level of Service by Approach (Delay in sec/veh)											
		Eastbound			Westbound			Northbound			Southbound		
AM Peak Hour													
2020 Existing	B (11.8) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.6)	A (0.0)	A (0.0)	A (7.6)	A (0.0)	A (0.0)	B (12.9)	B (12.9)	A (9.2)	B (11.3)	B (11.3)	B (11.3)
		A (1.9)			A (0.1)			B (11.8)			B (11.3)		
2022 Future No Build	B (12.0) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.6)	A (0.0)	A (0.0)	A (7.6)	A (0.0)	A (0.0)	B (13.1)	B (13.1)	A (9.2)	B (11.4)	B (11.4)	B (11.4)
		A (1.8)			A (0.1)			B (12.0)			B (11.4)		
2022 Future Phase 1 Build	B (14.0) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.8)	A (0.0)	A (0.0)	A (7.6)	A (0.0)	A (0.0)	B (14.8)	B (14.8)	A (9.1)	B (10.5)	B (10.5)	B (10.5)
		A (2.7)			A (0.1)			B (14.0)			B (10.5)		
2023 Future No Build	B (12.1) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.6)	A (0.0)	A (0.0)	A (7.6)	A (0.0)	A (0.0)	B (13.2)	B (13.2)	A (9.3)	B (11.5)	B (11.5)	B (11.5)
		A (1.8)			A (0.1)			B (12.1)			B (11.5)		
2023 Future Phase 2 Build	B (12.2) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.7)	A (0.0)	A (0.0)	A (7.6)	A (0.0)	A (0.0)	B (13.4)	B (13.4)	A (9.3)	B (11.6)	B (11.6)	B (11.6)
		A (1.8)			A (0.1)			B (12.2)			B (11.6)		
PM Peak Hour													
2020 Existing	B (13.1) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.7)	A (0.0)	A (0.0)	A (7.5)	A (0.0)	A (0.0)	B (14.3)	B (14.3)	A (9.0)	B (10.4)	B (10.4)	B (10.4)
		A (2.8)			A (0.1)			B (13.1)			B (10.4)		
2022 Future No Build	B (13.9) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.8)	A (0.0)	A (0.0)	A (7.6)	A (0.0)	A (0.0)	B (14.6)	B (14.6)	A (9.0)	B (10.5)	B (10.5)	B (10.5)
		A (2.8)			A (0.1)			B (13.9)			B (10.5)		
2022 Future Phase 1 Build	B (14.1) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.8)	A (0.0)	A (0.0)	A (7.6)	A (0.0)	A (0.0)	B (14.9)	B (14.9)	A (9.0)	B (10.6)	B (10.6)	B (10.6)
		A (2.9)			A (0.1)			B (14.1)			B (10.6)		
2023 Future No Build	B (14.0) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.8)	A (0.0)	A (0.0)	A (7.6)	A (0.0)	A (0.0)	B (14.7)	B (14.7)	A (9.1)	B (10.5)	B (10.5)	B (10.5)
		A (2.8)			A (0.1)			B (14.0)			B (10.5)		
2023 Future Phase 2 Build	B (14.3) NB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.8)	A (0.0)	A (0.0)	A (7.6)	A (0.0)	A (0.0)	C (15.1)	C (15.1)	A (9.1)	B (10.6)	B (10.6)	B (10.6)
		A (2.7)			A (0.1)			B (14.3)			B (10.6)		



Table 4 - Porters Neck Road at Plantation Village Drive													
Scenario	LOS of Worst Approach	Level of Service by Approach (Delay in sec/veh)											
		Eastbound			Westbound			Northbound			Southbound		
AM Peak Hour													
2020 Existing	A (9.3) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.5)	A (0.0)			A (0.0)	A (0.0)				A (9.3)		A (9.3)
		A (2.1)			A (0.0)						A (9.3)		
2022 Future No Build	A (9.3) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.5)	A (0.0)			A (0.0)	A (0.0)				A (9.3)		A (9.3)
		A (2.1)			A (0.0)						A (9.3)		
2022 Future Phase 1 Build	A (9.3) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.5)	A (7.5)			A (0.0)	A (0.0)				A (9.3)		A (9.3)
		A (9.5)			A (0.0)						A (9.3)		
2023 Future No Build	A (9.3) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.5)	A (0.0)			A (0.0)	A (0.0)				A (9.3)		A (9.3)
		A (2.0)			A (0.0)						A (9.3)		
2023 Future Phase 2 Build	A (9.3) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.5)	A (0.0)			A (0.0)	A (0.0)				A (9.3)		A (9.3)
		A (2.2)			A (0.0)						A (9.3)		
PM Peak Hour													
2020 Existing	A (9.3) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.6)	A (0.0)			A (0.0)	A (0.0)				A (9.3)		A (9.3)
		A (0.8)			A (0.0)						A (9.3)		
2022 Future No Build	A (9.5) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.6)	A (0.0)			A (0.0)	A (0.0)				A (9.5)		A (9.5)
		A (0.9)			A (0.0)						A (9.5)		
2022 Future Phase 1 Build	A (9.5) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.6)	A (0.0)			A (0.0)	A (0.0)				A (9.5)		A (9.5)
		A (1.2)			A (0.0)						A (9.5)		
2023 Future No Build	A (9.5) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.6)	A (0.0)			A (0.0)	A (0.0)				A (9.5)		A (9.5)
		A (0.8)			A (0.0)						A (9.5)		
2023 Future Phase 2 Build	A (9.5) SB Approach	L	T	R	L	T	R	L	T	R	L	T	R
		A (7.6)	A (0.0)			A (0.0)	A (0.0)				A (9.5)		A (9.5)
		A (1.3)			A (0.0)						A (9.5)		



Table 5 - Queue Results

AM Peak Hour Queues

Scenario	Porters Neck Road at Shiraz Way / Edgewater Club Road (ROUNDAABOUT)				Champ Davis Road at Porters Neck Road						Porters Neck Road at Plantation Village Drive		
2020 Existing	EBLTR	WBLTR	NBLTR	SBLTR	EBLT	EBR	WBLTR	NBLT	NBR	SBLTR	EBLT	WBTR	SBLR
Max Queue (ft)	62	32.3	39.8	16.9	30	0	0	29	28	50	31	22	27
95th Percentile Queue (ft)	62	32.3	39.8	16.9	3	0	0	2	0	11	2	0	2
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL
2022 Future No Build	EBLTR	WBLTR	NBLTR	SBLTR	EBLT	EBR	WBLTR	NBLT	NBR	SBLTR	EBLTR	WBLTR	SBLTR
Max Queue (ft)	77.9	37.8	63.3	38	49	0	0	29	28	50	32	27	0
95th Percentile Queue (ft)	77.9	37.8	63.3	38	3	0	0	2	0	11	2	0	2
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL
2022 Future Phase 1 Build	EBLTR	WBLTR	NBLTR	SBLTR	EBLT	EBR	WBLTR	NBLT	NBR	SBLTR	EBLTR	WBLTR	SBLTR
Max Queue (ft)	78.8	39.2	63.5	38.6	50	0	0	29	28	44	46	27	10
95th Percentile Queue (ft)	78.8	39.2	63.5	38.6	3	0	0	2	0	11	3	0	2
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL
2023 Future No Build	EBLTR	WBLTR	NBLTR	SBLTR	EBLT	EBR	WBLTR	NBLT	NBR	SBLTR	EBLTR	WBLTR	SBLTR
Max Queue (ft)	79.1	38.2	64.3	38.7	50	0	0	29	28	52	32	27	0
95th Percentile Queue (ft)	79.1	38.2	64.3	38.7	3	0	0	2	0	11	2	0	2
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL
2023 Future Phase 2 Build	EBLTR	WBLTR	NBLTR	SBLTR	EBLT	EBR	WBLTR	NBLT	NBR	SBLTR	EBLTR	WBLTR	SBLTR
Max Queue (ft)	80.7	40.4	64.7	39.6	28	0	0	29	28	48	46	27	10
95th Percentile Queue (ft)	80.7	40.4	64.7	39.6	3	0	0	2	0	12	3	0	3
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL

Home Office:
119 Brookstown Ave, Suite PH1
Winston-Salem, NC 27101
Main: 336.744.1636; Fax: 336.458.9377

Wilmington Regional Office:
3722 Shipyard Boulevard, Suite E
Wilmington, NC 28403
Main: 910.251.8912; Fax: 336.458.9377

