ADD-ONS

COUNTY COUNCIL OF BEAUFORT COUNTY

ADMINISTRATION BUILDING
BEAUFORT COUNTY GOVERNMENT ROBERT SMALLS COMPLEX
100 RIBAUT ROAD
POST OFFICE DRAWER 1228
BEAUFORT, SOUTH CAROLINA 29901-1228
TELEPHONE: (843) 255-2180
www.bcgov.net

AGENDA
NATURAL RESOURCES COMMITTEE
Monday, March 18, 2019
2:00 p.m.
(or immediately following the Community Services Committee Meeting)
Executive Conference Room, Administration Building
Beaufort County Government Robert Smalls Complex
100 Ribaut Road, Beaufort

Committee Members:
Alice Howard, Chairman
Gerald Dawson, Vice Chairman
Michael Covert
York Glover
Chris Hervochon

Staff Support:
Eric Greenway, Community Development Director
Eric Larson, Director Environmental Engineering
Dan Morgan, Mapping & Applications Director
Ebony Sanders, Interim Assessor

1. CALL TO ORDER – 2:00 p.m.

2. PLEDGE OF ALLEGIANCE

3. APPROVAL OF AGENDA

4. CITIZEN COMMENTS (*Comments regarding agenda items only*)

5. UPDATES – *Eric Greenway, Director Community Development*
   A. Previous Planning Commission Meeting
   B. Previous Southern Lowcountry Regional Planning Board (SOLOCO) Meeting
   C. 2020 Census Update

6. BEACH CITY ROAD PARCELS APPRAISAL (MITCHELVILLE) - *Eric Greenway, Director Community Development* (backup)

7. SOUTHERN BEAUFORT COUNTY MAP AMENDMENT (ZONING CHANGE OF 175 FORDING ISLAND ROAD, BLUFFTON) - *Melissa Peagler, Long Range Planner* (backup)

8. DISCUSSION / RIVER OAKS PLANNED UNIT DEVELOPMENT MASTER PLAN AMENDMENT *Eric Greenway, Director Community Development* (backup)

9. DISCUSSION / WALCAM LAND EXCHANGE PROPOSAL - *Stefanie Nagid, Passive Parks Manager (*backup)

10. DISCUSSION / LAND ACQUISITION PROCEDURES – *Eric Greenway, Director Community Development* (backup)

11. LAND ACQUISITION PROPOSALS – *Eric Greenway, Director Community Development; Stefanie Nagid, Passive Parks Manager*
    A. Cleland Property, Okatie Connector (backup)
    B. Pineview, Lady's Island (backup)

12. PRESENTATION / WIDGEON POINT PARK PLAN – *Stefanie Nagid, Passive Parks Manager* (backup)

13. EXECUTIVE SESSION
    A. Legal advice regarding two potential land purchases

14. MATTERS ARISING OUT OF EXECUTIVE SESSION

15. CONSIDERATION OF APPOINTMENTS AND REAPPOINTMENTS
    A. Rural and Critical Lands Preservation Board / (1) vacancy (backup)
    B. Southern Beaufort County Corridor Beautification Board / (2) vacancies (backup)
    C. Stormwater Management Utility Board / (1) vacancy (backup)

16. ADJOURNMENT

2018-2019 Strategic Plan Committee Assignments
Regional Stormwater Management
Comprehensive Impact Fees Update
Affordable Housing Strategy and Actions
County Stormwater Management Program

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

Beach City Road Parcels Appraisal (aka Mitchelville)

Council Committee:

Natural Resources

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

Eric Greenway, CDD Director

Issues for Consideration:

The appraisal of four (4) County/Town of HHI co-owned parcels of land off of Beach City Road on Hilton Head Island for the possible sale to St. James Church.

Points to Consider:

1) Parcel #s: R510 005 000 010I 0000, R510 005 000 010A 0000, R510 005 000 010B 0000, and R510 005 000 0329 0000
2) Relocation of St. James Church and Cherry Hill School from current location to these parcels

Funding & Liability Factors:

Appraised value unknown at this time.

Council Options:

1) Approve the request to conduct an appraisal of all four parcels, 2) Approve the request to conduct an appraisal of a portion of the parcels, 3) Do not approve the request to conduct an appraisal of all four parcels

Recommendation:

Approve the request to conduct an appraisal of all four parcels and direct staff to present to the RCLP Board for consideration of sale.


Beach City Road Parcels: Possible relocation site for St. James Church and Cherry Hill School.
Mitchelville Freedom Park
St. James Church and Cherry Hill School
BEACH CITY ROAD
MITCHELVILLE ROAD
CIRCLEWOOD DRIVE
DELTON ROAD
WILEY ROAD
FISH HAUL ROAD
BAYGALL ROAD
CARTPATH
DRIVEWAY
FORT WALKER DRIVE
BEACH TR
ACCESS

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

ZMA-2019-01 175 Fording Island Road Rezoning T2R- Rural to C5 Regional Center Mixed Use

Council Committee:

Natural Resources

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

Melissa Peagler, Long Range Planner

Issues for Consideration:

The Property owner has requested rezoning of a 4.25 acre parcel located at 175 Fording Island Road in Bluffton from T2R- Rural to C5 Regional Commercial Mixed Use. The property is currently for sell and the owner would like to rezone for marketing purposes.

Points to Consider:

The property is adjacent to existing C5 Regional Mixed Use zoning and regional commercial uses. Community Development Staff recommended approval based on their staff review (attached) of the request. The Planning Commission recommended denial as they expressed concern about the size of the parcel in relation to the zone, increasing regional commercial down the corridor and the impact on the adjacent parcel currently zoned T2-R Rural.

Funding & Liability Factors:

N/A

Council Options:

Approve or Deny the rezoning request.

Recommendation:

Community Development Staff recommended approval. Planning Commission recommended denial.
Vote 4:3

PLANNING DIVISION MEMORANDUM

TO: Beaufort County Council

FROM: Melissa Peagler, Long Range Planner

DATE: March 11, 2019

SUBJECT: **Proposed Beaufort County Community Development Code (CDC) Zoning Map Amendment/Rezoning Request for approximately 4.25 acres at 175 Fording Island Road, Bluffton (R600 022 000 011A 0000) from T2R Rural to C5 Regional Center Mixed Use.**

STAFF REPORT:

A. BACKGROUND:

Case No.	ZMA-2019-01
Owner/Applicant/Agent:	Laura Lewis and Tammy B. Sauter
Property Location:	175 Fording Island Road, Bluffton
District/Map/Parcel:	R600 022 000 011A 0000
Property Size:	4.25 acres approximately
Current Future Land Use Designation:	Community Commercial
Proposed Future Land Use Designation:	Regional Commercial
Current Zoning District:	T2R – Rural
Proposed Zoning District:	C5 Regional Center Mixed Use

B. SUMMARY OF REQUEST

The subject property consists of 4.25 acres located on Fording Island Road in Bluffton. Currently a residential structure is located on the property. The property is zoned T2R - Rural. The property owner's intentions for the property are unclear at this time. The property is for sell.

C. ZONING MAP AMENDMENT ANALYSIS: Section 7.3.40 of the Community Development Code (CDC) states that a zoning map amendment may be approved if the proposed amendment:

1. **Is consistent with and furthers the goals and policies of the Comprehensive Plan and the purposes of this Development Code:** The current proposed Land Use is community commercial. This zoning is more in line with the Regional Commercial land use designation.
2. **Is not in conflict with any provision of this Development Code, or the Code of Ordinances:** This rezoning is not in conflict with the Development Code or the Code of Ordinances.
3. **Addresses a demonstrated community need:** Due to the amount of traffic on the roadway of Highway 278 (Fording Island Road) and the adjacent Regional Commercial zone and uses, it is unlikely that residential rural uses will continue to be the best use of the property.
4. **Is required by changing conditions:** The area has changed to a Regional Commercial use with the adjacent automobile sales facility.
5. **Is compatible with existing and proposed uses surrounding the land subject to the application, and is the appropriate zone and uses for the land.** The proposed rezoning is adjacent to existing C-5 Regional Commercial zoned property.
6. **Would not adversely impact nearby lands.** The addition of this small piece of property into the larger properties that are already being utilized as regional commercial development will not have an adverse impact on nearby lands.
7. **Would result in a logical and orderly development pattern.** The proposed rezoning would result in a logical and orderly development pattern as it is adjacent to C-5 Regional Commercial Zone.
8. **Would not result in adverse impacts on the natural environment – including, but not limited to, water, air, noise, storm water management, wildlife, vegetation, wetlands, and the natural functioning of the environment.** The proposed rezoning should result in minimal impact on the natural environment. Any additional development of the property will need to be addressed through adherence to the natural resource and stormwater standards in the Community Development Code.
9. **Would result in development that is adequately served by public facilities (e.g. streets, potable water, sewerage, storm water management, solid waste collection and disposal, schools, parks, police, and fire and emergency facilities):** The proposed rezoning would not result in an increase on the public facilities or infrastructure.

D. STAFF RECOMMENDATION

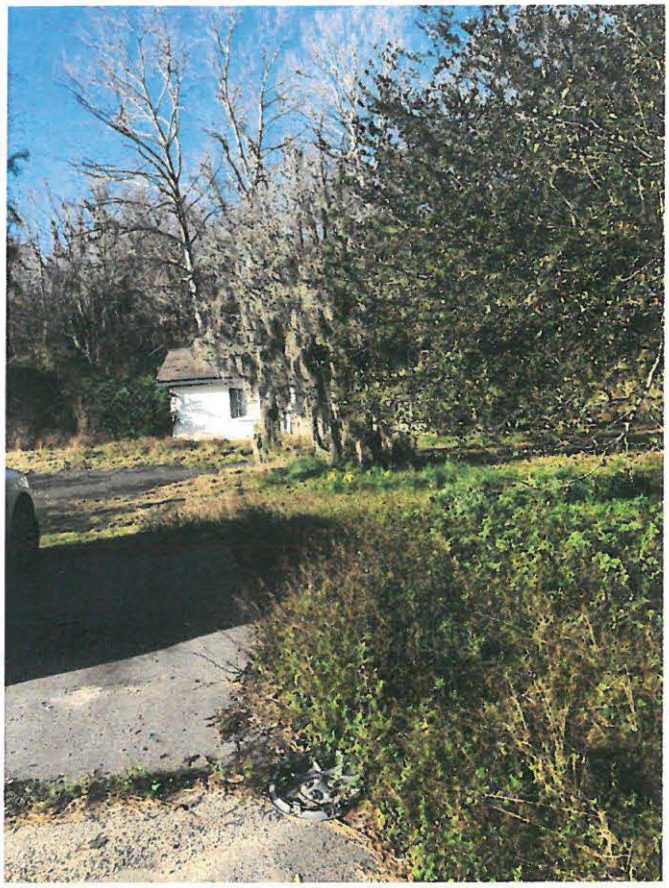
After review of the guidelines set forth in Section 7.3.40 of the Community Development Code, staff recommends that rezoning of the property from T2R Rural to C-5 Regional Commercial. Staff further recommends that the Planning Commission Consider amending the Comprehensive plan to identify the larger area as Regional Commercial verses community commercial due to the current use of the properties in this location.

E. PLANNING COMMISSION RECOMMENDATION

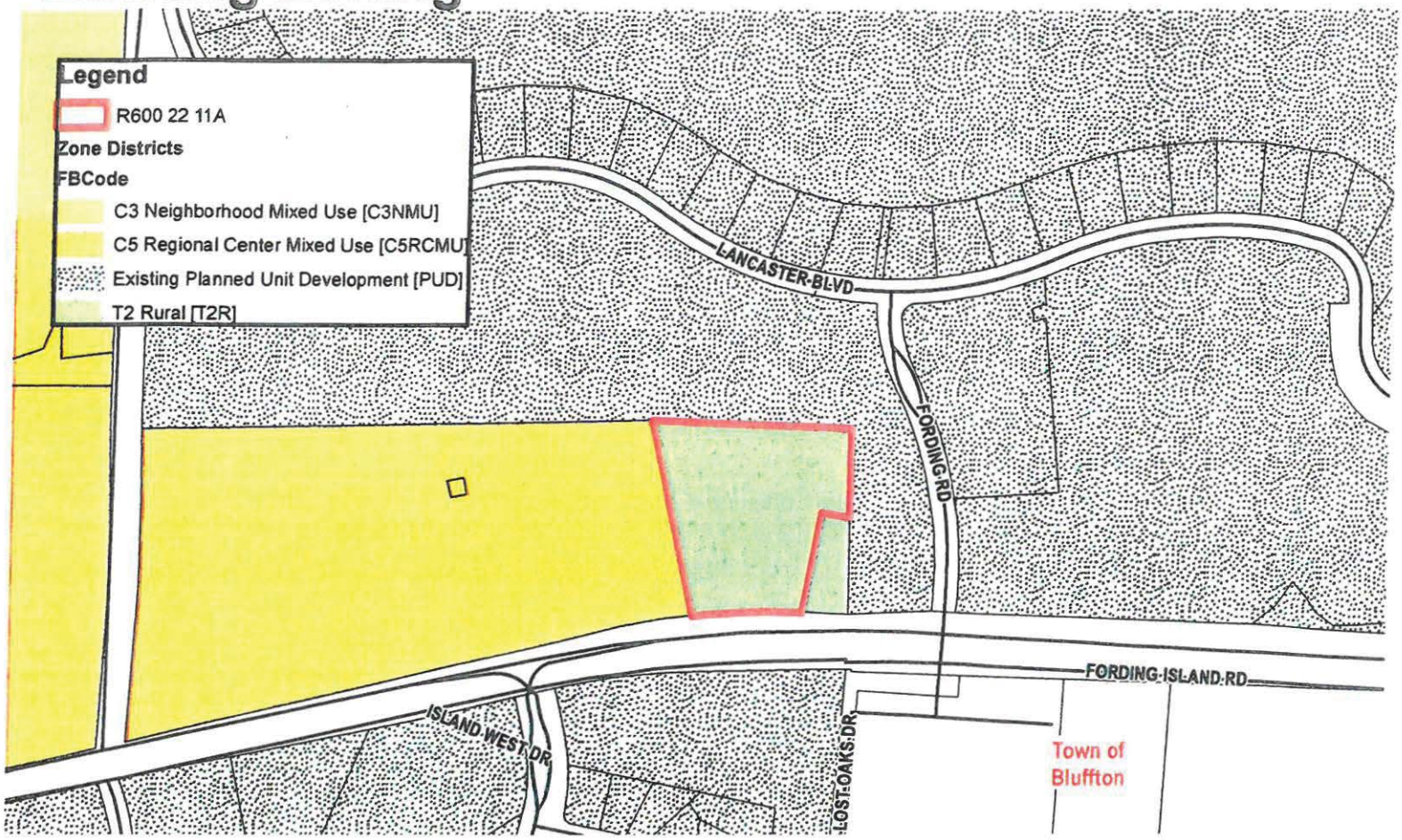
On March 4, 2019 the Beaufort County Planning Commission recommended denial of this rezoning to the Beaufort County Council. They commissioners expressed concern over the size of the parcel in relation to the regional commercial designation as well as increasing the regional commercial uses in this area. Commissioners also expressed concern over the adjacent parcel that is zoned T2R – Rural. The Planning Commission decided to review the amending the comprehensive land use plan as part of the entire review during the next year.

F. ATTACHMENTS:

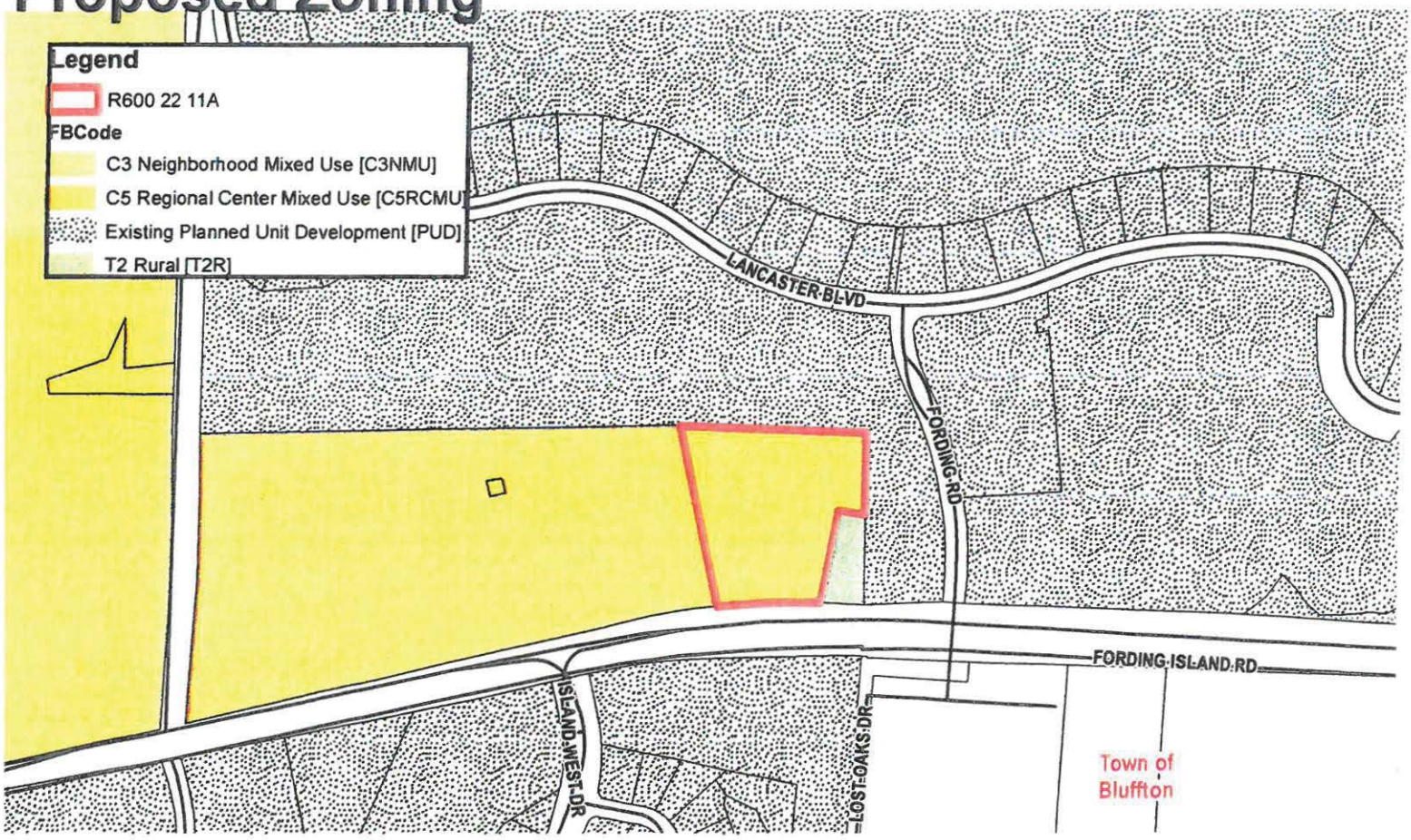
- Before and After Zoning Map of site
- Future Land Use Plan of the Area
- Photographs of the site

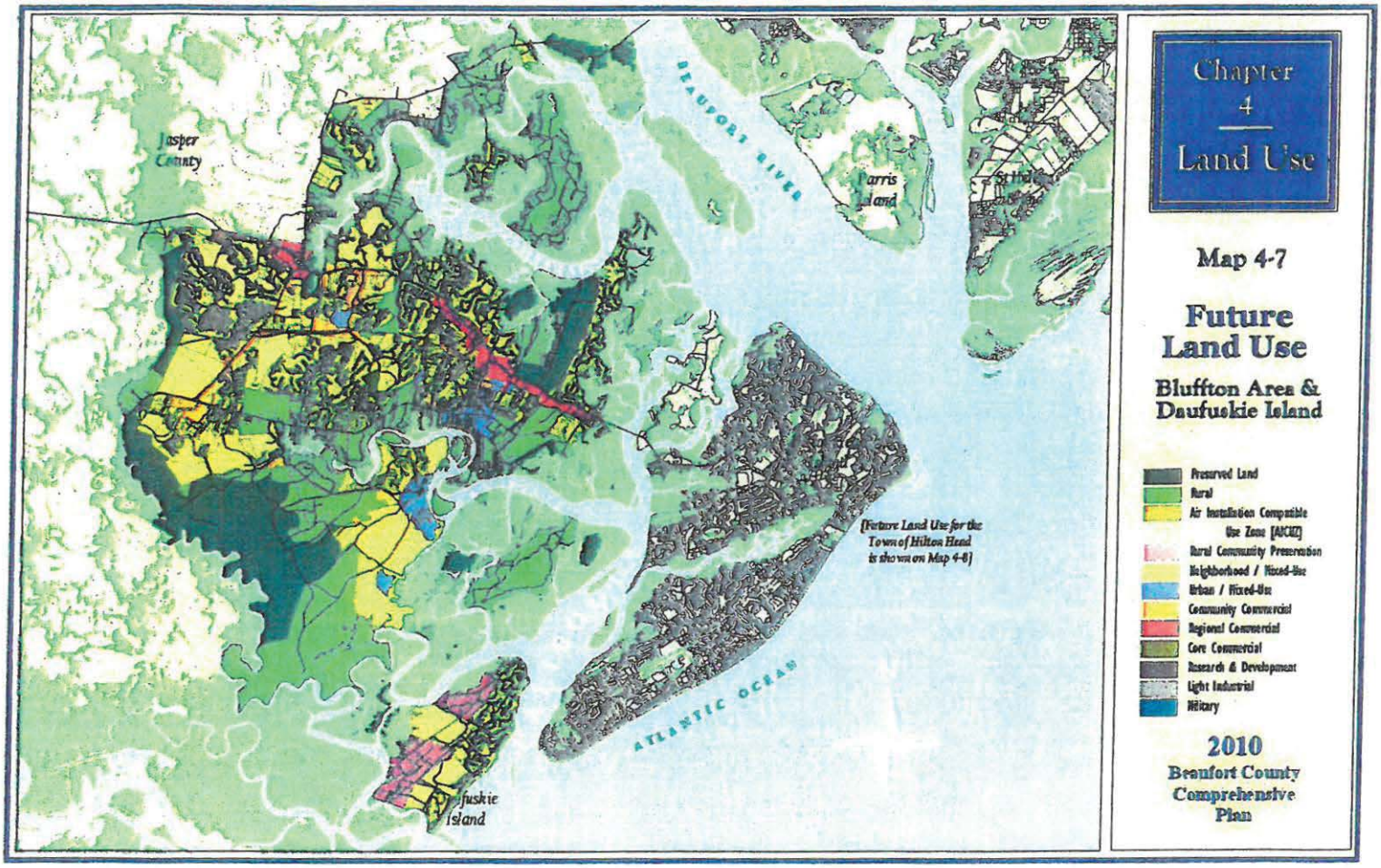


Existing Zoning



Proposed Zoning




Jasper County
BEAUFORT RIVER
Parris Island
St Helena
[Future Land Use for the Town of Hilton Head is shown on Map 4-8]
ATLANTIC OCEAN
Daufuskie Island
Chapter 4
Land Use
Map 4-7
Future Land Use
Bluffton Area & Daufuskie Island
Preserved Land
Rural
Air Installation Compatible Use Zone (AICUZ)
Rural Community Preservation
Neighborhood / Mixed-Use
Urban / Mixed-Use
Community Commercial
Regional Commercial
Core Commercial
Research & Development
Light Industrial
Military
2010
Beaufort County Comprehensive Plan

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

River Oaks Planned Unit Development (PUD) Master Plan Amendment

Council Committee:

Natural Resources Committee

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

Eric Greenway, AICP

Issues for Consideration:

Master Plan amendment to the River Oaks PUD.

Points to Consider:

Consistency with the Planned Unit Development Standards in the Zoning and Development Standards Ordinance.
Consistency with the Comprehensive Plan.
Comparison of the proposed master plan with what would be permitted under the County's current zoning ordinance - the Community Development Code.
Impact on transportation, schools, and the environment.

Funding & Liability Factors:

n/a

Council Options:

approval; approval with conditions; or denial

Recommendation:

Recommend denial of Master Plan amendment (see attached staff report)

COUNTY COUNCIL OF BEAUFORT COUNTY
Community Development Department
Beaufort County Government Robert Smalls Complex
Administration Building, 100 Ribaut Road
Post Office Drawer 1228, Beaufort, South Carolina 29901-1228

TO: Natural Resources Committee of County Council

FROM: Eric Greenway, AICP, Beaufort County Community Development Director

DATE: March 11, 2019

SUBJECT: **River Oaks Planned Unit Development (PUD) Master Plan Amendment**

STAFF REPORT:

A. BACKGROUND:

Case No.	ZMA-2017-11
Owner:	BBII Holding Company, LLC (Roger L. Saunders)
Applicant:	Joshua Tiller, J.K. Tiller and Associates
Property Location:	Located in the Okatie area on Cherry Point Road approximately 2,000 feet from SC 170
District/Map/Parcel:	R603-013-000-008C-0000
Property Size:	63.5 acres

A. SUMMARY OF REQUEST: The River Oaks PUD is located in the Okatie area on Cherry Point Road approximately 2,000 feet from SC 170. The property is immediately to the East of the Okatie Elementary school and south of the Osprey Point PUD. The applicant is requesting to amend the PUD by changing it from a senior village to a single-family subdivision. The revised master plan consists of 315 single-family houses. 124 of the lots will be 4,400 square feet (40' x 110'); and the remaining 191 lots will be 3,300 square feet (30' x 110'). The main entrance of the subdivision is off Cherry Point Road. The PUD proposes a connection to the Osprey Point PUD. The revised master plan provides a network of pedestrian sidewalks with a connection to the property line of Okatie Elementary. The lots along the perimeter of the property are proposed to be 4,400 square feet and be accessed from the front. The remaining lots will be 3,300 square feet and will be accessed by alleys.

Existing PUD: The River Oaks PUD sits on 63.5 acres and was designed to accommodate seniors (65 or older) with a combination of independent and assisted living quarters and a nursing home. The PUD consists of 118 cottages for independent living, 146 apartment units for independent and assisted living, and 66 nursing home beds. The original River Oaks PUD was approved by County Council in 2008 in conjunction with two adjoining PUDs – Osprey Point and Okatie Marsh. This action amended the zoning of a total of 284 acres and increased the allowable density nine-fold. The combined PUDs featured an integrated street network, a mix of land uses and housing types, and a system of pathways, sidewalks and bike lanes. County Council eventually supported the zoning change because they determined that these features made the community economically sustainable and provided enough internal trip capture to reduce the development's impact on SC 170. Since the adoption of the original PUD, in 2012 Okatie Marsh (395 dwelling units, 97.7 acres) was purchased through the Rural and Critical Lands Program. Additionally, in 2014, County staff approved an amendment to the River Oaks Development Agreement lifting an age restriction on the PUD.

B. CONSISTENCY WITH ZDSO PUD STANDARDS: The Zoning and Development Standards Ordinance states the purpose of PUDs is to implement the Comprehensive Plan by allowing flexibility that would result in improved design, character, and quality while preserving natural and scenic features. Innovative features may include preservation of open space and natural areas; greenways, sidewalks, and other bike/pedestrian features; enhanced landscaping and deeper buffers; vehicular and pedestrian connectivity; provision of affordable housing; dedication of public parks and community facilities; mitigating adverse impacts on neighboring properties, and burying utilities. The revised master plan addresses some of these features. The plan provides for a system of streets and blocks with a network of sidewalks and pathways. Three of the stormwater ponds also function as usable civic space that are accessible to community residents by being located on streets rather than in the interior of blocks. However, none of these provisions exceed what would be required under the County's Community Development code for a residential development of this density.

C. CONSISTENCY WITH THE COMPREHENSIVE PLAN: The future land use designation for the River Oaks PUD is Neighborhood Mixed-Use. This district calls for new development to be pedestrian-friendly, have a mix of housing types, a mix of land uses and interconnected streets. The maximum gross residential density is approximately two dwelling units per acre. Residential areas are to have a network of sidewalks and trails to link the development to retail, employment, and schools. The Plan allows for some density bonuses for the creation of affordable housing.

The River Oaks PUD is also designated as a village in the Place Type Overlay District which calls for clusters of residential neighborhoods of sufficient intensity to support a central, mixed-use environment. Villages are meant to be organized within an interconnected network of streets and blocks in multiple pedestrian sheds. They include areas where one has the opportunity to walk, bike, or ride transit to work, to fulfill daily shopping needs (such as groceries), and to access other amenities within close proximity.

D. STORMWATER: The County's Stormwater Manager reviewed the revised PUD and drainage plan and stated that the concept that the applicant has submitted is acceptable. However, the revised PUD document needs to clearly incorporate the County's existing Stormwater BMP Manual and any revisions that are made in the future. When the original PUD was approved in 2008, the County did not have volume control standards in place. The project's location on the Okatie River makes it crucial that it follow the latest standards and practices for stormwater management. The Okatie River is an impaired waterway and is currently protected by a set of Total Maximum Daily Load (TMDL) regulations to ensure its continued or improved health in the future.

E. CONSISTENCY WITH THE COMMUNITY DEVELOPMENT CODE (CDC):
The revised River Oaks Master Plan could never be approved under the County's Community Development Code. The CDC requires alleys for all blocks where the average lot width is less than 55 feet. 40% (124) of the lots in this proposed master plan are not accessed by alleys. The only district that would permit single-family residential lots of this size is T4 Hamlet Center (T4HC), which is meant to have a mix of housing types and uses.

F. TRANSPORTATION ISSUES:

- **Updated Traffic Impact Analysis (TIA) Ordinance Needed:** An updated Traffic Impact Analysis was submitted in March 2018. Due to recent personnel changes in the Traffic Engineering Department, staff has no recommendation at this point.

- **Paving of Cherry Point Road:** Approximately 1,300 feet of Cherry Point Road would need to be paved in order to accommodate this PUD.

G. POTENTIAL SCHOOL IMPACTS: The combined amendments to the Osprey Point and Cherry Point PUDs may have significant implications on the number of potential students. Both existing PUDs have age restrictions and therefore would have little to no impacts. The proposed amendments would result in the creation of 711 single-family dwelling units with no age restrictions. The School District has been given copies of the two revised PUDs and has expressed concerns about not having excess capacity to address the potential increase in the number of students in southern Beaufort County.

H. RECOMMENDATION: Staff **recommends denial** of the application for the following conditions:

- The proposed amendment does not meet the basic criteria for PUDs as outlined in the ZDSO. PUDs are meant to provide flexibility that would result in improved design, character, and quality while preserving natural and scenic features. Innovative features may include preservation of open space and natural areas; greenways, sidewalks, and other bike/pedestrian features; enhanced landscaping and deeper buffers; vehicular and pedestrian connectivity; provision of affordable housing; dedication of public parks and community facilities; mitigating adverse impacts on neighboring properties, and burying utilities. Other than the provision of some workforce housing, the only thing that the PUD affords the applicant is density (5.2 du per acre) that is double what would otherwise be permitted if the property was simply zoned C3 Neighborhood Mixed-Use (2.6 du per acre), the conventional district best suited to implement the future land use plan in the Comprehensive Plan.
- The Community Development Code makes provisions for residential lots smaller than 5,000 square feet in its higher transect zones. However, with this increased density come requirements for alleys and rear access, sidewalks on both sides of the street, on-street parking, and houses addressing the street. Forty percent of the lots proposed in this master plan are front loaded with front facing garages and do not meet these standards. These requirements are not simply aesthetic, but have a major functional component of separating vehicular and pedestrian movement and providing areas for parking in a high density environment. The proximity of this PUD to Okatie Elementary and the proposed price point of the houses may attract a large number of school age children, making the issue of pedestrian safety all the more important.
- Staff recommends that any revised master plan include alley access for all lots that are less than 55 feet in width; use of front porches for a majority of the houses; and additional useable open space that does not solely consist of stormwater ponds, wetlands, and required buffers.

COMBINED NARRATIVE

OSPREY POINT AND RIVER OAKS
AT OKATIE VILLAGE
AMENDMENT REQUESTS

Introduction

Okatie Village originally consisted of Okatie Marsh PUD, Osprey Point PUD, and River Oaks PUD, each passed by Beaufort County Council as separate parts of a coordinated whole in 2008. Each was enacted with its separate, but coordinated, Development Agreement at the same time, following over two years of active planning and negotiations.

The dream of Okatie Village was a mixed-use community, where kids could walk or be driven to the elementary school (without entering Highway 170), families could shop at the Neighborhood Commercial Village, park facilities were to be available to all, and an historic Workforce Housing requirement would make it possible for average income, working families to be part of the community. Environmental controls were the highest in the County, to protect the river and marsh, with required water quality testing.

The dream evaporated during the Great Recession. Nothing was built or developed on any of the three properties. Okatie Marsh went bankrupt and was purchased by the County for open space. River Oaks went bankrupt next and was sold by the bank, with an uncertain future. Osprey Point came in to Beaufort County for an amendment to its PUD and Development Agreement in 2014, attempting to salvage something with a prospective development partner. The 2014 Osprey Point plan envisioned an age restricted and gated community. That plan also failed to move forward after approval, due to high projected lot costs.

A new plan has emerged for a coordinated development that seeks to restore much of the original vision of Okatie Village, while competing successfully in the current market. Osprey Point presents a new Second Amended Development Agreement and PUD, and River Oaks comes forward with a coordinated First Amendment to its Development Agreement and PUD. The details of each proposal are contained in the respective submittals which accompany this Narrative. To lend context to the proposals, this Narrative summarizes the allowed development within Okatie Village in 2008, followed by the allowed development in 2014 (at the time of the Osprey Point First Amendment), and finally, a brief summary of allowed development within Okatie Village under these current proposals.

The Original Okatie Village Plan (2008)

The original Okatie Village included Okatie Marsh (with 395 allowed homes and 64,800 square feet of commercial), Osprey Point (with 527 allowed homes and 207,700 square feet of Village Commercial), and River Oaks (with 330 allowed retirement cottages, apartments and condos, with nursing and other facilities). Of the combined total of 1,250 homes, 922 homes allowed families, with the remainder being age restricted within River Oaks.

Complete traffic, environmental, and economic studies were performed at the time. The traffic and road improvements were designed to accommodate these larger expected populations, and the storm water and other environmental features were designed to accommodate these loads. In fact, at the request of Planning Staff, these studies included projected development of nearby properties, to ensure that the Okatie Village communities could function and that the designed systems were adequate.

Only the River Oaks retirement PUD was envisioned to be gated, so that all family residences within both Okatie Marsh and Osprey Point could reach, through internal roads and paths, both the nearby school site and the planned Village Commercial area off Highway 170. The original developers of both Osprey Point and Okatie Marsh made historic commitments to include affordable, workforce housing for at least some of the product types, but not for single family housing.

Okatie Village Plan in 2014

The years from the original 2008 approvals of Okatie Village communities, through 2013, were very dark times. As stated above, Okatie Marsh failed completely and was purchased by Beaufort County for open space. River Oaks, the proposed retirement community, foundered and was in bankruptcy and foreclosure. Osprey Point was the last standing of the three communities, but no development had taken place and disaster was on its horizon as well. A national builder sought the Osprey Point property for an age restricted, gated community. Many months were spent in negotiations with Beaufort County, and finally the First Amendment to Osprey Point Development Agreement and PUD was passed in late 2014. But alas, internal negotiations and projected lot cost overruns doomed the new Osprey Point direction. No development took place and the proposed national builder moved on.

With the passage of the Osprey Point First Amendment in 2014, the original vision for Okatie Village was all but lost. Okatie Marsh was gone, and its potential for 395 homes was down to zero. River Oaks was in bankruptcy, with no one stepping up to develop the retirement center at that location. Osprey Point was down to 396 potential residents (from its 527 original approval). All of the anticipated homes within Osprey Point were to be age restricted homes, with no provision for families to interact with the schools or the planned Village Commercial

area. This loss of much of the residential density darkened the possibility of the Village Commercial area ever being built as envisioned, and doomed its future to a highway strip center.

The new 2014 commitment of Osprey Point to develop a minimum of 15 affordable homes became a somewhat hollow commitment, with no houses being built at all, at any price range.

New Okatie Village Plan of 2017

Against this background, the owners of Osprey Point and River Oaks have joined forces to present a new coordinated plan, which revives much of the original Okatie Village dream. All homes in both communities will now allow families.

Even more importantly, the two communities have pledged to allow cross access to one another, so that all residents can reach the schools and all residents can reach the Village Commercial area. Total residential density for Osprey Point remains at 396, and River Oaks density is forecast at 315 homes. The Village Commercial density remains at 207,700, but now has a chance to thrive as part of an active, family oriented community.

One of the best features of the revived Okatie Village vision is an increased commitment to affordable, workforce housing. At present, before these amendments, the requirement for all of Okatie Village (if it develops as expected as single family) is 15 affordable homes. The new development partner has stepped up this commitment, and increased it substantially. A new minimum commitment of 40 affordable workforce homes within Okatie Village has been added. This important pledge will allow working families, teachers, police, fire fighters and others to buy homes in a beautiful new community.

The official documents for the First Amendment to River Oaks Development Agreement and PUD, and the Second Amendment to Osprey Point Development Agreement and PUD, are attached to this Narrative. The plans are explained in greater detail, along with the justifications for changes, in the body of these documents. The Owners, the prospective developers, and all team members will stand ready to answer any questions that arise in the process.

We seek the support of all Beaufort County residents, and we urge County staff, the Planning Commission, and Members of Council to review these requests carefully, and approve this revived vision for Okatie Village.

Respectfully submitted,

Lewis J. Hammet
Attorney for Osprey Point & River Oaks

LIST OF PROPOSED PUD CHANGES

RIVER OAKS AT OKATIE VILLAGE PUD

1. Changes:
    a. Master Plan and Trail Plan reflect new direction as a family oriented community, including restored interconnectivity with Osprey Point, so all residents in both communities can reach schools, village commercial, and the 13 Acre park (by internal connections).
    b. The 30’ and 40’ Lot layout reflects single family uses, which was allowed previously, but previous layout reflected an expected retirement center. See Exhibits B-1 and B-2 for lot building placement details.
    c. Density reduction from 330 units to 315 units.
    d. Design and development standards adjusted to match the standards in the adjacent Osprey Point neighborhood, to accommodate more affordable, single family product. The builder has agreed to increase the commitment to affordable/workforce housing in the two communities (under the Development Agreement).
    e. As requested by Staff and the Planning Commission, the Master Plan has been updated to include alleyways on all 30’ lots. In addition, these 30’ Lots will be “zero” lot line (Z-Lots), which maximizes private open space within the lots. (See Exhibit B-1)
    f. All stormwater, environmental and related standards continue, including the commitment to stormwater quality testing.

All other items in the First Amendment to the River Oaks PUD and Development Agreement relate to Development Agreement issues.

STATE OF SOUTH CAROLINA	**)**	**FIRST AMENDMENT TO**
	)	**RIVER OAKS AT OKATIE VILLAGE**
COUNTY OF BEAUFORT	**)**	**DEVELOPMENT AGREEMENT AND PUD ZONING**

This First Amendment To River Oaks at Okatie Village Development Agreement and PUD Zoning ("First Amendment") is made and entered this _____ day of _____, 2017, by and between Roger Saunders and Sloan Saunders(Owner), and the governmental authority of Beaufort County, South Carolina ("County").

WHEREAS, River Oaks is a portion of a larger, coordinated development area, known as Okatie Village, which also included the Okatie Marsh PUD and the Osprey Point PUD, with their respective Development Agreements, which were negotiated, adopted, and recorded simultaneously with River Oaks; and,

WHEREAS, no development activity or sales activity has taken place within the overall Okatie Village properties, including River Oaks, during the approximately 9 years since the original approvals of these developments; and,

WHEREAS, the original Development Agreements for Okatie Village would have expired in September of 2014, but such Development Agreements have been extended by the South Carolina Tolling Acts of 2010 and 2013, so that the expiration date has been effectively extended until approximately January 1, 2022; and,

WHEREAS, significant changes have taken place in real estate market conditions and within the Okatie Village development area since the original approval of River Oaks, making it

practically and economically unfeasible to develop River Oaks under the exact terms of the original River Oaks Development Agreement and PUD; and,

WHEREAS, the current Owner and County have agreed to amend the River Oaks Development Agreement and PUD in order to adjust the terms thereof to reflect current conditions as provided below;

NOW THEREFORE, in consideration of the terms and conditions hereof, the Owner and County hereby agree as follows:

I. INCORPORATION.

The above recitals are incorporated herein by reference.

II. STATEMENT OF DEVELOPMENT BACKGROUND AND CHANGES TO MARKET CONDITIONS AND CIRCUMSTANCES.

Planning and negotiations toward ultimate approval of the three Okatie Village Tracts, including River Oaks, occurred in 2006 - 2008, at a time that development was exploding in Beaufort County, and the pace of that development activity was expected to continue and accelerate as the baby boom generation was beginning to reach retirement age. Prices for homes and for commercial properties were escalating and that trend was expected to continue.

All of these trends ended before development of any of the Okatie Village communities could begin. Sales prices plummeted and a financial crisis prevented developers from acquiring needed development loans, and prevented potential buyers from obtaining home loans, even at reduced prices. Okatie Village properties were particularly hard hit, since their Development

Agreements imposed fees and burdens beyond any other development properties in Beaufort County.

The Okatie Marsh PUD failed completely before any development took place. Beaufort County acquired the entire property, which has been added to the County's Open Space land holdings. River Oaks, envisioned as a retirement facility with 330 residential units, plus nursing home and other facilities, failed to materialize. In 2014, a new version of the River Oaks community as a non-age restricted, family community was ruled possible by minor amendment, but that also failed, largely because more extensive changes to the Master Plan were needed than a minor amendment could accommodate, and also, due to the continuing problem of Development Fees in excess of competition.

Osprey Point, the central property of the three Okatie Village tracts, now has real potential to move forward in an economically conscientious way, under the name Malind Bluff. Several changes to the original plan have been necessitated by these changing market conditions, and are set forth in the Second Amendment to Osprey Point Development Agreement and PUD.