Serving the Southeast since 2002



PM Peak Hour Queues													
Scenario	Porters Neck Road at Shiraz Way / Edgewater Club Road (ROUNDAABOUT)				Champ Davis Road at Porters Neck Road						Porters Neck Road at Plantation Village Drive		
	EBLTR	WBLTR	NBLTR	SBLTR	EBLT	EBR	WBLTR	NBLT	NBR	SBLTR	EBLTR	WBLTR	SBLTR
2020 Existing													
Max Queue (ft)	90.1	33.7	44.1	20.4	51	0	0	29	28	74	0	0	54
95th Percentile Queue (ft)	90.1	33.7	44.1	20.4	5	0	0	3	0	9	1	0	5
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL
2022 Future No Build													
Max Queue (ft)	166.1	70.6	85.4	40.3	51	0	0	29	25	51	27	0	52
95th Percentile Queue (ft)	166.1	70.6	85.4	40.3	5	0	0	3	0	10	1	0	5
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL
2022 Future Phase 1 Build													
Max Queue (ft)	170.9	74	87	40.9	51	0	0	29	0	51	26	0	52
95th Percentile Queue (ft)	170.9	74	87	40.9	5	0	0	3	0	10	1	0	6
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL
2023 Future No Build													
Max Queue (ft)	169.5	72.8	87.4	41.2	49	0	0	29	26	69	27	0	52
95th Percentile Queue (ft)	169.5	72.8	87.4	41.2	6	0	0	3	0	10	1	0	5
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL
2023 Future Phase 2 Build													
Max Queue (ft)	176.5	78.1	89.7	42	49	0	20	29	0	72	27	0	56
95th Percentile Queue (ft)	176.5	78.1	89.7	42	6	0	0	3	0	10	2	0	6
Storage Bay (ft)	FULL	FULL	FULL	FULL	FULL	150	FULL	50	FULL	FULL	FULL	FULL	FULL

Home Office:
119 Brookstown Ave. Suite PH1
Winston-Salem, NC 27101
Main: 336.744.1636; Fax: 336.458.9377

Wilmington Regional Office:
3722 Shipyard Boulevard, Suite E
Wilmington, NC 28403
Main: 910.251.8912; Fax: 336.458.9377

Serving the Southeast since 2002



Summary and Conclusion

DAVENPORT was retained to determine the potential traffic impacts of this project and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic.

Based on the trip generation rates and equations published in Trip Generation (Institute of Transportation Engineers, 10th Edition), this development has a trip generation potential of 23 trips in the AM peak and 32 trips in the PM peak in the total of phases.

Overall, this capacity analysis shows that the proposed project will have a relatively minimal impact on capacity (less than a second increase in delay). Therefore, no improvements are recommended to accommodate future build traffic.

In conclusion, this study has reviewed the impacts of both background traffic and proposed development traffic and has provided recommendations to accommodate future traffic. Please note that all site accesses should be designed according to NCDOT standards.

Attached Supporting Documents:

1. Figure 1: Site Plan
2. Figure 2: Vicinity Map
3. Figure 3: Existing Lane Geometry
4. Figure 4: 2020 Existing Volumes
5. Figure 5: 2022 Future No Build Volumes
6. Figure 6: Trip Distribution
7. Figure 7: Phase 1 Site Trips
8. Figure 8: 2022 Future Phase 1 Build Volumes
9. Figure 9: 2022 Recommended Improvements
10. Figure 10: 2023 Future No Build Volumes
11. Figure 11: Phase 2 Site Trips
12. Figure 12: 2023 Future Phase 2 Build Volumes
13. Figure 13: 2023 Recommended Improvements
14. Turn Lane Warrants



Supporting Documents

Home Office:
119 Brookstown Ave. Suite PH1
Winston-Salem, NC 27101
Main: 336.744.1636; Fax: 336.458.9377

Wilmington Regional Office:
3722 Shipyard Boulevard, Suite E
Wilmington, NC 28403
Main: 910.251.8912; Fax: 336.458.9377

Serving the Southeast since 2002

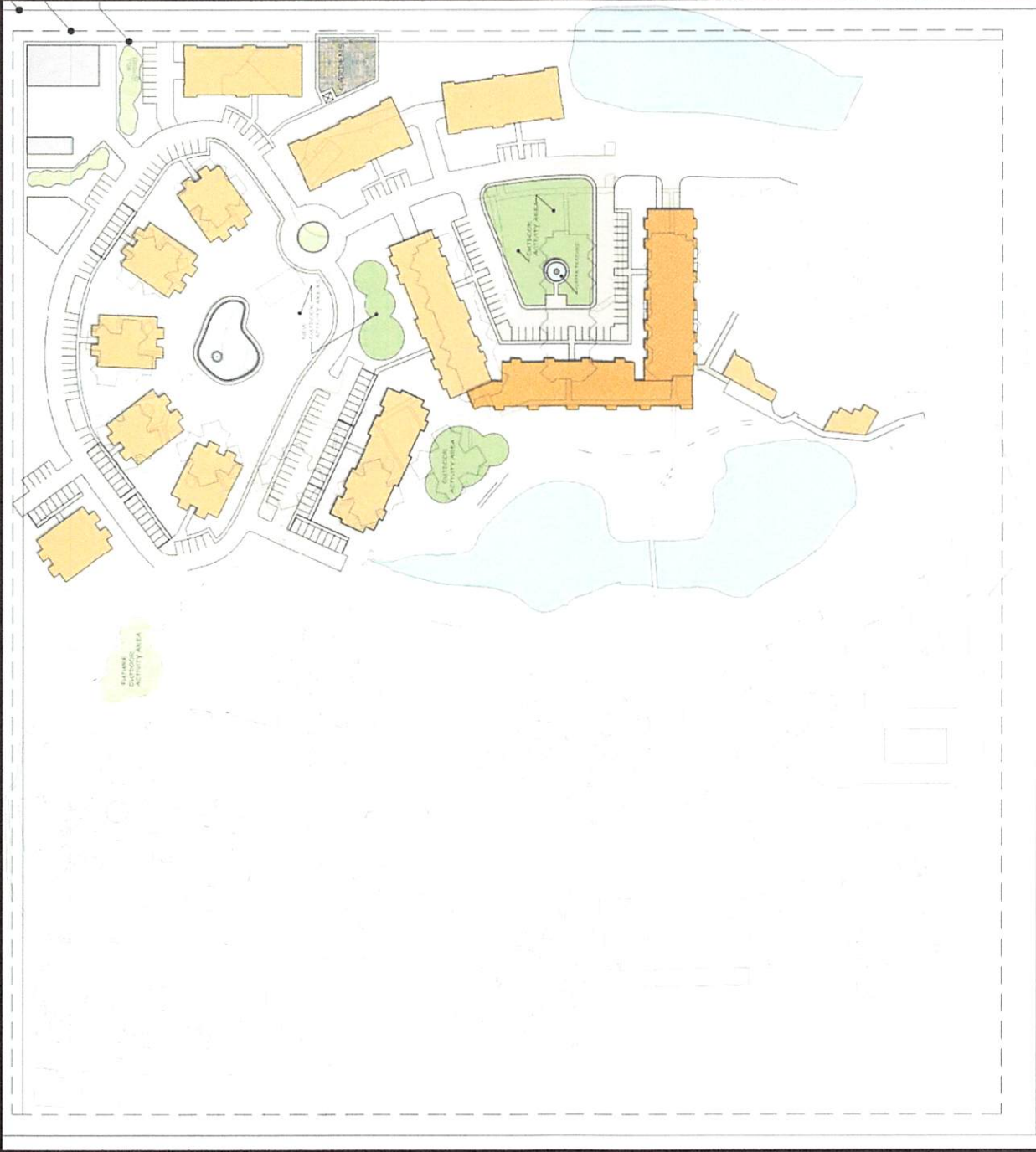
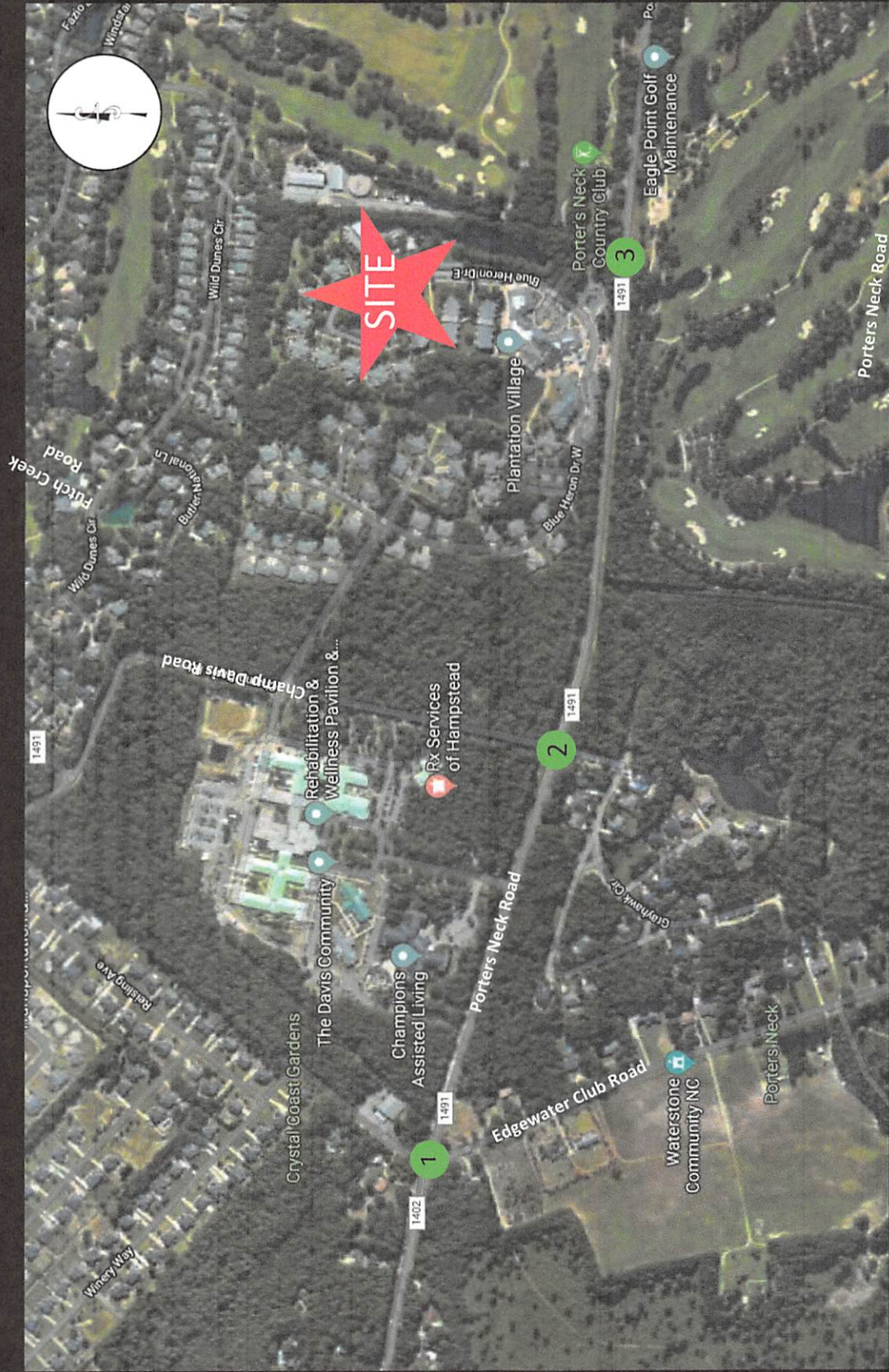


FIGURE 1
SITE PLAN

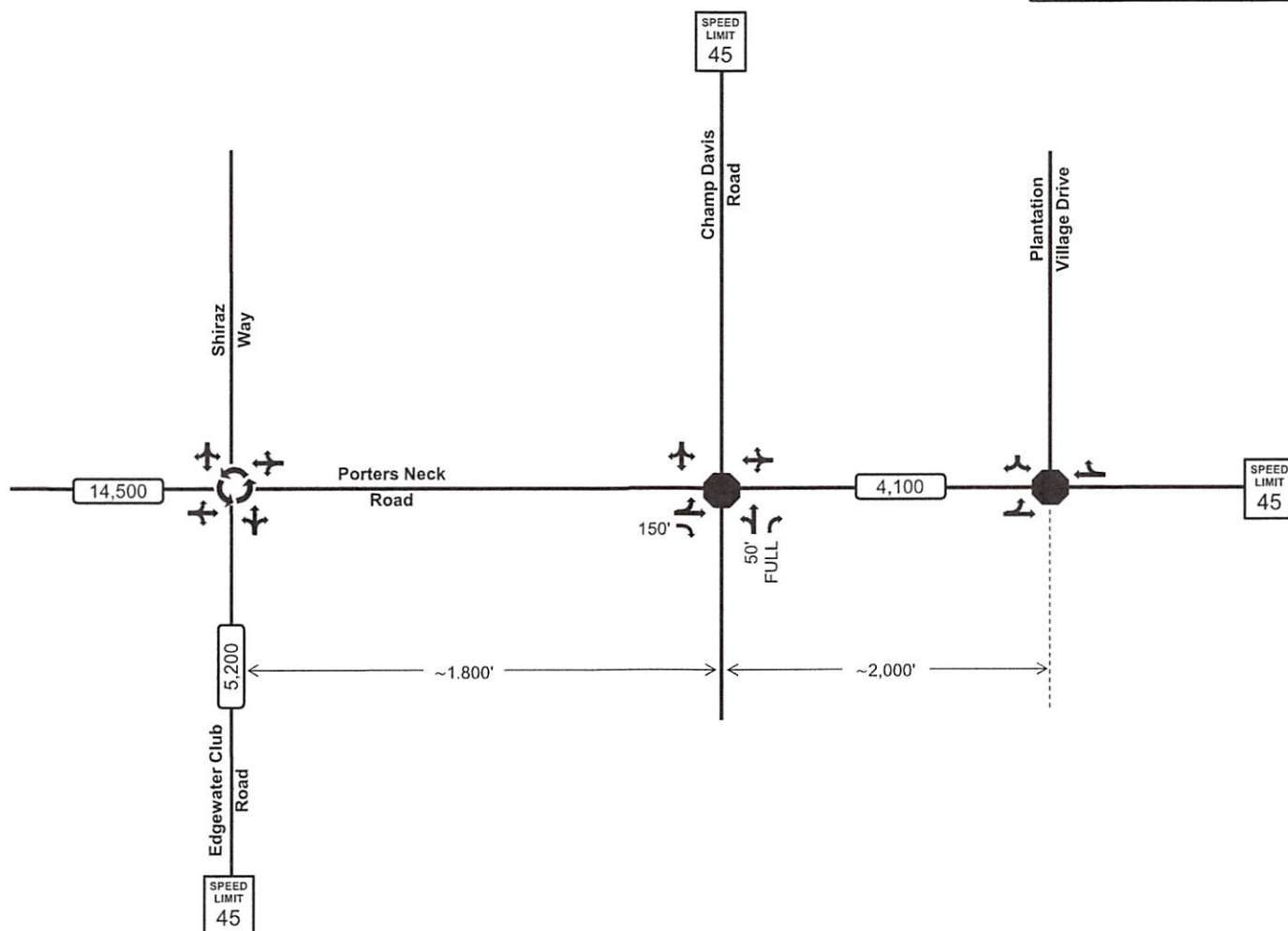


STUDY INTERSECTIONS
BACKGROUND
PROPOSED

FIGURE 2
VICINITY MAP



LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
BLACK = EXISTING	
	2018 AADT VOLUMES
	TRAFFIC MOVEMENT
	ROUNDAABOUT