Since 2014, the two remaining Okatie Village PUDs (Osprey Point and River Oaks) have continued to struggle, with no development activity occurring. River Oaks PUD went into bankruptcy and the original Owner lost the property. Osprey Point failed to move forward as a completely age restricted community, as envisioned by the First Amendment. The expected development partnership between the Owner of Osprey Point and a national builder fell apart due to failed negotiations over lot cost factors and a continuing change to market conditions. The fact that Osprey Point would be the only development in Beaufort County subject to $6,000 per house school fees was a major contributing factor.

On the positive side, a new development partner has emerged to bring activity to both Osprey Point and River Oaks. The two remaining PUDs are working together to produce modifications that restore much of the original vision of Okatie Village as a functioning, live/work community, with access for all residents of both communities to the Village Commercial, the School areas, and a 13-acre public park (which was mandated by the First Amendment To Osprey Point).

The minimum changes to the River Oaks Development Agreement and PUD that are required to carry out these plans and restore the original vision of Okatie Village are set forth below.

III. DEVELOPMENT PLAN CHANGES.

A revised Master Plan and revised Trail and Open Space Plan are attached as Exhibits B and C, respectively, to this First Amendment (Exhibit A continues as a restatement of the original property description).

Both the Development Agreement and PUD Zoning are hereby amended by this First Amendment to reflect all changes which are shown and depicted on revised Exhibits B and C hereto, regarding the specific changes that are referenced herein and any other changes necessary, by implication, to effectuate these Development Plan and Master Plan changes. The following changes to the original Development Agreement and Master Plan are specifically listed and approved:

A. **Residential Density Reduction.** The original maximum residential density of 330 units is hereby reduced to a maximum of 315 residential units.

B. Allowed Development Type and Resulting Changes to Roadway and Pathway (Including Trails) Standards. The current development planning for River Oaks does not envision or require age restricted development. A mix of age targeted residential, family allowed residential, and (potentially) age restricted residential is envisioned and allowed hereby. The exact mix of these residential types will be based on market demand and will be at the Owner's discretion. The residential area is planned to be single family detached, although other residential building types are allowed, as was provided under the original Development Agreement.

Roads, Pathways, and Trails within the residential area may have limited access restrictions, subject to the additional, mandatory requirement that any gating of the community shall allow access by residents of the adjacent Osprey Point development to reach the School and Cherry Point areas, at least for daylight hours and school related trips. A reciprocal requirement will be incorporated into the Osprey Point Second Amendment that will allow restricted access, but mandate that residents of River Oaks be allowed access across Osprey Point to reach the Village Commercial Area and Highway 170 access, at least during daylight hours.

The Amended Master Plan (Exhibit B hereto) depicts the changes to the road system to allow this internal linkage between the communities, and the Amended Trail and Open Space Plan (Exhibit C hereto) also reflects these changes. All provisions of the original Development Agreement and PUD to the contrary are hereby amended to conform herewith.

C. Workforce Housing Requirement. The original River Oaks Development Agreement did not contain a Workforce Housing Requirement (as was required for Osprey Point and Okatie Marsh) because River Oaks was to be a retirement and age restricted development. With the changes adopted hereunder, and in the accompanying Osprey Point Second Amendment, a provision for workforce housing is appropriate. Therefore, River Oaks commits to a minimum of 25 residences to be offered at prices which qualify for workforce/affordable under the same guidelines and terms as apply to Osprey Point. This River Oaks provision raises the combined minimum from 15 units to a total of 40 qualifying residential units in the two communities of Okatie Village. Each community is responsible for meeting its individual requirement , however, so long as the 4o unit total requirement is met between the two developments, the workforce housing requirement will be satisfied. In other words, if Osprey Point develops 10 qualifying units, and River Oaks develops 30 qualifying units, this requirement shall be deemed satisfied for both communities.

D. Impact/Development Fee Issues. The terms of the original Development Agreement regarding fees due under Section IV (E) remain unchanged, with the following qualifications regarding School fees under Section IV(D). Owner and County recognize that South Carolina law has changed to allow the potential for Beaufort County to enact a development impact fee ordinance of general application to provide funding for school capital improvements. If Beaufort County adopts such a development fee ordinance for school capital improvements in the future, the terms of such new law shall apply to all future development within River Oaks, on the same basis as other development in Beaufort County. Given this change in South Carolina law, and recognizing the competitive disadvantage that has prevented development within River Oaks

for many years, the parties agree to eliminate Section IV(D) of the Development Agreement.

E. Design Guidelines/Residential Design. Under this First Amendment to River Oaks Development Agreement and PUD, River Oaks is committed to the same development type as the adjoining Osprey Point, and to internal integration with the adjoining Osprey Point community. Therefore, the same design and building flexibility as approved for Osprey Point, under both the First and Second Amendment to Osprey Point Development Agreement and PUD, is hereby adopted as controlling for River Oaks. All provisions of the River Oaks Development Agreement and PUD to the contrary are hereby repealed and replaced. The provisions of Section III (H) of the Osprey Point First and Second Amendments are incorporated herein by reference, substituting the name "River Oaks" for "Osprey Point", for the purposes of this First Amendment. This provision will allow River Oaks to fully integrate with its neighboring community, and further, allow the flexibility to meet the target market on the same terms as its major competitors in Southern Beaufort County, and also to meet its aggressive commitment to provide affordable housing. Notwithstanding the above flexibility, Owner agrees to utilize rear alley entrances for all lots of 35 foot width or less, as depicted on the Amended Master Plan, in order to minimize on street driveway locations for safety puposes.

F. Development Schedule Amendment. Subject to the same reservations and conditions contained under Section IV of the original Development Agreement and Exhibit D thereto, the Development Schedule is hereby amended as set forth in Exhibit D hereto, to reflect current forecasts and expected schedules.

G. Preliminary Drainage Plan, Water Plan and Sanitary Sewer Plans.

These preliminary plans are shown on Exhibits E, F, and G, respectively. All of these engineering elements fall at or below the load levels anticipated under the original River Oaks Development Agreement and PUD, so these changes to facilitate routing of these infrastructure elements constitute minor changes. These new Exhibits are included for completeness and to provide clarity as development progresses.

H. Legal Status of Workers. The provisions of Article V of the original River Oaks Development are hereby repealed, in order to avoid potential conflicts with evolving laws regarding immigration status of workers, while the commitment of Owner to provide an equal opportunity workplace continues.

I. Terms of Agreement/Incorporation/Default. The original Development Agreement and PUD were approved by both parties, effective September 3, 2008. The parties hereby agree that terms of the original Development Agreement are incorporated herein by reference, and that said documents are hereby amended as specifically set forth herein, directly or by necessary implication. The term of this First Amendment shall be for five years from the date of execution hereof, provided that the term shall be further extended for an additional five years if neither party hereto is in material breach hereof and if development of the subject property has not been completed during the initial term, and also, further extended by any South Carolina laws which have extended Development Agreements generally, for the full tolling period established by law. Both parties agree that with the execution and adoption hereof, no present defaults exist between the parties and all future activities within River Oaks shall be governed by the terms

hereof.

IN WITNESS WHEREOF, the parties hereby set their hands and seals, effective the date first above written.

WITNESSES

OWNER:

_____

_____

By:_____

Its:

_____

Attest: _____

Its:

_____

STATE OF SOUTH CAROLINA)
) ACKNOWLEDGMENT
COUNTY OF BEAUFORT)

I HEREBY CERTIFY, that on this ____ day of _____, 201__. before me, the undersigned Notary Public of the State and County aforesaid, personally appeared _____, and _____known to me (or satisfactorily proven) to be the person whose name is subscribed to the within document, as the appropriate official of _____, who acknowledged the due execution of the foregoing document.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year last above mentioned.

_____
Notary Public for South Carolina
My Commission Expires: _____

WITNESSES:

COUNTY OF BEAUFORT

_____

_____
County Council Chairman

_____

Attest:_____
County Clerk - County of Beaufort

STATE OF SOUTH CAROLINA)
)
COUNTY OF BEAUFORT)

ACKNOWLEDGMENT

I HEREBY CERTIFY, that on this ___ day of _____, 201__ before me, the undersigned Notary Public of the state and County aforesaid, personally appeared known to me (or satisfactorily proven) to be the persons whose name is subscribed to the within document, who acknowledged the due execution of the foregoing Development Agreement.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year last above mentioned.

_____
Notary Public for South Carolina
My Commission Expires:_____

EXHIBIT B

LOT YEILD: 315

- 30' X 110'
- 40' X 110'

Total Acres: +/-61.21

Residential Density: 5.14 DU/AC

Open Space: 26.26 AC (42.90%)

GRAPHIC SCALE

NORTH 0 150' 300' 450'

PREPARED FOR:
VILLAGE PARK HOMES, LLC

PREPARED BY:
J. K. TILLER ASSOCIATES, INC.
LAND PLANNING LANDSCAPE ARCHITECTURE
181 BLUFFTON ROAD SUITE F203 BLUFFTON, SC 29910
Voice 843.815.4800 jktiller@jktiller.com Fax: 843.815.4802

Ward Edwards ENGINEERING

RIVER OAKS (MALIND POINTE) AMENDED MASTER PLAN

BEAUFORT COUNTY, SOUTH CAROLINA

FEBRUARY 2, 2018

JKT Job Number: 201703-01

EXHIBIT C

MALIND BLUFF PUD
(OSPREY POINT)

APPROXIMATE MARSH LINE

MALIND CREEK

OCRM LINE

50' OCRM LINE SETBACK

LAGOON

BUFFER

CHERRY POINT ROAD

ACCESS TO MALIND BLUFF PUD

PARK

BEAUFORT COUNTY SCHOOL DISTRICT (OKATIE ELEMENTARY)

NON-JURISDICTIONAL WETLAND 1.384 AC

CLUB & POOL

SIDEWALKS (TYPICAL)

PARK

PARK

PARK

PEDESTRIAN PATH TO OKATIE ELEMENTARY

PARK

BUFFER

CHERRY POINT ROAD

TO HIGHWAY 170

TRAILS AND OPEN SPACE

INTERNAL SIDEWALKS

PARKS

Total Acres: +/-61.21

Residential Density: 5.14 DU/AC

Open Space*: 26.26 AC (42.90 %)

*THE OPEN SPACES INCLUDE GARDENS, NATURAL AREAS, BUFFERS, STORMWATER AMENITIES, TRAILS AND OTHER NON-BUILDABLE LAND.

NORTH

GRAPHIC SCALE 0 200' 400' 600'

PREPARED FOR:
VILLAGE PARK HOMES, LLC

PREPARED BY:

J. K. TILLER ASSOCIATES, INC.
LAND PLANNING LANDSCAPE ARCHITECTURE
181 BLUFFTON ROAD SUITE F203 BLUFFTON, SC 29910
Voice 843.815.4800 jktiller@jktiller.com Fax: 843.815.4802

Ward Edwards ENGINEERING

RIVER OAKS (MALIND POINTE) TRAILS AND OPEN SPACE PLAN

BEAUFORT COUNTY, SOUTH CAROLINA

FEBRUARY 2, 2018

JKT Job Number: 201703-01

Exhibit D

DEVELOPMENT SCHEDULE

MALIND POINT (RIVER OAKS)

Development of the Property is expected to occur over the five (5) year term of the Agreement, with the sequence and timing of development activity to be dictated largely by market conditions. The following estimate of expected activity is hereby included, to be updated by Owner as the development evolves over the term:

		Year(s) of Commencement / Completion				
Type of Development	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	
Residential, Single Family (1)	50	50	50	50	50	
Affordable / Workforce Housing (3)	-- 15	15	15	15	15	
Park -- % To Be Completed	--	100%	--	--	--	
Multi-Purpose Trail & Pathways -- % To Be Completed	--	25%	30%	30%	15%	

(1) 300 single family units are forecast to remain to be built at the end of six years.
(2) none planned.
(3) River Oaks Schedule

As stated in the Development Agreement, Section VI, actual development may occur more rapidly or less rapidly, based on market conditions and final product mix.

EXHIBIT E

EXISTING WATER LEGEND
- EXISTING WATER MAIN — W —
- EXISTING FIRE HYDRANT
- EXISTING VALVE
- EXISTING METER

PROPOSED WATER LEGEND
- PROPOSED WATER MAIN — WL —
- PROPOSED FIRE HYDRANT
- PROPOSED VALVE
- PROPOSED METER

EXISTING SEWER LEGEND
- EXISTING GRAVITY SEWER LINE — SS —
- EXISTING GRAVITY SEWER MANHOLE
- EXISTING FORCE MAIN

PROPOSED SEWER LEGEND
- PROPOSED GRAVITY SEWER LINE
- PROPOSED GRAVITY SEWER MANHOLE
- PROPOSED FORCE MAIN — FM —
- PROPOSED SERVICE LATERAL — C — F —

EXISTING DRAINAGE LEGEND
- EXISTING STORM DRAIN (SOLID WALL) — SD —
- EXISTING STORM DRAIN (PERFORATED CMP)
- EXISTING STRUCTURE
- EXISTING WATERSHED DELINEATION

PROPOSED DRAINAGE LEGEND
- PROPOSED STORM DRAIN (SOLID WALL)
- PROPOSED STORM DRAIN (PERFORATED CMP)
- PROPOSED STRUCTURE
- SPOT ELEVATION — EL: XX.X

LAND PLAN REFERENCE:
J. K. TILLER ASSOCIATES, INC.

SURVEY REFERENCE:
COASTAL SURVEYING, INC.

WETLANDS REFERENCE:
NEWKIRK ENVIRONMENTAL INC.

PROPOSED DRAINAGE SYSTEM

0 120 240 Feet

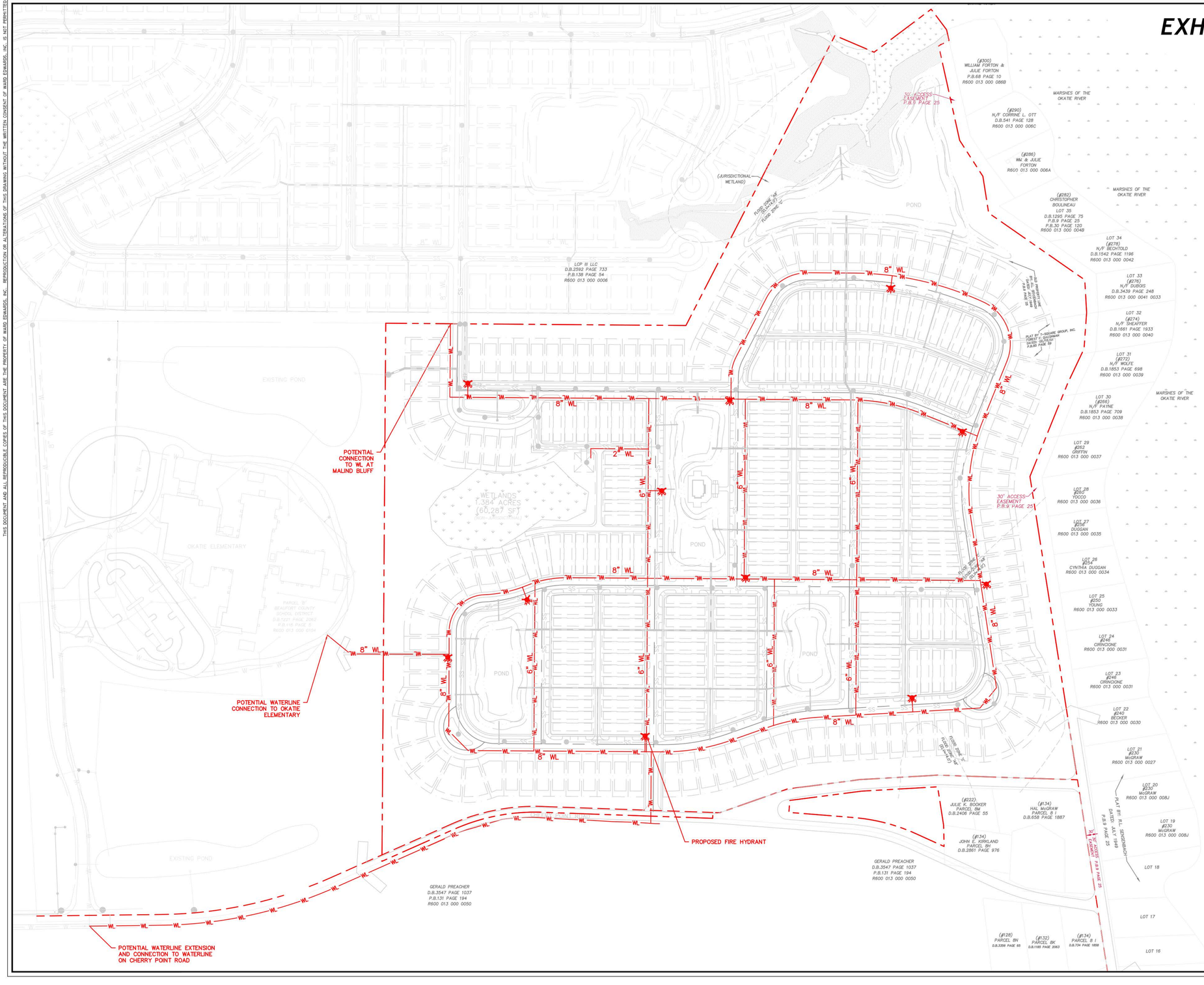
RIVER OAKS
BEAUFORT COUNTY, SOUTH CAROLINA

DATE: 02-02-18
PROJECT NO.: 180203
SCALE: 1"=120'

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

EXHIBIT F



EXISTING WATER LEGEND
- EXISTING WATER MAIN — W —
- EXISTING FIRE HYDRANT
- EXISTING VALVE
- EXISTING METER

PROPOSED WATER LEGEND
- PROPOSED WATER MAIN — WL —
- PROPOSED FIRE HYDRANT
- PROPOSED VALVE
- PROPOSED METER

EXISTING SEWER LEGEND
- EXISTING GRAVITY SEWER LINE — SS —
- EXISTING GRAVITY SEWER MANHOLE
- EXISTING FORCE MAIN

PROPOSED SEWER LEGEND
- PROPOSED GRAVITY SEWER LINE
- PROPOSED GRAVITY SEWER MANHOLE
- PROPOSED FORCE MAIN — FM —
- PROPOSED SERVICE LATERAL — C — F —

EXISTING DRAINAGE LEGEND
- EXISTING STORM DRAIN (SOLID WALL) — SD —
- EXISTING STORM DRAIN (PERFORATED CMP)
- EXISTING STORM STRUCTURE
- EXISTING WATERSHED DELINEATION

PROPOSED DRAINAGE LEGEND
- PROPOSED STORM DRAIN (SOLID WALL)
- PROPOSED STORM DRAIN (PERFORATED CMP)
- PROPOSED STORM STRUCTURE
- SPOT ELEVATION — EL: XX.X

LAND PLAN REFERENCE:
J. K. TILLER ASSOCIATES, INC.

SURVEY REFERENCE:
COASTAL SURVEYING, INC.

WETLANDS REFERENCE:
NEWKIRK ENVIRONMENTAL INC.

PROPOSED WATER DISTRIBUTION SYSTEM

0 120 240 Feet

RIVER OAKS
BEAUFORT COUNTY, SOUTH CAROLINA

DATE: 02-02-18
PROJECT NO.: 180203
SCALE: 1"=120'

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

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EXHIBIT G

EXISTING WATER LEGEND

- EXISTING WATER MAIN — W —
- EXISTING FIRE HYDRANT
- EXISTING VALVE
- EXISTING METER

PROPOSED WATER LEGEND

- PROPOSED WATER MAIN — WL —
- PROPOSED FIRE HYDRANT
- PROPOSED VALVE
- PROPOSED METER

EXISTING SEWER LEGEND

- EXISTING GRAVITY SEWER LINE — SS —
- EXISTING GRAVITY SEWER MANHOLE
- EXISTING FORCE MAIN

PROPOSED SEWER LEGEND

- PROPOSED GRAVITY SEWER LINE
- PROPOSED GRAVITY SEWER MANHOLE
- PROPOSED FORCE MAIN — FM —
- PROPOSED SERVICE LATERAL — C — F —

EXISTING DRAINAGE LEGEND

- EXISTING STORM DRAIN (SOLID WALL) — SD —
- EXISTING STORM DRAIN (PERFORATED CMP)
- EXISTING STORM STRUCTURE
- EXISTING WATERSHED DELINEATION

PROPOSED DRAINAGE LEGEND

- PROPOSED STORM DRAIN (SOLID WALL)
- PROPOSED STORM DRAIN (PERFORATED CMP)
- PROPOSED STORM STRUCTURE
- SPOT ELEVATION — EL: XX.X

LAND PLAN REFERENCE:

J. K. TILLER ASSOCIATES, INC.

SURVEY REFERENCE:

COASTAL SURVEYING, INC.

WETLANDS REFERENCE:

NEWKIRK ENVIRONMENTAL INC.

PROPOSED SANITARY SEWER SYSTEM

0 120 240 Feet

RIVER OAKS

BEAUFORT COUNTY, SOUTH CAROLINA

DATE: 02-02-18
PROJECT NO.: 180203
SCALE: 1"=120'

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
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IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

Traffic Impact Analysis

Okatie Village
Okatie, SC

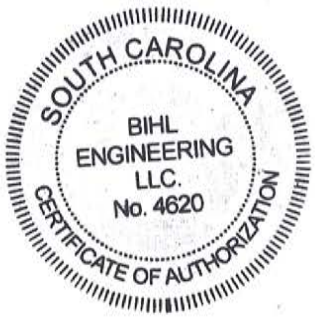
Prepared for:
Village Park Homes

BIHL ENGINEERING

Traffic Impact Analysis
Okatie Village
Okatie, SC

Prepared for:
Village Park Homes

Prepared by:
Bihl Engineering, LLC
304 Meeting Street, Suite D
Charleston, SC 29401
Mail:
P.O. Box 31318
Charleston, SC 29417
(843) 637-9187



January 2018

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1.0 Executive Summary

Okatie Village is located in Beaufort County, SC on the east side of SC 170, near Pritcher Point Road and Cherry Point Road. With the proposed updates to the PUD the land use intensities will include a total of 212,700 square feet (sf) of commercial space (159,525 sf of retail and 53,175 sf of office space) and 711 single-family detached units. Okatie Village consists of two development areas being updated, Osprey Point PUD and River Oaks PUD, these land use intensities further break down as follows:

- Osprey Point PUD – 159,525 sf of retail, 53,175 sf of office space, and 396 single-family detached units
- River Oaks PUD – 315 single-family detached units

The development will be accessed via three access points along SC 170.

The most recent traffic analysis for the PUD was performed in 2007.

For the purposes of this TIA, the proposed development is assumed to be complete by 2023, constructed in three phases. This report reviews the 2017 existing, 2019 background and projected total traffic peak hour conditions, 2021 background and projected total traffic peak hour conditions, and 2023 background and projected total traffic peak hour conditions and presents the trip generation, distribution, and traffic analysis, and any recommendations for transportation improvements required to meet anticipated traffic demands.

The study area includes the following existing intersections:

- SC 170 at Argent Boulevard (signalized)
- Argent Boulevard at Jasper Station Road/Short Cut Drive (unsignalized)
- SC 170 at Pritcher Point Road/Short Cut Drive (unsignalized)
- SC 170 at Pearlstine Drive/Cherry Point Road (signalized)
- SC 170 at Red Oaks Drive (unsignalized)
- SC 170 at Schinger Avenue (unsignalized)
- SC 170 at Riverwalk Boulevard (unsignalized)
- SC 170 at Tidewatch Drive (signalized)

Today the study area intersections are operating with some delays during the peak times, particularly the unsignalized intersections. However, it is not uncommon for unsignalized intersections on heavily traveled corridors to experience delays while the traffic along the corridor is moving with little to no delays. At these intersections, the wide medians allow two-step maneuver to occur for side street vehicles providing an area for vehicle storage. The intersection of SC 170 at Cherry Point Road experiences delays during peak student pick-up and drop-off times as this is the primary access point for Okatie Elementary School.

The SC 170 corridor is subject to an access management plan where signalized intersection locations have been identified. Back access is also planned for the properties east and west of SC 170 in this area. These connections within the PUD area are planned and shown on the site plans.

As part of the study, the Lowcountry Travel Demand Model was run with and without the land uses associated with this project. It was found that the growth rate along SC 170 is expected to be approximately 3% per year for the background conditions.

The project phases include the following land uses. Land uses listed are cumulative.

The Phase 1 2019 Phase 1 Build conditions for this study and includes the following land uses:

- Osprey Point PUD – 102 single-family detached units
- River Oaks PUD – 101 single-family detached units

The Phase 2 2021 Phase 2 Build conditions for this study and includes the following land uses:

- Osprey Point PUD – 331 single-family detached units
- River Oaks PUD – 315 single-family detached units

The Buildout 2023 Build conditions for this study and includes the following land uses:

- Osprey Point PUD – 159,525 sf of retail, 53,175 sf of office space, and 396 single-family detached units
- River Oaks PUD – 315 single-family detached units

Based on the analysis the following Phase 1 (2019) transportation improvements are recommended:

- Argent Boulevard at Jasper Station Road/Short Cut Drive – Installation of a northbound right-turn lane on Argent Boulevard
- SC 170 at Pritcher Point Road/Short Cut Drive – Installation of a traffic signal, when warranted. Performance of a traffic signal warrant analysis at completion of phase.
- SC 170 at Red Oaks Drive/Site Access #2 – Installation of a northbound right-turn lane on SC 170, southbound left-turn lane on SC 170, and shared westbound left-turn lane, through lane, and right-turn lane on Site Access #2. Installation of an exclusive eastbound right-turn lane on Red Oaks Drive.
- Improvements to Cherry Point Road (to be coordinated with County Staff) – Improvements to roadway conditions from site access point to SC 170, potential installation of left-turn lane into the School property, etc.
- Coordination with Beaufort County, Beaufort County School District Staff and Developer regarding school access
- SC 170 at Riverwalk Boulevard – Consideration of extension of the eastbound right-turn lane on Riverwalk Boulevard
- Traffic signal timing optimization at signalized intersections

Based on the analysis the following Phase 2 (2021) transportation improvements are recommended:

- Improvements listed in Phase 1 above
- Argent Boulevard at Jasper Station Road/Short Cut Drive – Installation of a westbound left-turn lane on Short Cut Drive
- SC 170 at Pritcher Point Road/Short Cut Drive – Installation of westbound left-turn lane on Pritcher Point Road
- SC 170 at Red Oaks Drive/Site Access #2 – Installation westbound right-turn lane on Site Access #2
- SC 170 at Pearlstine Drive/Cherry Point Road – Installation of an additional westbound left-turn lane on Cherry Point Road, and restriping of the westbound approach (Cherry Point Road) to dual left-turns with a shared through right lane
- Traffic signal timing optimization at signalized intersections

Based on the analysis the following ultimate (2023) transportation improvements are recommended:

- Improvements listed in Phase 1 and Phase 2 above
- SC 170 at Argent Boulevard – Signal optimization and reconfiguration of the eastbound approach to dual left-turn lanes with shared right-turn lane
- SC 170 at Pritcher Point Road/Short Cut Drive – Install westbound dual left-turn lanes on Pritcher Point Road
- SC 170 at Site Access #1 – Installation of a northbound right-turn lane on SC 170
- Traffic signal timing optimization at signalized intersections

Results in this report are based solely on traffic studies and are considered input into final design considerations. The final design will be determined by the project engineer after other design elements (such as, but not limited to, utilities, stormwater, etc.) are taken into consideration.

2.0 Introduction

Okatie Village is located in Beaufort County, SC on the east side of SC 170, near Pritcher Point Road and Cherry Point Road. The most recent traffic study performed for the site was in 2007. This study is included in the **Appendix**.

With the proposed updates to the PUD the land use intensities will include a total of 212,700 sf of commercial space (159,525 sf of retail and 53,175 sf of office space) and 711 single-family detached units. Okatie Village consists of two development areas being updated, Osprey Point PUD and River Oaks PUD, these land use intensities further break down as follows:

- Osprey Point PUD – 159,525 sf of retail, 53,175 sf of office space, and 396 single-family detached units

- River Oaks PUD – 315 single-family detached units

The development will be ultimately accessed via three full access points along SC 170 and one right-in, right-out access point. Per the Access Management Ordinance for SC 170, the right-in, right-out access location will need to be approved.

For the purposes of this TIA, the proposed development is assumed to be complete by 2023, constructed in three phases with final buildout in 2023.

The 2019 Phase 1 Build conditions for this study and includes the following land uses:

- Osprey Point PUD – 102 single-family detached units
- River Oaks PUD – 101 single-family detached units

The 2021 Phase 2 Build conditions for this study and includes the following land uses:

- Osprey Point PUD – 331 single-family detached units
- River Oaks PUD – 315 single-family detached units

This report reviews the potential external traffic impacts of Okatie Village and identifies recommended transportation improvements to accommodate future background traffic conditions and projected total traffic conditions for buildout and interim phase years.

3.0 Inventory

The following section discuss the existing conditions of the study area and the SC 170 Access Management Plan.

3.1 Study Area

The study area for the traffic impact analysis includes the following existing intersections.

- SC 170 at Argent Boulevard (signalized)
- Argent Boulevard at Jasper Station Road/Short Cut Drive (unsignalized)
- SC 170 at Pritcher Point Road/Short Cut Drive (unsignalized)
- SC 170 at Pearlstine Drive/Cherry Point Road (signalized)
- SC 170 at Red Oaks Drive (unsignalized)
- SC 170 at Schinger Avenue (unsignalized)
- SC 170 at Riverwalk Boulevard (unsignalized)
- SC 170 at Tidewatch Drive (signalized)

Figure 1 (Appendix) shows the site location and **Figure 2A and 2B (Appendix)** shows the project conceptual site plans.

3.2 Existing Conditions

Roadways in the project vicinity include SC 170, Pritcher Point Road, Short Cut Drive, Argent Boulevard, Jasper Station Road, Red Oaks Drive, Pearlstine Drive, Cherry Point Road, Schinger Avenue, Riverwalk Boulevard, and Tidewatch Drive.

SC 170 is a principal arterial four-lane divided roadway with a grassed median and a posted speed limit of 55 miles per hour (mph) north and south of Argent Boulevard and 45 mph around the intersection with Argent Boulevard. SC 170 has a 2016 South Carolina Department of Transportation (SCDOT) annual average daily traffic (AADT) of 30,100 vehicles per day (vpd) in the vicinity of the site.

Argent Boulevard is a two-lane roadway with a posted speed limit of 45 mph. Argent Boulevard connects SC 170 to US 278.

Short Cut Drive/Jasper Station Road is a two-lane roadway. Short Cut Drive connects SC 170 and Argent Boulevard. Pritcher Point Road is located opposite Short Cut Drive/Jasper Station Road is a dirt roadway that is currently being improved for the animal hospital with a southbound left-turn lane and a northbound right-turn lane on SC 170 and a shared through-left and right-turn lanes on the east approach.

Cherry Point Road is a two-lane roadway that provides access to Okatie Elementary School and the Cherry Point area. Cherry Point Road is paved from SC 170 to Okatie Elementary School and unpaved east of Okatie Elementary School. This roadway experiences congestion during school pickup and drop-off periods.

Pearlstine Drive, Schinger Avenue, Riverwalk Boulevard are two-lane roadways.

Tidewatch Drive is a two-lane roadway with a speed limit of 25 mph west of SC 170 and 10 mph east of SC 170.

Figure 3 (Appendix) shows the existing roadway laneage in the study area.

3.3 SC 170 Access Management Plan

The *SC 170/US 278 Corridor Study Analysis Findings and Recommended Access Management Standards* prepared for Beaufort County by Day Wilburn Associates, Inc. (December 2003) provides an access management plan for SC 170. Within the Access Management Plan the following minimum spacing requirements are given:

- Full signalized access – 3,200 feet
- Directional signalized access – 1,900 feet
- Driveways – 500 feet

The following intersection controls are noted for SC 170 intersections in the study area –

- Full signalized intersections on SC 170 at Pritcher Point Road/Short Cut Drive, Cherry Point Road, and Tidewatch Drive
- Directional signalized intersections on SC 170 at Argent Boulevard, Heffallump Road, and south of Riverwalk Boulevard

In addition, the report identifies a back access connection throughout the Okatie Village area as well as back access connections for the properties west of SC 170.

This report is included in the **Appendix.**

Connectivity through the Okatie Village area is shown on the site plans.

4.0 Traffic Generation

The trip generation of the proposed development was determined using trip generation rates published in Institute of Transportation Engineers (ITE) Trip Generation handbook (Institute of Transportation Engineers, Tenth Edition). Internal capture and pass-by trips were also applied. Internal capture trips are those trips that stay internal to the development and do not use the external roadway network. The internal capture trips were calculated using National Cooperative Highway Research Program (NCHRP) Report 684 standards. If internal capture was calculated to be greater than 20% of the overall trips, it was limited to 20% of the overall trips in the analysis per SCDOT guidelines. Pass-by trips are those trips currently on the external roadway network (SC 170) that enter and exit the development then resume their trip. The pass-by trips were calculated using ITE standards.

Table 1 summarizes the peak hour trips associated with the proposed PUDs.

The proposed PUDs are projected to generate 771 new trips during the AM peak hour (318 entering and 453 exiting) and 991 new trips during the PM peak hour (539 entering and 452 exiting).

Tables 2 and **3** summarize the peak hour trips noted above specifically associated with each of the PUDs.

Table 2 summarizes the peak hour trips associated with the Osprey Point PUD. The proposed development is projected to generate 551 new trips during the AM peak hour (264 entering and 287 exiting) and 757 new trips during the PM peak hour (383 entering and 374 exiting).

Table 3 summarizes the peak hour trips associated with the River Oaks PUD. The proposed development is projected to generate 220 new trips during the AM peak hour (54 entering and 166 exiting) and 234 new trips during the PM peak hour (156 entering and 78 exiting).

Table 1:
Year 2023 Buildout
Okatie Village Overall Trip Generation

Land Use and Intensity	ITE Land Use Code	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
711 Single-Family Detached Units	210	510	128	382	668	421	247
53,175 sf Office	710	76	65	11	62	10	52
159,525 sf Retail	820	232	144	88	768	369	399
Gross Trips		818	337	481	1,498	800	698
Internal Capture w/ Overall Okatie Village		-30	-15	-15	-278	-139	-139
Driveway Trips		788	322	466	1,220	661	559
Pass-by Trips		0	0	0	-209	-109	-100
Net New Trips		**788**	**322**	**466**	**1,011**	**552**	**459**

Table 2:
Year 2023 Buildout
Osprey Point PUD Trip Generation

Land Use and Intensity	ITE Land Use Code	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
396 Single-Family Detached Units	210	284	71	213	372	234	138
53,175 sf Office	710	76	65	11	62	10	52
159,525 sf Retail	820	232	144	88	768	369	399
Gross Trips		592	280	312	1,202	613	589
Internal Capture w/ Overall Okatie Village		-24	-12	-12	-216	-108	-108
Driveway Trips		568	268	300	986	505	481
Pass-by Trips		0	0	0	-209	-109	-100
Net New Trips		**568**	**268**	**300**	**777**	**396**	**381**

Table 3:
Year 2023 Buildout
River Oaks PUD Trip Generation

Land Use and Intensity	ITE Land Use Code	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
315 Single-Family Detached Units	210	226	57	169	296	187	109
Gross Trips		226	57	169	296	187	109
Internal Capture		-6	-3	-3	-62	-31	-31
Driveway Trips		220	54	166	234	156	78
Pass-by Trips		0	0	0	0	0	0
Net New Trips		**220**	**54**	**166**	**234**	**156**	**78**

Table 4 summarizes the peak hour trips associated with the 2019 Phase 1 Build year trip generation. The proposed development is projected to generate 149 new trips during the AM peak hour (37 entering and 112 exiting) and 200 new trips during the PM peak hour (126 entering and 74 exiting).

Table 4:
2019 Phase 1
Okatie Village Trip Generation

Land Use and Intensity	ITE Land Use Code	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
203 Single-Family Detached Units	210	149	37	112	200	126	74
Gross Trips		149	37	112	200	126	74
Internal Capture		0	0	0	0	0	0
Driveway Trips		149	37	112	200	126	74
Pass-by Trips		0	0	0	0	0	0
Net New Trips		**149**	**37**	**112**	**200**	**126**	**74**

Table 5 summarizes the peak hour trips associated with the 2021 Phase 2 Build year trip generation. The proposed development is projected to generate 463 new trips during the AM peak hour (116 entering and 347 exiting) and 609 new trips during the PM peak hour (384 entering and 225 exiting).

Table 5:
2021 Phase 2
Okatie Village Trip Generation

Land Use and Intensity	ITE Land Use Code	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
646 Single-Family Detached Units	210	463	116	347	609	384	225
Gross Trips		463	116	347	609	384	225
Internal Capture		0	0	0	0	0	0
Driveway Trips		463	116	347	609	384	225
Pass-by Trips		0	0	0	0	0	0
Net New Trips		**463**	**116**	**347**	**609**	**384**	**225**

5.0 Lowcountry Council of Governments Traffic Demand Model

The Lowcountry Council of Governments maintains the Lowcountry Travel Demand Model which includes the study area for this project. The validated 2010, the projected 2030 (Beaufort County Comprehensive Plan Existing plus Committed Network), and the projected 2030 with the update to the traffic analysis zone (TAZ) that includes this development were used to determine trip distribution and traffic growth for the project. The TAZ includes the land use data associated with this section of the model. The Travel Demand Model runs for the study area performed by CDM Smith are provided in the **Appendix**.

In the 2010 model, SC 170 (in the project area) had 23,700 vehicles traveling daily on the segment. In the 2030 model based on the Beaufort County Comprehensive Plan on the Existing plus Committed

transportation network, this segment was determined to have approximately 37,200 daily vehicles in year 2030. With the addition of the updated traffic analysis zone information for this project, the daily volumes were expected to be 38,900 daily vehicles in this segment.

The 2030 Beaufort County Comprehensive Plan on the Existing plus Committed transportation network model estimates the volume to capacity ratio for this area from 1.01 to 0.96 and projecting LOS C and LOS D operation. With the addition of the updated TAZ data the volume to capacity ratio for the area ranges from 0.92 to 1.2 and projecting LOS C to LOS E operation depending on the location of the segment.

Table 6 summarizes the projected growth rate in the study area which included data from SC 170 and Argent Boulevard. Model data points were taken on SC 170 north of Argent Boulevard and three additional points between Argent Boulevard and US 278 and two model data points were taken west of SC 170 to determine the modeled growth in the area.

Table 6:
Lowcountry Council of Governments Travel Demand Model
Traffic Volumes and Growth Rates

Roadway	Road Section		Model Year			% Growth per Year	
	Start	End	2010	2030 Beaufort County Comp Plan E+C	2030 E+C Model with TAZ Update	2030 Beaufort County Comp Plan E+C	2030 E+C Model with TAZ Update
SC 170	Argent Blvd	Oldfield Way	31,300	46,200	47,700	2.4%	2.6%
SC 170	Green Acres Rd	SC 141	23,700	37,200	38,900	2.8%	3.2%
SC 170	Tidewatch Dr.	Green Acres Road	23,900	39,100	44,700	3.2%	4.4%
SC 170	US 278	Tidewatch Dr.	25,500	41,700	47,200	3.2%	4.3%
SC 170 Weighted Average						**2.9%**	**3.6%**
Argent Blvd	Jasper Station Rd	SC 170	7,800	10,300	11,700	1.6%	2.5%
Argent Blvd	Sergeant William Jasper Blvd	Jasper Station Rd	7,700	9,900	11,100	1.4%	2.2%
SC 141 (Argent Blvd) Weighted Average						**1.5%**	**2.4%**
Overall Study Area Weighted Average						**2.7%**	**3.5%**

The overall study area growth rate in the model was 2.7% per year without the proposed Okatie Village, and 3.5% per year with the proposed Okatie Village.

A select zone was also completed for the updated 2030 traffic model to help determine the distribution of the project trips. This figure is included in the **Appendix.**

6.0 Site Traffic Distribution

The development will be accessed via three roadways. Pritcher Point Road, Site Access #2, and Cherry Point Road are all full access points located on SC 170. Site Access #1 will be a right-in, right-out (RIRO) access point located on SC 170.

The proposed project traffic was assigned to the surrounding roadway network. The directional distribution and assignment were based on the 2030 travel demand model Select Zone run performed as part of the regional modeling efforts **(Section 5)**. The following overall trip distribution was calculated and proposed to be used in the analysis:

- 65% to/from the south on SC 170
- 18% to/from the north on SC 170
- 2% to/from the west on Short Cut Road/Jasper Station Road
- 4% to/from the south on Argent Boulevard
- 1% to/from the west on Red Oaks Drive
- 1% to/from the west on Pearlstine Drive
- 5% to/from the west on Riverwalk Boulevard
- 2% to/from the west Tidewatch Drive
- 2% to/from the east Tidewatch Drive

Figure 4 (**Appendix**) shows the projected traffic distribution through the study area.

7.0 Traffic Volumes

7.1 Existing Traffic

Peak hour intersection turning movement counts including vehicular, pedestrian, and heavy vehicle traffic were performed in October 2017 from 7:00 AM to 9:00 AM and from 2:00 PM to 6:00 PM at the following intersections:

- SC 170 at Argent Boulevard (signalized)
- Argent Boulevard at Jasper Station Road/Short Cut Drive (unsignalized)
- SC 170 at Pritcher Point Road/Short Cut Drive (unsignalized)

- SC 170 at Pearlstine Drive/Cherry Point Road (signalized)
- SC 170 at Red Oaks Drive (unsignalized)
- SC 170 at Schinger Avenue (unsignalized)
- SC 170 at Riverwalk Boulevard (unsignalized)
- SC 170 at Tidewatch Drive (signalized)

The turning movement count data is included in the **Appendix** and the AM and PM peak hour existing traffic volumes are shown in **Figure 5 (Appendix)**.

7.2 Future Background Traffic

Historic growth on the SC 170 corridor was also reviewed. Based on historic AADT data provided by SCDOT SC 170 had approximately a 4.5% per year growth rate from 2011 to 2016 (six years) as shown in **Table 7**.