**FIGURE 3
EXISTING LANE
GEOMETRY**

PLANTATION VILLAGE
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204

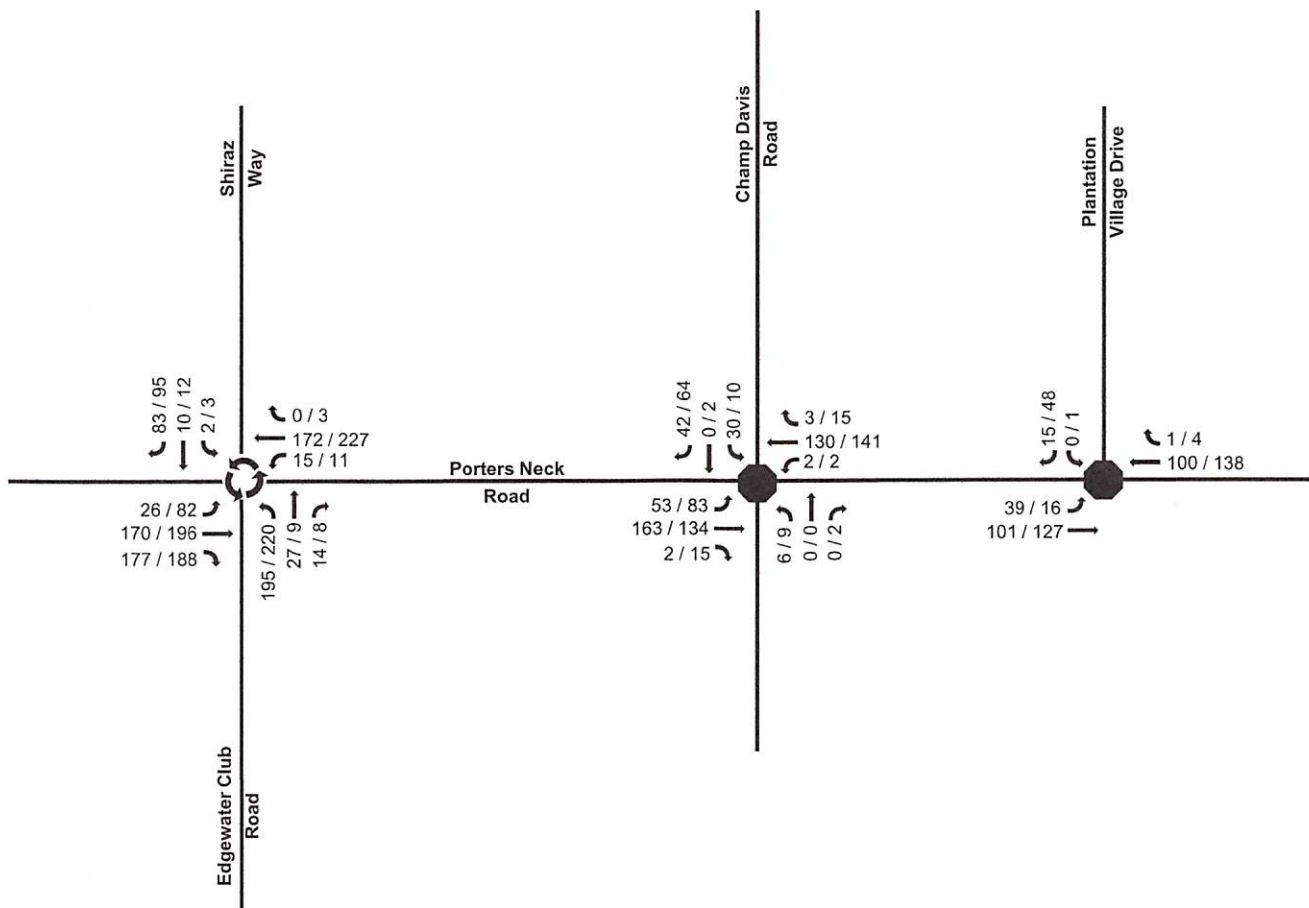
DAVENPORT

*** NOT TO SCALE ***

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.



LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
	BLACK = EXISTING
	TRAFFIC MOVEMENT
	ROUNDBABOUT
	AM / PM PEAKS



*** NOT TO SCALE ***





This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

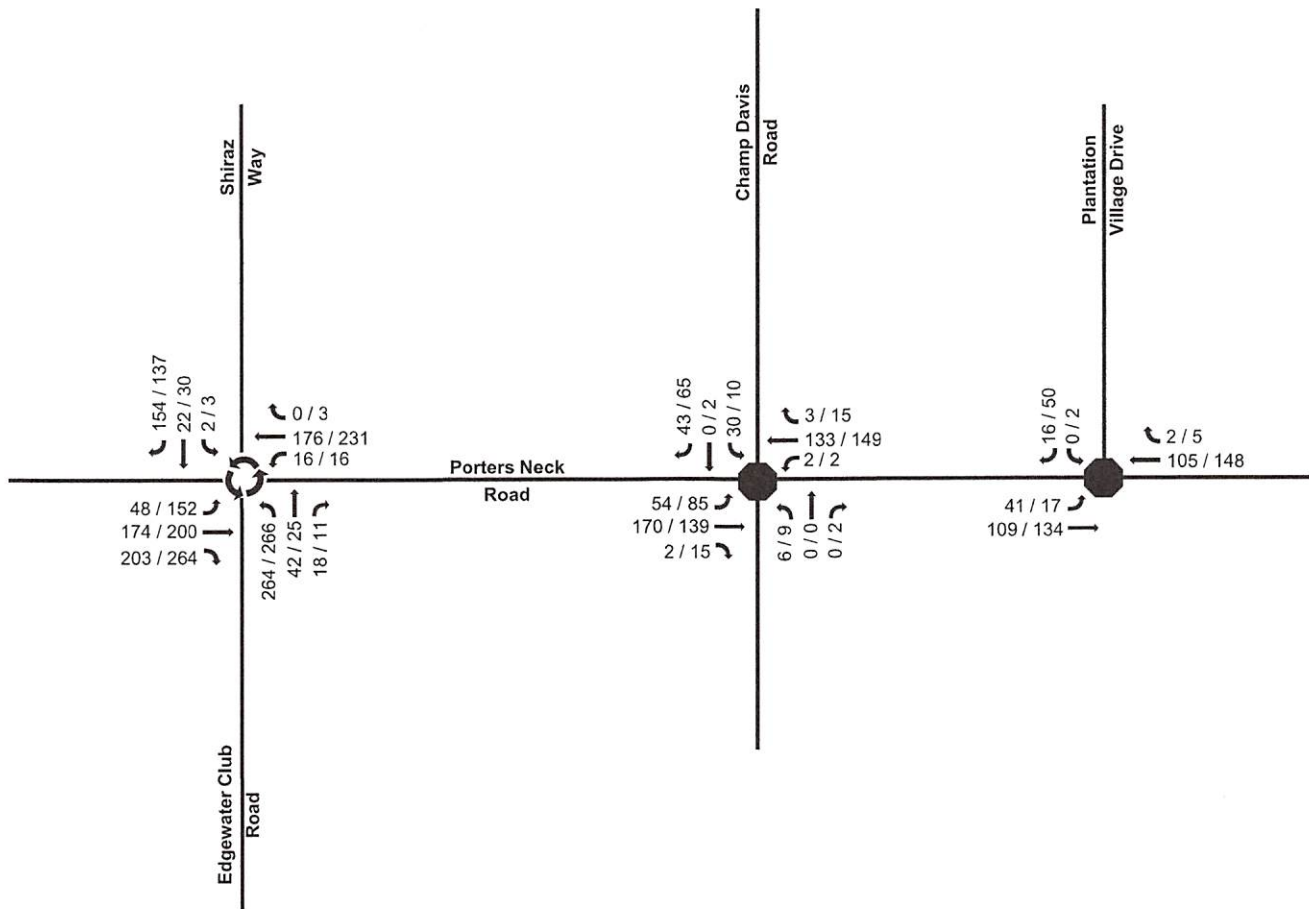
FIGURE 4
2020 EXISTING TRAFFIC
VOLUMES

PLANTATION VILLAGE
 NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204



LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
BLACK = EXISTING	
	TRAFFIC MOVEMENT
	ROUNDBABOUT
AM / PM PEAKS	




*** NOT TO SCALE ***

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Rouse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.






FIGURE 7
2022 FUTURE NO BUILD
VOLUMES

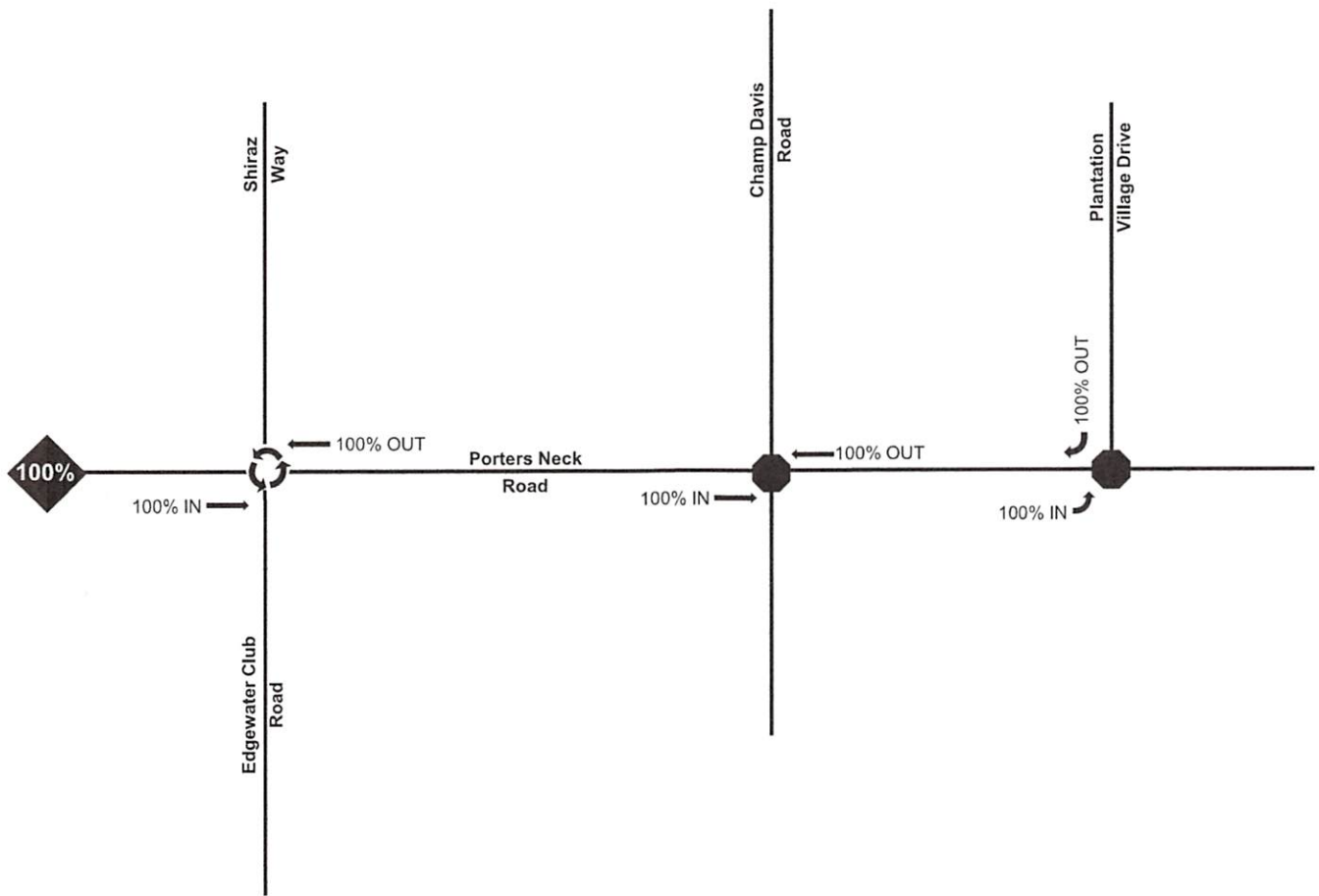
PLANTATION VILLAGE
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204