Table 7:
SCDOT Average Annual Daily Traffic (AADT) Counts by Year

Roadway	Road Section		Year						% Growth per Year
	Start	End	2016	2015	2014	2013	2012	2011	
SC 170	US 278	SC 462	30,100	29,200	27,700	25,800	24,300	23,300	**4.5%**

As previously shown in **Table 6**, the overall study area growth rate in the model was 2.7% per year without the proposed Okatie Village.

Due to the difference in growth on SC 170 and Argent Boulevard, to determine the background growth, the application of a 2.9% per year growth rate was applied to the SC 170 corridor while a 1.5% per year growth rate was applied to the Argent Boulevard corridor.

The No Build traffic volumes include existing traffic grown to the buildout year. **Figure 6** (**Appendix**) and **Figure 7** (**Appendix**) show the 2019 Phase 1 No Build AM and PM peak hour traffic volumes, respectively. **Figure 8** (**Appendix**) and **Figure 9** (**Appendix**) show the 2021 Phase 2 No Build AM and PM peak hour traffic volumes, respectively. **Figure 10** (**Appendix**) and **Figure 11** (**Appendix**) show the 2023 No Build AM and PM peak hour traffic volumes, respectively.

7.3 Project Traffic

The AM peak hour and PM peak hour projected project trips were assigned based on the trip distribution discussed in **Section 5.**

7.4 Build Traffic

The total traffic volumes include the background traffic and the proposed development traffic at buildout. The 2019 Phase 1 AM and PM peak hour total traffic volumes are shown in **Figure 6** (**Appendix**) and **Figure 7** (**Appendix**), respectively. The 2021 Phase 2 AM and PM peak hour total traffic volumes are shonw in **Figure 8** (**Appendix**) and **Figure 9** (**Appendix**), respectively. The 2023 Buildout AM and PM peak hour total traffic volumes are shonw in **Figure 10** (**Appendix**) and **Figure 11** (**Appendix**), respectively.

Intersection volume development worksheets are included in the **Appendix**.

8.0 Capacity Analysis

Capacity analyses were performed for the AM and PM peak hours for the Existing, No Build (2019, 2021, and 2023), and Build (2019, 2021, and 2023) conditions using the Synchro Version 9 software to determine the operating characteristics of the adjacent roadway network and the impacts of the proposed project. The analyses were conducted with methodologies contained in the *2010 Highway Capacity Manual* (Transportation Research Board, December 2010).

Capacity of an intersection is defined as the maximum number of vehicles that can pass through an intersection during a specified time, typically an hour. Capacity is described by level of service (LOS) for the operating characteristics of an intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A being the best and F being the worst.

LOS for signalized intersections is determined by the overall intersection operations and is reflected in average delay per vehicle. LOS D or better is typically considered acceptable for signalized intersections.

LOS for a two-way stop-controlled (TWSC) intersection is determined by the delay of the poorest performing minor approach, as LOS is not defined for TWSC intersections as a whole. It is typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay. Due to the traffic volumes on SC 170 the side street vehicle maneuvers are mostly two-step maneuvers. On roadways with higher levels of traffic with medians large enough to store vehicles, drivers will often cross one direction of traffic and wait in the median for the second direction of traffic to clear. The analysis does not fully reflect the platooning of vehicles along the corridor from adjacent signalized intersections which results in gaps for these movements. This is not fully reflected in the analysis algorithms so the study results for the unsignalized intersections where medians exist are considered conservative and are typically lower in practice.

Capacity analyses were performed for the Existing, No Build (2019, 2021, and 2023), and Build (2019, 2021, and 2023) AM and PM peak hour traffic conditions for the following intersections:

- SC 170 at Argent Boulevard (signalized)
- Argent Boulevard at Jasper Station Road/Short Cut Drive (unsignalized)
- SC 170 at Pritcher Point Road/Short Cut Drive (unsignalized)
- SC 170 at Pearlstine Drive/Cherry Point Road (signalized)
- SC 170 at Red Oaks Drive/Site Access #2 (unsignalized)
- SC 170 at Schinger Avenue (unsignalized)
- SC 170 at Riverwalk Boulevard (unsignalized)
- SC 170 at Tidewatch Drive (signalized)
- SC 170 at Site Access #1 (2023 Build conditions only)

Existing signal timings were applied to the signalized intersections for the intersection analyses. Signal timings were optimized in the Build conditions to the signalized intersections.

Figure 12 (Appendix) shows the proposed roadway laneage in the study area applied in the 2023 Build conditions analysis.

8.1 2019 Capacity Analysis

Capacity analyses were performed for the Existing, 2019 Phase 1 No Build, and 2019 Phase 1 Build AM and PM peak hour traffic conditions. The 2019 Phase 1 Build year conditions includes the following land uses:

- Osprey Point PUD – 102 single-family detached units
- River Oaks PUD – 101 single-family detached units

8.1.1 SC 170 at Argent Boulevard

Table 7 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2019 Phase 1 No Build, and 2019 Phase 1 Build AM and PM peak hour conditions for the signalized intersection of SC 170 at Argent Boulevard.

As shown in **Table 8**, the intersection of SC 170 at Argent Boulevard currently operates at LOS D during the AM and PM peak hours. Based on the projected traffic growth, the intersection is projected to experience elevated delays during the AM peak hour and operate at LOS D during the PM peak hour in the 2019 Phase 1 No Build conditions. With signal optimization, the intersection is projected to operate at LOS D during the AM and PM peak hours in the 2019 Phase 1 Build conditions.

Table 8: 2019 Phase 1 Analysis Summary SC 170 at Argent Boulevard					
Analysis Scenario	**Approach**	**AM Peak Hour**		**PM Peak Hour**	
		Approach LOS (Delay[1])	**Overall LOS (Delay[1])**	**Approach LOS (Delay[1])**	**Overall LOS (Delay[1])**
Existing	NB SB EB	B (12.5) D (46.8) F (149.6)	D (45.7)	B (15.8) C (22.3) F (168.1)	D (38.2)
2019 Phase 1 No Build	NB SB EB	B (13.2) E (66.8) F (164.8)	E (57.1)	B (17.7) C (24.4) F (198.4)	D (43.9)
2019 Phase 1 Build	NB SB EB	B (18.9) D (51.3) F (102.1)	D (44.2)	C (29.6) E (57.5) E (76.9)	D (46.2)

1. Delay = average seconds of delay

8.1.2 Argent Boulevard at Jasper Station Road/Short Cut Drive

Table 9 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2019 Phase 1 No Build, and 2019 Phase 1 Build AM and PM peak hour conditions for the unsignalized intersection of Argent Boulevard at Jasper Station Road/Short Cut Drive.

As shown in **Table 9**, the intersection of Argent Boulevard at Jasper Station Road/Short Cut Drive currently operates at LOS D (eastbound and westbound approach) during the AM peak hour and experiences elevated delay, operating at LOS E (westbound approach), during the PM peak hour. Based on the projected traffic growth, the intersection is projected to continue to operate similarly in the 2019 Phase 1 No Build conditions. The addition of a northbound right-turn lane was included in the 2019 Phase 1 Build conditions. With this improvement, the intersection is projected to continue to operate similar to the 2019 Phase 1 No Build conditions, operating at LOS D (eastbound and westbound approach) during the AM peak hour and experiencing delay, operating at LOS E (westbound approach), during the PM peak hour in the 2019 Phase 1 Build conditions. It is typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

Table 9: 2019 Phase 1 Analysis Summary Argent Boulevard at Jasper Station Road/Short Cut Drive			
Analysis Scenario	**Approach**	**AM Peak Hour**	**PM Peak Hour**
		Approach LOS (Delay[1])	**Approach LOS (Delay[1])**
Existing	NB SB EB WB	A (0.2) A (0.2) D (30.0) D (32.6)	A (0.3) A (0.2) D (32.6) E (36.4)
2019 Phase 1 No Build	NB SB EB WB	A (0.2) A (0.1) D (30.6) D (33.2)	A (0.3) A (0.2) E (36.0) E (40.6)
2019 Phase 1 Build with Improvements	NB SB EB WB	A (0.2) A (0.2) D (27.0) D (31.3)	A (0.3) A (0.2) D (34.4) E (40.4)

1. Delay = average seconds of delay

8.1.3 SC 170 at Pritcher Point Road/Short Cut Drive

Table 10 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2019 Phase 1 No Build, and 2019 Phase 1 Build AM and PM peak hour conditions for the intersection of SC 170 at Pritcher Point Road/Short Cut Drive. The intersection is currently unsignalized. Construction associated with the nearby animal shelter, accessed via Pritcher Point Road, includes the following intersection improvements, included in the 2019 Phase 1 No Build and 2019 Phase 1 Build conditions:

- Northbound right-turn lane on SC 170
- Southbound left-turn lane on SC 170
- Westbound through/left-turn lane and right-turn lane on Pritcher Point Road

The intersection was signalized in the 2019 Phase 1 Build conditions. This is consistent with the SC 170 Access Management Plan.

As shown in **Table 10**, the intersection of SC 170 at Jasper Station Road/Short Cut Drive currently experiences elevated delay, operating at LOS F (westbound approach), during the AM peak hour and operates at LOS E during the PM peak hour (eastbound approach). The current westbound approach traffic volume is very low in the morning (two vehicles) however, those vehicles do experience delay. As stated previously, improvements to the intersection are being completed as part of construction associated with the nearby animal shelter on Pritcher Point Road. These improvements include installation of a northbound right-turn lane, a southbound left-turn lane, and configuration of the westbound approach to include a right-

turn lane and a shared through-left lane. With these improvements, based on the projected traffic growth the intersection is projected to experience elevated delays, operating at LOS F (eastbound and westbound approaches) during the AM peak hour and at LOS C (eastbound approach) during the PM peak hours in the 2019 Phase 1 No Build conditions. The intersection is planned to be signalized in the 2019 Phase 1 Build conditions. With signalization the intersection is projected to operate at LOS C during the AM and PM peak hours in the 2019 Phase 1 Build conditions. Performance of a traffic signal warrant analysis should be performed for this intersection at completion of Phase 1.

Table 10:
2019 Phase 1 Analysis Summary
SC 170 at Pritcher Point Road/Short Cut Drive

Analysis Scenario	Approach	AM Peak Hour		PM Peak Hour	
		Approach LOS (Delay[1])	Overall LOS (Delay[1])	Approach LOS (Delay[1])	Overall LOS (Delay[1])
Existing	NB SB EB WB	A (1.7) A (0.0) E (48.3) F (*)[2]	N/A[3]	A (0.6) A (0.0) E (36.7) A (0.0)	N/A[3]
2019 Phase 1 No Build	NB SB EB WB	A (2.0) A (0.0) F (68.0) F (55.0)	N/A[3]	A (0.6) A (0.0) C (22.5) A (0.0)	N/A[3]
2019 Phase 1 Build with Improvements	NB SB EB WB	B (18.3) D (41.1) D (49.5) D (51.3)	C (32.3)	C (24.3) B (16.4) C (34.7) C (30.7)	C (21.5)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds
3. Overall intersection delay not calculated for two-way stop controlled intersections

8.1.4 SC 170 at Pearlstine Road/Cherry Point Road

Table 11 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2019 Phase 1 No Build, and 2019 Phase 1 Build AM and PM peak hour conditions for the signalized intersection of SC 170 at Pearlstine Road/Cherry Point Road.

As shown in **Table 11**, the intersection of SC 170 at Pearlstine Road/Cherry Point Road currently experiences elevated delay in the AM peak hour and operates at LOS B during the PM peak hour. The AM peak hour delay is elevated on the westbound approach primarily due to the impacts of the Okatie Elementary School (intersection is the only access to the school from SC 170). School hours are from 7:40 AM – 2:45 PM with drop-off in the morning allowed from 7:00 AM – 7:35 AM which coincides with the

morning peak time of the SC 170 corridor. Based on the projected traffic growth, the intersection is projected to experience elevated delays during the AM peak hour and to operate at LOS B during the PM peak hour in the 2019 Phase 1 No Build conditions. With signal optimization the intersection is projected to operate at LOS D and LOS B during the AM and PM peak hours, respectively, in the 2019 Phase 1 Build conditions.

Table 11:
2019 Phase 1 Analysis Summary
SC 170 at Pearlstine Road/Cherry Point Road

Analysis Scenario	Approach	AM Peak Hour		PM Peak Hour	
		Approach LOS (Delay[1])	Overall LOS (Delay[1])	Approach LOS (Delay[1])	Overall LOS (Delay[1])
Existing	NB SB EB WB	C (22.5) D (39.5) D (40.6) F (*)[2]	E (72.8)	B (18.0) B (13.8) D (37.2) D (35.7)	B (16.7)
2019 Phase 1 No Build	NB SB EB WB	C (24.1) D (52.1) D (40.9) F (*)[2]	F (85.2)	C (22.3) B (15.3) D (37.5) D (35.8)	B (19.6)
2019 Phase 1 Build	NB SB EB WB	C (27.5) D (40.1) D (49.6) F (233.4)	D (54.5)	B (12.6) B (13.8) C (32.2) C (31.3)	B (13.8)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

8.1.5 Cherry Point Road

Based on the projected flow on Cherry Point Road, an eastbound left-turn lane entering the school is recommended for consideration along with improvements to Cherry Point Road which may include restriping and repaving. These items should be closely coordinated with Beaufort County Staff regarding their requirements. In addition, it may be prudent for the school to consider a review of their drop-off and pick-up operations to limit impacts to Cherry Point Road. Coordination with the developer, school, and County is recommended.

8.1.6 SC 170 at Red Oaks Drive/Site Access #2

Table 12 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2019 Phase 1 No Build, and 2019 Phase 1 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Red Oaks Drive/Site Access #2.

As shown in **Table 12**, the intersection of SC 170 at Red Oaks Drive currently experiences elevated delays during the AM and PM peak hours. The intersection is projected to continue to experience elevated delays during the AM and PM peak hours in the 2019 Phase 1 No Build conditions. The installation of an eastbound right-turn lane was applied in the 2019 Phase 1 Build conditions. The intersection was further reviewed for consideration of the installation of an exclusive northbound right-turn lane based on SCDOT Design Manual guidelines and the projected intersection volumes. It was found that a northbound right-turn lane was warranted in the 2019 Phase 1 Build conditions. With these improvements the intersection is projected to experience elevated delays during the AM and PM peak hours in the 2019 Phase 1 Build conditions. It is typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

Table 12:
2019 Phase 1 Analysis Summary
SC 170 at Red Oaks Drive/Site Access #2

Analysis Scenario	Approach	AM Peak Hour	PM Peak Hour
		Approach LOS (Delay[1])	Approach LOS (Delay[1])
Existing	NB SB EB	A (0.4) A (0.0) F (279.1)	A (0.4) A (0.0) F (*)[2]
2019 Phase 1 No Build	NB SB EB	A (0.4) A (0.0) E (47.2)	A (0.4) A (0.0) F (64.4)
2019 Phase 1 Build with Improvements	NB SB EB WB	A (0.5) A (0.0) F (59.7) E (40.7)	A (0.4) A (0.0) F (94.7) F (55.5)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

8.1.7 SC 170 at Schinger Avenue

Table 13 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2019 Phase 1 No Build, and 2019 Phase 1 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Schinger Avenue.

As shown in **Table 13**, the intersection of SC 170 at Schinger Avenue currently operates acceptably at LOS D and LOS C during the AM and PM peak hours, respectively. Based on the projected traffic growth the eastbound approach of the intersection is expected to experience elevated delays during the AM peak hour, operating at LOS E and to operate at LOS D during the PM peak hours in the 2019 Phase 1 No Build and 2019 Phase 1 Build conditions. It is typical for minor stop-controlled side streets and driveways on major

streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

Table 13:
2019 Phase 1 Analysis Summary
SC 170 at Schinger Avenue

Analysis Scenario	Approach	AM Peak Hour	PM Peak Hour
		Approach LOS (Delay[1])	Approach LOS (Delay[1])
Existing	NB SB EB	A (0.0) A (0.0) D (32.2)	A (0.0) A (0.0) C (22.7)
2019 Phase 1 No Build	NB SB EB	A (0.0) A (0.0) E (37.9)	A (0.0) A (0.0) D (25.9)
2019 Phase 1 Build	NB SB EB	A (0.0) A (0.0) E (42.2)	A (0.0) A (0.0) D (27.5)

1. Delay = average seconds of delay

8.1.8 SC 170 at Riverwalk Boulevard

Table 14 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2019 Phase 1 No Build, and 2019 Phase 1 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Riverwalk Boulevard.

As shown in **Table 14**, the intersection of SC 170 at Riverwalk Boulevard currently experiences elevated delay during the AM and PM peak hours. The intersection is projected to continue to experience elevated delays during the AM and PM peak hours in the 2019 Phase 1 No Build and 2019 Phase 1 Build conditions. These operations are typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

It is recommended based on the results of the No Build and Build conditions that consideration of extending the eastbound turn-lane to accommodate the project queue from the left-turn. This would allow right-turning vehicles to not be delayed by the left-turns.

Table 14: 2019 Phase 1 Analysis Summary SC 170 at Riverwalk Boulevard			
Analysis Scenario	**Approach**	**AM Peak Hour**	**PM Peak Hour**
		Approach LOS (Delay[1])	**Approach LOS (Delay[1])**
Existing	NB SB EB	A (4.4) A (0.0) F (*)[2]	A (0.9) A (0.0) F (*)[2]
2019 Phase 1 No Build	NB SB EB	A (6.3) A (0.0) F (50.7)	A (1.0) A (0.0) F (*)[2]
2019 Phase 1 Build	NB SB EB	A (7.7) A (0.0) F (75.8)	A (1.0) A (0.0) F (77.2)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

8.1.9 SC 170 at Tidewatch Drive

Table 15 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2019 Phase 1 No Build, and 2019 Phase 1 Build AM and PM peak hour conditions for the signalized intersection of SC 170 at Tidewatch Drive.

Table 15: 2019 Phase 1 Analysis Summary SC 170 at Tidewatch Drive					
Analysis Scenario	**Approach**	**AM Peak Hour**		**PM Peak Hour**	
		Approach LOS (Delay[1])	**Overall LOS (Delay[1])**	**Approach LOS (Delay[1])**	**Overall LOS (Delay[1])**
Existing	NB SB EB WB	A (7.9) A (9.6) D (44.5) D (44.2)	B (10.0)	A (8.4) A (8.0) D (44.2) D (45.9)	A (9.8)
2019 Phase 1 No Build	NB SB EB WB	A (8.7) B (10.9) D (44.7) D (44.3)	B (11.0)	A (9.2) A (8.7) D (44.3) D (46.2)	B (10.5)
2019 Phase 1 Build	NB SB EB WB	B (14.7) B (10.5) D (37.0) D (36.7)	B (13.6)	B (13.8) B (12.5) C (31.6) C (32.7)	B (14.0)

1. Delay = average seconds of delay

As shown in Table 15, the intersection of SC 170 at Tidewatch Drive currently operates acceptably at LOS B and LOS A during the AM and PM peak hours. Based on the projected traffic growth the intersection is projected to operate acceptably at LOS B during the AM and PM peak hours in the 2019 Phase 1 No Build conditions. In the 2019 Phase 1 Build conditions, signal optimization was applied to the signalized intersection. With this improvement the intersection is projected to continue to operate acceptably, operating at LOS B, during the AM and PM peak hours in the 2019 Phase 1 Build conditions.

8.1.10 2019 Phase 1 Capacity Analysis Summary

Based on the projected 2019 Phase 1 Build year future conditions, the following transportation improvements are recommended as a part of this project:

- Argent Boulevard at Jasper Station Road/Short Cut Drive – Installation of a northbound right-turn lane on Argent Boulevard
- SC 170 at Pritcher Point Road/Short Cut Drive – Installation of a traffic signal, when warranted. Performance of a traffic signal warrant analysis at completion of phase.
- SC 170 at Red Oaks Drive/Site Access #2 – Installation of a northbound right-turn lane on SC 170, southbound left-turn lane on SC 170, and shared westbound left-turn lane, through lane, and right-turn lane on Site Access #2. Installation of an exclusive eastbound right-turn lane on Red Oaks Drive.
- Improvements to Cherry Point Road (to be coordinated with County Staff) – Improvements to roadway conditions from site access point to SC 170, potential installation of and eastbound left-turn lane into the School property, etc.
- Coordination with Beaufort County, Beaufort County School District Staff and Developer regarding school access
- SC 170 at Riverwalk Boulevard – Consideration of extension of the eastbound right-turn lane on Riverwalk Boulevard
- Traffic signal timing optimization at signalized intersections

8.2 2021 Capacity Analysis

Capacity analyses were performed for the Existing, 2021 Phase 2 No Build, and 2021 Phase 2 Build AM and PM peak hour traffic conditions. The 2021 Phase 2 Build year conditions includes the following land uses:

- Osprey Point PUD – 331 single-family detached units
- River Oaks PUD – 315 single-family detached units

8.2.1 SC 170 at Argent Boulevard

Table 16 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 Phase 2 No Build, and 2021 Phase 2 Build AM and PM peak hour conditions for the signalized intersection of SC 170 at Argent Boulevard.

As shown in **Table 16**, the intersection of SC 170 at Argent Boulevard currently operates at LOS D during the AM and PM peak hours. Based on the projected traffic growth, the intersection is projected to experience elevated delays during the AM peak hour and to operate at LOS D during the PM peak hour in the 2021 Phase 2 No Build conditions. With signal optimization of the intersection, the intersection is projected to operate at LOS D during the AM and PM peak hours in the 2021 Phase 2 Build conditions.

Table 16:
2021 Phase 2 Analysis Summary
SC 170 at Argent Boulevard

Analysis Scenario	Approach	AM Peak Hour		PM Peak Hour	
		Approach LOS (Delay[1])	Overall LOS (Delay[1])	Approach LOS (Delay[1])	Overall LOS (Delay[1])
Existing	NB SB EB	B (12.5) D (46.8) F (149.6)	D (45.7)	B (15.8) C (22.3) F (168.1)	D (38.2)
2021 Phase 2 No Build	NB SB EB	B (14.2) F (94.1) F (179.2)	E (72.0)	C (20.8) C (27.6) F (231.8)	D (51.0)
2021 Phase 2 Build	NB SB EB	C (21.6) E (64.6) F (110.5)	D (52.2)	D (40.9) D (41.9) F (80.5)	D (46.3)

1. Delay = average seconds of delay

8.2.2 Argent Boulevard at Jasper Station Road/Short Cut Drive

Table 17 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 Phase 2 No Build, and 2021 Phase 2 Build AM and PM peak hour conditions for the unsignalized intersection of Argent Boulevard at Jasper Station Road/Short Cut Drive.

As shown in **Table 17**, the intersection of Argent Boulevard at Jasper Station Road/Short Cut Drive currently operates at LOS D (eastbound and westbound approaches) during the AM peak hour and experiences elevated delay, operating at LOS E (westbound approach) during the PM peak hour. Based on the projected traffic growth, the intersection is projected to experience elevated delays during the AM and PM peak hours for the 2021 Phase 2 No Build conditions for the eastbound and westbound approaches. As stated previously, the addition of a northbound right-turn lane was included in the 2019 Phase 1 Build conditions. In addition, the installation of a westbound left-turn lane was included in the 2021 Phase 2 Build conditions. With these improvements the intersection is projected to operate at LOS D during the AM peak hour (eastbound and westbound approaches) and to experience elevated delay, operating at LOS E

(westbound approach) in the PM peak hour during the 2021 Phase 2 Build conditions. It is typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

Table 17:
2021 Phase 2 Analysis Summary
Argent Boulevard at Jasper Station Road/Short Cut Drive

Analysis Scenario	Approach	AM Peak Hour	PM Peak Hour
		Approach LOS (Delay[1])	Approach LOS (Delay[1])
Existing	NB	A (0.2)	A (0.3)
	SB	A (0.2)	A (0.2)
	EB	D (30.0)	D (32.6)
	WB	D (32.6)	E (36.4)
2021 Phase 2 No Build	NB	A (0.2)	A (0.3)
	SB	A (0.2)	A (0.2)
	EB	E (35.9)	E (39.2)
	WB	E (39.9)	E (45.6)
2021 Phase 2 Build with Improvements	NB	A (0.2)	A (0.3)
	SB	A (0.1)	A (0.2)
	EB	D (30.1)	E (38.8)
	WB	D (27.9)	D (34.6)

1. Delay = average seconds of delay

8.2.3 SC 170 at Pritcher Point Road/Short Cut Drive

Table 18 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 Phase 2 No Build, and 2021 Phase 2 Build AM and PM peak hour conditions for the intersection of SC 170 at Pritcher Point Road/Short Cut Drive. The intersection is currently unsignalized. As discussed previously, construction associated with a nearby animal shelter, accessed via Pritcher Point Road, includes the following intersection improvements, included in the 2021 Phase 2 No Build and 2021 Phase 2 Build conditions:

- Northbound right-turn lane on SC 170
- Southbound left-turn lane on SC 170
- Westbound through/left-turn lane and right-turn lane on Pritcher Point Road

The intersection was assumed to be signalized in the 2021 Phase 2 conditions.

Table 18:
2021 Phase 2 Analysis Summary
SC 170 at Pritcher Point Road/Short Cut Drive

Analysis Scenario	Approach	AM Peak Hour		PM Peak Hour	
		Approach LOS (Delay[1])	Overall LOS (Delay[1,2])	Approach LOS (Delay[1,2])	Overall LOS (Delay[1,2])
Existing	NB SB EB WB	A (1.7) A (0.0) E (48.3) F (*)[2]	N/A[3]	A (0.6) A (0.0) E (36.7) A (0.0)	N/A[3]
2021 Phase 2 No Build	NB SB EB WB	A (2.4) A (0.0) F (101.6) F (107.6)	N/A[3]	A (0.7) A (0.0) F (78.2) A (0.0)	N/A[3]
2021 Phase 2 Build with Improvements	NB SB EB WB	C (26.3) E (56.7) E (56.1) F (163.4)	D (49.7)	C (27.1) C (20.4) D (37.6) D (37.1)	C (25.1)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds
3. Overall intersection delay not calculated for two-way stop controlled intersections

As shown in **Table 18**, the intersection of SC 170 at Jasper Station Road/Short Cut Drive currently experiences elevated delay, operating at LOS F (westbound approach), during the AM peak hour and operates at LOS E during the PM peak hour (eastbound approach). The current westbound approach traffic volume is very low in the morning (two vehicles) however, those vehicles do experience delay. As discussed previously, construction associated with a nearby animal shelter on Pritcher Point Road, includes installation of a northbound right-turn lane, a southbound left-turn lane, and configuration of the westbound approach to include a right-turn lane and a through-left lane. With these improvements, based on the projected traffic growth the intersection is projected to experience elevated delays, operating at LOS F (westbound and eastbound approaches) during the AM peak hour and to operate at LOS F during the PM peak hour (eastbound approach) in the 2021 Phase 2 No Build conditions. The intersection is planned to be signalized in the 2021 Phase 2 Build conditions. With signalization the intersection is projected to operate at LOS D and LOS C during the AM and PM peak hours, respectively, in the 2021 Phase 2 Build conditions.

8.2.4 SC 170 at Pearlstine Road/Cherry Point Road

Table 19 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 Phase 2 No Build, and 2021 Phase 2 Build AM and PM peak hour conditions for the signalized intersection of SC 170 at Pearlstine Road/Cherry Point Road.

Table 19: 2021 Phase 2 Analysis Summary SC 170 at Pearlstine Road/Cherry Point Road					
Analysis Scenario	**Approach**	**AM Peak Hour**		**PM Peak Hour**	
		Approach LOS (Delay[1])	**Overall LOS (Delay[1])**	**Approach LOS (Delay[1])**	**Overall LOS (Delay[1])**
Existing	NB SB EB WB	C (22.5) D (39.5) D (40.6) F (*)[2]	E (72.8)	B (18.0) B (13.8) D (37.2) D (35.7)	B (16.7)
2021 Phase 2 No Build	NB SB EB WB	C (26.2) F (70.3) D (44.2) F (*)[2]	F (99.2)	C (30.1) B (16.9) D (37.6) D (35.8)	C (24.6)
2021 Phase 2 Build with Improvements	NB SB EB WB	B (19.9) C (34.5) D (48.9) F (88.9)	D (35.8)	B (15.8) B (14.4) D (37.7) D (36.4)	B (16.2)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

As shown in **Table 19**, the intersection of SC 170 at Pearlstine Road/Cherry Point Road currently experiences elevated delay in the AM peak hour and operates at LOS B during the PM peak hour. The AM peak hour delay is elevated on the westbound approach primarily due to the impacts of the Okatie Elementary School (intersection is the only access to the school from SC 170). Based on the projected traffic growth, the intersection is projected to experience elevated delays during the AM peak hour and to operate at LOS C during the PM peak hour in the 2021 Phase 2 No Build conditions. The installation of a second westbound left-turn lane with restriping of the westbound approach to dual left-turn lanes with a shared through right lane, and signal optimization were applied in the 2021 Phase 2 Build conditions. With these improvements the intersection is projected to operate at LOS D and LOS B during the AM and PM peak hours, respectively, in the 2021 Phase 2 Build conditions.

The Cherry Point Road improvements were assumed to be complete as part of Phase 1.

8.2.5 SC 170 at Red Oaks Drive/Site Access #2

Table 20 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 Phase 2 No Build, and 2021 Phase 2 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Red Oaks Drive/Site Access #2.

Table 20: 2021 Phase 2 Analysis Summary SC 170 at Red Oaks Drive/Site Access #2			
Analysis Scenario	**Approach**	**AM Peak Hour**	**PM Peak Hour**
		Approach LOS (Delay[1])	**Approach LOS (Delay[1])**
Existing	NB SB EB	A (0.4) A (0.0) F (279.1)	A (0.4) A (0.0) F (*)[2]
2021 Phase 2 No Build	NB SB EB	A (0.5) A (0.0) F (56.6)	A (0.4) A (0.0) F (87.2)
2021 Phase 2 Build with Improvements	NB SB EB WB	A (0.6) A (0.0) F (86.8) F (70.1)	A (0.4) A (0.0) F (159.7) F (91.4)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

As shown in **Table 20**, the intersection of SC 170 at Red Oaks Drive currently experiences elevated delays during the AM and PM peak hours. The intersection is projected to continue to experience elevated delays during the AM and PM peak hours in the 2021 Phase 2 No Build conditions. As stated previously, the addition of an eastbound right-turn lane and northbound right-turn lane were included in the 2019 Phase 1 Build conditions. In addition, the installation of an exclusive westbound right-turn lane with a shared through left lane exiting the site were applied in the 2021 Phase 2 Build conditions. With these improvements the intersection is projected to experience elevated delays during the AM and PM peak hours in the 2021 Phase 2 Build conditions (eastbound and westbound approaches). It is typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

8.2.6 SC 170 at Schinger Avenue

Table 21 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 Phase 2 No Build, and 2021 Phase 2 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Schinger Avenue.

As shown in **Table 21**, the intersection of SC 170 at Schinger Avenue currently operates acceptably at LOS D and LOS C during the AM and PM peak hours, respectively. Based on the projected traffic growth the intersection is expected to experience elevated delays during the AM peak hour and to operate at LOS D during PM peak hour in the 2023 No Build conditions. The intersection is projected to experience elevated delays during the AM and PM peak hours in the 2021 Phase 2 Build conditions. It is typical for minor stop-

controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

Table 21:
2021 Phase 2 Analysis Summary
SC 170 at Schinger Avenue

Analysis Scenario	Approach	AM Peak Hour	PM Peak Hour
		Approach LOS (Delay[1])	Approach LOS (Delay[1])
Existing	NB SB EB	A (0.0) A (0.0) D (32.2)	A (0.0) A (0.0) C (22.7)
2021 Phase 2 No Build	NB SB EB	A (0.0) A (0.0) E (46.7)	A (0.0) A (0.0) D (30.4)
2021 Phase 2 Build	NB SB EB	A (0.0) A (0.0) F (69.2)	A (0.0) A (0.0) E (38.8)

1. Delay = average seconds of delay

8.2.7 SC 170 at Riverwalk Boulevard

Table 22 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 Phase 2 No Build, and 2021 Phase 2 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Riverwalk Boulevard.

As shown in **Table 22**, the intersection of SC 170 at Riverwalk Boulevard currently experiences elevated delay during the AM and PM peak hours. The intersection is projected to continue to experience elevated delays during the AM and PM peak hours in the 2021 Phase 2 No Build and 2021 Phase 2 Build conditions. These operations are typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

As stated in Phase 1, it is recommended based on the results of the No Build and Build conditions that consideration of extending the eastbound turn-lane to accommodate the project queue from the left-turn. This would allow right-turning vehicles to not be delayed by the left-turns.

Table 22: 2021 Phase 2 Analysis Summary SC 170 at Riverwalk Boulevard			
Analysis Scenario	**Approach**	**AM Peak Hour**	**PM Peak Hour**
		Approach LOS (Delay[1])	**Approach LOS (Delay[1])**
Existing	NB SB EB	A (4.4) A (0.0) F (*)[2]	A (0.9) A (0.0) F (*)[2]
2021 Phase 2 No Build	NB SB EB	A (9.8) A (0.0) F (117.4)	A (1.2) A (0.0) F (*)[2]
2021 Phase 2 Build	NB SB EB	D (19.4) A (0.0) F (75.9)	A (1.2) A (0.0) F (192.1)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

8.2.8 SC 170 at Tidewatch Drive

Table 23 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 Phase 2 No Build, and 2021 Phase 2 Build AM and PM peak hour conditions for the signalized intersection of SC 170 at Tidewatch Drive.

Table 23: 2021 Phase 2 Analysis Summary SC 170 at Tidewatch Drive					
Analysis Scenario	**Approach**	**AM Peak Hour**		**PM Peak Hour**	
		Approach LOS (Delay[1])	**Overall LOS (Delay[1])**	**Approach LOS (Delay[1])**	**Overall LOS (Delay[1])**
Existing	NB SB EB WB	A (7.9) A (9.6) D (44.5) D (44.2)	B (10.0)	A (8.4) A (8.0) D (44.2) D (45.9)	A (9.8)
2021 Phase 2 No Build	NB SB EB WB	A (9.6) B (12.6) D (44.7) D (44.3)	B (12.3)	B (10.2) A (9.6) D (44.3) D (46.4)	B (11.4)
2021 Phase 2 Build	NB SB EB WB	A (8.9) B (13.8) E (57.8) E (57.2)	B (13.1)	B (14.8) B (12.2) D (42.0) D (43.4)	B (14.8)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

As shown in **Table 23**, the intersection of SC 170 at Tidewatch Drive currently operates acceptably at LOS B and LOS A during the AM and PM peak hours. Based on the projected traffic growth the intersection is projected to operate at LOS B during the AM and PM peak hours in the 2021 Phase 2 No Build conditions. In the 2021 Phase 2 Build conditions, signal optimization was applied to the signalized intersection. With this improvement the intersection is projected to continue to operate similarly, operating at LOS B, during the AM and PM peak hours in the 2021 Phase 2 Build conditions.

8.2.9 2021 Phase 2 Capacity Analysis Summary

Based on the projected 2021 Phase 2 Build year future conditions, the following transportation improvements are recommended as a part of this project, in addition to the recommendations for the projected 2019 Phase 1 Build year future conditions:

- Improvements listed in Phase 1 above
- Argent Boulevard at Jasper Station Road/Short Cut Drive – Installation of a westbound left-turn lane on Short Cut Drive
- SC 170 at Pritcher Point Road/Short Cut Drive – Installation of westbound left-turn lane on Pritcher Point Road
- SC 170 at Red Oaks Drive/Site Access #2 – Installation westbound right-turn lane on Site Access #2
- SC 170 at Pearlstine Drive/Cherry Point Road – Installation of an additional westbound left-turn lane on Cherry Point Road, and restriping of the westbound approach (Cherry Point Road) to dual left-turns with a shared through right lane
- Traffic signal timing optimization at signalized intersections

8.3 2023 Capacity Analysis

Capacity analyses were performed for the Existing, 2023 No Build, and 2023 Build AM and PM peak hour traffic conditions. The 2023 Build year conditions include the following land uses:

- Osprey Point PUD – 159,525 sf of retail, 53,175 sf of office space, and 396 single-family detached units
- River Oaks PUD – 315 single-family detached units

8.3.1 SC 170 at Argent Boulevard

Table 24 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2023 No Build, and 2023 Build AM and PM peak hour conditions for the signalized intersection of SC 170 at Argent Boulevard.

Table 24: 2023 Analysis Summary SC 170 at Argent Boulevard					
Analysis Scenario	**Approach**	**AM Peak Hour**		**PM Peak Hour**	
		Approach LOS (Delay[1])	**Overall LOS (Delay[1])**	**Approach LOS (Delay[1])**	**Overall LOS (Delay[1])**
Existing	NB SB EB	B (12.5) D (46.8) F (149.6)	D (45.7)	B (15.8) C (22.3) F (168.1)	D (38.2)
2023 No Build	NB SB EB	B (15.4) F (123.7) F (196.1)	F (88.3)	C (26.4) C (33.1) F (267.0)	E (60.5)
2023 Build with Improvements	NB SB EB	B (11.3) D (36.1) F (84.5)	C (31.2)	C (21.8) D (35.6) D (51.2)	C (30.7)

1. Delay = average seconds of delay

As shown in **Table 24**, the intersection of SC 170 at Argent Boulevard currently operates acceptably at LOS D during the AM and PM peak hours. Based on the projected traffic growth, the intersection is projected to experience elevated delays during the AM and PM peak hours in the 2023 No Build conditions. With the current intersection configuration, the intersection was projected to continue to experience elevated delay during the Build conditions. It is recommended that the eastbound approach movements be reconfigured, to provide dual left-turn lanes along with a right-turn lane. Based on the geometrics of this intersection the eastbound approach may be able to be restriped or the intersection approach may need to be redesigned. This would be determined as part of the design of the improvements by the project team in coordination with the County staff. With this improvement and signal optimization, the intersection is projected to operate acceptably at LOS C during the AM and PM peak hours in the 2023 Build conditions.

8.3.2 Argent Boulevard at Jasper Station Road/Short Cut Drive

Table 25 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2023 No Build, and 2023 Build AM and PM peak hour conditions for the unsignalized intersection of Argent Boulevard at Jasper Station Road/Short Cut Drive.

Table 25: 2023 Analysis Summary Argent Boulevard at Jasper Station Road/Short Cut Drive			
Analysis Scenario	**Approach**	**AM Peak Hour**	**PM Peak Hour**
		Approach LOS (Delay[1])	**Approach LOS (Delay[1])**
Existing	NB SB EB WB	A (0.2) A (0.2) D (30.0) D (32.6)	A (0.3) A (0.2) D (32.6) E (36.4)
2023 No Build	NB SB EB WB	A (0.2) A (0.2) E (40.2) E (45.5)	A (0.3) A (0.2) E (45.1) F (50.9)
2023 Build with Improvements	NB SB EB WB	A (0.2) A (0.2) D (34.2) D (31.9)	A (0.3) A (0.2) E (47.1) E (45.5)

1. Delay = average seconds of delay

As shown in **Table 25**, the intersection of Argent Boulevard at Jasper Station Road/Short Cut Drive currently operates at LOS D during the AM peak hour and experiences elevated delay, operating at LOS E, during the PM peak hour (westbound approach). Based on the projected traffic growth, the intersection is projected to experience elevated delays during the AM and PM peak hours for the 2023 No Build conditions. As stated previously, the addition of a northbound right-turn lane and a westbound left-turn lane were included in the 2021 Phase 2 Build conditions and were also applied in the 2023 Build conditions. With these improvements the intersection is projected to operate acceptably at LOS D during the AM peak hour and to experience elevated delay, operating at LOS E, in the PM peak hour during the 2023 Build conditions (eastbound and westbound approaches). It is typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

8.3.3 SC 170 at Pritcher Point Road/Short Cut Drive

Table 26 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2023 No Build, and 2023 Build AM and PM peak hour conditions for the intersection of SC 170 at Pritcher Point Road/Short Cut Drive. The intersection is currently unsignalized. As discussed previously, construction associated with a nearby animal shelter, accessed via Pritcher Point Road, includes the following intersection improvements, included in the 2023 No Build and 2023 Build conditions:

- Northbound right-turn lane on SC 170
- Southbound left-turn lane on SC 170
- Westbound through/left-turn lane and right-turn lane on Pritcher Point Road

The intersection was assumed to be signalized in the 2023 conditions. A second westbound left-turn lane installed in Phase 2 was also included in the 2023 analysis.

Table 26:
2023 Analysis Summary
SC 170 at Pritcher Point Road/Short Cut Drive

Analysis Scenario	Approach	AM Peak Hour		PM Peak Hour	
		Approach LOS (Delay[1])	Overall LOS (Delay[1])	Approach LOS (Delay[1])	Overall LOS (Delay[1])
Existing	NB SB EB WB	A (1.7) A (0.0) E (48.3) F (*)[2]	N/A[3]	A (0.6) A (0.0) C (19.7) A (0.0)	N/A[3]
2023 No Build	NB SB EB WB	A (3.0) A (0.0) F (154.1) F (*)[2]	N/A[3]	A (0.7) A (0.0) D (30.9) A (0.0)	N/A[3]
2023 Build with Improvements	NB SB EB WB	C (23.2) E (56.3) F (86.8) F (135.5)	D (47.4)	C (34.6) C (28.2) E (72.3) F (110.4)	D (37.4)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds
3. Overall intersection delay not calculated for two-way stop controlled intersections

As shown in **Table 26**, the intersection of SC 170 at Jasper Station Road/Short Cut Drive currently experiences elevated delay, operating at LOS F (westbound approach), during the AM peak hour and operates at LOS E during the PM peak hour (eastbound approach). The current westbound approach traffic volume is very low in the morning (two vehicles) however, those vehicles do experience delay. Based on the projected traffic growth the intersection is projected to continue to experience elevated delays during the AM peak hour, operating at LOS F (eastbound and westbound approaches), and to operate at LOS D during the PM peak hour in the 2023 conditions. With the improvements discussed above, the intersection is projected to operate acceptably at LOS D in the AM and PM peak hours during the 2023 Build conditions.

8.3.4 SC 170 at Pearlstine Road/Cherry Point Road

Table 27 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2023 No Build, and 2023 Build AM and PM peak hour conditions for the signalized intersection of SC 170 at Pearlstine Road/Cherry Point Road.

Table 27: 2023 Analysis Summary SC 170 at Pearlstine Road/Cherry Point Road					
Analysis Scenario	**Approach**	**AM Peak Hour**		**PM Peak Hour**	
		Approach LOS (Delay[1])	**Overall LOS (Delay[1])**	**Approach LOS (Delay[1])**	**Overall LOS (Delay[1])**
Existing	NB SB EB WB	C (22.5) D (39.5) D (40.6) F (*)[2]	E (72.8)	B (18.0) B (13.8) D (37.2) D (35.7)	B (16.7)
2023 No Build	NB SB EB WB	C (29.4) F (94.3) D (44.5) F (*)[2]	F (118.8)	D (46.0) B (19.3) D (37.8) D (35.9)	C (34.1)
2023 Build with Improvements	NB SB EB WB	C (34.1) D (46.7) E (75.5) F (109.7)	D (48.9)	C (27.4) B (15.3) E (67.6) F (96.8)	C (25.2)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

As shown in **Table 27**, the intersection of SC 170 at Pearlstine Road/Cherry Point Road currently experiences elevated delay in the AM peak hour (westbound approach) and operates at LOS B during the PM peak hour. The AM peak hour delay is elevated on the westbound approach due to the impacts of the Okatie Elementary School using this intersection as the primary access to the school. Based on the projected traffic growth, the intersection is projected to experience elevated delays during the AM peak hour (westbound approach) and to operate at LOS C during the PM peak hour in the 2023 No Build conditions. As stated in Phase 2, the installation of a second westbound left-turn lane, and signal optimization were applied in the 2021 Phase 2 Build conditions and were applied in the 2023 Build conditions analysis. In addition, the installation of an eastbound left-turn lane was applied in the 2023 Build conditions. With these improvements the intersection is projected to operate at LOS D and LOS C during the AM and PM peak hours, respectively, in the 2023 Build conditions.

The Cherry Point Road improvements were assumed to be complete as part of Phase 1.

8.3.5 SC 170 at Red Oaks Drive/Site Access #2

Table 28 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2023 No Build, and 2023 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Red Oaks Drive/Site Access #2.

Table 28: 2023 Analysis Summary SC 170 at Red Oaks Drive/Site Access #2			
Analysis Scenario	**Approach**	**AM Peak Hour**	**PM Peak Hour**
		Approach LOS (Delay[1])	**Approach LOS (Delay[1])**
Existing	NB SB EB	A (0.4) A (0.0) F (279.1)	A (0.4) A (0.0) F (*)[2]
2023 No Build	NB SB EB	A (0.5) A (0.0) F (75.6)	A (0.4) A (0.0) F (124)
2023 Build with Improvements	NB SB EB WB	A (0.6) A (0.0) F (189.5) F (268.4)	A (0.5) A (0.1) F (*) F (188.2)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

As shown in **Table 28**, the intersection of SC 170 at Red Oaks Drive currently experiences elevated delays during the AM and PM peak hours. The intersection is projected to continue to experience elevated delays during the AM and PM peak hours in the 2023 No Build conditions. As stated previously, the installation of an eastbound right-turn lane, a northbound right-turn lane, and a westbound right-turn lane and a through-left lane exiting the site to help facilitate traffic flow out of the site were applied in the 2021 Phase 2 Build conditions. These improvements were also applied in the 2023 Build conditions. With these improvements the intersection is projected to experience elevated delays during the AM and PM peak hours in the 2023 Build conditions. It is typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay. As the development builds out and as back access is established on both sides of SC 170, this location may be considered for right-in, right-out operations.

8.3.6 SC 170 at Schinger Avenue

Table 29 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2023 No Build, and 2023 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Schinger Avenue.

Table 29: 2023 Analysis Summary SC 170 at Schinger Avenue			
Analysis Scenario	**Approach**	**AM Peak Hour**	**PM Peak Hour**
		Approach LOS (Delay[1])	**Approach LOS (Delay[1])**
Existing	NB SB EB	A (0.0) A (0.0) D (32.2)	A (0.0) A (0.0) C (22.7)
2023 No Build	NB SB EB	A (0.0) A (0.0) F (59.6)	A (0.0) A (0.0) E (37.0)
2023 Build	NB SB EB	A (0.0) A (0.0) F (113.4)	A (0.0) A (0.0) F (70.8)

1. Delay = average seconds of delay

As shown in **Table 29**, the intersection of SC 170 at Schinger Avenue currently operates acceptably at LOS D and LOS C during the AM and PM peak hours, respectively. Based on the projected traffic growth the intersection is expected to experience elevated delays during the AM and PM peak hours during the 2023 No Build and 2023 Build conditions. It is typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

8.3.7 SC 170 at Riverwalk Boulevard

Table 30 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2023 No Build, and 2023 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Riverwalk Boulevard.

As shown in **Table 30**, the intersection of SC 170 at Riverwalk Boulevard currently experiences elevated delay during the AM and PM peak hours. The intersection is projected to continue to experience elevated delays during the AM and PM peak hours in the 2023 No Build and 2023 Build conditions. These operations are typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay. It is recommended based on the results of the No Build and Build conditions that consideration of extending the eastbound turn-lane to accommodate the project queue from the left-turn. This would allow right-turning vehicles to not be delayed by the left-turns.

Table 30: 2023 Analysis Summary SC 170 at Riverwalk Boulevard			
Analysis Scenario	**Approach**	**AM Peak Hour**	**PM Peak Hour**
		Approach LOS (Delay[1])	**Approach LOS (Delay[1])**
Existing	NB SB EB	A (4.4) A (0.0) F (*)[2]	A (0.9) A (0.0) F (*)[2]
2023 No Build	NB SB EB	C (15.3) A (0.0) F (66.6)	A (1.3) A (0.0) F (136.5)
2023 Build	NB SB EB	D (32.8) A (0.0) F (196.5)	A (1.8) A (0.0) F (*)[2]

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

8.3.8 SC 170 at Tidewatch Drive

Table 31 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2023 No Build, and 2023 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Tidewatch Drive.

Table 31: 2023 Analysis Summary SC 170 at Tidewatch Drive					
Analysis Scenario	**Approach**	**AM Peak Hour**		**PM Peak Hour**	
		Approach LOS (Delay[1])	**Overall LOS (Delay[1])**	**Approach LOS (Delay[1])**	**Overall LOS (Delay[1])**
Existing	NB SB EB WB	A (7.9) A (9.6) D (44.5) D (44.2)	B (10.0)	A (8.4) A (8.0) D (44.2) D (45.9)	A (9.8)
2023 No Build	NB SB EB WB	B (10.9) B (15.3) D (44.8) D (44.4)	B (14.3)	B (11.5) B (10.8) D (44.4) D (46.6)	B (12.6)
2023 Build	NB SB EB WB	B (12.0) C (22.0) E (58.3) E (57.4)	B (18.8)	B (14.9) B (13.0) E (57.8) E (60.0)	B (15.9)

1. Delay = average seconds of delay
2. * Delay exceeds 300 seconds

As shown in **Table 31**, the intersection of SC 170 at Tidewatch Drive currently operates acceptably at LOS B and LOS A during the AM and PM peak hours. Based on the projected traffic growth the intersection is projected to operate acceptably at LOS B during the AM and PM peak hours in the 2023 No Build conditions. In the 2023 Build conditions, signal optimization was applied to the signalized intersection. With this improvement the intersection is projected to continue to operate acceptably, operating at LOS B, during the AM and PM peak hours in the 2023 Build conditions.

8.3.9 SC 170 at Site Access #1

Table 32 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected 2023 Build AM and PM peak hour conditions for the unsignalized intersection of SC 170 at Site Access #1.

This location has been shown in previous planning efforts for the PUDs but is not consistent with the SC 170 Access Management Plan as noted by Staff in their comments. Formal allowance of this access will need to be coordinated with the County. If this access point is not allowed, the trips assigned to this intersection would be redistributed to other access points.

Table 32:
2023 Analysis Summary
SC 170 at Site Access #1

Analysis Scenario	Approach	AM Peak Hour	PM Peak Hour
		Approach LOS (Delay[1])	Approach LOS (Delay[1])
2023 Build	NB	A (0.0)	A (0.0)
	SB	A (0.0)	A (0.0)
	WB	C (21.7)	E (48.0)

1. Delay = average seconds of delay

The RIRO intersection of SC 170 at Site Access #1 was reviewed for consideration of the installation of an exclusive northbound right-turn lane on SC 170 based on SCDOT Design Manual guidelines and projected intersection volumes. The AM and PM peak hour conditions meet the guidelines for installation of an exclusive northbound right-turn lane. As shown in **Table 32**, with this improvement the intersection is projected to operate acceptably at LOS C during the AM peak hour and to experience elevated delays during the PM peak hour in the 2023 Build conditions. The westbound approach queuing is projected to be approximately one vehicle in the AM peak hour conditions and two vehicles in the PM peak hour conditions. These operations are typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

8.3.10 2023 Capacity Analysis Summary

Based on the projected 2023 Build future conditions, the following transportation improvements are recommended as a part of this project:

- Improvements listed in Phase 1 and Phase 2 above
- SC 170 at Argent Boulevard – Signal optimization and reconfiguration of the eastbound approach to dual left-turn lanes with shared right-turn lane
- SC 170 at Pritcher Point Road/Short Cut Drive – Install westbound dual left-turn lanes on Pritcher Point Road
- SC 170 at Site Access #1 – Installation of a northbound right-turn lane on SC 170
- Traffic signal timing optimization at signalized intersections

8.4 Year 2023 - SC 170 Arterial Analysis

Arterial analysis was performed for the SC 170 in the study area for the AM, Midday and PM peak hour conditions. The arterial level of service reviews the travel speed on a corridor. Travel speed considers intersection delay and travel time along the segments. The SC 170 corridor from Argent Boulevard to Tidewatch Drive was reviewed. **Table 33** provides a comparison of the arterial level of service between the Existing, 2023 No Build and 2023 Build conditions during the AM and PM peak hours.

In the Existing and 2023 No Build conditions, the intersection of Pritcher Point Road is not included because it is unsignalized in those conditions. During the morning and evening peak hour conditions, the arterial is operating at LOS D or better in the northbound direction (to Beaufort area) for all scenarios. In the southbound direction (to Bluffton area) in the morning peak, the arterial is operating at LOS D in the Existing conditions and LOS E in the 2023 No Build and Build conditions with 0.1 mph difference in overall travel speed between No Build and Build. In the southbound direction (to Bluffton area) in the evening peak, the arterial is operating at LOS C in the Existing conditions and 2023 No Build conditions and LOS D in the 2023 Build conditions.

Table 33: Arterial Level of Service – SC 170 LOS (Speed in mph)						
	Existing Conditions		**2023 No Build Conditions**		**2023 Build Conditions**	
Cross Street	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
NB SC 170						
Tidewatch Drive	D (26.6)	D (25.7)	D (24.5)	D (22.9)	D (23.7)	E (20.3)
Cherry Point Road	D (26.7)	B (34.2)	D (23.2)	D (29.6)	D (22.4)	D (25.4)
Pritcher Point Road	n/a	n/a	n/a	n/a	D (23.1)	E (16.9)
Argent Boulevard	B (36.5)	B (34.6)	B (34.8)	C (29.8)	C (27.9)	D (22.0)
Total	**C (31.0)**	**C (32.9)**	**C (38.2)**	**C (28.6)**	**D (24.0)**	**D (21.1)**
SB SC 170						
Argent Boulevard	F (6.2)	F (8.0)	F (2.9)	F (6.5)	F (6.8)	F (7.3)
Pritcher Point Road	n/a	n/a	n/a	n/a	F (14.0)	E (20.5)
Cherry Point Road	C (30.8)	B (39.1)	E (19.0)	B (36.8)	F (16.0)	D (26.4)
Tidewatch Drive	B (35.9)	B (36.8)	C (32.7)	B (34.7)	C (30.0)	C (32.9)
Total	**D (27.0)**	**C (32.1)**	**E (17.1)**	**C (29.2)**	**E (17.2)**	**D (23.2)**

1. n/a = not signalized

8.5 Analysis Summary

Based on the analysis the following Phase 1 (2019) transportation improvements are recommended:

- Argent Boulevard at Jasper Station Road/Short Cut Drive – Installation of a northbound right-turn lane on Argent Boulevard
- SC 170 at Pritcher Point Road/Short Cut Drive – Installation of a traffic signal, when warranted. Performance of a traffic signal warrant analysis at completion of phase.
- SC 170 at Red Oaks Drive/Site Access #2 – Installation of a northbound right-turn lane on SC 170, southbound left-turn lane on SC 170, and shared westbound left-turn lane, through lane, and right-turn lane on Site Access #2. Installation of an exclusive eastbound right-turn lane on Red Oaks Drive.

- Improvements to Cherry Point Road (to be coordinated with County Staff) – Improvements to roadway conditions from site access point to SC 170, potential installation of left-turn lane into the School property, etc.
- Coordination with Beaufort County, Beaufort County School District Staff and Developer regarding school access
- SC 170 at Riverwalk Boulevard – Consideration of extension of the eastbound right-turn lane on Riverwalk Boulevard
- Traffic signal timing optimization at signalized intersections

Based on the analysis the following Phase 2 (2021) transportation improvements are recommended:

- Improvements listed in Phase 1 above
- Argent Boulevard at Jasper Station Road/Short Cut Drive – Installation of a westbound left-turn lane on Short Cut Drive
- SC 170 at Pritcher Point Road/Short Cut Drive – Installation of westbound left-turn lane on Pritcher Point Road
- SC 170 at Red Oaks Drive/Site Access #2 – Installation westbound right-turn lane on Site Access #2
- SC 170 at Pearlstine Drive/Cherry Point Road – Installation of an additional westbound left-turn lane on Cherry Point Road, and restriping of the westbound approach (Cherry Point Road) to dual left-turns with a shared through right lane
- Traffic signal timing optimization at signalized intersections

Based on the analysis the following ultimate (2023) transportation improvements are recommended:

- Improvements listed in Phase 1 and Phase 2 above
- SC 170 at Argent Boulevard – Signal optimization and reconfiguration of the eastbound approach to dual left-turn lanes with shared right-turn lane
- SC 170 at Pritcher Point Road/Short Cut Drive – Install westbound dual left-turn lanes on Pritcher Point Road
- SC 170 at Site Access #1 – Installation of a northbound right-turn lane on SC 170
- Traffic signal timing optimization at signalized intersections

Results in this report are based solely on traffic studies and are considered input into final design considerations. The final design will be determined by the project engineer after other design elements (such as, but not limited to, utilities, stormwater, etc.) are taken into consideration.

9.0 Conclusion

The Okatie Village is located in Beaufort County, SC on the east side of SC 170, near Pritcher Point Road and Cherry Point Road. Okatie Village includes two development areas being studied, Osprey Point PUD

and River Oaks PUD. The development will be accessed via three full access points along SC 170 and a RIRO access point. For the purposes of this TIA, the proposed development is assumed to be complete by 2023, constructed in three phases. Land uses listed are cumulative.

The Phase 1 2019 Phase 1 Build conditions for this study and includes the following land uses:

- Osprey Point PUD – 102 single-family detached units
- River Oaks PUD – 101 single-family detached units

The Phase 2 2021 Phase 2 Build conditions for this study and includes the following land uses:

- Osprey Point PUD – 331 single-family detached units
- River Oaks PUD – 315 single-family detached units

The Buildout 2023 Build conditions for this study and includes the following land uses:

- Osprey Point PUD – 159,525 sf of retail, 53,175 sf of office space, and 370 single-family detached units
- River Oaks PUD – 315 single-family detached units

Based on the analysis the following Phase 1 (2019) transportation improvements are recommended:

- Argent Boulevard at Jasper Station Road/Short Cut Drive – Installation of a northbound right-turn lane on Argent Boulevard
- SC 170 at Pritcher Point Road/Short Cut Drive – Installation of a traffic signal, when warranted. Performance of a traffic signal warrant analysis at completion of phase.
- SC 170 at Red Oaks Drive/Site Access #2 – Installation of a northbound right-turn lane on SC 170, southbound left-turn lane on SC 170, and shared westbound left-turn lane, through lane, and right-turn lane on Site Access #2. Installation of an exclusive eastbound right-turn lane on Red Oaks Drive.
- Improvements to Cherry Point Road (to be coordinated with County Staff) – Improvements to roadway conditions from site access point to SC 170, potential installation of left-turn lane into the School property, etc.
- Coordination with Beaufort County, Beaufort County School District Staff and Developer regarding school access
- SC 170 at Riverwalk Boulevard – Consideration of extension of the eastbound right-turn lane on Riverwalk Boulevard
- Traffic signal timing optimization at signalized intersections

Based on the analysis the following Phase 2 (2021) transportation improvements are recommended:

- Improvements listed in Phase 1 above
- Argent Boulevard at Jasper Station Road/Short Cut Drive – Installation of a westbound left-turn lane on Short Cut Drive

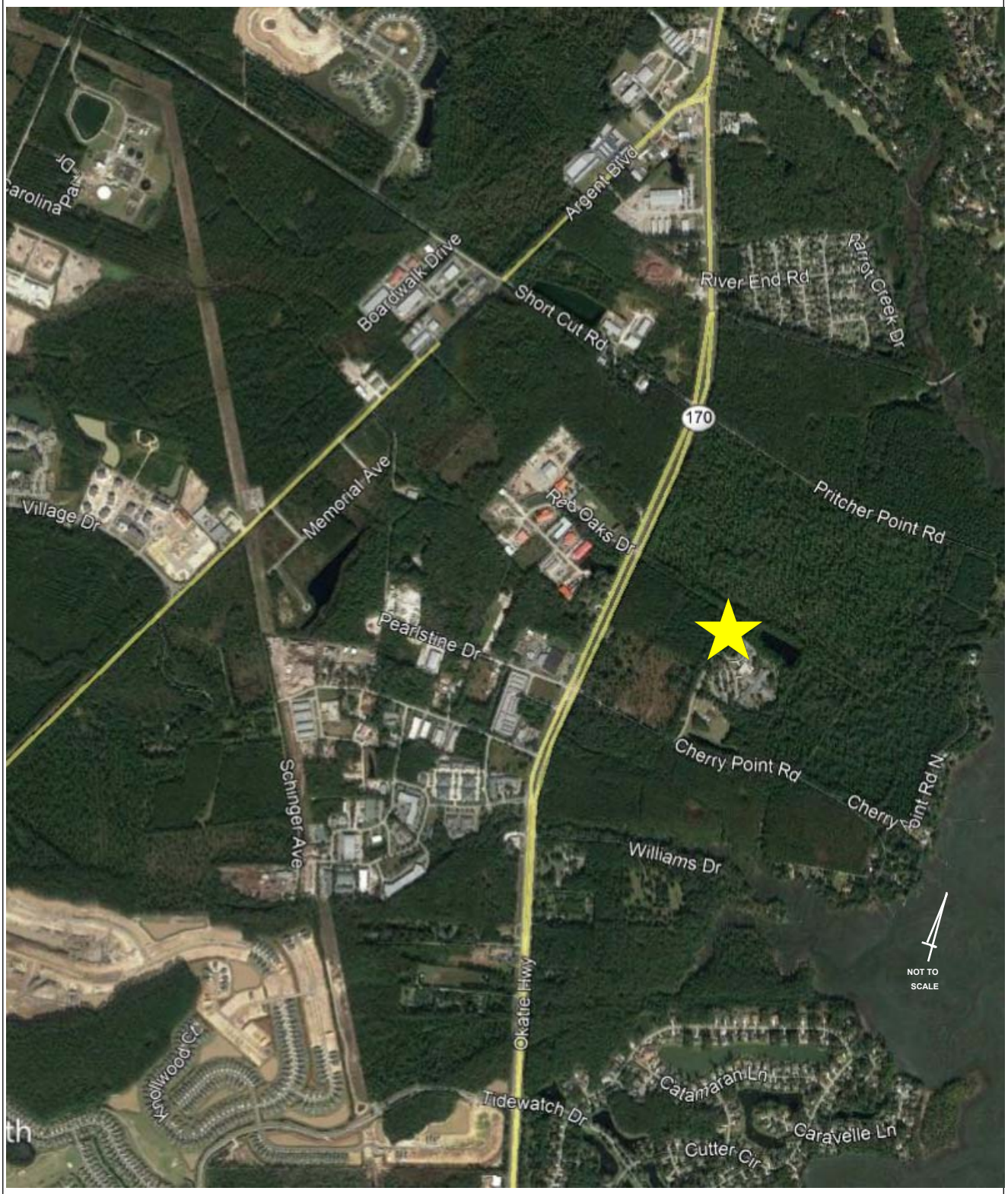
- SC 170 at Pritcher Point Road/Short Cut Drive – Installation of westbound left-turn lane on Pritcher Point Road
- SC 170 at Red Oaks Drive/Site Access #2 – Installation westbound right-turn lane on Site Access #2
- SC 170 at Pearlstine Drive/Cherry Point Road – Installation of an additional westbound left-turn lane on Cherry Point Road, and restriping of the westbound approach (Cherry Point Road) to dual left-turns with a shared through right lane
- Traffic signal timing optimization at signalized intersections

Based on the analysis the following ultimate (2023) transportation improvements are recommended:

- Improvements listed in Phase 1 and Phase 2 above
- SC 170 at Argent Boulevard – Signal optimization and reconfiguration of the eastbound approach to dual left-turn lanes with shared right-turn lane
- SC 170 at Pritcher Point Road/Short Cut Drive – Install westbound dual left-turn lanes on Pritcher Point Road
- SC 170 at Site Access #1 – Installation of a northbound right-turn lane on SC 170
- Traffic signal timing optimization at signalized intersections

Results in this report are based solely on traffic studies and are considered input into final design considerations. The final design will be determined by the project engineer after other design elements (such as, but not limited to, utilities, stormwater, etc.) are taken into consideration.

Appendix



LEGEND
Project Site

BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**Site Location**	**Figure 1**

EXHIBIT B

LOT YEILD: 315

30' X 110'

40' X 110'

Total Acres: +/-61.21

Residential Density: 5.14 DU/AC

Open Space: 26.26 AC (42.90%)

NORTH

GRAPHIC SCALE

0 150' 300' 450'

PREPARED FOR:
VILLAGE PARK HOMES, LLC

PREPARED BY:
J. K. TILLER ASSOCIATES, INC.
LAND PLANNING LANDSCAPE ARCHITECTURE
181 BLUFFTON ROAD SUITE F205 BLUFFTON, SC 29910

RIVER OAKS (MALIND POINTE) AMENDED MASTER PLAN

BEAUFORT COUNTY, SOUTH CAROLINA

OCTOBER 16, 2017

THIS IS A CONCEPTUAL PLAN AND IS SUBJECT TO CHANGE. ALL SURVEY INFORMATION AND SITE BOUNDARIES WERE COMPILED FROM A VARIETY OF UNVERIFIED SOURCES AT VARIOUS TIMES AND AS SUCH ARE INTENDED TO BE USED ONLY AS A GUIDE. ALL PROPERTY LINES, TRACT DIMENSIONS AND NARRATIVE DESCRIPTIONS ARE FOR GRAPHIC REPRESENTATION ONLY, AS AN AID TO SITE LOCATION AND POTENTIAL LAND USE, AND ARE NOT LEGAL REPRESENTATIONS AS TO FUTURE USES OR LOCATIONS. J. K. TILLER ASSOCIATES, INC. ASSUMES NO LIABILITY FOR ITS ACCURACY OR STATE OF COMPLETION, OR FOR ANY DECISIONS (REQUIRING ACCURACY) WHICH THE USER MAY MAKE BASED ON THIS INFORMATION.

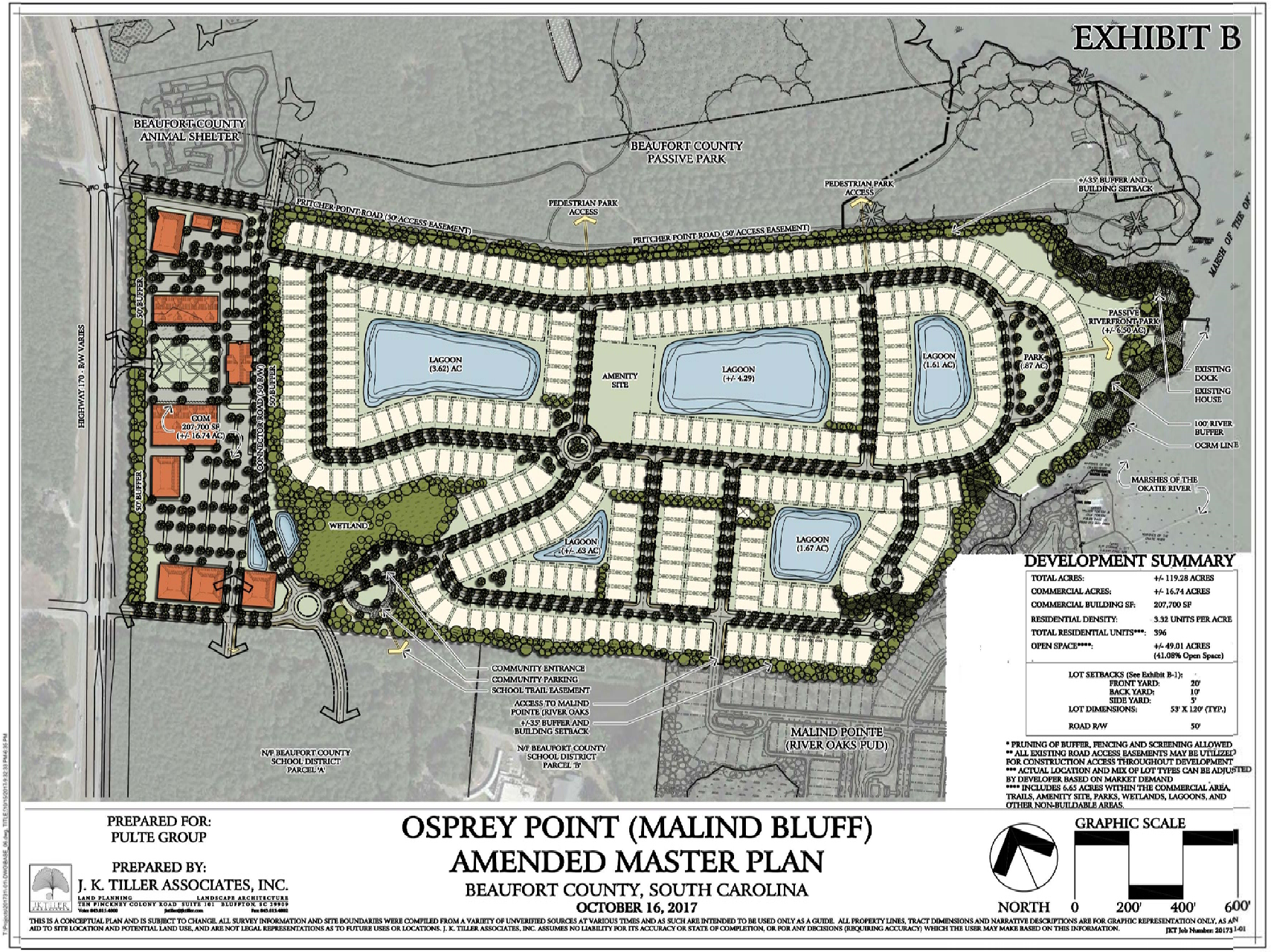
JKT Job Number: 201703-01

	Okatie Village Traffic Impact Analysis	Conceptual Site Plan	Figure 2A

Okatie Village
Traffic Impact Analysis

Conceptual
Site Plan

Figure 2B



DEVELOPMENT SUMMARY

TOTAL ACRES:	+/- 119.28 ACRES
COMMERCIAL ACRES:	+/- 16.74 ACRES
COMMERCIAL BUILDING SF:	207,700 SF
RESIDENTIAL DENSITY:	5.32 UNITS PER ACRE
TOTAL RESIDENTIAL UNITS***:	596
OPEN SPACE****:	+/- 49.01 ACRES (41.08% Open Space)

LOT SETBACKS (See Exhibit B-1):	
FRONT YARD:	20'
BACK YARD:	10'
SIDE YARD:	5'
LOT DIMENSIONS:	53' X 120' (TYP.)
ROAD R/W	50'

* PRUNING OF BUFFER, FENCING AND SCREENING ALLOWED
** ALL EXISTING ROAD ACCESS EASEMENTS MAY BE UTILIZED FOR CONSTRUCTION ACCESS THROUGHOUT DEVELOPMENT
*** ACTUAL LOCATION AND MIX OF LOT TYPES CAN BE ADJUSTED BY DEVELOPER BASED ON MARKET DEMAND
**** INCLUDES 6.65 ACRES WITHIN THE COMMERCIAL AREA, TRAILS, AMENITY SITE, PARKS, WETLANDS, LAGOONS, AND OTHER NON-BUILDABLE AREAS.

PREPARED FOR:
PULTE GROUP

PREPARED BY:
J. K. TILLER ASSOCIATES, INC.
LAND PLANNING LANDSCAPE ARCHITECTURE
TEN PINCKNEY COLONY ROAD SUITE 101 BLUFFTON, SC 29909

OSPREY POINT (MALIND BLUFF) AMENDED MASTER PLAN

BEAUFORT COUNTY, SOUTH CAROLINA

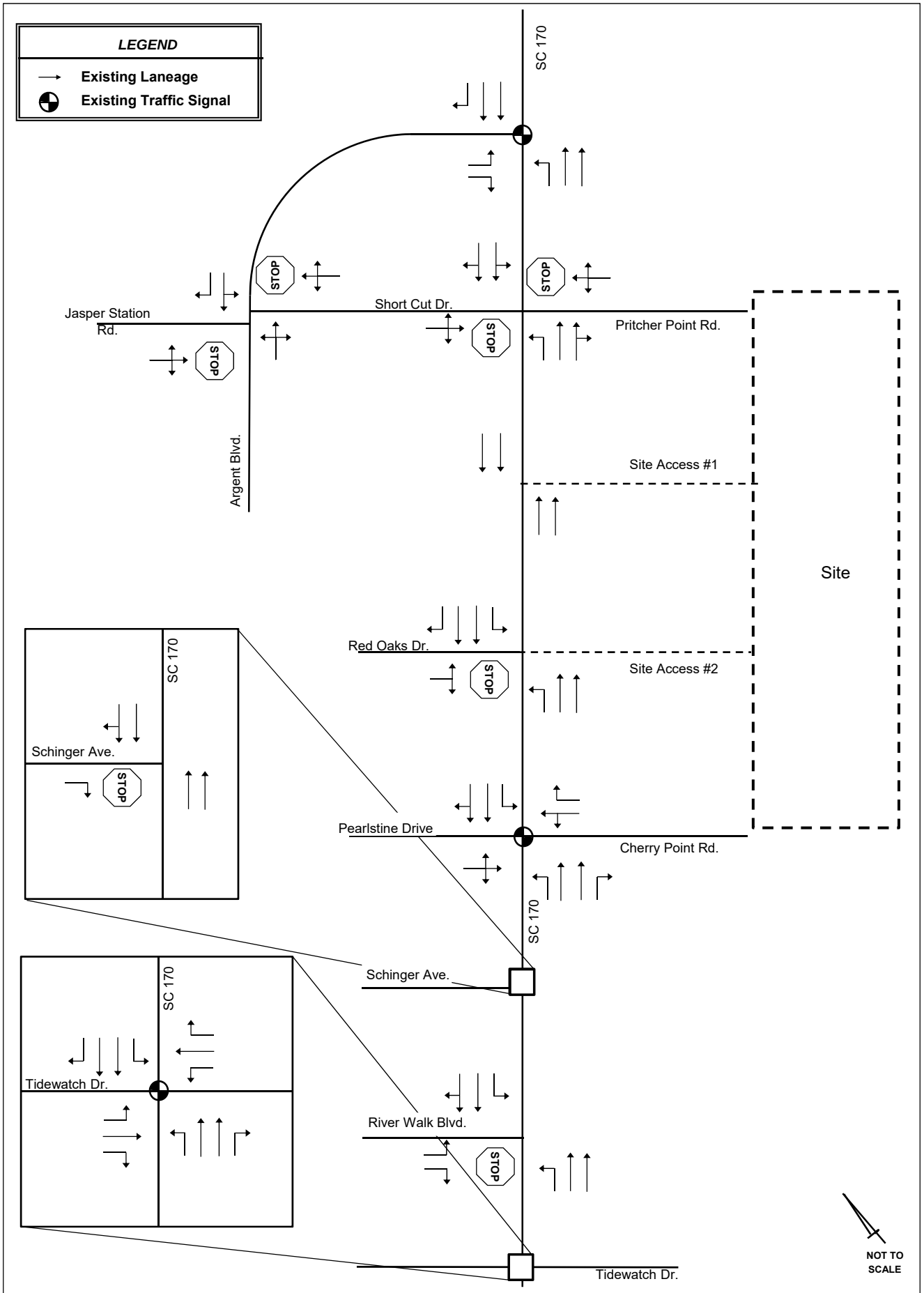
OCTOBER 16, 2017

GRAPHIC SCALE

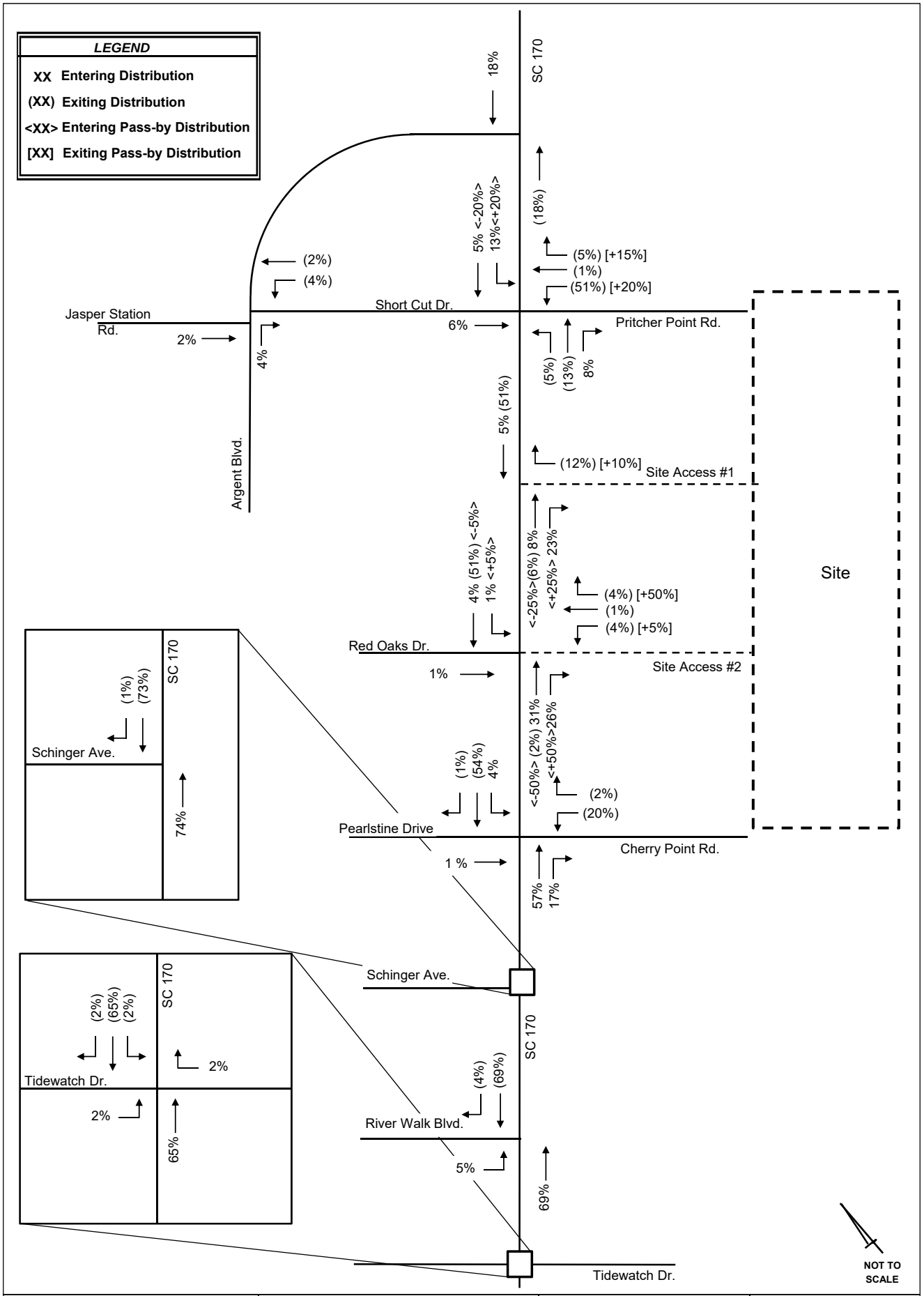
NORTH 0 200' 400' 600'

"THIS IS A CONCEPTUAL PLAN AND IS SUBJECT TO CHANGE. ALL SURVEY INFORMATION AND SITE BOUNDARIES WERE COMPILED FROM A VARIETY OF UNVERIFIED SOURCES AT VARIOUS TIMES AND AS SUCH ARE INTENDED TO BE USED ONLY AS A GUIDE. ALL PROPERTY LINES, TRACT DIMENSIONS AND NARRATIVE DESCRIPTIONS ARE FOR GRAPHIC REPRESENTATION ONLY, AS AN AID TO SITE LOCATION AND POTENTIAL LAND USE, AND ARE NOT LEGAL REPRESENTATIONS AS TO FUTURE USES OR LOCATIONS. J. K. TILLER ASSOCIATES, INC. ASSUMES NO LIABILITY FOR ITS ACCURACY OR STATE OF COMPLETION, OR FOR ANY DECISIONS (REQUIRING ACCURACY) WHICH THE USER MAY MAKE BASED ON THIS INFORMATION.