 **DAVENPORT**



LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
BLACK = EXISTING	
	TRAFFIC MOVEMENT
	ROUNDBABOUT
	DESTINATION NODE



*** NOT TO SCALE ***

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

**FIGURE 6
TRIP DISTRIBUTION**

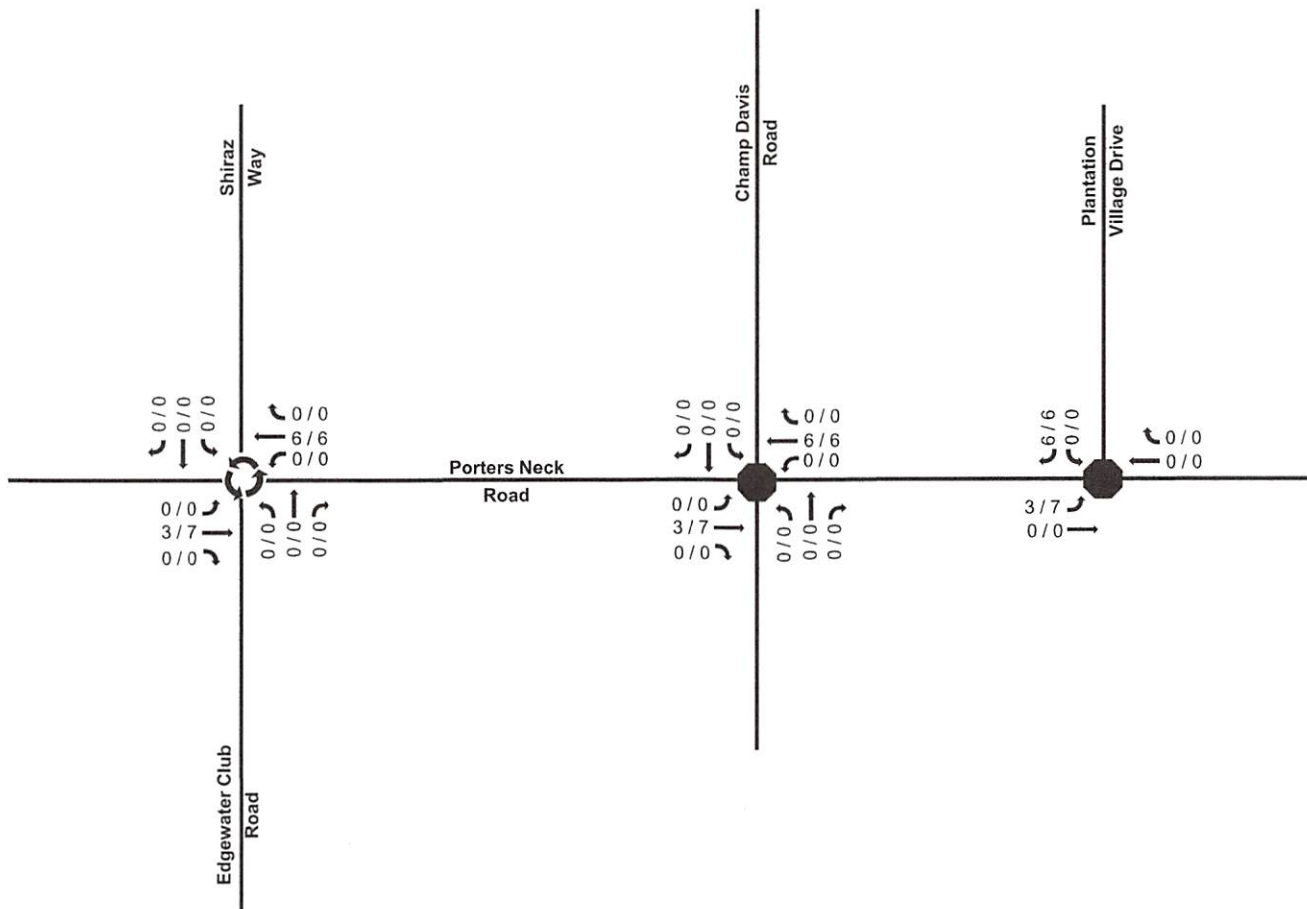
PLANTATION VILLAGE
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204





LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
BLACK = EXISTING	
	TRAFFIC MOVEMENT
	ROUNDBABOUT
AM / PM PEAKS	



*** NOT TO SCALE ***

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

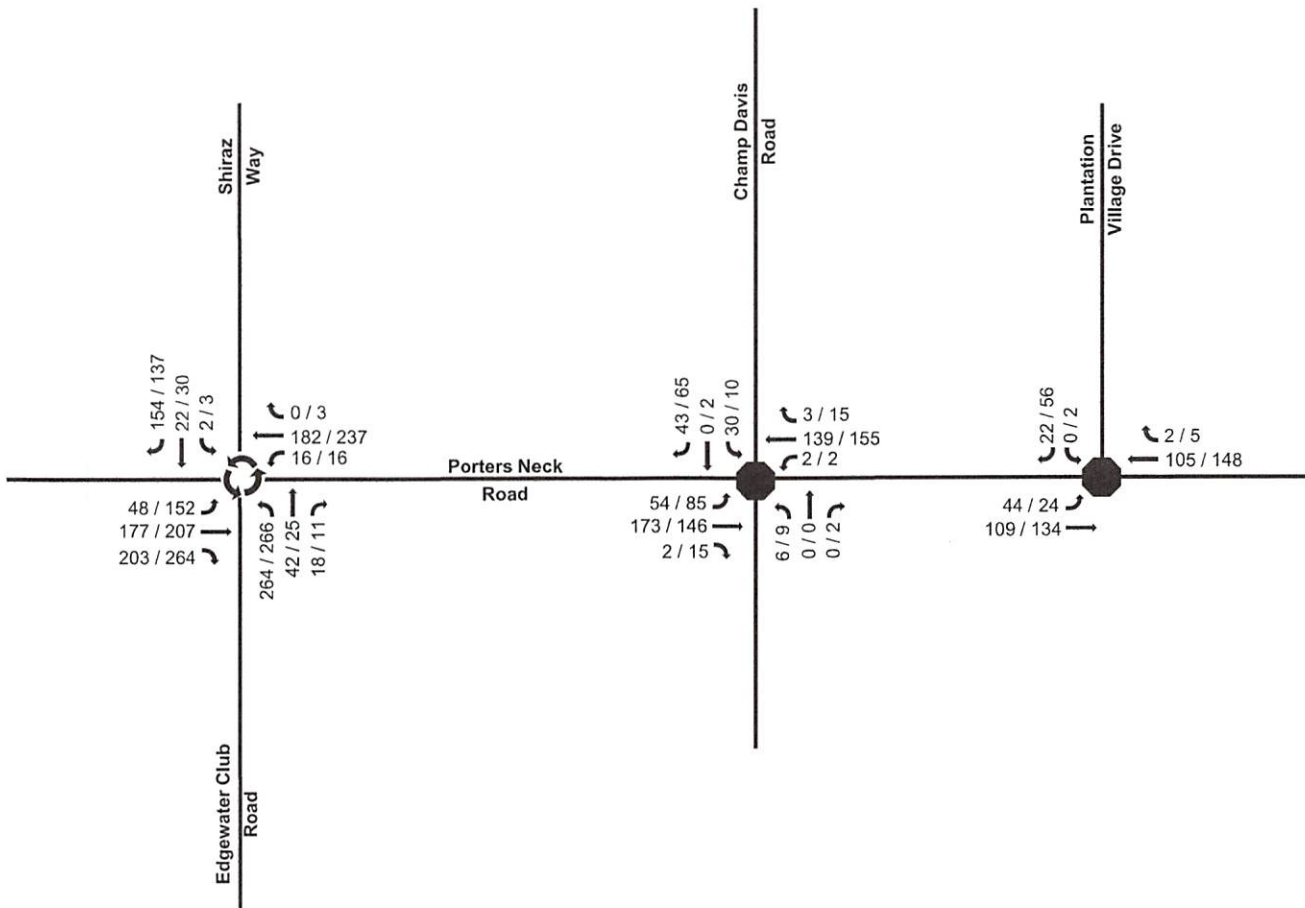
FIGURE 7
PHASE 1 SITE TRIPS

PLANTATION VILLAGE
 NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204



LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
	BLACK = EXISTING
	TRAFFIC MOVEMENT
	ROUNDBABOUT
AM / PM PEAKS	



*** NOT TO SCALE ***

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

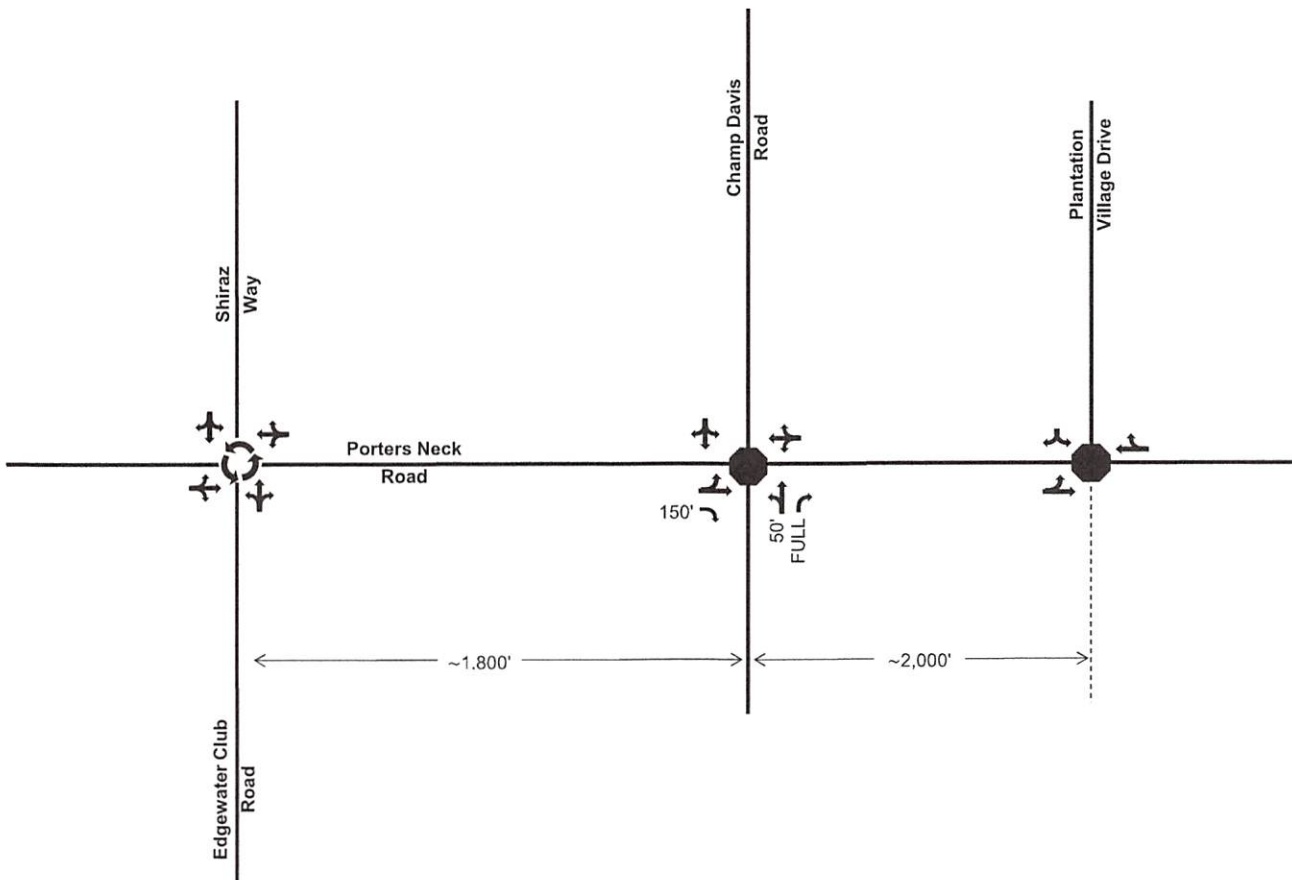
FIGURE 8
2022 PHASE 1 BUILD
VOLUMES

PLANTATION VILLAGE
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204



LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
BLACK = EXISTING BLUE = PROPOSED	
	ROUNDBABOUT



*** NOT TO SCALE ***

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

FIGURE 9 PHASE 1 RECOMMENDED IMPROVEMENTS

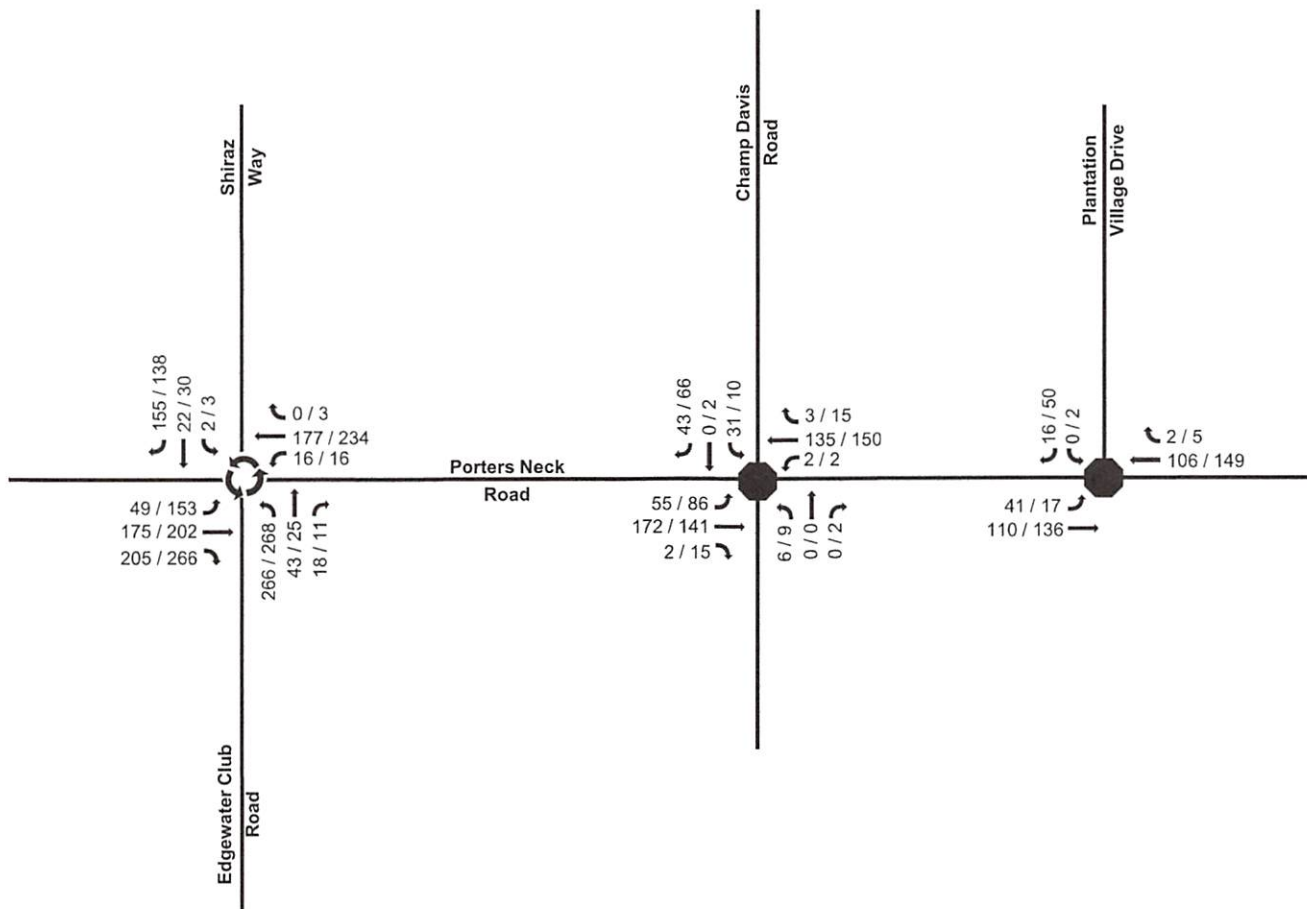
PLANTATION VILLAGE
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204





LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
BLACK = EXISTING	
	TRAFFIC MOVEMENT
	ROUNDBABOUT
AM / PM PEAKS	



*** NOT TO SCALE ***





This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

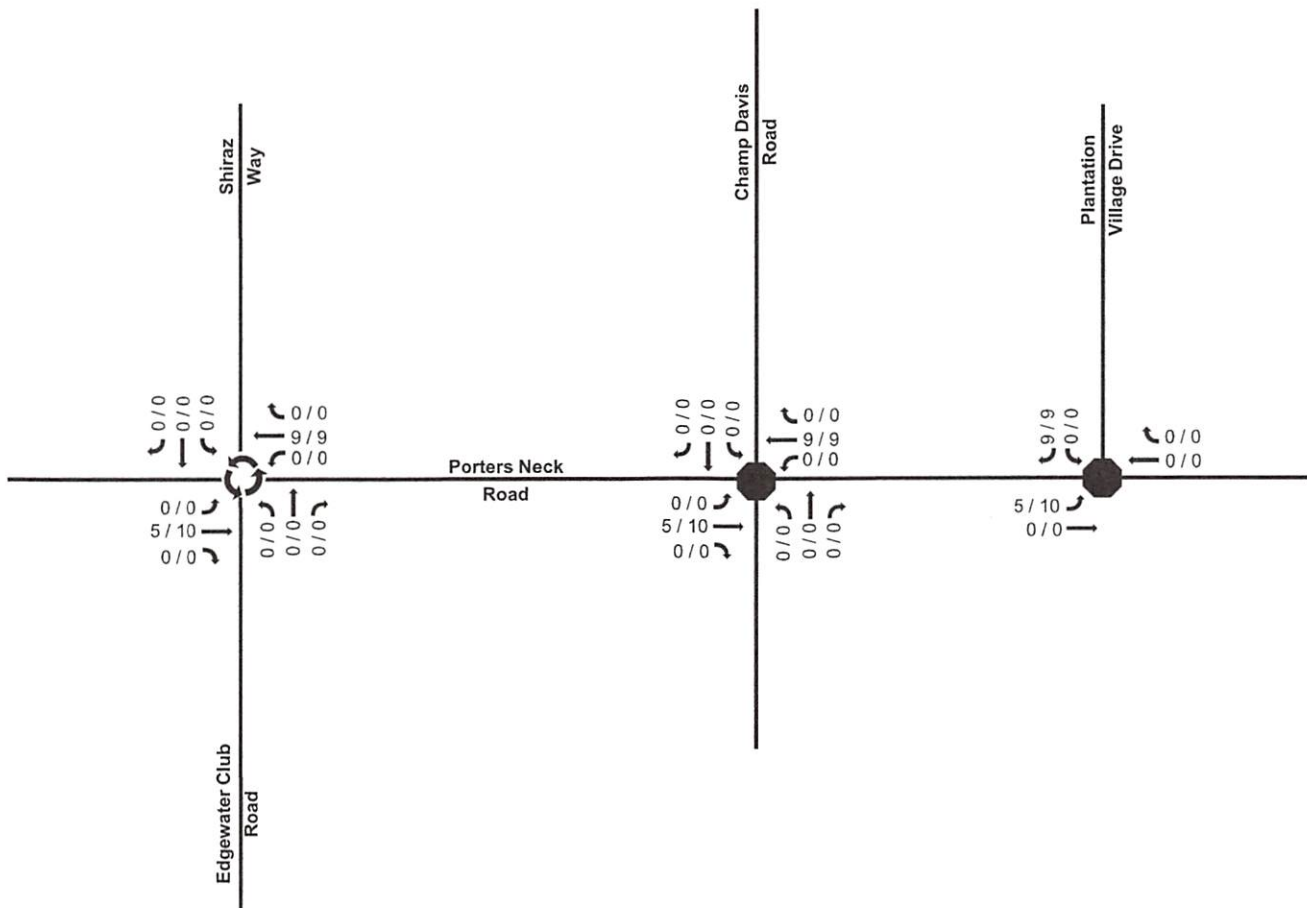
FIGURE 10
2023 FUTURE NO BUILD
VOLUMES

PLANTATION VILLAGE
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204



LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
BLACK = EXISTING	
	TRAFFIC MOVEMENT
	ROUNDBABOUT
AM / PM PEAKS	



*** NOT TO SCALE ***

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

FIGURE 11
PHASE 2 SITE TRIPS

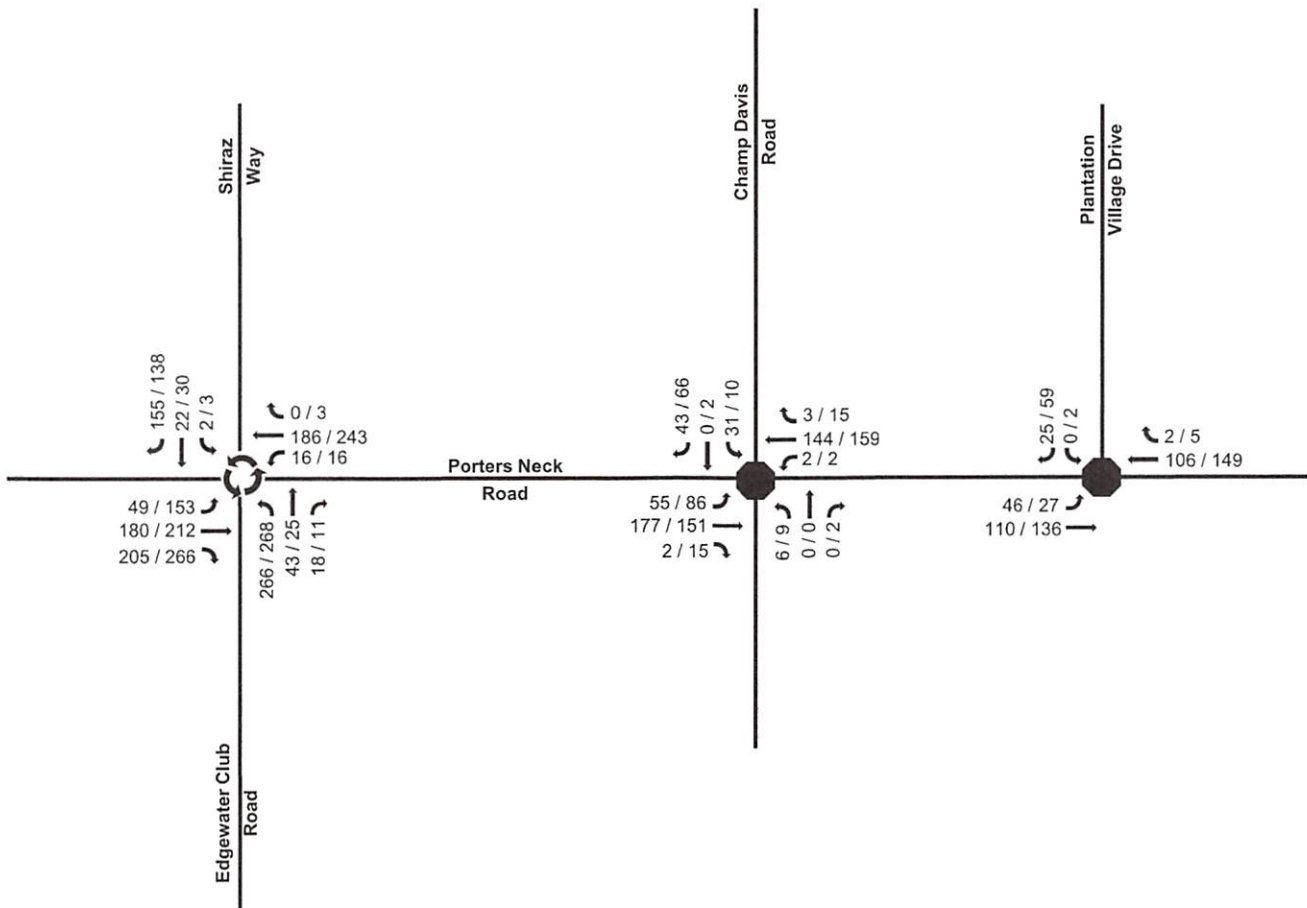
PLANTATION VILLAGE
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204





LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
	BLACK = EXISTING
	TRAFFIC MOVEMENT
	ROUNDBABOUT
AM / PM PEAKS	



*** NOT TO SCALE ***

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

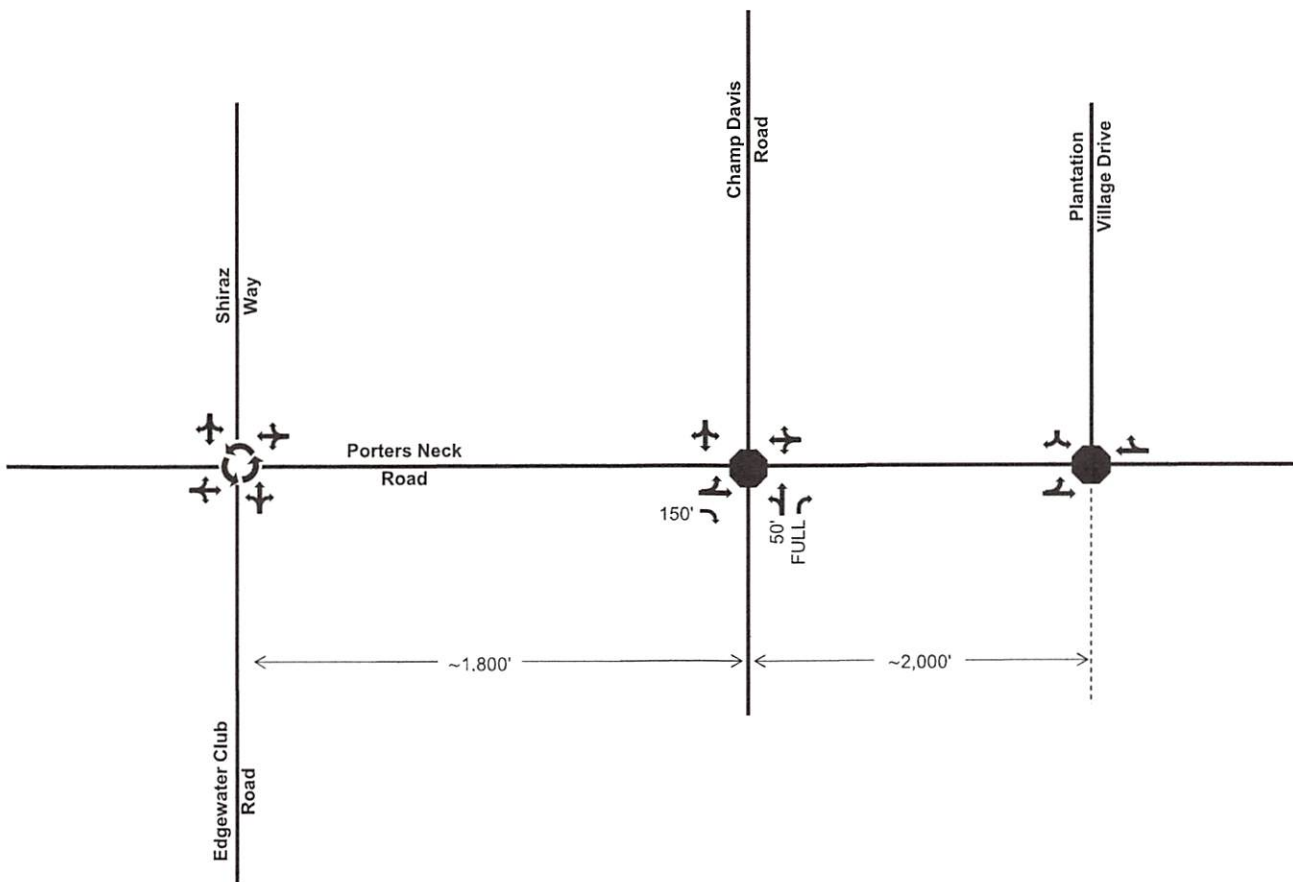
FIGURE 12
2023 PHASE 2 BUILD
VOLUMES

PLANTATION VILLAGE
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200204



LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
BLACK = EXISTING BLUE = PROPOSED	
	ROUNDBABOUT



*** NOT TO SCALE ***

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

**FIGURE 13
PHASE 2
RECOMMENDED
IMPROVEMENTS**

PLANTATION VILLAGE
NEW HANOVER COUNTY, NC

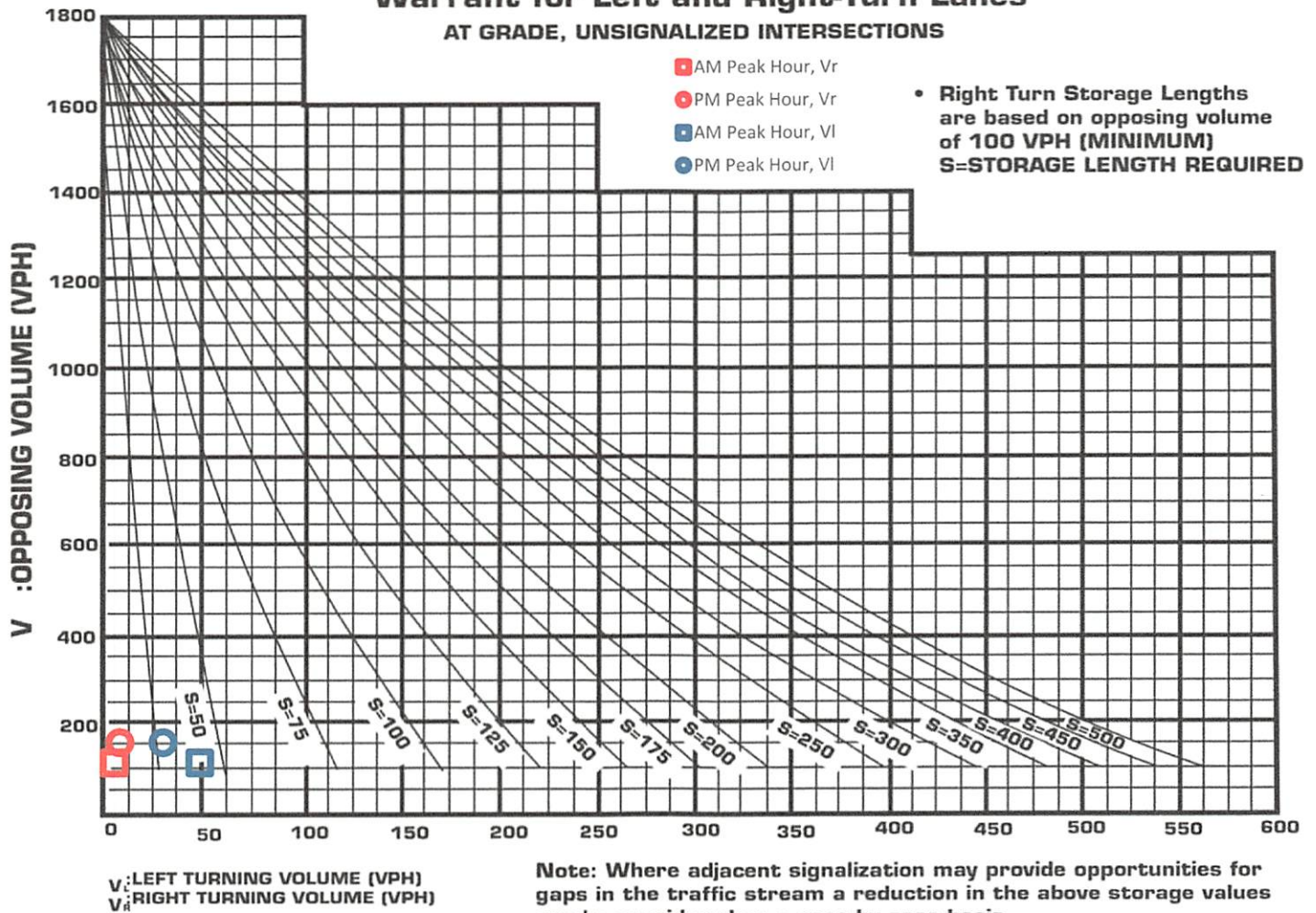
PROJECT NUMBER 200204



Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	108	46	AM	108	2
PM	154	27	PM	154	5

Warrant for Left and Right-Turn Lanes

AT GRADE, UNSIGNALIZED INTERSECTIONS



TURN LANE WARRANT SUMMARY

PHASE 2
PORTERS NECK AT PLANTATION