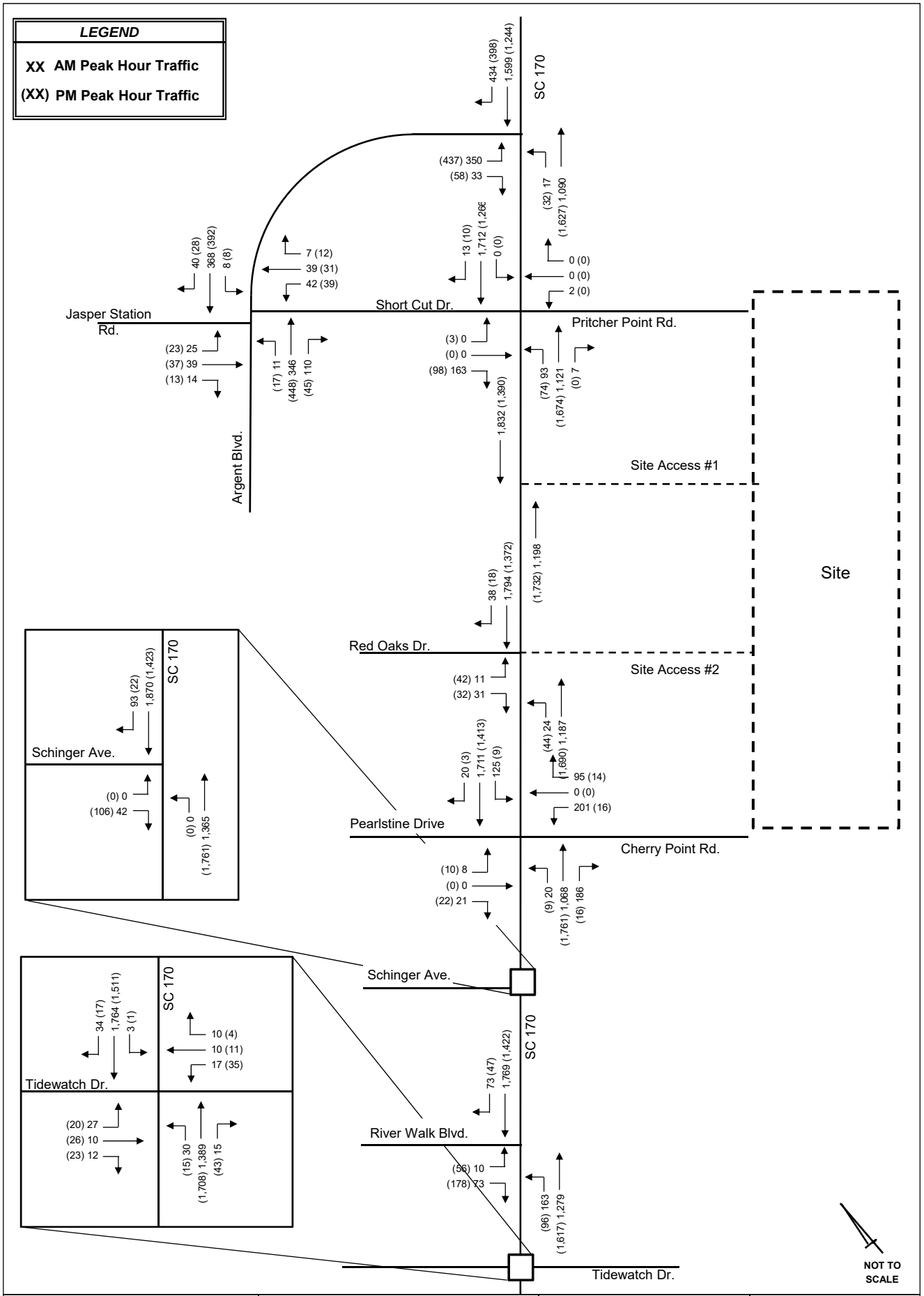
JKT Job Number: 20173 1-01



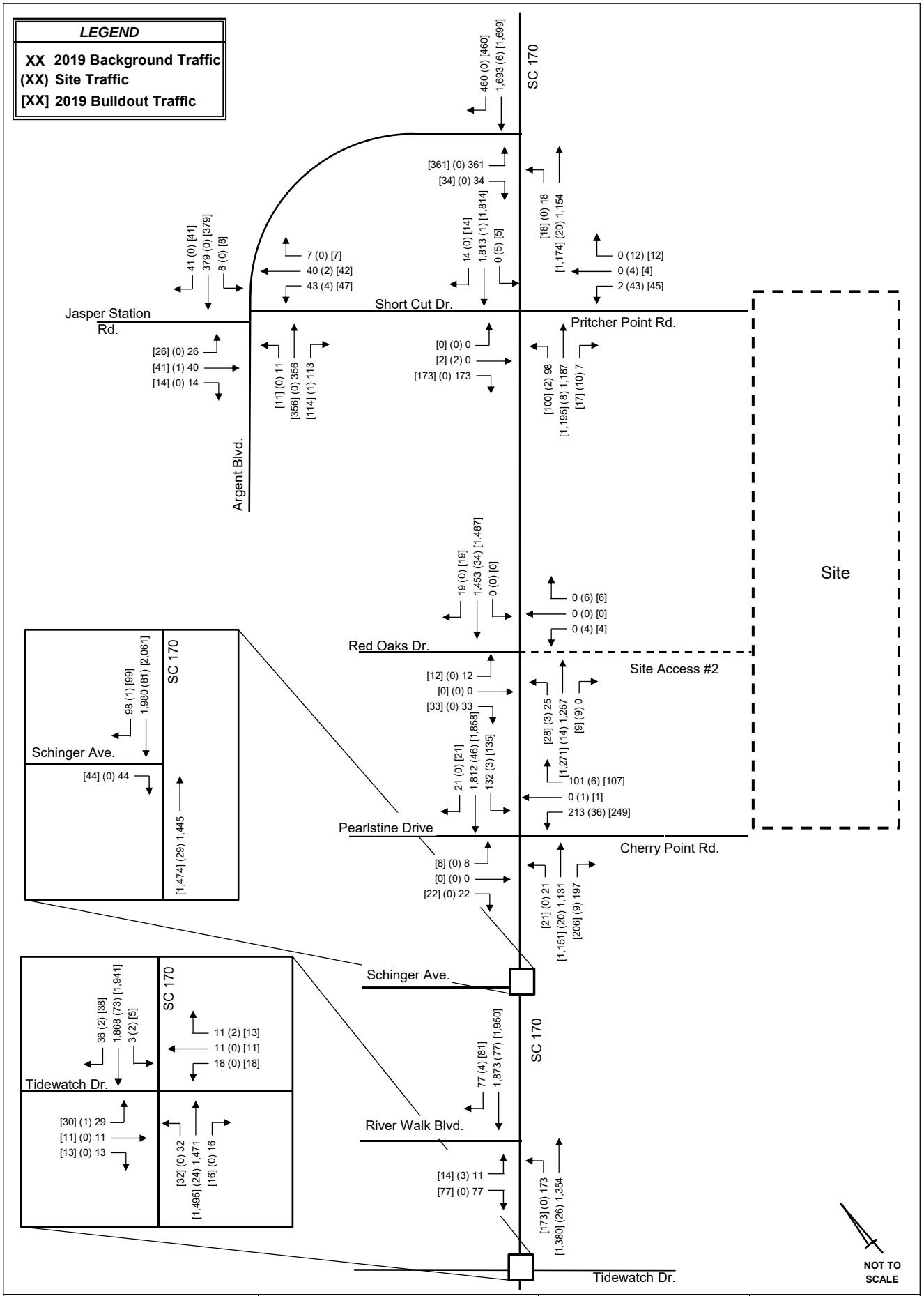
BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**Existing Laneage**	**Figure 3**



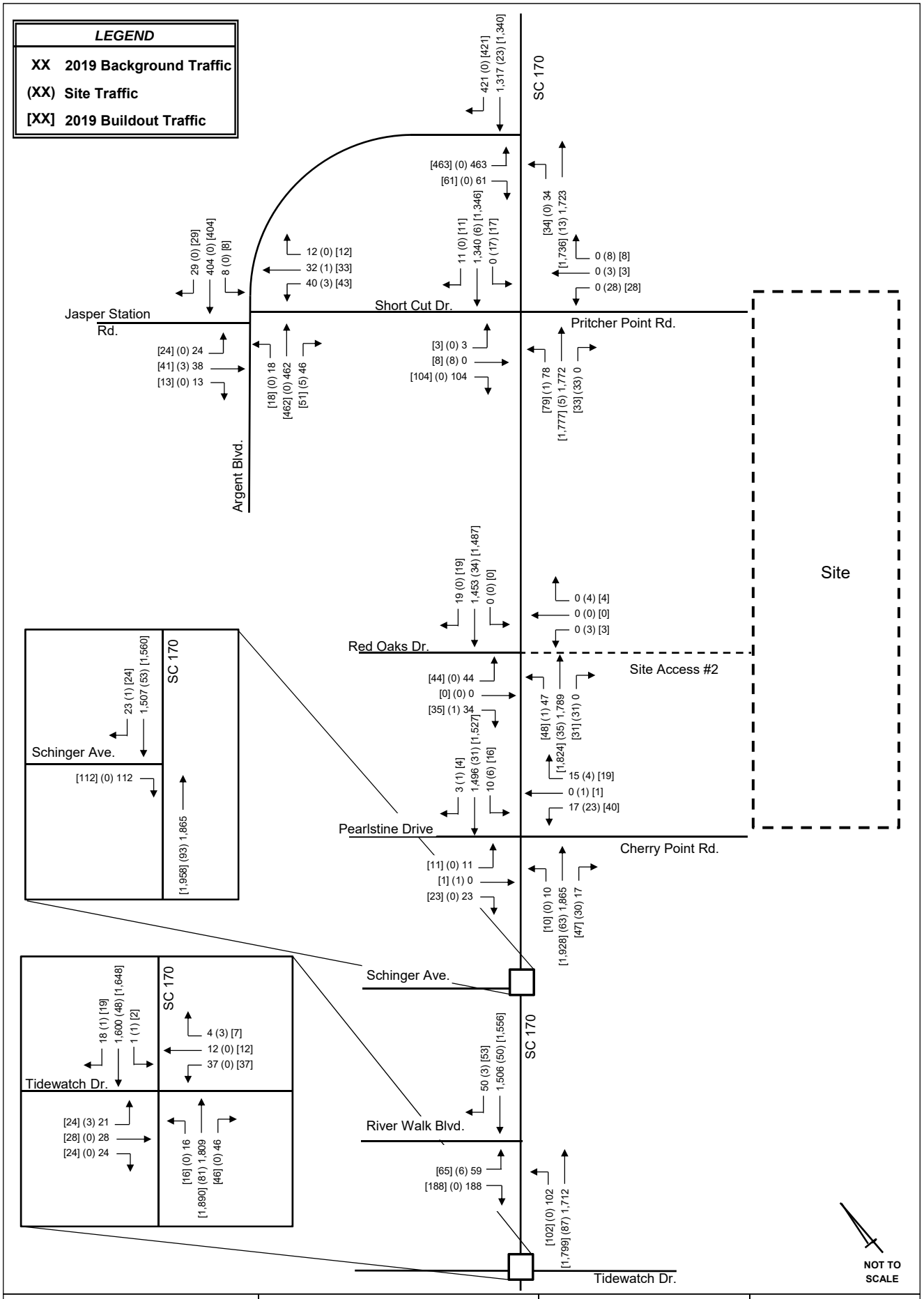
BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**Trip Distribution**	**Figure 4**



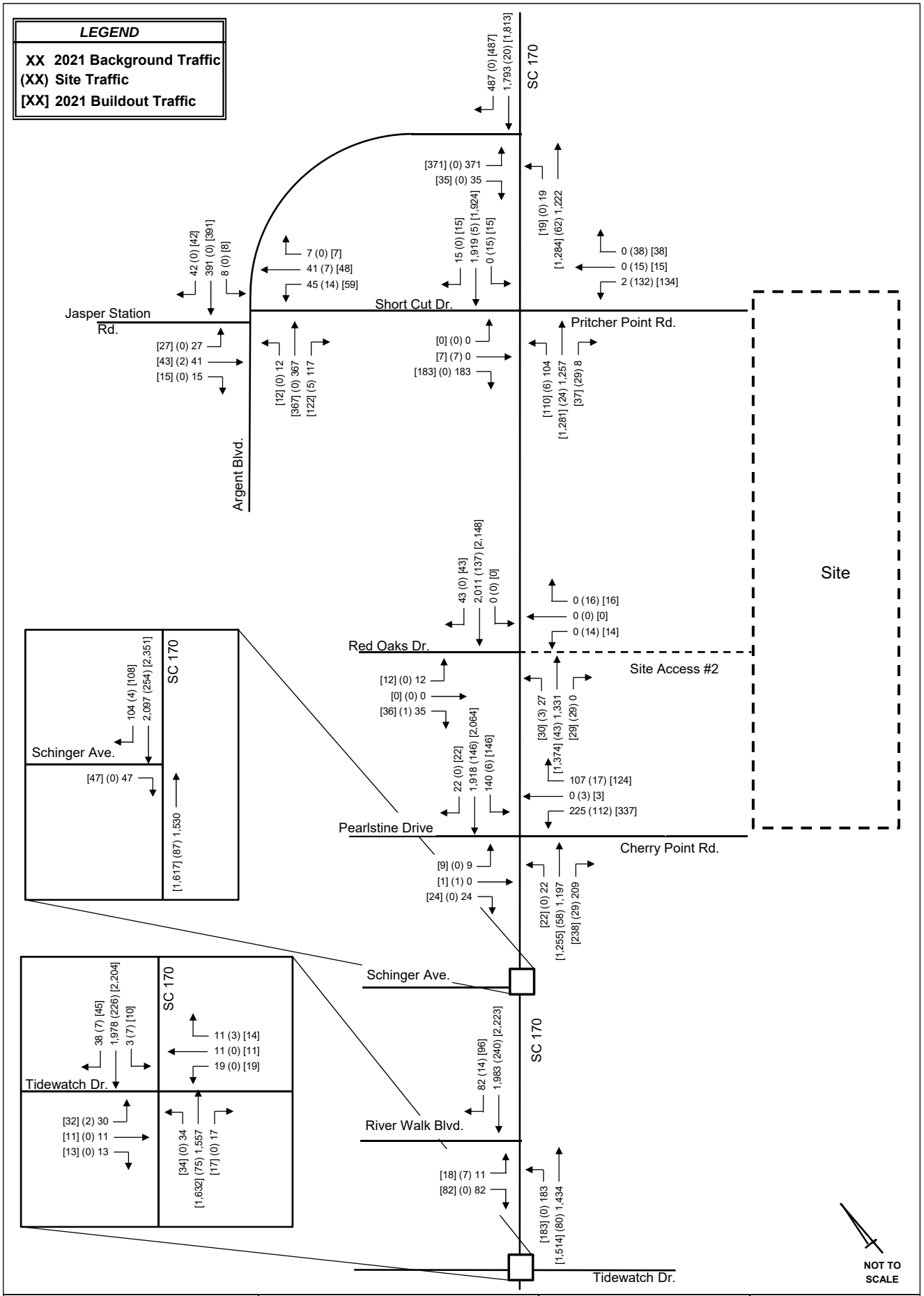
BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**Existing Traffic Volumes**	**Figure 5**



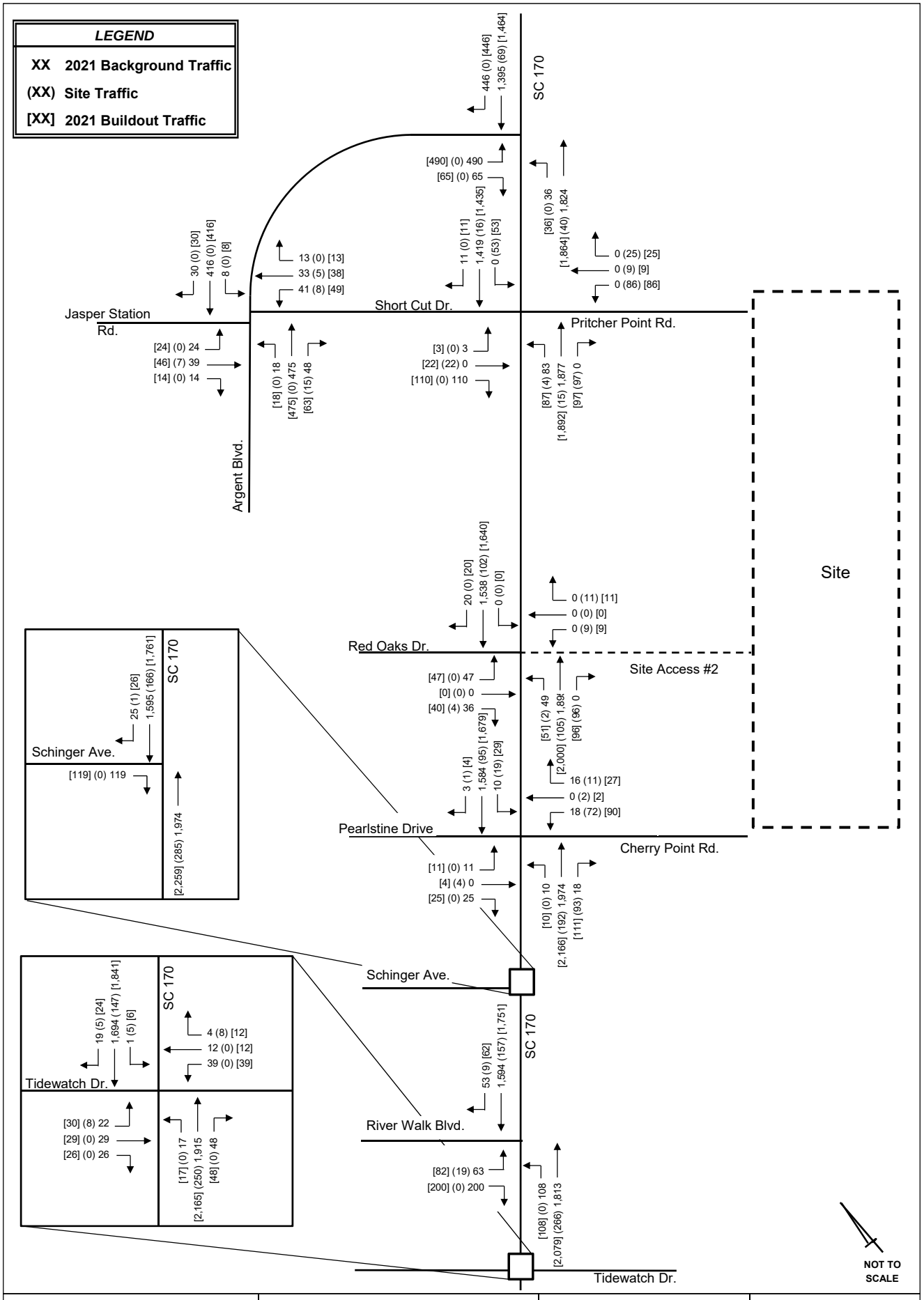
BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**2019 AM Peak Traffic Volumes**	**Figure 6**



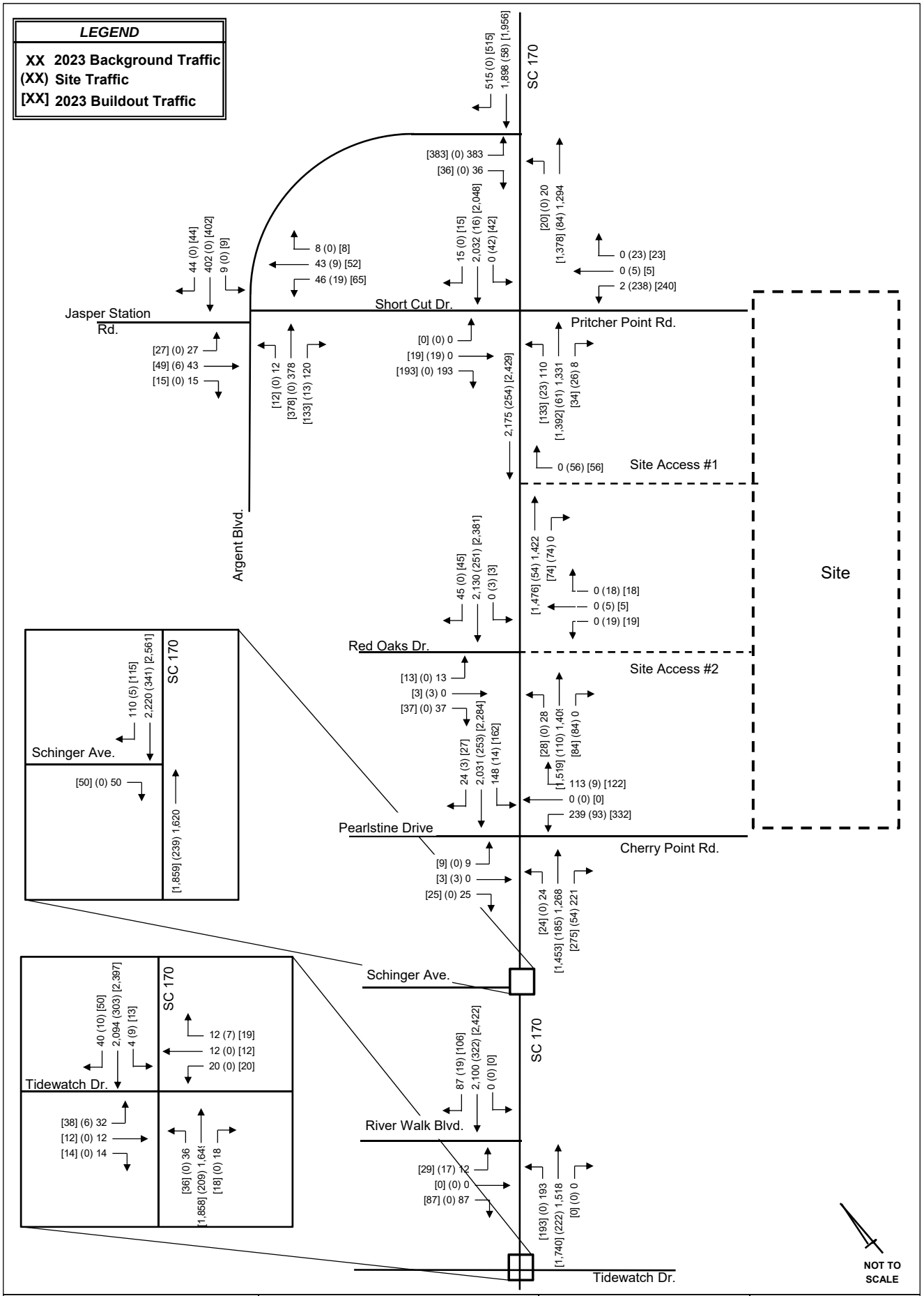
BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**2019 PM Peak Traffic Volumes**	**Figure 7**



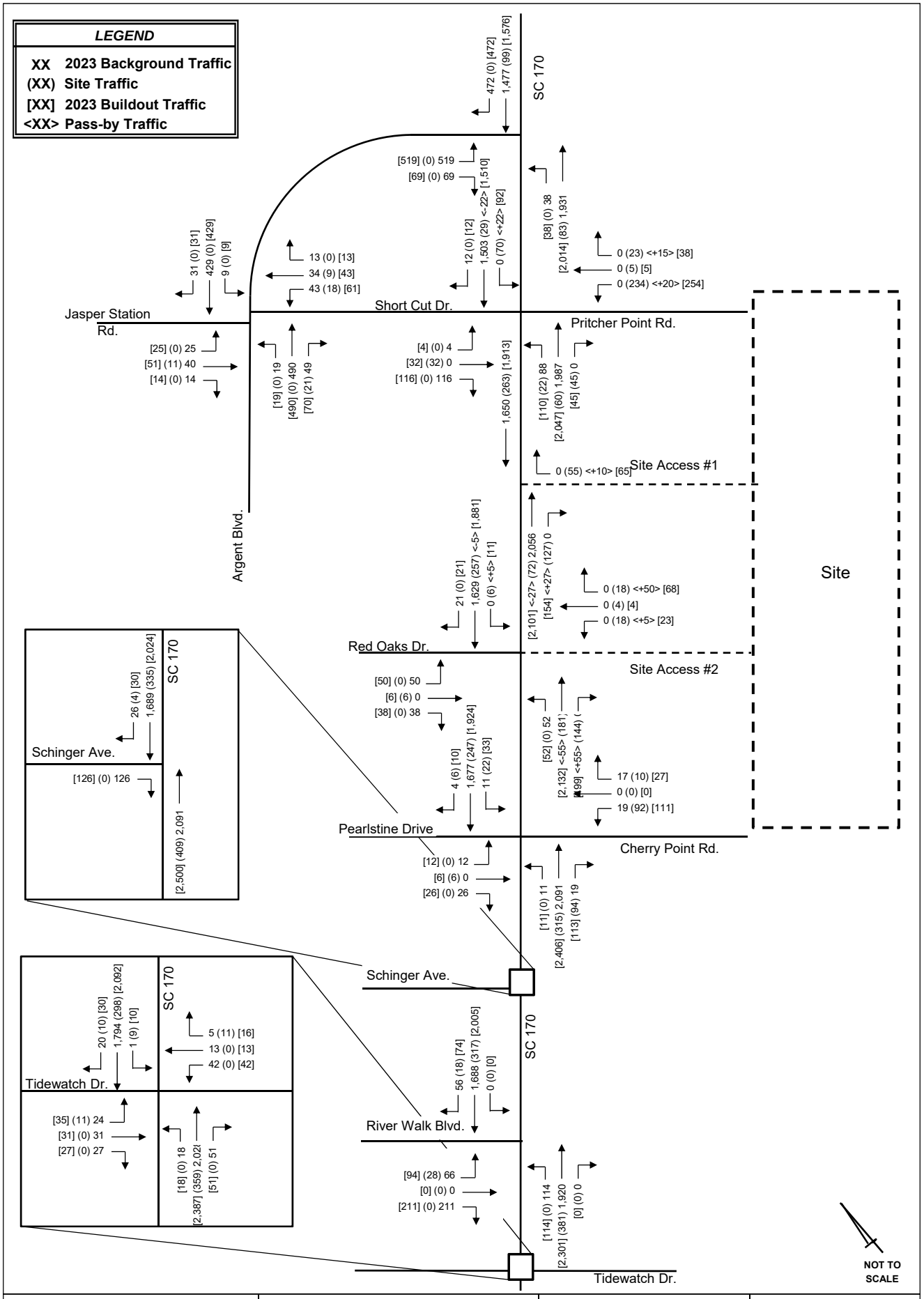
BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**2021 AM Peak Traffic Volumes**	**Figure 6**



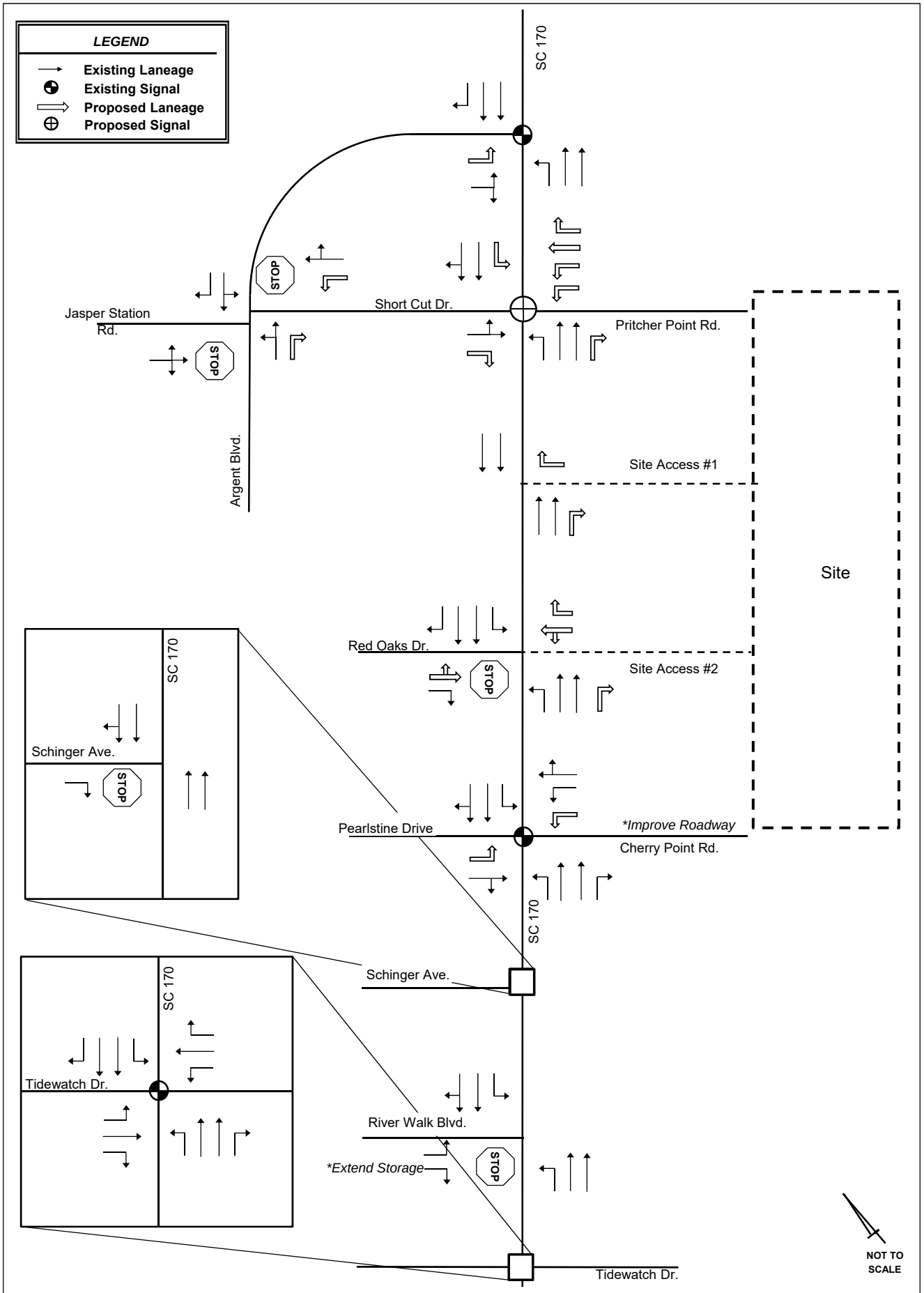
BIHL ENGINEERING	Okatie Village Traffic Impact Analysis	2021 PM Peak Traffic Volumes	Figure 7



BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**2023 AM Peak Traffic Volumes**	**Figure 10**



BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**2023 PM Peak Traffic Volumes**	**Figure 11**



BIHL ENGINEERING	**Okatie Village Traffic Impact Analysis**	**Proposed Lanage**	**Figure 12**

Short Counts

File Name : Argent Rd @ Short Cut Rd
Site Code :
Start Date : 10/11/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Argent Blvd From North				Short Cut Rd From East				Argent Blvd From South				Jasper Station Rd From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	1	61	9	0	10	10	4	0	2	80	28	0	6	9	1	0	221
07:15 AM	0	82	14	0	11	10	1	0	4	81	28	0	4	9	4	0	248
07:30 AM	3	97	10	0	13	8	2	0	3	84	30	0	6	18	4	0	278
07:45 AM	3	105	8	0	11	13	1	0	1	77	26	0	5	6	1	0	257
Total	7	345	41	0	45	41	8	0	10	322	112	0	21	42	10	0	1004
08:00 AM	2	84	8	0	7	8	3	0	3	104	26	0	10	6	5	0	266
08:15 AM	0	90	6	0	9	11	1	0	7	83	15	0	8	11	6	0	247
08:30 AM	0	97	7	0	1	9	1	0	2	80	11	0	9	4	2	0	223
08:45 AM	0	89	14	0	6	16	0	0	5	77	8	0	3	13	6	0	237
Total	2	360	35	0	23	44	5	0	17	344	60	0	30	34	19	0	973
02:00 PM	2	64	10	0	10	5	0	0	1	73	14	0	2	4	5	0	190
02:15 PM	1	76	6	0	5	8	4	0	4	69	13	0	5	8	1	0	200
02:30 PM	0	70	4	0	5	9	5	0	2	73	14	0	4	6	8	0	200
02:45 PM	0	89	4	0	10	11	1	0	4	62	12	0	3	6	4	0	206
Total	3	299	24	0	30	33	10	0	11	277	53	0	14	24	18	0	796
03:00 PM	1	79	5	0	12	10	1	0	5	84	10	0	5	5	2	0	219
03:15 PM	3	71	2	0	8	4	1	0	7	86	11	0	2	8	4	0	207
03:30 PM	1	85	4	0	8	8	1	0	4	83	16	0	2	7	1	0	220
03:45 PM	0	82	1	0	10	5	2	0	5	78	14	0	7	4	4	0	212
Total	5	317	12	0	38	27	5	0	21	331	51	0	16	24	11	0	858
04:00 PM	1	69	5	0	21	7	1	0	2	105	10	0	10	10	5	0	246
04:15 PM	0	94	3	0	15	8	0	0	5	96	13	0	2	3	3	0	242
04:30 PM	3	87	4	0	13	8	2	0	2	105	8	0	6	10	2	0	250
04:45 PM	1	87	9	0	6	9	2	0	1	111	15	0	7	7	3	0	258
Total	5	337	21	0	55	32	5	0	10	417	46	0	25	30	13	0	996
05:00 PM	1	108	8	0	9	6	8	0	3	122	15	0	8	12	4	0	304
05:15 PM	3	110	7	0	11	8	0	0	11	110	7	0	2	8	4	0	281
05:30 PM	2	84	12	0	5	9	2	0	7	96	14	0	5	10	1	0	247
05:45 PM	0	87	2	0	6	5	2	0	1	82	5	0	3	7	5	0	205
Total	6	389	29	0	31	28	12	0	22	410	41	0	18	37	14	0	1037
Grand Total	28	2047	162	0	222	205	45	0	91	2101	363	0	124	191	85	0	5664
Apprch %	1.3	91.5	7.2	0	47	43.4	9.5	0	3.6	82.2	14.2	0	31	47.8	21.2	0	
Total %	0.5	36.1	2.9	0	3.9	3.6	0.8	0	1.6	37.1	6.4	0	2.2	3.4	1.5	0	
Passenger Vehicles	28	1943	155	0	213	190	44	0	81	2001	350	0	112	175	82	0	5374
% Passenger Vehicles	100	94.9	95.7	0	95.9	92.7	97.8	0	89	95.2	96.4	0	90.3	91.6	96.5	0	94.9
Heavy Vehicles	0	84	7	0	4	15	1	0	8	90	11	0	12	16	3	0	251
% Heavy Vehicles	0	4.1	4.3	0	1.8	7.3	2.2	0	8.8	4.3	3	0	9.7	8.4	3.5	0	4.4
Buses	0	20	0	0	5	0	0	0	2	10	2	0	0	0	0	0	39
% Buses	0	1	0	0	2.3	0	0	0	2.2	0.5	0.6	0	0	0	0	0	0.7

Short Counts

File Name : Argent Rd @ Short Cut Rd
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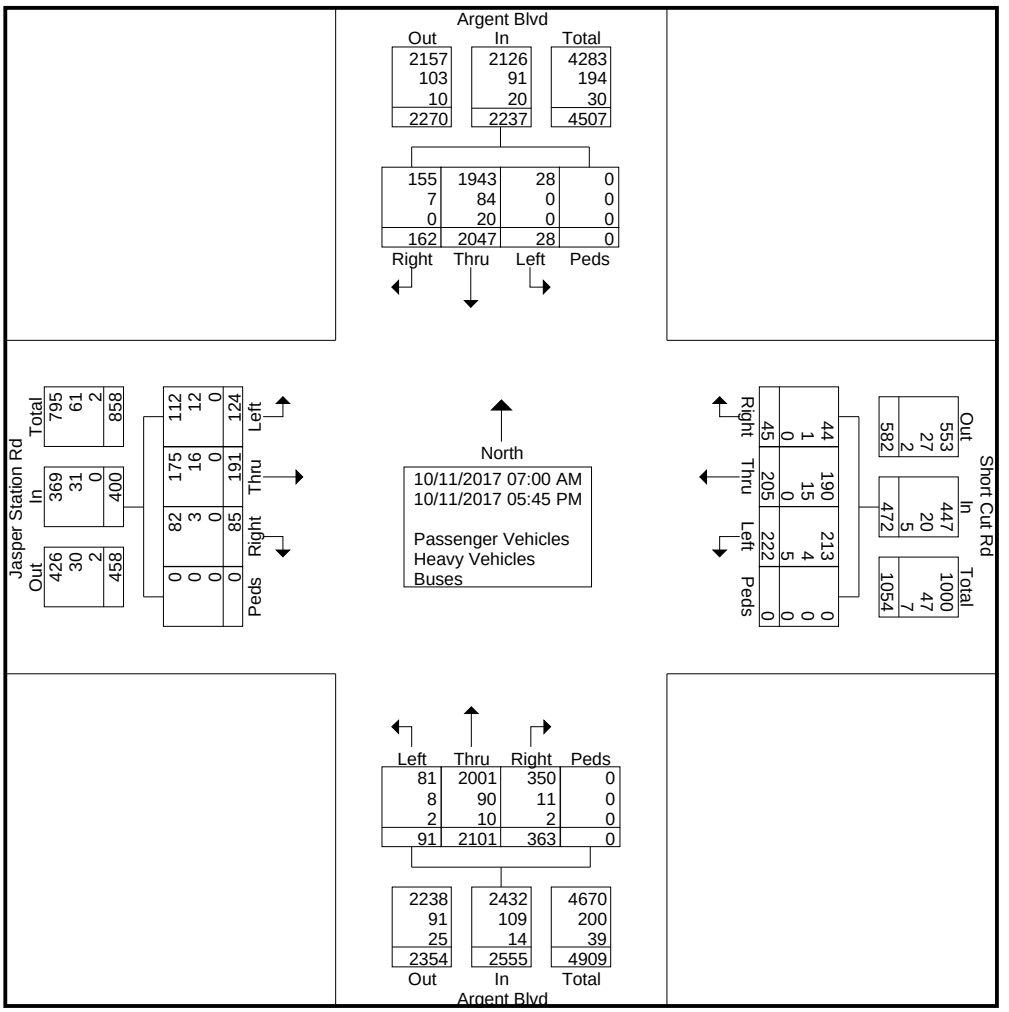
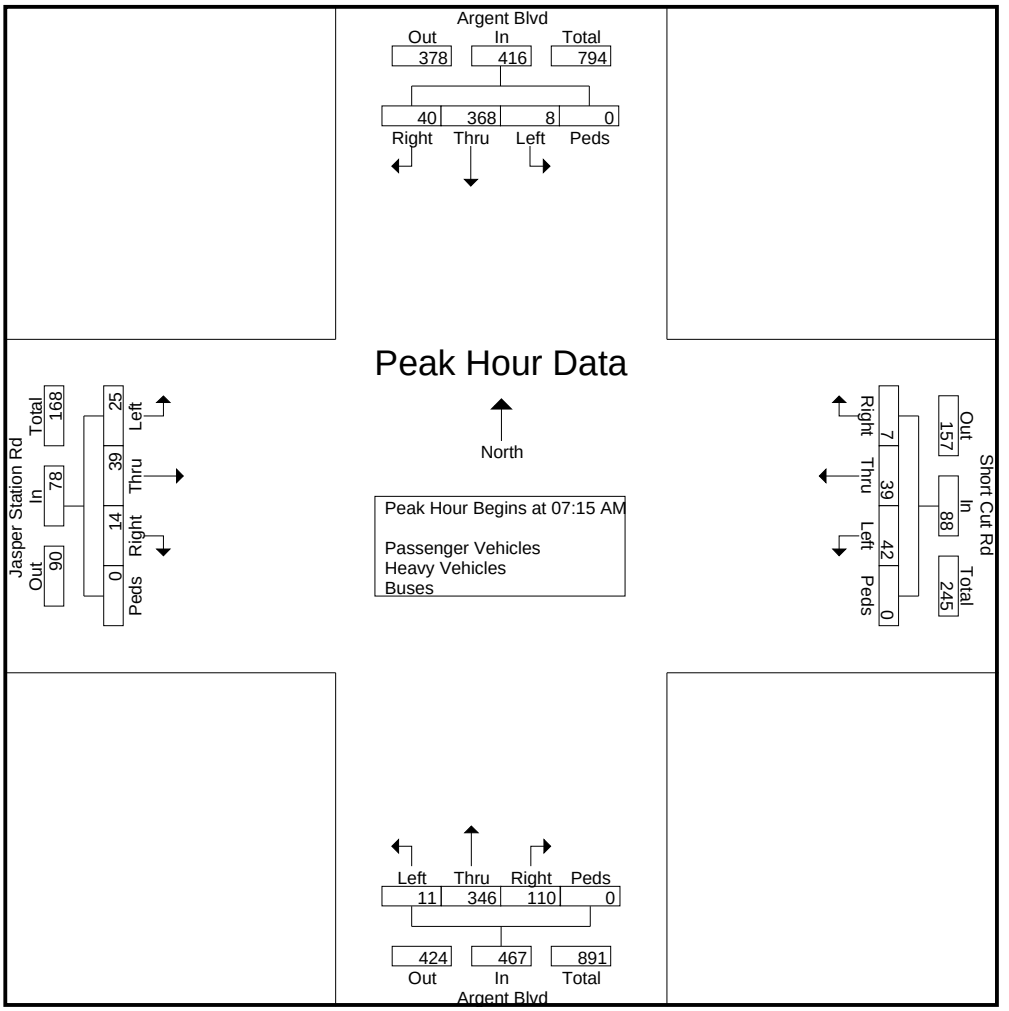


Short Counts

File Name : Argent Rd @ Short Cut Rd
Site Code :
Start Date : 10/11/2017
Page No : 3

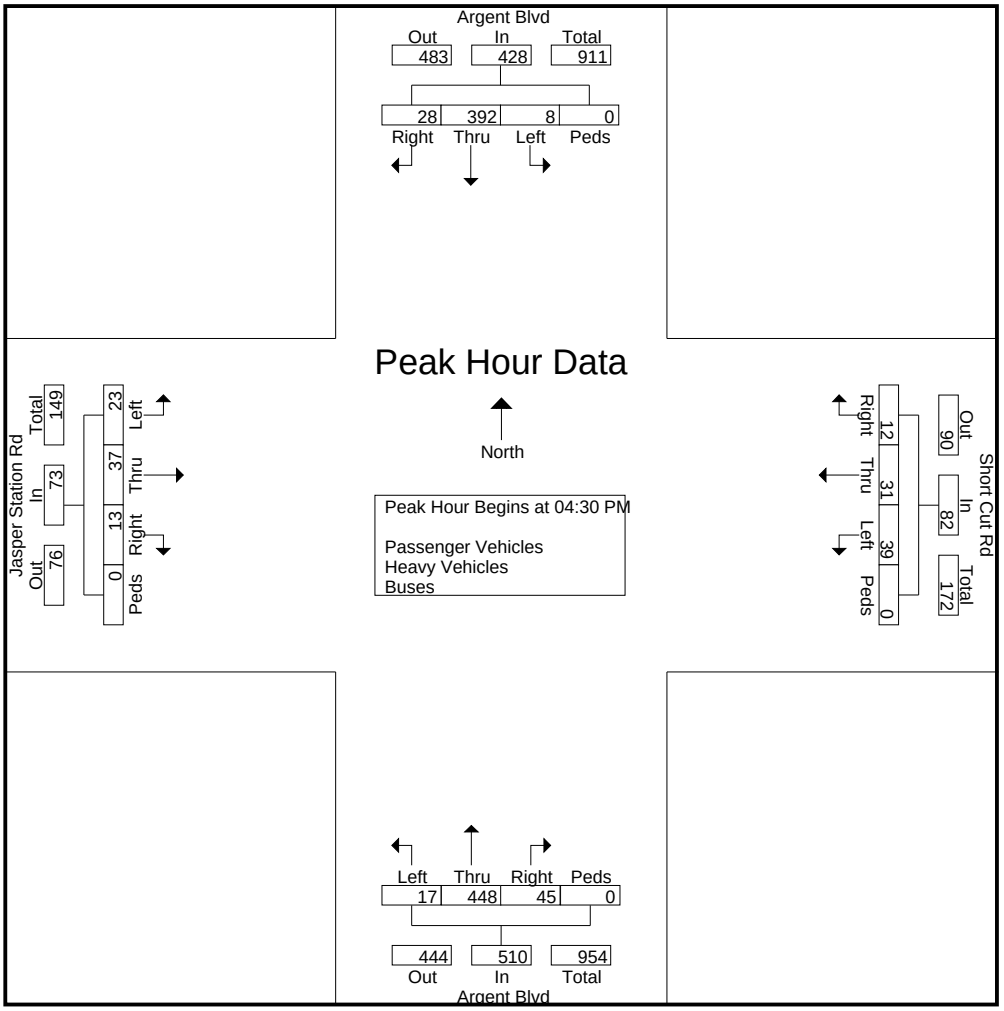
	Argent Blvd From North					Short Cut Rd From East					Argent Blvd From South					Jasper Station Rd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	82	**14**	0	96	11	10	1	0	22	**4**	81	28	0	113	4	9	4	0	17	248
07:30 AM	**3**	97	10	0	110	**13**	8	2	0	23	3	84	**30**	0	117	6	**18**	4	0	**28**	**278**
07:45 AM	3	**105**	8	0	**116**	11	**13**	1	0	**25**	1	77	26	0	104	5	6	1	0	12	257
08:00 AM	2	84	8	0	94	7	8	**3**	0	18	3	**104**	26	0	**133**	**10**	6	**5**	0	21	266
Total Volume	8	368	40	0	416	42	39	7	0	88	11	346	110	0	467	25	39	14	0	78	1049
% App. Total	1.9	88.5	9.6	0		47.7	44.3	8	0		2.4	74.1	23.6	0		32.1	50	17.9	0		
PHF	.667	.876	.714	.000	.897	.808	.750	.583	.000	.880	.688	.832	.917	.000	.878	.625	.542	.700	.000	.696	.943



Short Counts

File Name : Argent Rd @ Short Cut Rd
Site Code :
Start Date : 10/11/2017
Page No : 4

	Argent Blvd From North					Short Cut Rd From East					Argent Blvd From South					Jasper Station Rd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**3**	87	4	0	94	**13**	8	2	0	**23**	2	105	8	0	115	6	10	2	0	18	250
04:45 PM	1	87	**9**	0	97	6	**9**	2	0	17	1	111	**15**	0	127	7	7	3	0	17	258
05:00 PM	1	108	8	0	117	9	6	**8**	0	23	3	**122**	15	0	**140**	**8**	**12**	**4**	0	**24**	**304**
05:15 PM	3	**110**	7	0	**120**	11	8	0	0	19	**11**	110	7	0	128	2	8	4	0	14	281
Total Volume	8	392	28	0	428	39	31	12	0	82	17	448	45	0	510	23	37	13	0	73	1093
% App. Total	1.9	91.6	6.5	0		47.6	37.8	14.6	0		3.3	87.8	8.8	0		31.5	50.7	17.8	0		
PHF	.667	.891	.778	.000	.892	.750	.861	.375	.000	.891	.386	.918	.750	.000	.911	.719	.771	.813	.000	.760	.899



Short Counts

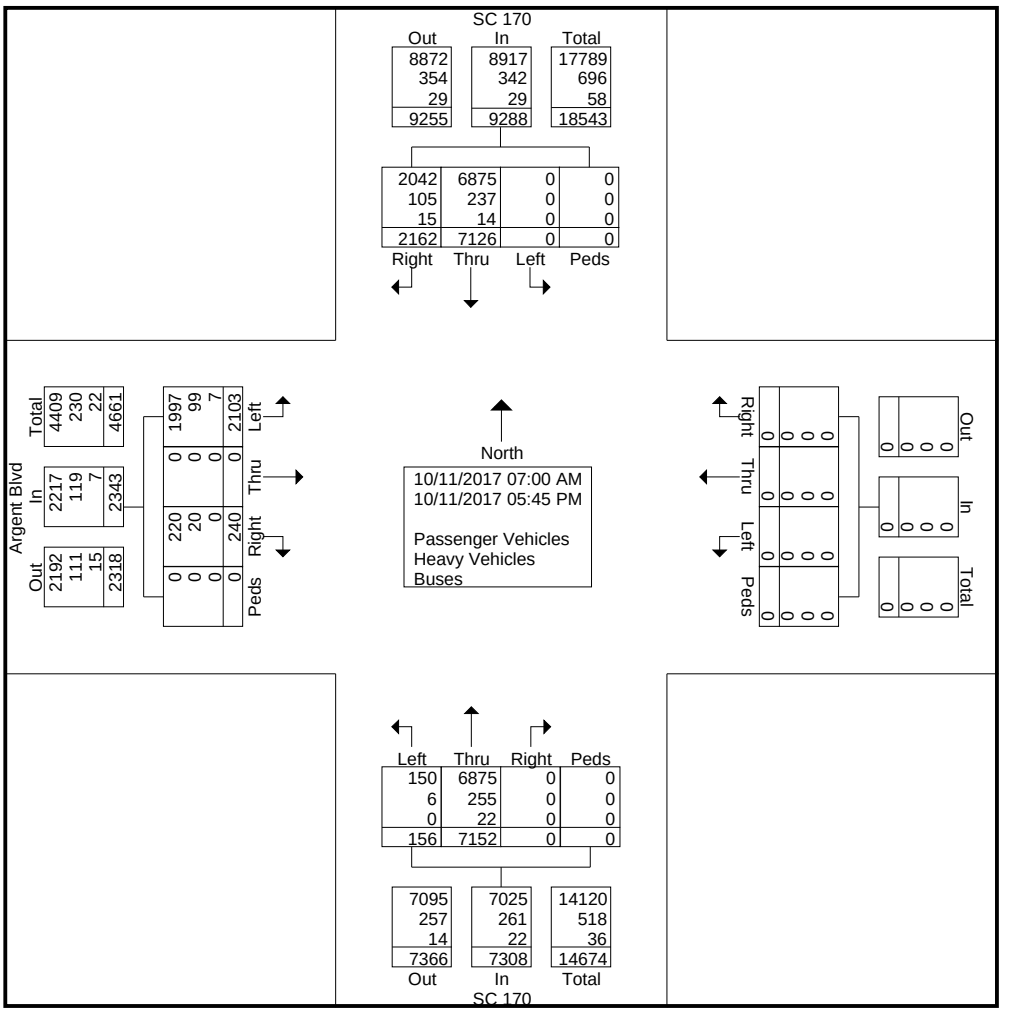
File Name : SC 170 @ Argent Blvd
Site Code :
Start Date : 10/11/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	SC 170 From North				From East				SC 170 From South				Argent Blvd From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	387	73	0	0	0	0	0	4	209	0	0	80	0	6	0	759
07:15 AM	0	383	113	0	0	0	0	0	2	231	0	0	83	0	12	0	824
07:30 AM	0	445	104	0	0	0	0	0	6	352	0	0	84	0	8	0	999
07:45 AM	0	389	124	0	0	0	0	0	4	271	0	0	72	0	3	0	863
Total	0	1604	414	0	0	0	0	0	16	1063	0	0	319	0	29	0	3445
08:00 AM	0	382	93	0	0	0	0	0	5	236	0	0	111	0	10	0	837
08:15 AM	0	301	87	0	0	0	0	0	7	272	0	0	73	0	8	0	748
08:30 AM	0	266	122	0	0	0	0	0	3	214	0	0	85	0	5	0	695
08:45 AM	0	236	96	0	0	0	0	0	2	195	0	0	73	0	5	0	607
Total	0	1185	398	0	0	0	0	0	17	917	0	0	342	0	28	0	2887
02:00 PM	0	244	69	0	0	0	0	0	8	233	0	0	74	0	18	0	646
02:15 PM	0	231	87	0	0	0	0	0	8	239	0	0	76	0	10	0	651
02:30 PM	0	258	63	0	0	0	0	0	5	233	0	0	71	0	7	0	637
02:45 PM	0	214	89	0	0	0	0	0	5	241	0	0	68	0	6	0	623
Total	0	947	308	0	0	0	0	0	26	946	0	0	289	0	41	0	2557
03:00 PM	0	226	78	0	0	0	0	0	9	298	0	0	71	0	11	0	693
03:15 PM	0	255	89	0	0	0	0	0	5	323	0	0	87	0	7	0	766
03:30 PM	0	301	69	0	0	0	0	0	6	283	0	0	84	0	12	0	755
03:45 PM	0	266	70	0	0	0	0	0	14	315	0	0	74	0	13	0	752
Total	0	1048	306	0	0	0	0	0	34	1219	0	0	316	0	43	0	2966
04:00 PM	0	274	86	0	0	0	0	0	4	333	0	0	126	0	12	0	835
04:15 PM	0	237	91	0	0	0	0	0	8	372	0	0	100	0	13	0	821
04:30 PM	0	310	74	0	0	0	0	0	12	327	0	0	97	0	11	0	831
04:45 PM	0	324	106	0	0	0	0	0	4	357	0	0	114	0	17	0	922
Total	0	1145	357	0	0	0	0	0	28	1389	0	0	437	0	53	0	3409
05:00 PM	0	322	105	0	0	0	0	0	15	417	0	0	114	0	12	0	985
05:15 PM	0	323	96	0	0	0	0	0	8	431	0	0	106	0	18	0	982
05:30 PM	0	275	91	0	0	0	0	0	5	422	0	0	103	0	11	0	907
05:45 PM	0	277	87	0	0	0	0	0	7	348	0	0	77	0	5	0	801
Total	0	1197	379	0	0	0	0	0	35	1618	0	0	400	0	46	0	3675
Grand Total	0	7126	2162	0	0	0	0	0	156	7152	0	0	2103	0	240	0	18939
Apprch %	0	76.7	23.3	0	0	0	0	0	2.1	97.9	0	0	89.8	0	10.2	0	
Total %	0	37.6	11.4	0	0	0	0	0	0.8	37.8	0	0	11.1	0	1.3	0	
Passenger Vehicles	0	6875	2042	0	0	0	0	0	150	6875	0	0	1997	0	220	0	18159
% Passenger Vehicles	0	96.5	94.4	0	0	0	0	0	96.2	96.1	0	0	95	0	91.7	0	95.9
Heavy Vehicles	0	237	105	0	0	0	0	0	6	255	0	0	99	0	20	0	722
% Heavy Vehicles	0	3.3	4.9	0	0	0	0	0	3.8	3.6	0	0	4.7	0	8.3	0	3.8
Buses	0	14	15	0	0	0	0	0	0	22	0	0	7	0	0	0	58
% Buses	0	0.2	0.7	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0.3

Short Counts

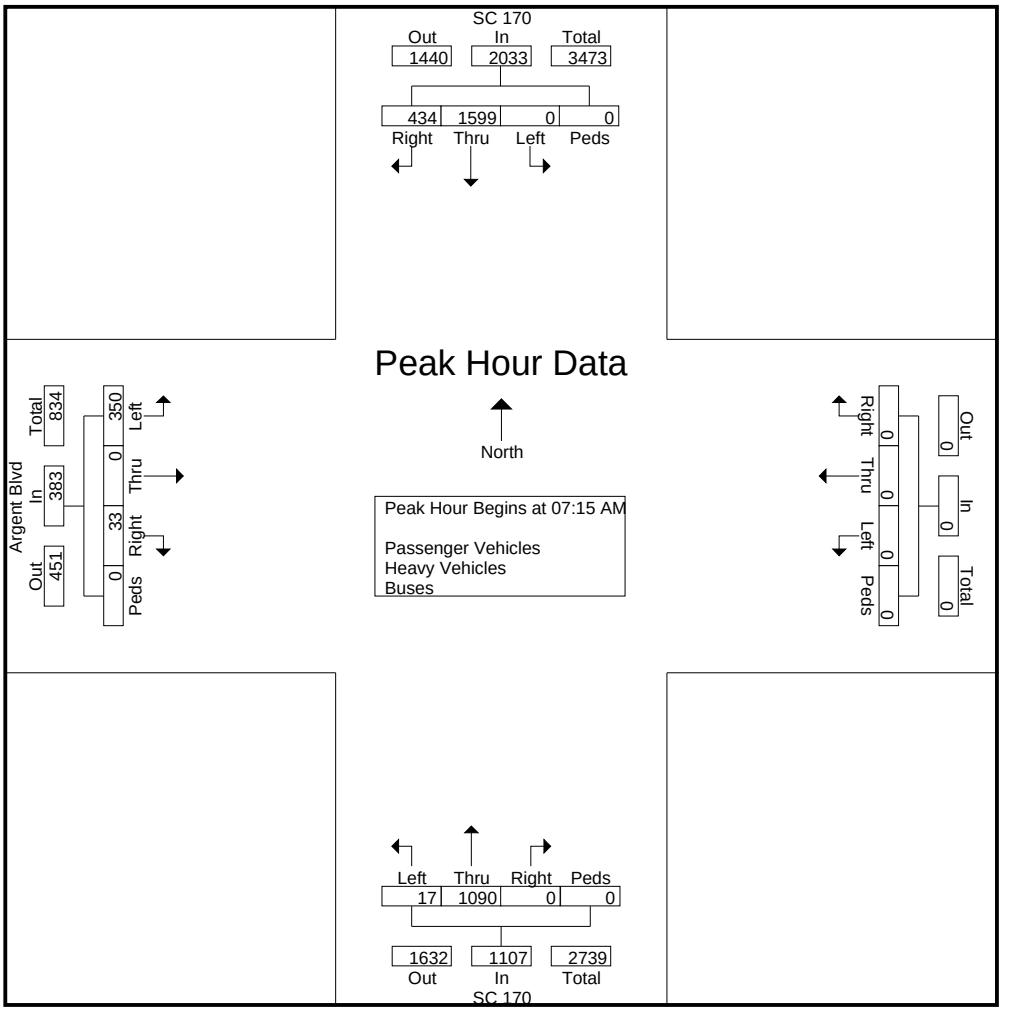
File Name : SC 170 @ Argent Blvd
Site Code :
Start Date : 10/11/2017
Page No : 2



Short Counts

File Name : SC 170 @ Argent Blvd
Site Code :
Start Date : 10/11/2017
Page No : 3

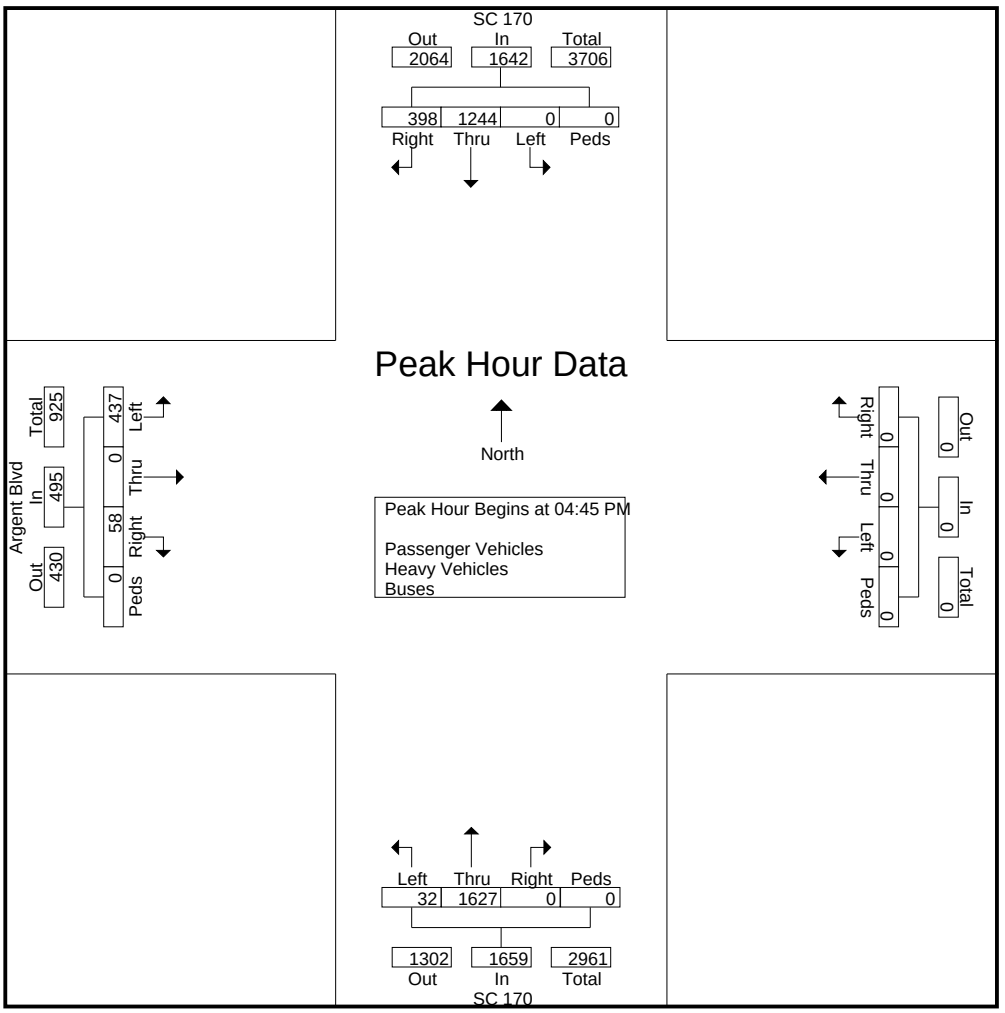
	SC 170 From North					From East					SC 170 From South					Argent Blvd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	383	113	0	496	0	0	0	0	0	2	231	0	0	233	83	0	**12**	0	95	824
07:30 AM	0	**445**	104	0	**549**	0	0	0	0	0	**6**	**352**	0	0	**358**	84	0	8	0	92	**999**
07:45 AM	0	389	**124**	0	513	0	0	0	0	0	4	271	0	0	275	72	0	3	0	75	863
08:00 AM	0	382	93	0	475	0	0	0	0	0	5	236	0	0	241	**111**	0	10	0	**121**	837
Total Volume	0	1599	434	0	2033	0	0	0	0	0	17	1090	0	0	1107	350	0	33	0	383	3523
% App. Total	0	78.7	21.3	0		0	0	0	0		1.5	98.5	0	0		91.4	0	8.6	0		
PHF	.000	.898	.875	.000	.926	.000	.000	.000	.000	.000	.708	.774	.000	.000	.773	.788	.000	.688	.000	.791	.882



Short Counts

File Name : SC 170 @ Argent Blvd
Site Code :
Start Date : 10/11/2017
Page No : 4

	SC 170 From North					From East					SC 170 From South					Argent Blvd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	**324**	**106**	0	**430**	0	0	0	0	0	4	357	0	0	361	**114**	0	17	0	**131**	922
05:00 PM	0	322	105	0	427	0	0	0	0	0	**15**	417	0	0	432	114	0	12	0	126	**985**
05:15 PM	0	323	96	0	419	0	0	0	0	0	8	**431**	0	0	**439**	106	0	**18**	0	124	982
05:30 PM	0	275	91	0	366	0	0	0	0	0	5	422	0	0	427	103	0	11	0	114	907
Total Volume	0	1244	398	0	1642	0	0	0	0	0	32	1627	0	0	1659	437	0	58	0	495	3796
% App. Total	0	75.8	24.2	0		0	0	0	0		1.9	98.1	0	0		88.3	0	11.7	0		
PHF	.000	.960	.939	.000	.955	.000	.000	.000	.000	.000	.533	.944	.000	.000	.945	.958	.000	.806	.000	.945	.963



Short Counts

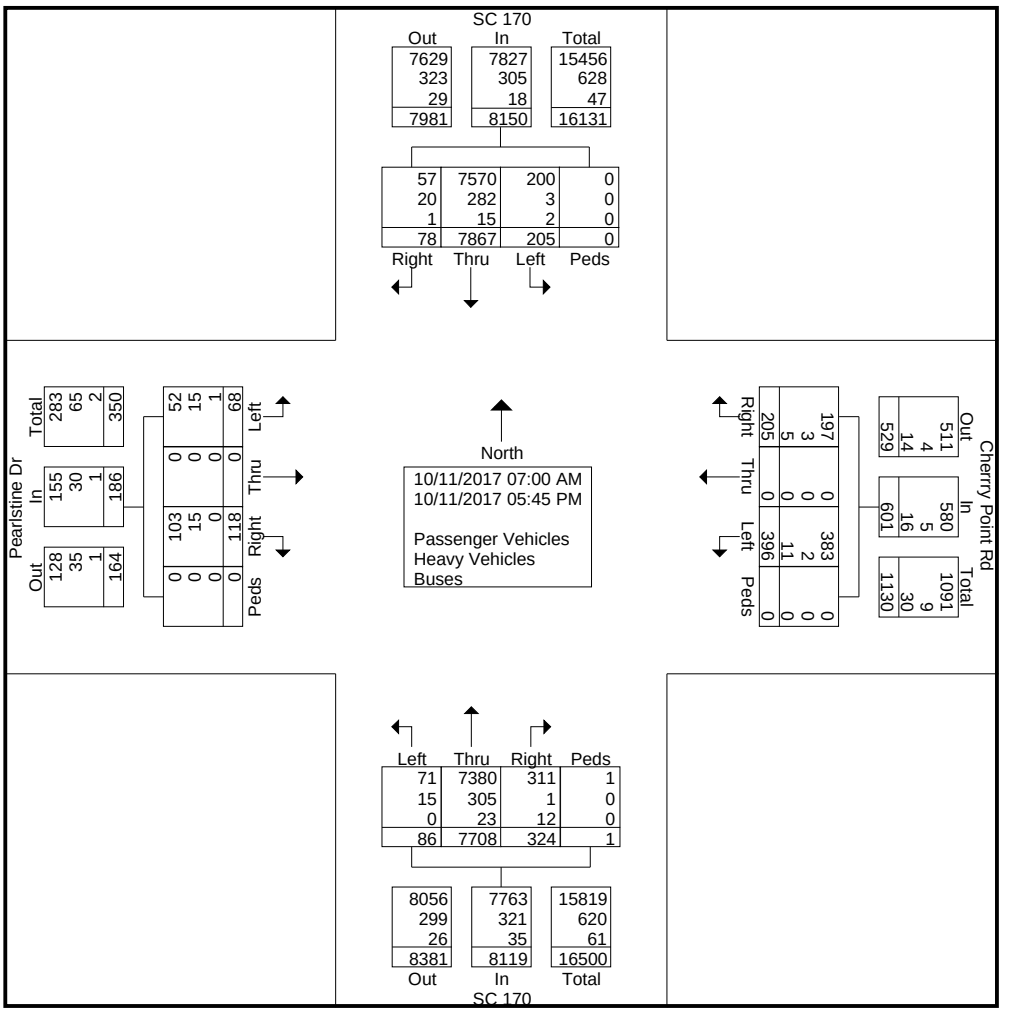
File Name : SC 170 @ Pearlstine-Cherry Point
Site Code :
Start Date : 10/11/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	SC 170 From North				Cherrry Point Rd From East				SC 170 From South				Pearlstine Dr From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	33	404	13	0	44	0	15	0	5	215	37	0	1	0	2	0	769
07:15 AM	47	405	2	0	46	0	20	0	4	252	69	0	3	0	1	0	849
07:30 AM	41	458	0	0	79	0	50	0	6	318	75	0	4	0	11	0	1042
07:45 AM	4	444	5	0	32	0	10	0	5	283	5	0	0	0	7	0	795
Total	125	1711	20	0	201	0	95	0	20	1068	186	0	8	0	21	0	3455
08:00 AM	0	430	4	0	5	0	4	0	3	276	2	0	2	0	5	0	731
08:15 AM	2	370	5	0	3	0	1	0	2	281	3	0	1	0	3	0	671
08:30 AM	2	275	7	0	3	0	0	0	5	247	1	0	2	0	3	0	545
08:45 AM	2	314	4	0	1	0	1	0	7	238	3	0	2	0	7	0	579
Total	6	1389	20	0	12	0	6	0	17	1042	9	0	7	0	18	0	2526
02:00 PM	9	255	3	0	1	0	4	0	7	275	12	1	3	0	5	0	575
02:15 PM	10	253	4	0	2	0	3	0	4	254	14	0	2	0	4	0	550
02:30 PM	11	272	7	0	2	0	4	0	5	263	21	0	6	0	8	0	599
02:45 PM	16	244	5	0	31	0	23	0	5	269	25	0	7	0	5	0	630
Total	46	1024	19	0	36	0	34	0	21	1061	72	1	18	0	22	0	2354
03:00 PM	3	236	3	0	68	0	25	0	4	292	8	0	11	0	5	0	655
03:15 PM	2	280	5	0	19	0	11	0	3	333	2	0	1	0	5	0	661
03:30 PM	1	308	3	0	7	0	3	0	6	304	2	0	2	0	9	0	645
03:45 PM	1	324	0	0	6	0	3	0	1	356	4	0	2	0	2	0	699
Total	7	1148	11	0	100	0	42	0	14	1285	16	0	16	0	21	0	2660
04:00 PM	6	292	1	0	14	0	4	0	3	381	11	0	6	0	4	0	722
04:15 PM	0	272	1	0	11	0	5	0	0	419	4	0	1	0	6	0	719
04:30 PM	3	323	3	0	3	0	5	0	2	346	8	0	1	0	3	0	697
04:45 PM	4	359	0	0	4	0	5	0	6	390	4	0	2	0	5	0	779
Total	13	1246	5	0	32	0	19	0	11	1536	27	0	10	0	18	0	2917
05:00 PM	2	371	3	0	3	0	3	0	2	461	5	0	4	0	9	0	863
05:15 PM	2	345	0	0	7	0	2	0	0	447	1	0	2	0	3	0	809
05:30 PM	1	338	0	0	2	0	4	0	1	463	6	0	2	0	5	0	822
05:45 PM	3	295	0	0	3	0	0	0	0	345	2	0	1	0	1	0	650
Total	8	1349	3	0	15	0	9	0	3	1716	14	0	9	0	18	0	3144
Grand Total	205	7867	78	0	396	0	205	0	86	7708	324	1	68	0	118	0	17056
Apprch %	2.5	96.5	1	0	65.9	0	34.1	0	1.1	94.9	4	0	36.6	0	63.4	0	
Total %	1.2	46.1	0.5	0	2.3	0	1.2	0	0.5	45.2	1.9	0	0.4	0	0.7	0	
Passenger Vehicles	200	7570	57	0	383	0	197	0	71	7380	311	1	52	0	103	0	16325
% Passenger Vehicles	97.6	96.2	73.1	0	96.7	0	96.1	0	82.6	95.7	96	100	76.5	0	87.3	0	95.7
Heavy Vehicles	3	282	20	0	2	0	3	0	15	305	1	0	15	0	15	0	661
% Heavy Vehicles	1.5	3.6	25.6	0	0.5	0	1.5	0	17.4	4	0.3	0	22.1	0	12.7	0	3.9
Buses	2	15	1	0	11	0	5	0	0	23	12	0	1	0	0	0	70
% Buses	1	0.2	1.3	0	2.8	0	2.4	0	0	0.3	3.7	0	1.5	0	0	0	0.4

Short Counts

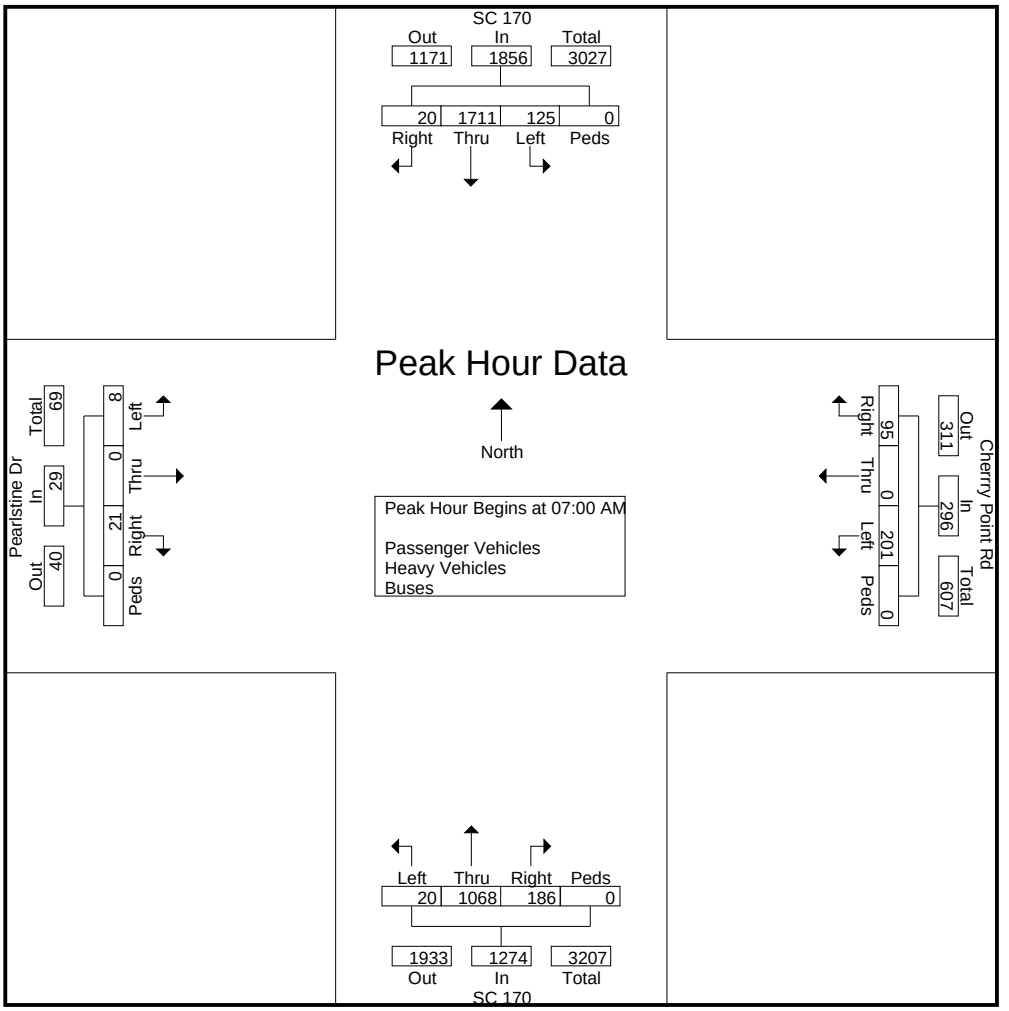
File Name : SC 170 @ Pearlstine-Cherry Point
Site Code :
Start Date : 10/11/2017
Page No : 2



Short Counts

File Name : SC 170 @ Pearlstine-Cherry Point
Site Code :
Start Date : 10/11/2017
Page No : 3

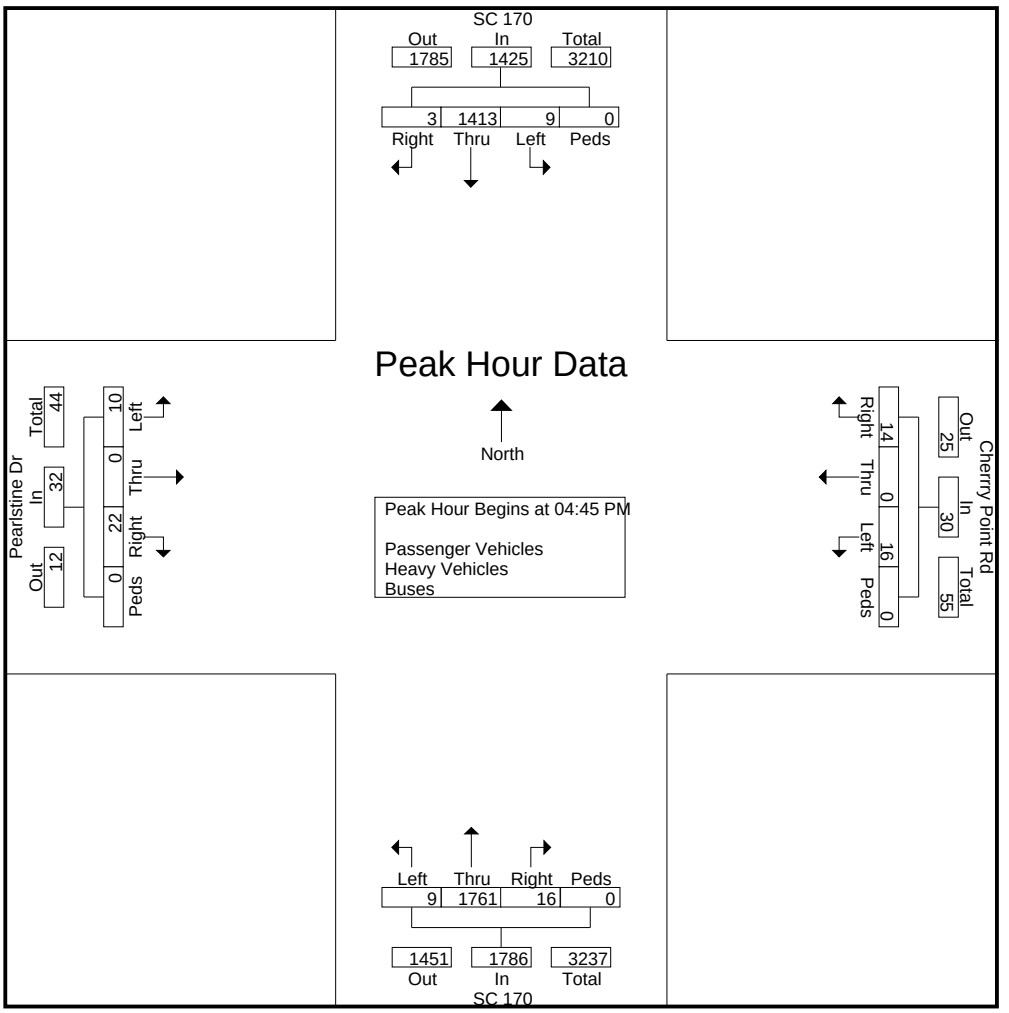
	SC 170 From North					Cherrry Point Rd From East					SC 170 From South					Pearlstine Dr From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	33	404	**13**	0	450	44	0	15	0	59	5	215	37	0	257	1	0	2	0	3	769
07:15 AM	**47**	405	2	0	454	46	0	20	0	66	4	252	69	0	325	3	0	1	0	4	849
07:30 AM	41	**458**	0	0	**499**	**79**	0	**50**	0	**129**	**6**	**318**	**75**	0	**399**	**4**	0	**11**	0	**15**	**1042**
07:45 AM	4	444	5	0	453	32	0	10	0	42	5	283	5	0	293	0	0	7	0	7	795
Total Volume	125	1711	20	0	1856	201	0	95	0	296	20	1068	186	0	1274	8	0	21	0	29	3455
% App. Total	6.7	92.2	1.1	0		67.9	0	32.1	0		1.6	83.8	14.6	0		27.6	0	72.4	0		
PHF	.665	.934	.385	.000	.930	.636	.000	.475	.000	.574	.833	.840	.620	.000	.798	.500	.000	.477	.000	.483	.829



Short Counts

File Name : SC 170 @ Pearlstine-Cherry Point
Site Code :
Start Date : 10/11/2017
Page No : 4

	SC 170 From North					Cherrry Point Rd From East					SC 170 From South					Pearlstine Dr From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**4**	359	0	0	363	4	0	**5**	0	**9**	**6**	390	4	0	400	2	0	5	0	7	779
05:00 PM	2	**371**	**3**	0	**376**	3	0	3	0	6	2	461	5	0	468	**4**	0	**9**	0	**13**	**863**
05:15 PM	2	345	0	0	347	**7**	0	2	0	9	0	447	1	0	448	2	0	3	0	5	809
05:30 PM	1	338	0	0	339	2	0	4	0	6	1	**463**	**6**	0	**470**	2	0	5	0	7	822
Total Volume	9	1413	3	0	1425	16	0	14	0	30	9	1761	16	0	1786	10	0	22	0	32	3273
% App. Total	0.6	99.2	0.2	0		53.3	0	46.7	0		0.5	98.6	0.9	0		31.2	0	68.8	0		
PHF	.563	.952	.250	.000	.947	.571	.000	.700	.000	.833	.375	.951	.667	.000	.950	.625	.000	.611	.000	.615	.948



Short Counts

File Name : SC 170 @ Tide Watch Dr
Site Code :
Start Date : 10/11/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	SC 170 From North				Tidewatch Dr From East				SC 170 From South				Tidewatch Dr From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	432	5	0	2	0	1	0	4	277	3	0	7	0	2	0	733
07:15 AM	0	436	6	0	4	2	1	0	4	346	1	0	3	2	0	0	805
07:30 AM	2	492	6	0	2	2	3	0	8	418	5	0	6	5	2	0	951
07:45 AM	0	439	10	0	4	1	2	0	10	322	4	0	8	1	6	0	807
Total	2	1799	27	0	12	5	7	0	26	1363	13	0	24	8	10	0	3296
08:00 AM	1	397	12	0	7	5	4	0	8	303	5	0	10	2	4	0	758
08:15 AM	0	359	18	0	7	6	0	0	9	301	1	0	3	3	9	0	716
08:30 AM	0	306	8	1	5	4	3	0	6	260	4	0	5	5	9	0	616
08:45 AM	0	309	12	0	9	7	3	0	14	245	4	0	11	6	7	0	627
Total	1	1371	50	1	28	22	10	0	37	1109	14	0	29	16	29	0	2717
02:00 PM	3	269	6	0	17	5	1	0	13	295	14	0	3	7	8	0	641
02:15 PM	1	279	11	1	7	6	2	0	8	277	11	0	3	5	6	0	617
02:30 PM	0	277	10	0	8	5	0	0	6	282	11	0	6	5	11	0	621
02:45 PM	2	274	4	0	6	4	0	0	10	314	10	0	5	5	12	0	646
Total	6	1099	31	1	38	20	3	0	37	1168	46	0	17	22	37	0	2525
03:00 PM	3	315	6	0	11	1	3	0	5	292	11	0	8	3	7	0	665
03:15 PM	3	293	3	0	9	1	0	0	4	335	14	0	8	4	7	0	681
03:30 PM	3	346	6	0	6	1	0	0	6	331	6	0	9	3	9	0	726
03:45 PM	2	320	9	0	12	4	3	0	6	360	10	0	5	9	4	0	744
Total	11	1274	24	0	38	7	6	0	21	1318	41	0	30	19	27	0	2816
04:00 PM	4	314	7	0	6	2	2	0	4	394	12	0	7	13	11	0	776
04:15 PM	0	312	6	0	5	4	0	0	9	401	11	0	9	5	5	0	767
04:30 PM	0	345	5	0	9	1	1	0	6	354	8	0	9	7	5	0	750
04:45 PM	0	347	1	0	6	3	0	0	4	394	11	0	2	11	7	0	786
Total	4	1318	19	0	26	10	3	0	23	1543	42	0	27	36	28	0	3079
05:00 PM	1	433	6	0	5	2	0	0	1	434	9	0	9	7	4	0	911
05:15 PM	0	366	6	0	10	4	1	0	7	446	8	0	7	4	6	0	865
05:30 PM	0	365	4	0	14	2	3	0	3	434	15	0	2	4	6	0	852
05:45 PM	1	303	6	0	8	3	1	0	1	353	13	0	3	5	7	0	704
Total	2	1467	22	0	37	11	5	0	12	1667	45	0	21	20	23	0	3332
Grand Total	26	8328	173	2	179	75	34	0	156	8168	201	0	148	121	154	0	17765
Apprch %	0.3	97.6	2	0	62.2	26	11.8	0	1.8	95.8	2.4	0	35	28.6	36.4	0	
Total %	0.1	46.9	1	0	1	0.4	0.2	0	0.9	46	1.1	0	0.8	0.7	0.9	0	
Passenger Vehicles	26	8025	164	2	179	65	34	0	139	7841	201	0	147	121	144	0	17088
% Passenger Vehicles	100	96.4	94.8	100	100	86.7	100	0	89.1	96	100	0	99.3	100	93.5	0	96.2
Heavy Vehicles	0	272	9	0	0	10	0	0	16	289	0	0	1	0	9	0	606
% Heavy Vehicles	0	3.3	5.2	0	0	13.3	0	0	10.3	3.5	0	0	0.7	0	5.8	0	3.4
Buses	0	31	0	0	0	0	0	0	1	38	0	0	0	0	1	0	71
% Buses	0	0.4	0	0	0	0	0	0	0.6	0.5	0	0	0	0	0.6	0	0.4

Short Counts

File Name : SC 170 @ Tide Watch Dr
Site Code :
Start Date : 10/11/2017
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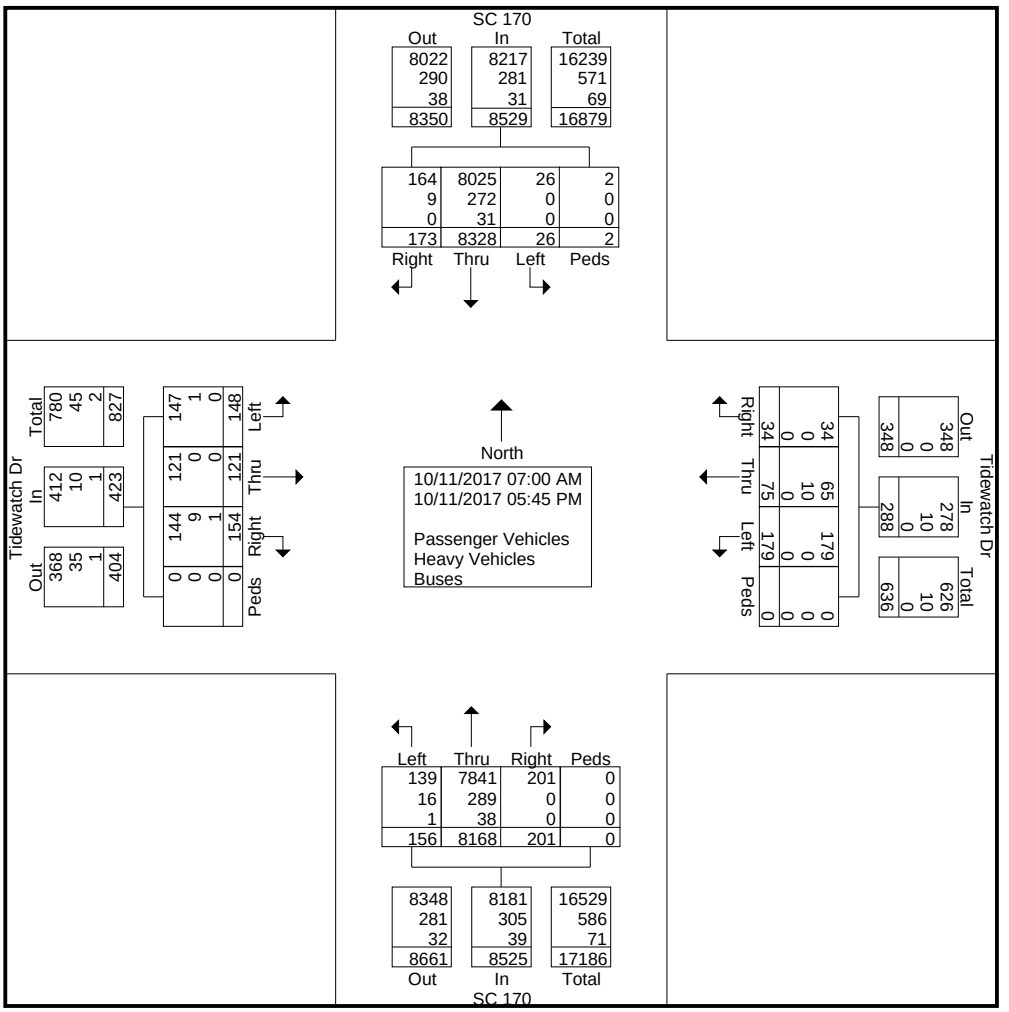
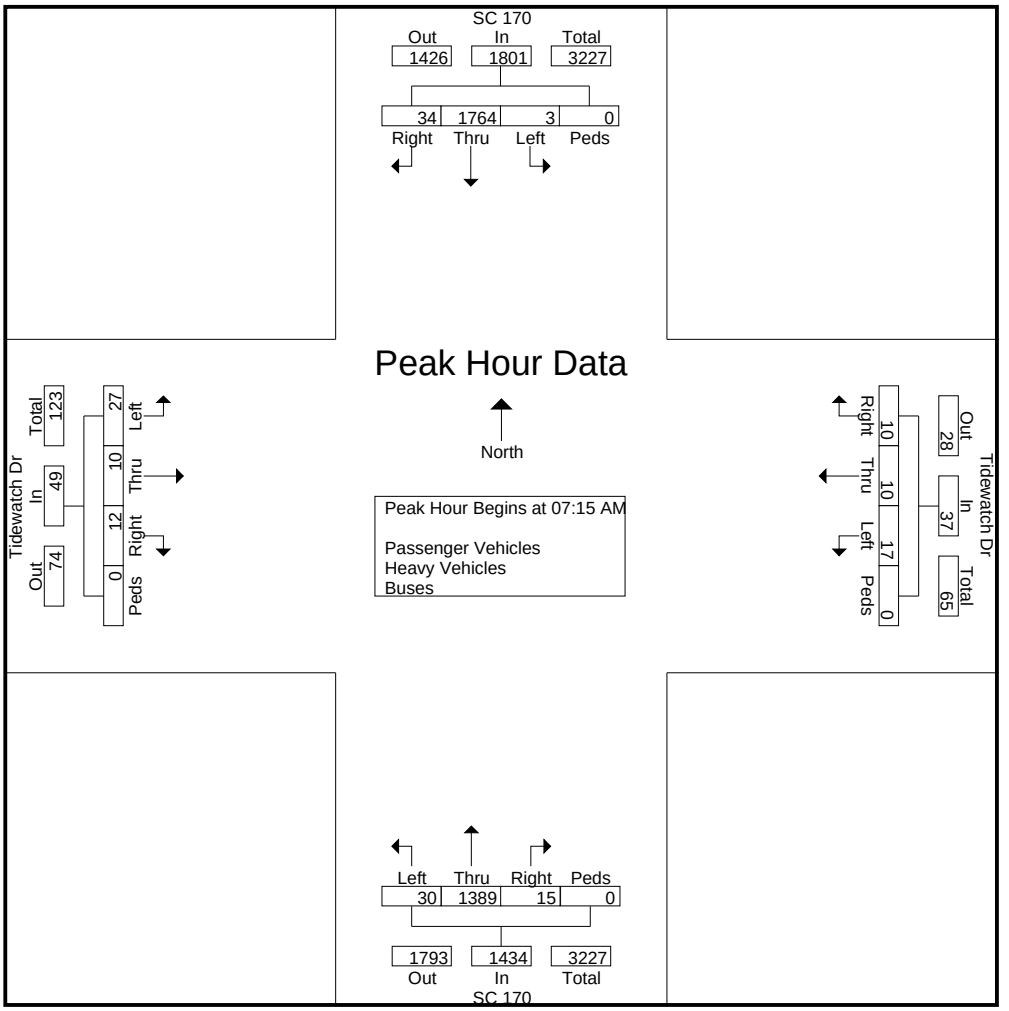


Short Counts

File Name : SC 170 @ Tide Watch Dr
Site Code :
Start Date : 10/11/2017
Page No : 3

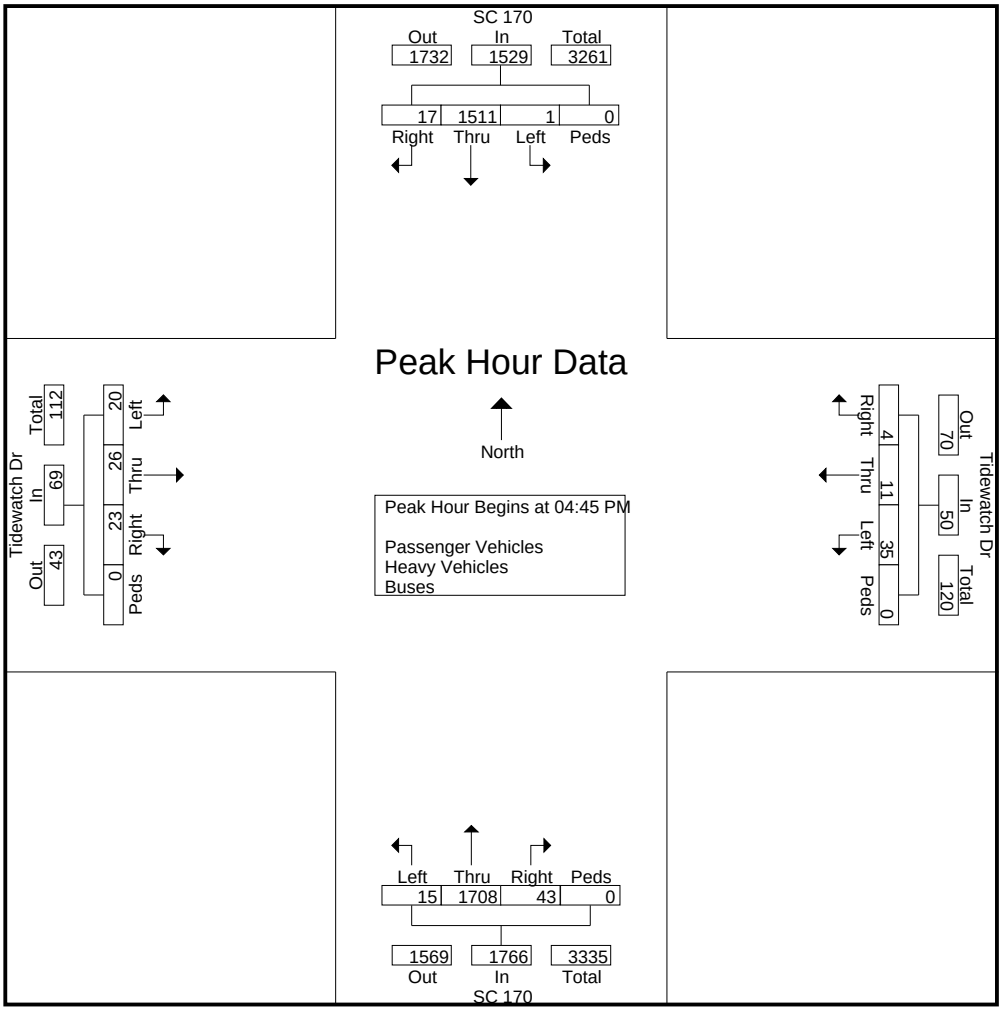
	SC 170 From North					Tidewatch Dr From East					SC 170 From South					Tidewatch Dr From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	436	6	0	442	4	2	1	0	7	4	346	1	0	351	3	2	0	0	5	805
07:30 AM	**2**	**492**	6	0	**500**	2	2	3	0	7	8	**418**	**5**	0	**431**	6	**5**	2	0	13	**951**
07:45 AM	0	439	10	0	449	4	1	2	0	7	**10**	322	4	0	336	8	1	**6**	0	15	807
08:00 AM	1	397	**12**	0	410	**7**	**5**	**4**	0	**16**	8	303	5	0	316	**10**	2	4	0	**16**	758
Total Volume	3	1764	34	0	1801	17	10	10	0	37	30	1389	15	0	1434	27	10	12	0	49	3321
% App. Total	0.2	97.9	1.9	0		45.9	27	27	0		2.1	96.9	1	0		55.1	20.4	24.5	0		
PHF	.375	.896	.708	.000	.901	.607	.500	.625	.000	.578	.750	.831	.750	.000	.832	.675	.500	.500	.000	.766	.873



Short Counts

File Name : SC 170 @ Tide Watch Dr
Site Code :
Start Date : 10/11/2017
Page No : 4

	SC 170 From North					Tidewatch Dr From East					SC 170 From South					Tidewatch Dr From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	347	1	0	348	6	3	0	0	9	4	394	11	0	409	2	**11**	**7**	0	**20**	786
05:00 PM	**1**	**433**	**6**	0	**440**	5	2	0	0	7	1	434	9	0	444	**9**	7	4	0	20	**911**
05:15 PM	0	366	6	0	372	10	**4**	1	0	15	**7**	**446**	8	0	**461**	7	4	6	0	17	865
05:30 PM	0	365	4	0	369	**14**	2	**3**	0	**19**	3	434	**15**	0	452	2	4	6	0	12	852
Total Volume	1	1511	17	0	1529	35	11	4	0	50	15	1708	43	0	1766	20	26	23	0	69	3414
% App. Total	0.1	98.8	1.1	0		70	22	8	0		0.8	96.7	2.4	0		29	37.7	33.3	0		
PHF	.250	.872	.708	.000	.869	.625	.688	.333	.000	.658	.536	.957	.717	.000	.958	.556	.591	.821	.000	.863	.937



Short Counts

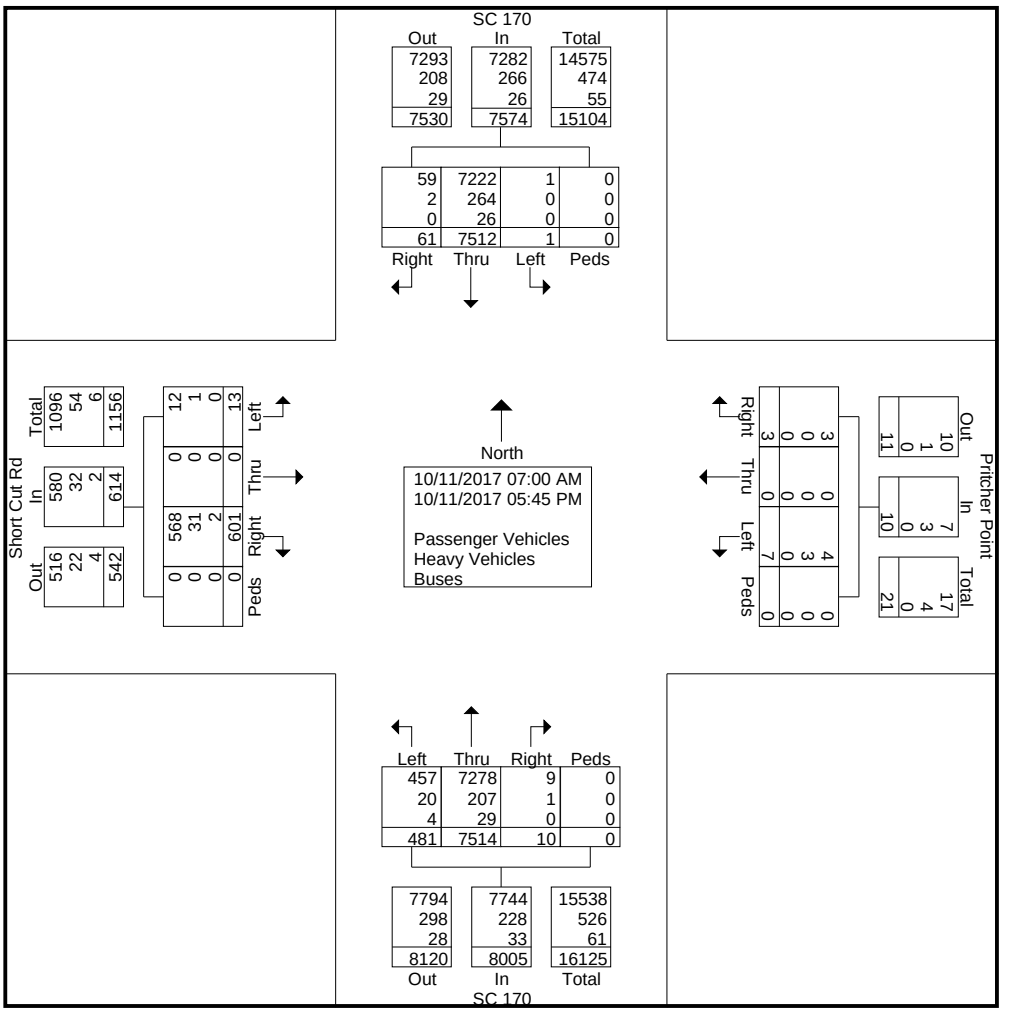
File Name : SC 170 @ Short Cut-Pritchers Point
Site Code :
Start Date : 10/11/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	SC 170 From North				Pritcher Point From East				SC 170 From South				Short Cut Rd From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	406	1	0	0	0	0	0	24	195	2	0	0	0	37	0	665
07:15 AM	0	423	0	0	0	0	0	0	25	259	0	0	0	0	41	0	748
07:30 AM	0	458	7	0	1	0	0	0	30	337	6	0	0	0	48	0	887
07:45 AM	0	405	2	0	0	0	0	0	20	273	0	0	0	0	39	0	739
Total	0	1692	10	0	1	0	0	0	99	1064	8	0	0	0	165	0	3039
08:00 AM	0	426	4	0	1	0	0	0	18	252	1	0	0	0	35	0	737
08:15 AM	0	357	3	0	1	0	0	0	16	277	0	0	0	0	27	0	681
08:30 AM	0	259	2	0	0	0	0	0	21	236	0	0	1	0	15	0	534
08:45 AM	0	301	1	0	0	0	0	0	25	221	0	0	0	0	24	0	572
Total	0	1343	10	0	2	0	0	0	80	986	1	0	1	0	101	0	2524
02:00 PM	0	233	0	0	0	0	0	0	16	261	0	0	1	0	23	0	534
02:15 PM	0	249	2	0	0	0	0	0	17	260	0	0	1	0	22	0	551
02:30 PM	0	281	5	0	0	0	0	0	18	230	1	0	0	0	25	0	560
02:45 PM	0	244	5	0	1	0	0	0	23	267	0	0	0	0	18	0	558
Total	0	1007	12	0	1	0	0	0	74	1018	1	0	2	0	88	0	2203
03:00 PM	0	258	3	0	0	0	1	0	18	318	0	0	1	0	16	0	615
03:15 PM	0	263	3	0	0	0	0	0	13	320	0	0	2	0	18	0	619
03:30 PM	0	291	2	0	0	0	0	0	20	305	0	0	1	0	25	0	644
03:45 PM	0	289	1	0	0	0	0	0	19	349	0	0	1	0	20	0	679
Total	0	1101	9	0	0	0	1	0	70	1292	0	0	5	0	79	0	2557
04:00 PM	1	271	3	0	1	0	0	0	30	362	0	0	1	0	23	0	692
04:15 PM	0	236	4	0	0	0	1	0	20	407	0	0	0	0	17	0	685
04:30 PM	0	310	2	0	2	0	1	0	19	340	0	0	0	0	20	0	694
04:45 PM	0	318	3	0	0	0	0	0	18	368	0	0	2	0	22	0	731
Total	1	1135	12	0	3	0	2	0	87	1477	0	0	3	0	82	0	2802
05:00 PM	0	338	0	0	0	0	0	0	25	427	0	0	0	0	28	0	818
05:15 PM	0	320	4	0	0	0	0	0	17	437	0	0	0	0	21	0	799
05:30 PM	0	290	3	0	0	0	0	0	14	442	0	0	1	0	27	0	777
05:45 PM	0	286	1	0	0	0	0	0	15	371	0	0	1	0	10	0	684
Total	0	1234	8	0	0	0	0	0	71	1677	0	0	2	0	86	0	3078
Grand Total	1	7512	61	0	7	0	3	0	481	7514	10	0	13	0	601	0	16203
Apprch %	0	99.2	0.8	0	70	0	30	0	6	93.9	0.1	0	2.1	0	97.9	0	
Total %	0	46.4	0.4	0	0	0	0	0	3	46.4	0.1	0	0.1	0	3.7	0	
Passenger Vehicles	1	7222	59	0	4	0	3	0	457	7278	9	0	12	0	568	0	15613
% Passenger Vehicles	100	96.1	96.7	0	57.1	0	100	0	95	96.9	90	0	92.3	0	94.5	0	96.4
Heavy Vehicles	0	264	2	0	3	0	0	0	20	207	1	0	1	0	31	0	529
% Heavy Vehicles	0	3.5	3.3	0	42.9	0	0	0	4.2	2.8	10	0	7.7	0	5.2	0	3.3
Buses	0	26	0	0	0	0	0	0	4	29	0	0	0	0	2	0	61
% Buses	0	0.3	0	0	0	0	0	0	0.8	0.4	0	0	0	0	0.3	0	0.4

Short Counts

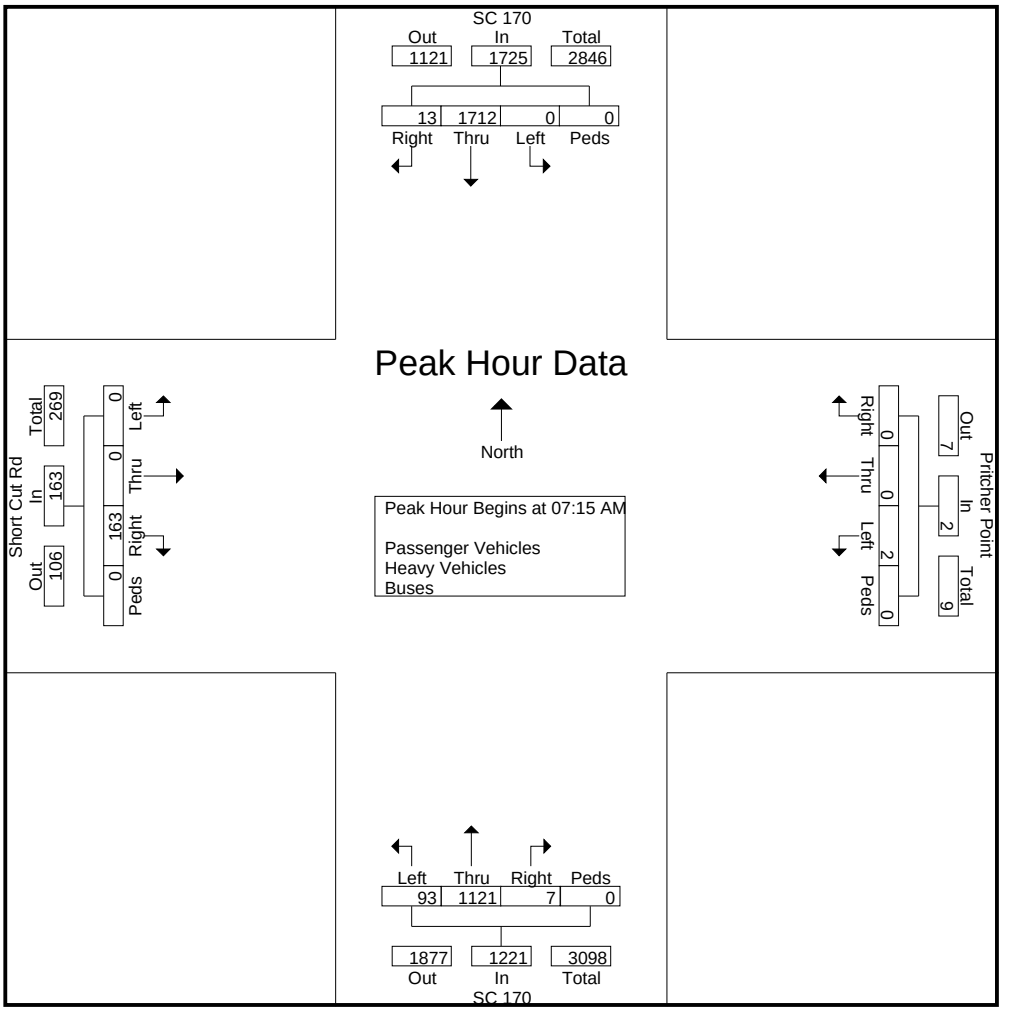
File Name : SC 170 @ Short Cut-Pritchers Point
Site Code :
Start Date : 10/11/2017
Page No : 2



Short Counts

File Name : SC 170 @ Short Cut-Pritchers Point
Site Code :
Start Date : 10/11/2017
Page No : 3

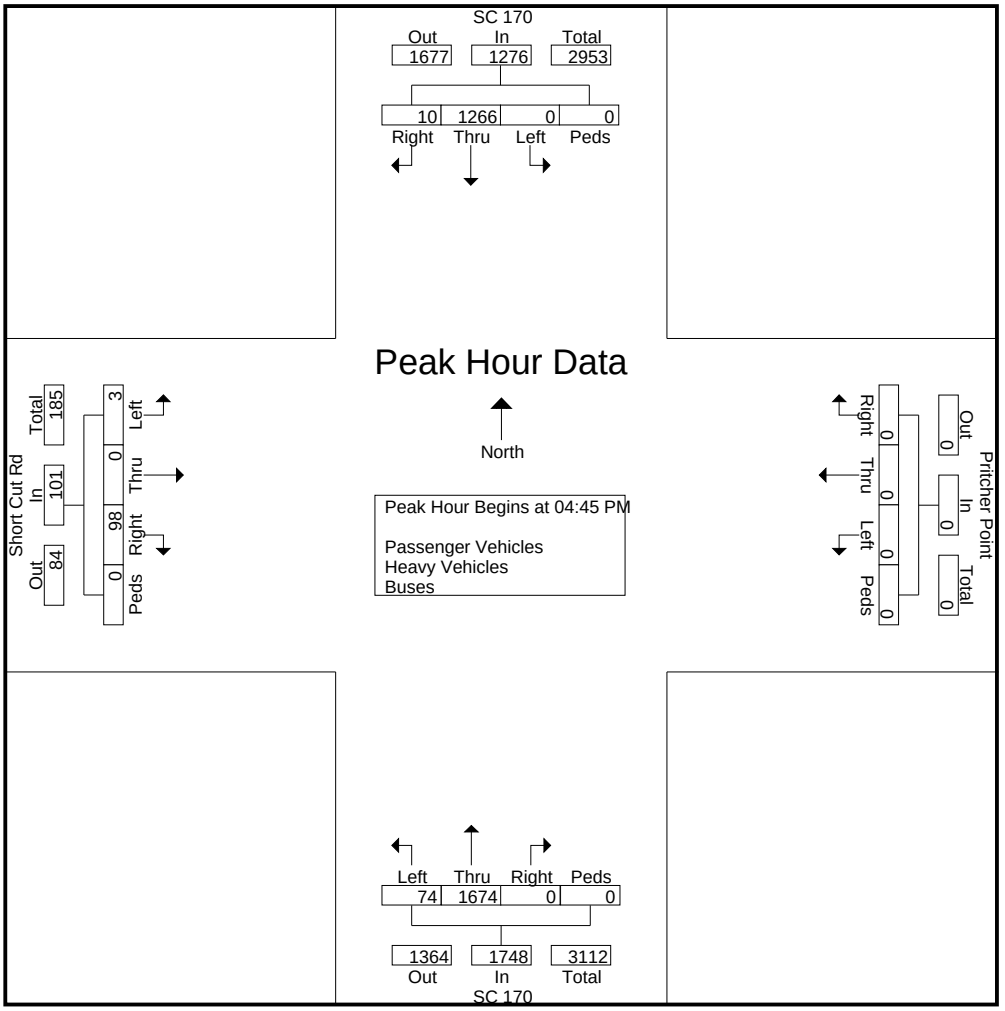
	SC 170 From North					Pritcher Point From East					SC 170 From South					Short Cut Rd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	423	0	0	423	0	0	0	0	0	25	259	0	0	284	0	0	41	0	41	748
07:30 AM	0	**458**	**7**	0	**465**	**1**	0	0	0	**1**	**30**	**337**	**6**	0	**373**	0	0	**48**	0	**48**	**887**
07:45 AM	0	405	2	0	407	0	0	0	0	0	20	273	0	0	293	0	0	39	0	39	739
08:00 AM	0	426	4	0	430	1	0	0	0	1	18	252	1	0	271	0	0	35	0	35	737
Total Volume	0	1712	13	0	1725	2	0	0	0	2	93	1121	7	0	1221	0	0	163	0	163	3111
% App. Total	0	99.2	0.8	0		100	0	0	0		7.6	91.8	0.6	0		0	0	100	0		
PHF	.000	.934	.464	.000	.927	.500	.000	.000	.000	.500	.775	.832	.292	.000	.818	.000	.000	.849	.000	.849	.877



Short Counts

File Name : SC 170 @ Short Cut-Pritchers Point
Site Code :
Start Date : 10/11/2017
Page No : 4

	SC 170 From North					Pritcher Point From East					SC 170 From South					Short Cut Rd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	318	3	0	321	0	0	0	0	0	18	368	0	0	386	**2**	0	22	0	24	731
05:00 PM	0	**338**	0	0	**338**	0	0	0	0	0	**25**	427	0	0	452	0	0	**28**	0	**28**	**818**
05:15 PM	0	320	**4**	0	324	0	0	0	0	0	17	437	0	0	454	0	0	21	0	21	799
05:30 PM	0	290	3	0	293	0	0	0	0	0	14	**442**	0	0	**456**	1	0	27	0	28	777
Total Volume	0	1266	10	0	1276	0	0	0	0	0	74	1674	0	0	1748	3	0	98	0	101	3125
% App. Total	0	99.2	0.8	0		0	0	0	0		4.2	95.8	0	0		3	0	97	0		
PHF	.000	.936	.625	.000	.944	.000	.000	.000	.000	.000	.740	.947	.000	.000	.958	.375	.000	.875	.000	.902	.955



Short Counts

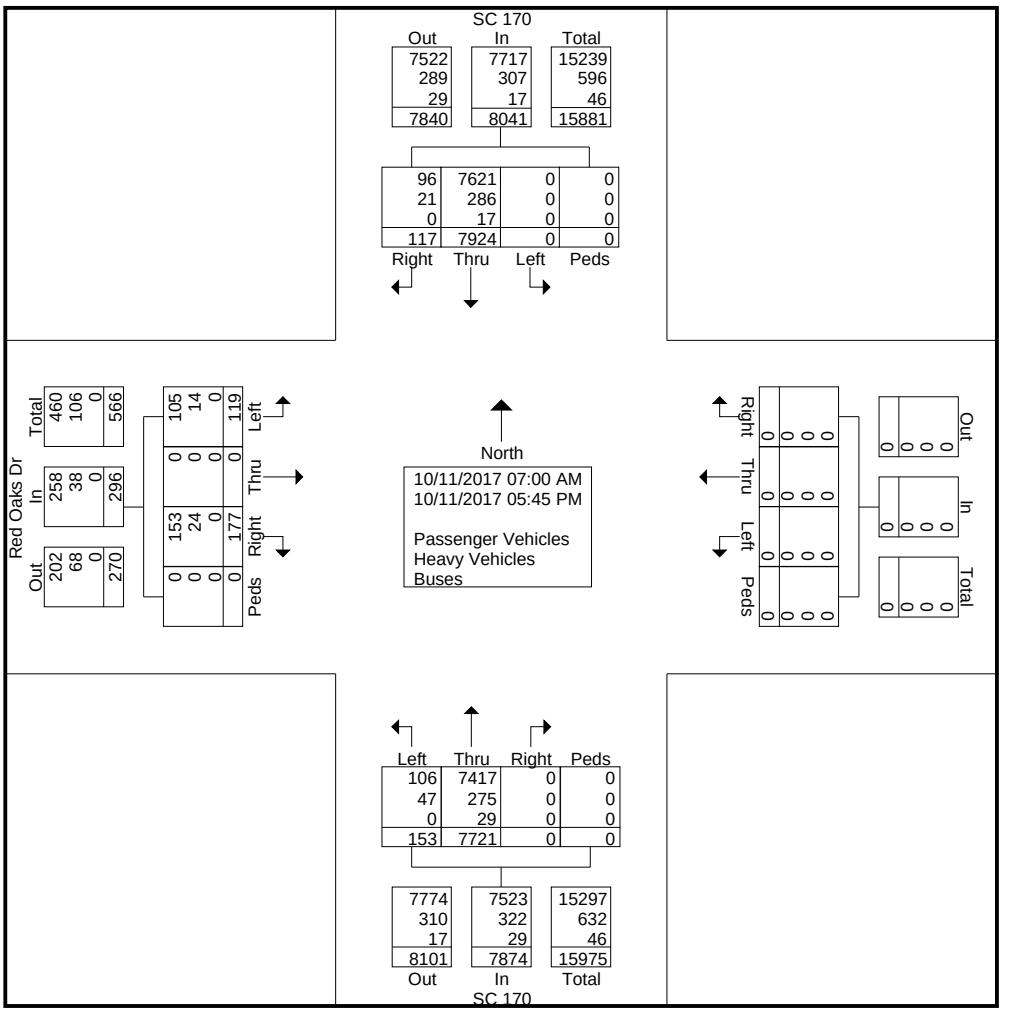
File Name : SC 170 @ Red Oaks Dr
Site Code :
Start Date : 10/11/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	SC 170 From North				From East				SC 170 From South				Red Oaks Dr From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	409	20	0	0	0	0	0	8	200	0	0	7	0	11	0	655
07:15 AM	0	446	15	0	0	0	0	0	7	262	0	0	1	0	9	0	740
07:30 AM	0	492	3	0	0	0	0	0	3	371	0	0	3	0	5	0	877
07:45 AM	0	430	10	0	0	0	0	0	5	284	0	0	2	0	9	0	740
Total	0	1777	48	0	0	0	0	0	23	1117	0	0	13	0	34	0	3012
08:00 AM	0	426	10	0	0	0	0	0	9	270	0	0	5	0	8	0	728
08:15 AM	0	382	2	0	0	0	0	0	3	277	0	0	3	0	7	0	674
08:30 AM	0	273	2	0	0	0	0	0	2	250	0	0	3	0	3	0	533
08:45 AM	0	323	3	0	0	0	0	0	2	242	0	0	2	0	5	0	577
Total	0	1404	17	0	0	0	0	0	16	1039	0	0	13	0	23	0	2512
02:00 PM	0	241	5	0	0	0	0	0	6	264	0	0	4	0	15	0	535
02:15 PM	0	263	1	0	0	0	0	0	4	278	0	0	2	0	11	0	559
02:30 PM	0	293	1	0	0	0	0	0	1	254	0	0	1	0	3	0	553
02:45 PM	0	259	2	0	0	0	0	0	7	269	0	0	1	0	8	0	546
Total	0	1056	9	0	0	0	0	0	18	1065	0	0	8	0	37	0	2193
03:00 PM	0	236	6	0	0	0	0	0	7	327	0	0	2	0	6	0	584
03:15 PM	0	265	7	0	0	0	0	0	3	336	0	0	1	0	4	0	616
03:30 PM	0	319	3	0	0	0	0	0	4	307	0	0	6	0	6	0	645
03:45 PM	0	310	4	0	0	0	0	0	10	348	0	0	2	0	7	0	681
Total	0	1130	20	0	0	0	0	0	24	1318	0	0	11	0	23	0	2526
04:00 PM	0	293	1	0	0	0	0	0	6	385	0	0	4	0	11	0	700
04:15 PM	0	258	3	0	0	0	0	0	7	399	0	0	10	0	6	0	683
04:30 PM	0	332	1	0	0	0	0	0	12	364	0	0	3	0	6	0	718
04:45 PM	0	343	6	0	0	0	0	0	11	377	0	0	7	0	6	0	750
Total	0	1226	11	0	0	0	0	0	36	1525	0	0	24	0	29	0	2851
05:00 PM	0	368	3	0	0	0	0	0	16	421	0	0	12	0	9	0	829
05:15 PM	0	345	4	0	0	0	0	0	9	444	0	0	13	0	6	0	821
05:30 PM	0	316	5	0	0	0	0	0	8	448	0	0	10	0	11	0	798
05:45 PM	0	302	0	0	0	0	0	0	3	344	0	0	15	0	5	0	669
Total	0	1331	12	0	0	0	0	0	36	1657	0	0	50	0	31	0	3117
Grand Total	0	7924	117	0	0	0	0	0	153	7721	0	0	119	0	177	0	16211
Apprch %	0	98.5	1.5	0	0	0	0	0	1.9	98.1	0	0	40.2	0	59.8	0	
Total %	0	48.9	0.7	0	0	0	0	0	0.9	47.6	0	0	0.7	0	1.1	0	
Passenger Vehicles	0	7621	96	0	0	0	0	0	106	7417	0	0	105	0	153	0	15498
% Passenger Vehicles	0	96.2	82.1	0	0	0	0	0	69.3	96.1	0	0	88.2	0	86.4	0	95.6
Heavy Vehicles	0	286	21	0	0	0	0	0	47	275	0	0	14	0	24	0	667
% Heavy Vehicles	0	3.6	17.9	0	0	0	0	0	30.7	3.6	0	0	11.8	0	13.6	0	4.1
Buses	0	17	0	0	0	0	0	0	0	29	0	0	0	0	0	0	46
% Buses	0	0.2	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.3

Short Counts

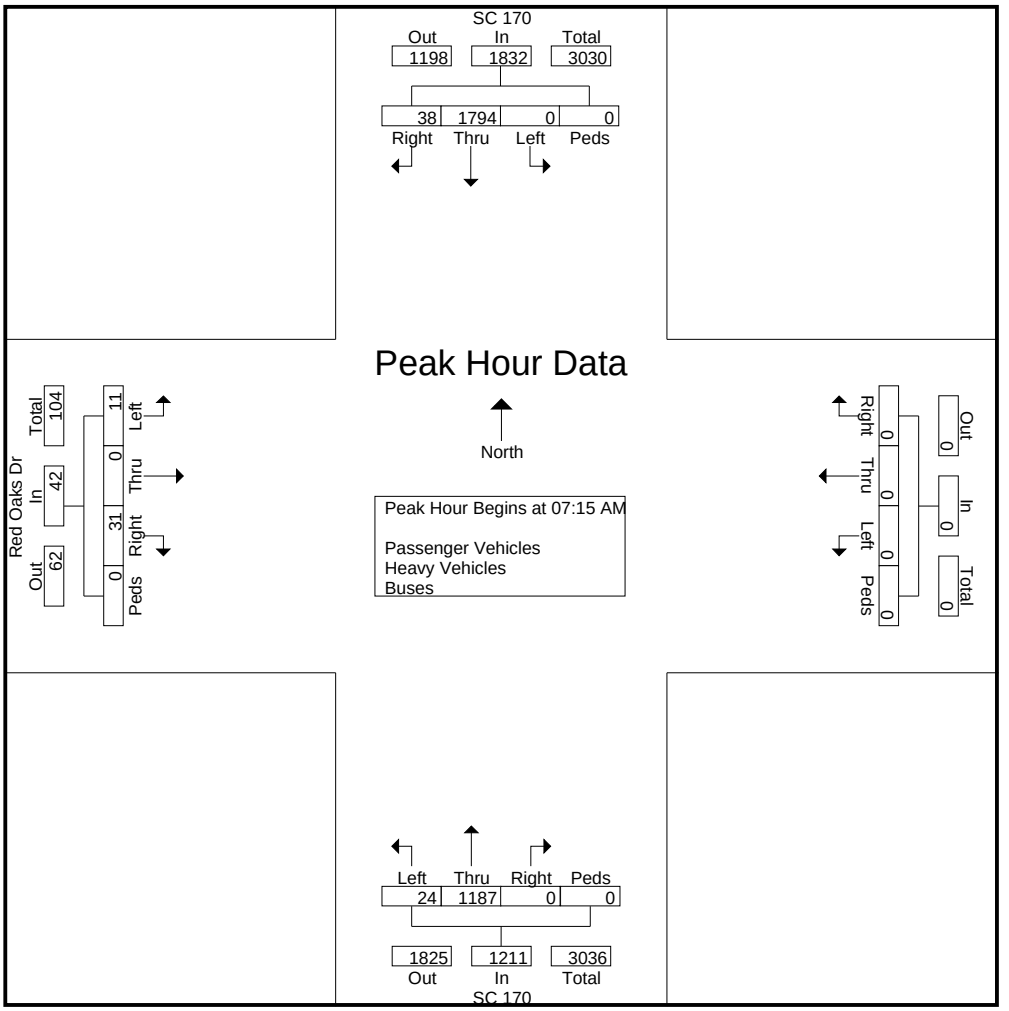
File Name : SC 170 @ Red Oaks Dr
Site Code :
Start Date : 10/11/2017
Page No : 2



Short Counts

File Name : SC 170 @ Red Oaks Dr
Site Code :
Start Date : 10/11/2017
Page No : 3

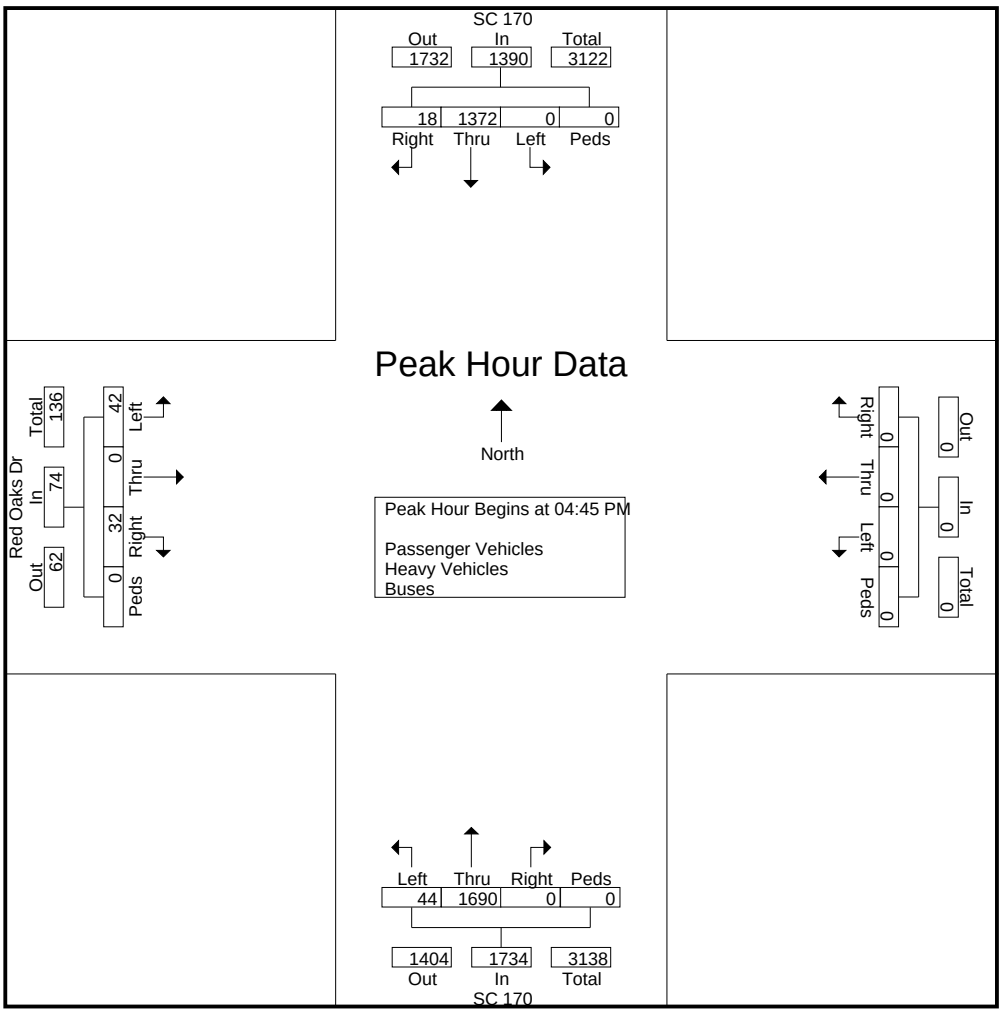
	SC 170 From North					From East					SC 170 From South					Red Oaks Dr From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	446	**15**	0	461	0	0	0	0	0	7	262	0	0	269	1	0	**9**	0	10	740
07:30 AM	0	**492**	3	0	**495**	0	0	0	0	0	3	**371**	0	0	**374**	3	0	5	0	8	**877**
07:45 AM	0	430	10	0	440	0	0	0	0	0	5	284	0	0	289	2	0	9	0	11	740
08:00 AM	0	426	10	0	436	0	0	0	0	0	**9**	270	0	0	279	**5**	0	8	0	**13**	728
Total Volume	0	1794	38	0	1832	0	0	0	0	0	24	1187	0	0	1211	11	0	31	0	42	3085
% App. Total	0	97.9	2.1	0		0	0	0	0		2	98	0	0		26.2	0	73.8	0		
PHF	.000	.912	.633	.000	.925	.000	.000	.000	.000	.000	.667	.800	.000	.000	.809	.550	.000	.861	.000	.808	.879



Short Counts

File Name : SC 170 @ Red Oaks Dr
Site Code :
Start Date : 10/11/2017
Page No : 4

	SC 170 From North					From East					SC 170 From South					Red Oaks Dr From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	343	**6**	0	349	0	0	0	0	0	11	377	0	0	388	7	0	6	0	13	750
05:00 PM	0	**368**	3	0	**371**	0	0	0	0	0	**16**	421	0	0	437	12	0	9	0	**21**	**829**
05:15 PM	0	345	4	0	349	0	0	0	0	0	9	444	0	0	453	**13**	0	6	0	19	821
05:30 PM	0	316	5	0	321	0	0	0	0	0	8	**448**	0	0	**456**	10	0	**11**	0	21	798
Total Volume	0	1372	18	0	1390	0	0	0	0	0	44	1690	0	0	1734	42	0	32	0	74	3198
% App. Total	0	98.7	1.3	0		0	0	0	0		2.5	97.5	0	0		56.8	0	43.2	0		
PHF	.000	.932	.750	.000	.937	.000	.000	.000	.000	.000	.688	.943	.000	.000	.951	.808	.000	.727	.000	.881	.964



Short Counts

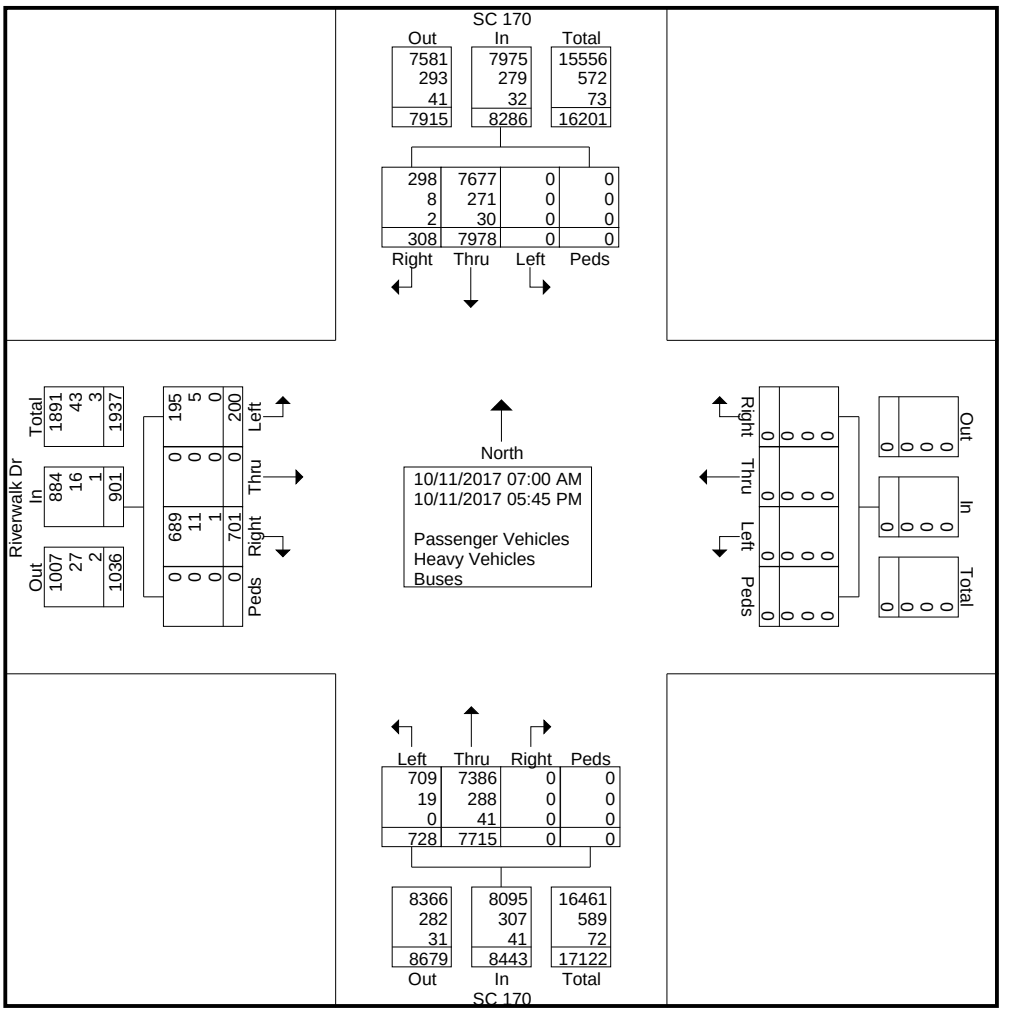
File Name : SC 170 @ Riverwalk Blvd
Site Code :
Start Date : 10/11/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	SC 170 From North				From East				SC 170 From South				Riverwalk Dr From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	418	23	0	0	0	0	0	29	249	0	0	1	0	14	0	734
07:15 AM	0	447	12	0	0	0	0	0	27	325	0	0	4	0	17	0	832
07:30 AM	0	478	13	0	0	0	0	0	28	393	0	0	0	0	10	0	922
07:45 AM	0	440	22	0	0	0	0	0	63	295	0	0	1	0	18	0	839
Total	0	1783	70	0	0	0	0	0	147	1262	0	0	6	0	59	0	3327
08:00 AM	0	404	26	0	0	0	0	0	45	266	0	0	5	0	28	0	774
08:15 AM	0	365	16	0	0	0	0	0	31	298	0	0	2	0	19	0	731
08:30 AM	0	288	7	0	0	0	0	0	36	244	0	0	3	0	23	0	601
08:45 AM	0	317	14	0	0	0	0	0	28	235	0	0	5	0	20	0	619
Total	0	1374	63	0	0	0	0	0	140	1043	0	0	15	0	90	0	2725
02:00 PM	0	251	10	0	0	0	0	0	21	275	0	0	8	0	30	0	595
02:15 PM	0	253	8	0	0	0	0	0	18	269	0	0	12	0	35	0	595
02:30 PM	0	271	11	0	0	0	0	0	21	281	0	0	7	0	32	0	623
02:45 PM	0	252	8	0	0	0	0	0	20	281	0	0	8	0	19	0	588
Total	0	1027	37	0	0	0	0	0	80	1106	0	0	35	0	116	0	2401
03:00 PM	0	305	10	0	0	0	0	0	33	292	0	0	9	0	22	0	671
03:15 PM	0	280	11	0	0	0	0	0	28	327	0	0	6	0	27	0	679
03:30 PM	0	333	9	0	0	0	0	0	27	287	0	0	9	0	25	0	690
03:45 PM	0	285	15	0	0	0	0	0	30	344	0	0	13	0	23	0	710
Total	0	1203	45	0	0	0	0	0	118	1250	0	0	37	0	97	0	2750
04:00 PM	0	299	8	0	0	0	0	0	31	370	0	0	15	0	37	0	760
04:15 PM	0	275	16	0	0	0	0	0	44	387	0	0	16	0	51	0	789
04:30 PM	0	314	15	0	0	0	0	0	41	344	0	0	11	0	50	0	775
04:45 PM	0	348	12	0	0	0	0	0	24	353	0	0	14	0	43	0	794
Total	0	1236	51	0	0	0	0	0	140	1454	0	0	56	0	181	0	3118
05:00 PM	0	356	7	0	0	0	0	0	24	425	0	0	22	0	57	0	891
05:15 PM	0	376	15	0	0	0	0	0	30	411	0	0	8	0	33	0	873
05:30 PM	0	342	13	0	0	0	0	0	18	428	0	0	12	0	45	0	858
05:45 PM	0	281	7	0	0	0	0	0	31	336	0	0	9	0	23	0	687
Total	0	1355	42	0	0	0	0	0	103	1600	0	0	51	0	158	0	3309
Grand Total	0	7978	308	0	0	0	0	0	728	7715	0	0	200	0	701	0	17630
Apprch %	0	96.3	3.7	0	0	0	0	0	8.6	91.4	0	0	22.2	0	77.8	0	
Total %	0	45.3	1.7	0	0	0	0	0	4.1	43.8	0	0	1.1	0	4	0	
Passenger Vehicles	0	7677	298	0	0	0	0	0	709	7386	0	0	195	0	689	0	16954
% Passenger Vehicles	0	96.2	96.8	0	0	0	0	0	97.4	95.7	0	0	97.5	0	98.3	0	96.2
Heavy Vehicles	0	271	8	0	0	0	0	0	19	288	0	0	5	0	11	0	602
% Heavy Vehicles	0	3.4	2.6	0	0	0	0	0	2.6	3.7	0	0	2.5	0	1.6	0	3.4
Buses	0	30	2	0	0	0	0	0	0	41	0	0	0	0	1	0	74
% Buses	0	0.4	0.6	0	0	0	0	0	0	0.5	0	0	0	0	0.1	0	0.4

Short Counts

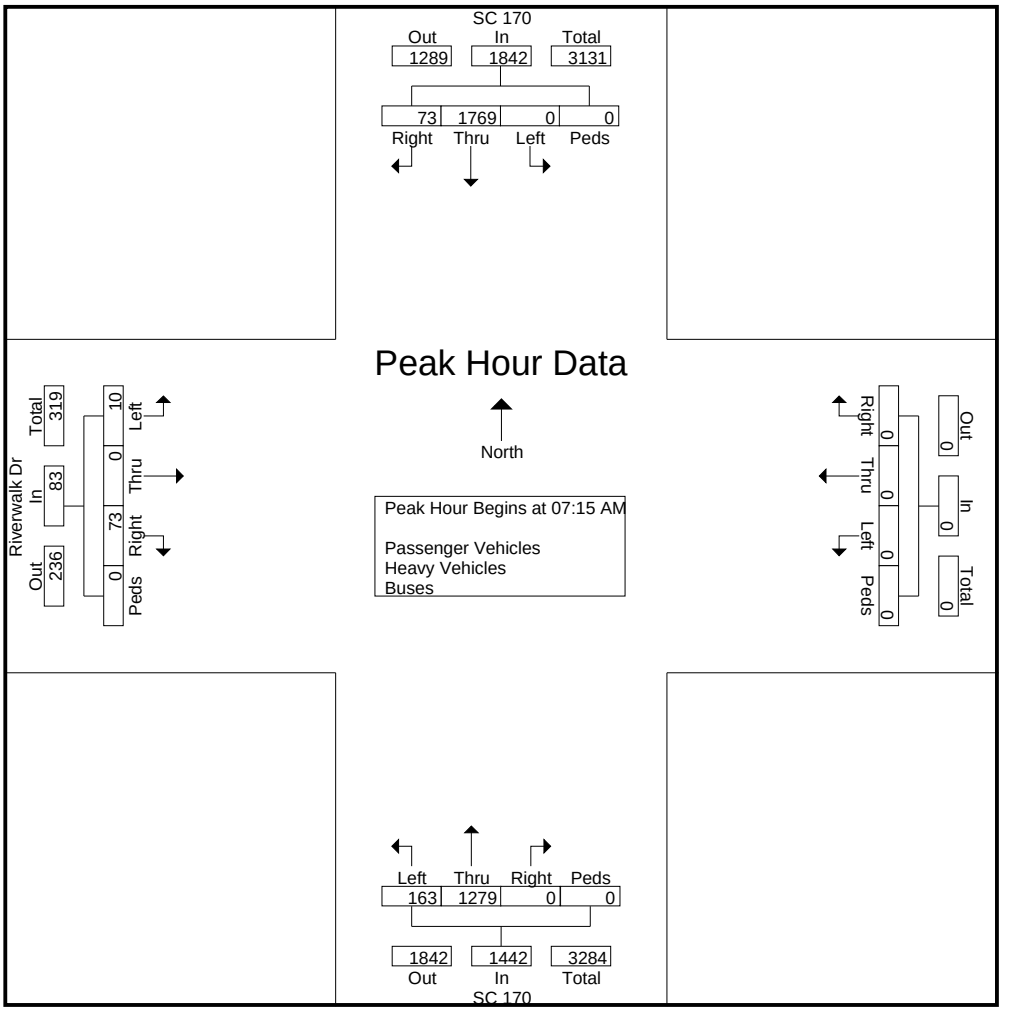
File Name : SC 170 @ Riverwalk Blvd
Site Code :
Start Date : 10/11/2017
Page No : 2



Short Counts

File Name : SC 170 @ Riverwalk Blvd
Site Code :
Start Date : 10/11/2017
Page No : 3

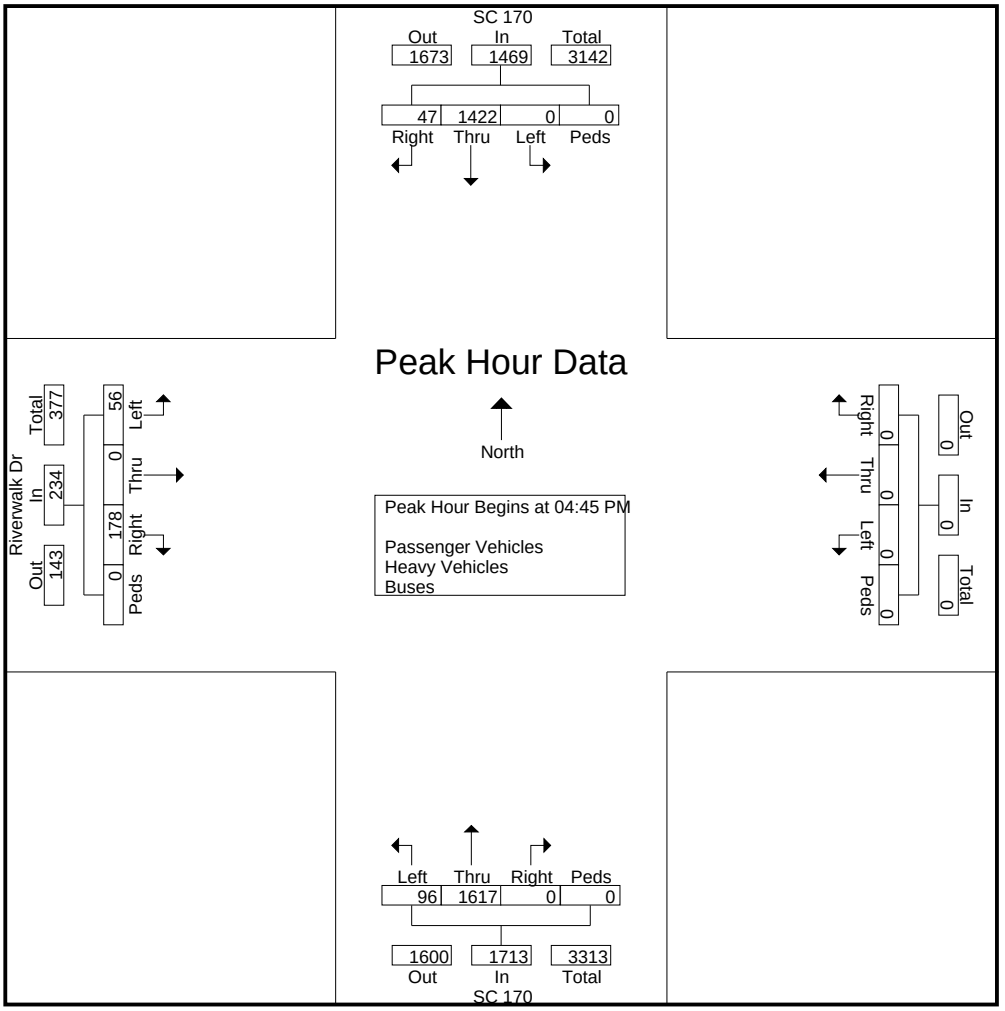
	SC 170 From North					From East					SC 170 From South					Riverwalk Dr From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	447	12	0	459	0	0	0	0	0	27	325	0	0	352	4	0	17	0	21	832
07:30 AM	0	**478**	13	0	**491**	0	0	0	0	0	28	**393**	0	0	**421**	0	0	10	0	10	**922**
07:45 AM	0	440	22	0	462	0	0	0	0	0	**63**	295	0	0	358	1	0	18	0	19	839
08:00 AM	0	404	**26**	0	430	0	0	0	0	0	45	266	0	0	311	**5**	0	**28**	0	**33**	774
Total Volume	0	1769	73	0	1842	0	0	0	0	0	163	1279	0	0	1442	10	0	73	0	83	3367
% App. Total	0	96	4	0		0	0	0	0		11.3	88.7	0	0		12	0	88	0		
PHF	.000	.925	.702	.000	.938	.000	.000	.000	.000	.000	.647	.814	.000	.000	.856	.500	.000	.652	.000	.629	.913



Short Counts

File Name : SC 170 @ Riverwalk Blvd
Site Code :
Start Date : 10/11/2017
Page No : 4

	SC 170 From North					From East					SC 170 From South					Riverwalk Dr From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	348	12	0	360	0	0	0	0	0	24	353	0	0	377	14	0	43	0	57	794
05:00 PM	0	356	7	0	363	0	0	0	0	0	24	425	0	0	**449**	**22**	0	**57**	0	**79**	**891**
05:15 PM	0	**376**	**15**	0	**391**	0	0	0	0	0	**30**	411	0	0	441	8	0	33	0	41	873
05:30 PM	0	342	13	0	355	0	0	0	0	0	18	**428**	0	0	446	12	0	45	0	57	858
Total Volume	0	1422	47	0	1469	0	0	0	0	0	96	1617	0	0	1713	56	0	178	0	234	3416
% App. Total	0	96.8	3.2	0		0	0	0	0		5.6	94.4	0	0		23.9	0	76.1	0		
PHF	.000	.945	.783	.000	.939	.000	.000	.000	.000	.000	.800	.945	.000	.000	.954	.636	.000	.781	.000	.741	.958



Short Counts

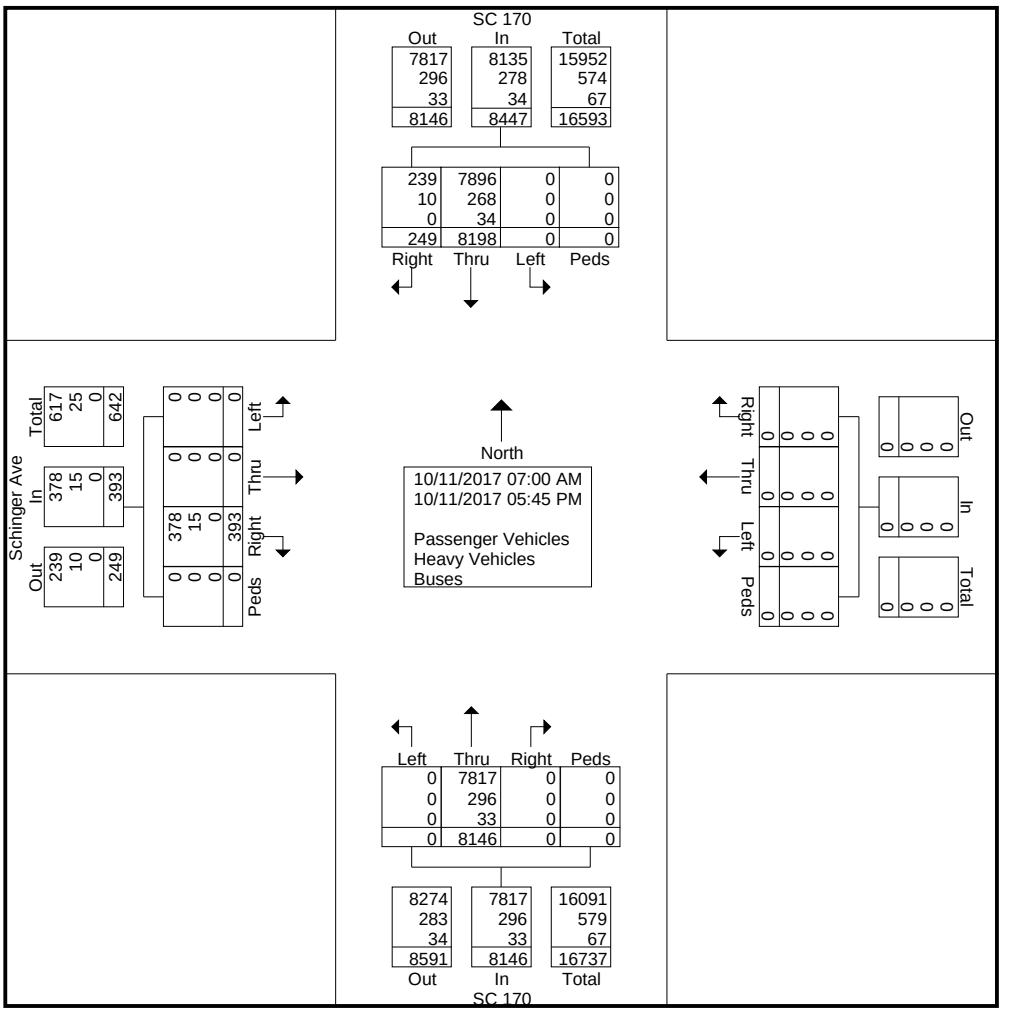
File Name : SC 170 @ Schinger Ave
Site Code :
Start Date : 10/11/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	SC 170 From North				From East				SC 170 From South				Schinger Ave From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	447	10	0	0	0	0	0	0	203	0	0	0	0	13	0	673
07:15 AM	0	444	11	0	0	0	0	0	0	379	0	0	0	0	19	0	853
07:30 AM	0	525	23	0	0	0	0	0	0	386	0	0	0	0	7	0	941
07:45 AM	0	463	41	0	0	0	0	0	0	300	0	0	0	0	3	0	807
Total	0	1879	85	0	0	0	0	0	0	1268	0	0	0	0	42	0	3274
08:00 AM	0	438	18	0	0	0	0	0	0	300	0	0	0	0	13	0	769
08:15 AM	0	354	13	0	0	0	0	0	0	273	0	0	0	0	18	0	658
08:30 AM	0	278	7	0	0	0	0	0	0	283	0	0	0	0	24	0	592
08:45 AM	0	318	10	0	0	0	0	0	0	282	0	0	0	0	26	0	636
Total	0	1388	48	0	0	0	0	0	0	1138	0	0	0	0	81	0	2655
02:00 PM	0	256	5	0	0	0	0	0	0	285	0	0	0	0	12	0	558
02:15 PM	0	252	11	0	0	0	0	0	0	309	0	0	0	0	13	0	585
02:30 PM	0	277	8	0	0	0	0	0	0	283	0	0	0	0	10	0	578
02:45 PM	0	279	5	0	0	0	0	0	0	280	0	0	0	0	9	0	573
Total	0	1064	29	0	0	0	0	0	0	1157	0	0	0	0	44	0	2294
03:00 PM	0	313	5	0	0	0	0	0	0	287	0	0	0	0	13	0	618
03:15 PM	0	298	9	0	0	0	0	0	0	362	0	0	0	0	11	0	680
03:30 PM	0	311	15	0	0	0	0	0	0	329	0	0	0	0	17	0	672
03:45 PM	0	327	6	0	0	0	0	0	0	358	0	0	0	0	8	0	699
Total	0	1249	35	0	0	0	0	0	0	1336	0	0	0	0	49	0	2669
04:00 PM	0	300	10	0	0	0	0	0	0	395	0	0	0	0	13	0	718
04:15 PM	0	288	7	0	0	0	0	0	0	415	0	0	0	0	27	0	737
04:30 PM	0	315	7	0	0	0	0	0	0	310	0	0	0	0	16	0	648
04:45 PM	0	362	5	0	0	0	0	0	0	414	0	0	0	0	12	0	793
Total	0	1265	29	0	0	0	0	0	0	1534	0	0	0	0	68	0	2896
05:00 PM	0	366	7	0	0	0	0	0	0	434	0	0	0	0	38	0	845
05:15 PM	0	351	7	0	0	0	0	0	0	456	0	0	0	0	36	0	850
05:30 PM	0	344	3	0	0	0	0	0	0	457	0	0	0	0	20	0	824
05:45 PM	0	292	6	0	0	0	0	0	0	366	0	0	0	0	15	0	679
Total	0	1353	23	0	0	0	0	0	0	1713	0	0	0	0	109	0	3198
Grand Total	0	8198	249	0	0	0	0	0	0	8146	0	0	0	0	393	0	16986
Apprch %	0	97.1	2.9	0	0	0	0	0	0	100	0	0	0	0	100	0	
Total %	0	48.3	1.5	0	0	0	0	0	0	48	0	0	0	0	2.3	0	
Passenger Vehicles	0	7896	239	0	0	0	0	0	0	7817	0	0	0	0	378	0	16330
% Passenger Vehicles	0	96.3	96	0	0	0	0	0	0	96	0	0	0	0	96.2	0	96.1
Heavy Vehicles	0	268	10	0	0	0	0	0	0	296	0	0	0	0	15	0	589
% Heavy Vehicles	0	3.3	4	0	0	0	0	0	0	3.6	0	0	0	0	3.8	0	3.5
Buses	0	34	0	0	0	0	0	0	0	33	0	0	0	0	0	0	67
% Buses	0	0.4	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.4

Short Counts

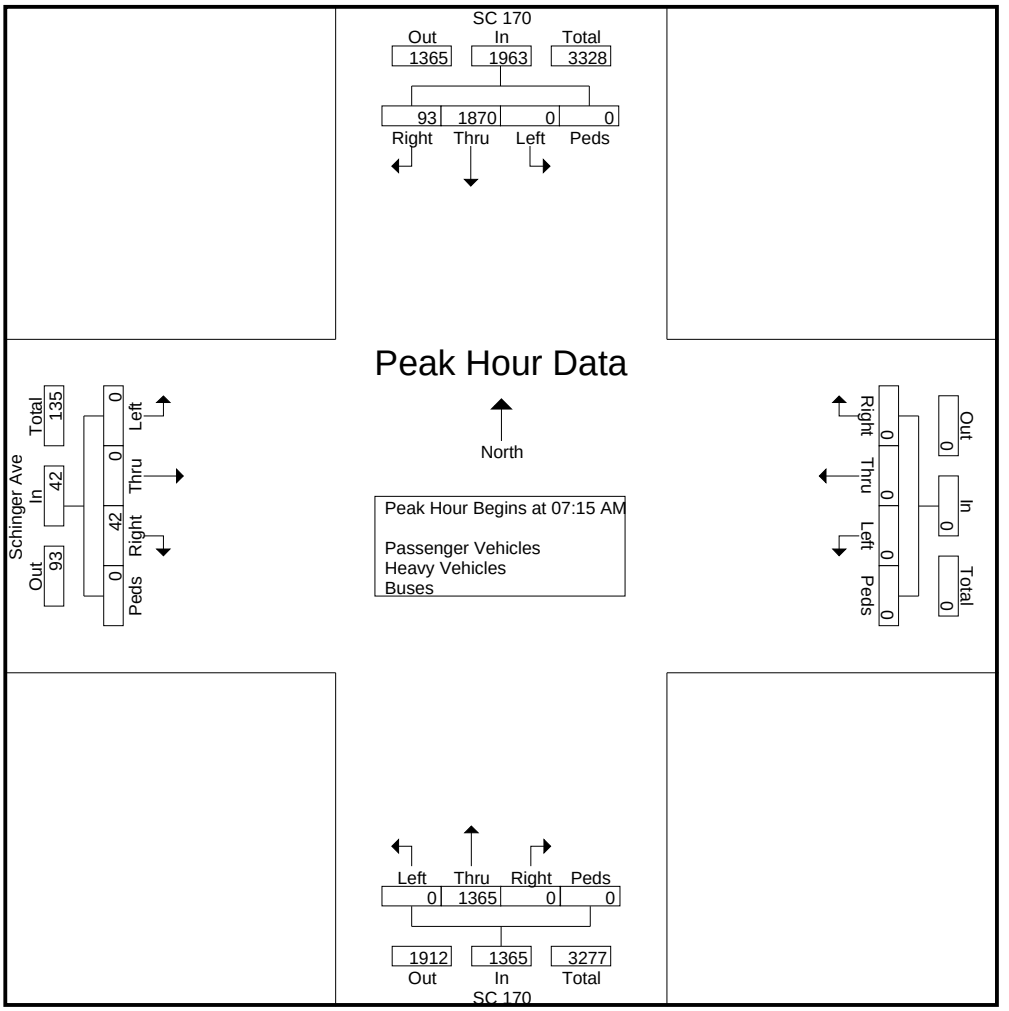
File Name : SC 170 @ Schinger Ave
Site Code :
Start Date : 10/11/2017
Page No : 2



Short Counts

File Name : SC 170 @ Schinger Ave
Site Code :
Start Date : 10/11/2017
Page No : 3

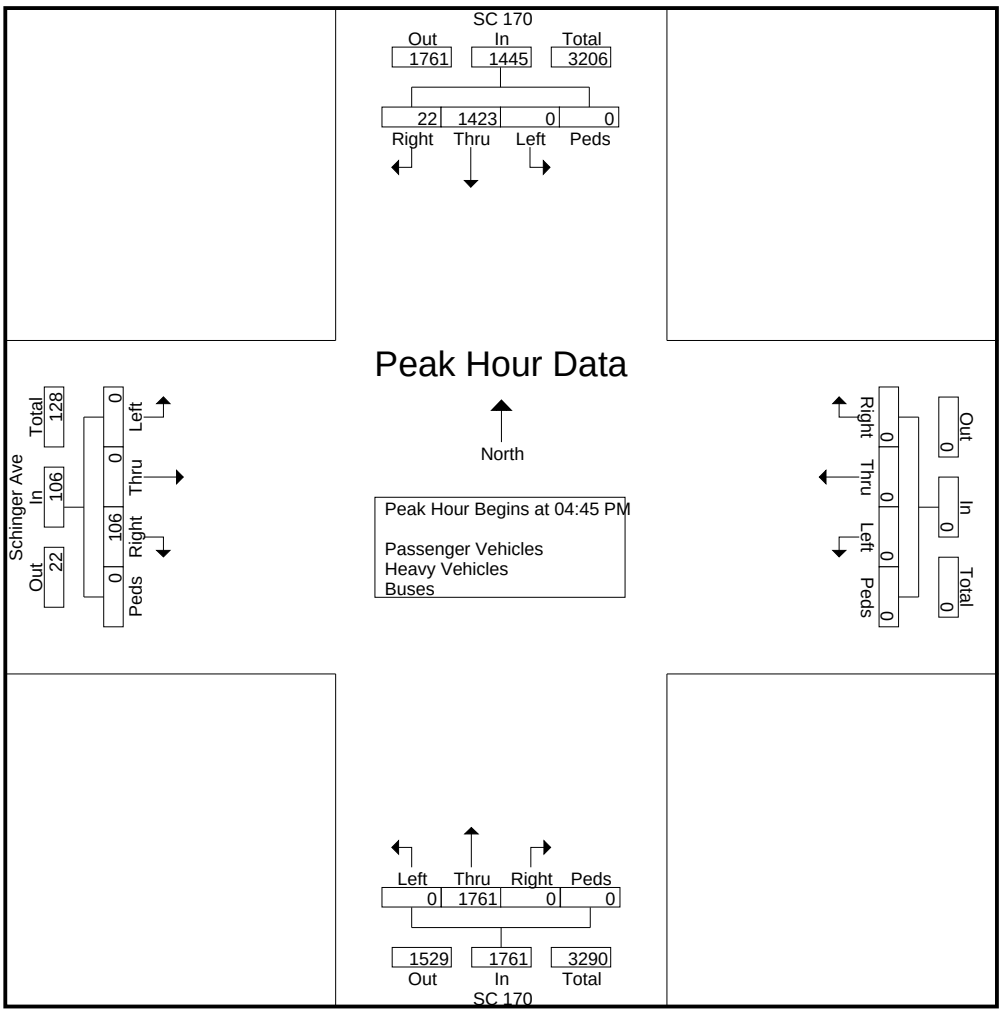
	SC 170 From North					From East					SC 170 From South					Schinger Ave From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	444	11	0	455	0	0	0	0	0	0	379	0	0	379	0	0	**19**	0	**19**	853
07:30 AM	0	**525**	23	0	**548**	0	0	0	0	0	0	**386**	0	0	**386**	0	0	7	0	7	**941**
07:45 AM	0	463	**41**	0	504	0	0	0	0	0	0	300	0	0	300	0	0	3	0	3	807
08:00 AM	0	438	18	0	456	0	0	0	0	0	0	300	0	0	300	0	0	13	0	13	769
Total Volume	0	1870	93	0	1963	0	0	0	0	0	0	1365	0	0	1365	0	0	42	0	42	3370
% App. Total	0	95.3	4.7	0		0	0	0	0		0	100	0	0		0	0	100	0		
PHF	.000	.890	.567	.000	.896	.000	.000	.000	.000	.000	.000	.884	.000	.000	.884	.000	.000	.553	.000	.553	.895



Short Counts

File Name : SC 170 @ Schinger Ave
Site Code :
Start Date : 10/11/2017
Page No : 4

	SC 170 From North					From East					SC 170 From South					Schinger Ave From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	362	5	0	367	0	0	0	0	0	0	414	0	0	414	0	0	12	0	12	793
05:00 PM	0	**366**	**7**	0	**373**	0	0	0	0	0	0	434	0	0	434	0	0	**38**	0	**38**	845
05:15 PM	0	351	7	0	358	0	0	0	0	0	0	456	0	0	456	0	0	36	0	36	**850**
05:30 PM	0	344	3	0	347	0	0	0	0	0	0	**457**	0	0	**457**	0	0	20	0	20	824
Total Volume	0	1423	22	0	1445	0	0	0	0	0	0	1761	0	0	1761	0	0	106	0	106	3312
% App. Total	0	98.5	1.5	0		0	0	0	0		0	100	0	0		0	0	100	0		
PHF	.000	.972	.786	.000	.968	.000	.000	.000	.000	.000	.000	.963	.000	.000	.963	.000	.000	.697	.000	.697	.974



INTERSECTION VOLUME DEVELOPMENT

Phase 1
SC 170 at Argent Boulevard
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Argent Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	17	1,090	0	0	1,599	434	350	0	33			
Pedestrians		0			0			0				
Heavy Vehicle %		3.9%			4.0%			5.4%				
Peak Hour Factor		0.77			0.93			0.79				
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	1.50%	1.50%	1.50%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.030	1.030	1.030	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	18	1,154	0	0	1,693	460	361	0	34	0	0	0
New Project Trips												
Trip Distribution IN					18%							
Trip Distribution OUT		18%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	20	0	0	6	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	20	0	0	6	0	0	0	0	0	0	0
2019 Buildout Total	**18**	**1,174**	**0**	**0**	**1,699**	**460**	**361**	**0**	**34**	**0**	**0**	**0**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Argent Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	32	1,627		0	1,244	398	437	0	58			
Pedestrians		0			0			0				
Heavy Vehicle %		3.9%			4.0%			5.4%			0.0%	
Peak Hour Factor		0.95			0.96			0.95				
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	34	1,723	0	0	1,317	421	463	0	61	0	0	0
New Project Trips												
Trip Distribution IN					18%							
Trip Distribution OUT		18%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	13	0	0	23	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	13	0	0	23	0	0	0	0	0	0	0
2019 Buildout Total	**34**	**1,736**	**0**	**0**	**1,340**	**421**	**463**	**0**	**61**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

Phase 1
Argent Boulevard at Jasper Station Road/Short Cut Drive
AM PEAK HOUR

Description	Argent Boulevard Northbound			Argent Boulevard Southbound			Jasper Station Road Eastbound			Short Cut Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	11	346	110	8	368	40	25	39	14	42	39	7
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.8%			5.0%			7.8%			5.3%	
Peak Hour Factor		0.88			0.90			0.70			0.88	
Annual Growth Rate	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Growth Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
Approved Development Traffic												
2019 Background Traffic	11	356	113	8	379	41	26	40	14	43	40	7
New Project Trips												
Trip Distribution IN			4%					2%				
Trip Distribution OUT										4%	2%	
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	1	0	0	0	0	1	0	4	2	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	1	0	0	0	0	1	0	4	2	0
2019 Buildout Total	**11**	**356**	**114**	**8**	**379**	**41**	**26**	**41**	**14**	**47**	**42**	**7**

PM PEAK HOUR

Description	Argent Boulevard Northbound			Argent Boulevard Southbound			Jasper Station Road Eastbound			Short Cut Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	17	448	45	8	392	28	23	37	13	39	31	12
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.8%			5.0%			7.8%			5.3%	
Peak Hour Factor		0.91			0.89			0.76			0.89	
Annual Growth Rate	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Growth Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
Approved Development Traffic												
2019 Background Traffic	18	462	46	8	404	29	24	38	13	40	32	12
New Project Trips												
Trip Distribution IN			4%					2%				
Trip Distribution OUT										4%	2%	
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	5	0	0	0	0	3	0	3	1	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	5	0	0	0	0	3	0	3	1	0
2019 Buildout Total	**18**	**462**	**51**	**8**	**404**	**29**	**24**	**41**	**13**	**43**	**33**	**12**

INTERSECTION VOLUME DEVELOPMENT

Phase 1
SC 170 at Short Cut Drive/Pritcher Point Road
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Short Cut Drive Eastbound			Pritcher Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	93	1,121	7	0	1,712	13	0	0	163	2	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		3.3%			3.9%			5.5%			30.0%	
Peak Hour Factor		0.82			0.93			0.85			0.50	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	98	1,187	7	0	1,813	14	0	0	173	2	0	0
New Project Trips												
Trip Distribution IN			25%	14%	4%			6%				
Trip Distribution OUT	2%	7%								38%	4%	11%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	2	8	10	5	1	0	0	2	0	43	4	12
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	2	8	10	5	1	0	0	2	0	43	4	12
2019 Buildout Total	**100**	**1,195**	**17**	**5**	**1,814**	**14**	**0**	**2**	**173**	**45**	**4**	**12**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Short Cut Drive Eastbound			Pritcher Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	74	1,674	0	0	1,266	10	3	0	98	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		3.3%			3.9%			5.5%			30.0%	
Peak Hour Factor		0.96			0.94			0.90			0.00	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	78	1,772	0	0	1,340	11	3	0	104	0	0	0
New Project Trips												
Trip Distribution IN			25%	14%	4%			6%				
Trip Distribution OUT	2%	7%								38%	4%	11%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	1	5	33	17	6	0	0	8	0	28	3	8
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	1	5	33	17	6	0	0	8	0	28	3	8
2019 Buildout Total	**79**	**1,777**	**33**	**17**	**1,346**	**11**	**3**	**8**	**104**	**28**	**3**	**8**

INTERSECTION VOLUME DEVELOPMENT

Phase 1
SC 170 at Red Oaks Drive/Site Access #2
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Red Oaks Drive Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	24	1,187	0	0	1,794	38	11	0	31	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.5%			4.0%			12.8%			2.0%	
Peak Hour Factor		0.81			0.93			0.81			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	25	1,257	0	0	1,900	40	12	0	33	0	0	0
New Project Trips												
Trip Distribution IN		25%	25%		4%				1%			
Trip Distribution OUT	1%	4%			38%					4%		5%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	3	14	9	0	44	0	0	0	0	4	0	6
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	3	14	9	0	44	0	0	0	0	4	0	6
2019 Buildout Total	**28**	**1,271**	**9**	**0**	**1,944**	**40**	**12**	**0**	**33**	**4**	**0**	**6**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Red Oaks Drive Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	44	1,690	0	0	1,372	18	42	0	32	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.5%			4.0%			12.8%			2.0%	
Peak Hour Factor		0.95			0.94			0.88			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	47	1,789	0	0	1,453	19	44	0	34	0	0	0
New Project Trips												
Trip Distribution IN		25%	25%		4%				1%			
Trip Distribution OUT	1%	4%			38%					4%		5%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	1	35	31	0	34	0	0	0	1	3	0	4
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	1	35	31	0	34	0	0	0	1	3	0	4
2019 Buildout Total	**48**	**1,824**	**31**	**0**	**1,487**	**19**	**44**	**0**	**35**	**3**	**0**	**4**

INTERSECTION VOLUME DEVELOPMENT

Phase 1
SC 170 at Cherry Point Road/Pearlstine Drive
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Pearlstine Drive Eastbound			Cherry Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	20	1,068	186	125	1,711	20	8	0	21	201	0	95
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.4%			4.0%			17.0%			3.5%	
Peak Hour Factor		0.80			0.93			0.48			0.57	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
2019 Background Traffic	21	1,131	197	132	1,812	21	8	0	22	213	0	101
New Project Trips												
Trip Distribution IN		50%	24%	5%				1%				
Trip Distribution OUT					42%					32%	1%	5%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	20	9	3	46	0	0	0	0	36	1	6
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	20	9	3	46	0	0	0	0	36	1	6
2019 Buildout Total	**21**	**1,151**	**206**	**135**	**1,858**	**21**	**8**	**0**	**22**	**249**	**1**	**107**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Pearlstine Drive Eastbound			Cherry Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	9	1,761	16	9	1,413	3	10	0	22	16	0	14
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.4%			4.0%			17.0%			3.5%	
Peak Hour Factor		0.95			0.95			0.62			0.83	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
2019 Background Traffic	10	1,865	17	10	1,496	3	11	0	23	17	0	15
New Project Trips												
Trip Distribution IN		50%	24%	5%				1%				
Trip Distribution OUT					42%					32%	1%	5%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	63	30	6	31	1	0	1	0	23	1	4
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	63	30	6	31	1	0	1	0	23	1	4
2019 Buildout Total	**10**	**1,928**	**47**	**16**	**1,527**	**4**	**11**	**1**	**23**	**40**	**1**	**19**

INTERSECTION VOLUME DEVELOPMENT

Phase 1
SC 170 at Schinger Avenue
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Schinger Avenue. Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	0	1,365	0	0	1,870	93	0	0	42	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			3.8%			2.0%	
Peak Hour Factor		0.88			0.90			0.55			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	0	1,445	0	0	1,980	98	0	0	44	0	0	0
New Project Trips												
Trip Distribution IN		74%										
Trip Distribution OUT					73%	1%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	29	0	0	81	1	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	29	0	0	81	1	0	0	0	0	0	0
2019 Buildout Total	**0**	**1,474**	**0**	**0**	**2,061**	**99**	**0**	**0**	**44**	**0**	**0**	**0**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Schinger Avenue. Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	0	1,761	0	0	1,423	22	0	0	106	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			3.8%			2.0%	
Peak Hour Factor		0.96			0.97			0.70			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	0	1,865	0	0	1,507	23	0	0	112	0	0	0
New Project Trips												
Trip Distribution IN		74%										
Trip Distribution OUT					73%	1%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	93	0	0	53	1	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	93	0	0	53	1	0	0	0	0	0	0
2019 Buildout Total	**0**	**1,958**	**0**	**0**	**1,560**	**24**	**0**	**0**	**112**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

Phase 1
SC 170 at River Walk Boulevard
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			River Walk Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	163	1,279	0	0	1,769	73	10	0	73	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.1%			3.8%			2.0%			2.0%	
Peak Hour Factor		0.86			0.94			0.63			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	173	1,354	0	0	1,873	77	11	0	77	0	0	0
New Project Trips												
Trip Distribution IN		69%					5%					
Trip Distribution OUT					69%	4%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	26	0	0	77	4	3	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	26	0	0	77	4	3	0	0	0	0	0
2019 Buildout Total	**173**	**1,380**	**0**	**0**	**1,950**	**81**	**14**	**0**	**77**	**0**	**0**	**0**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			River Walk Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	96	1,617	0	0	1,422	47	56	0	178	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.1%			3.8%			2.0%			2.0%	
Peak Hour Factor		0.95			0.94			0.74			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	102	1,712	0	0	1,506	50	59	0	188	0	0	0
New Project Trips												
Trip Distribution IN		69%					5%					
Trip Distribution OUT					69%	4%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	87	0	0	50	3	6	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	87	0	0	50	3	6	0	0	0	0	0
2019 Buildout Total	**102**	**1,799**	**0**	**0**	**1,556**	**53**	**65**	**0**	**188**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

Phase 1
SC 170 at Tidewatch Drive
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Tidewatch Drive Eastbound			Tidewatch Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	30	1,389	15	3	1,764	34	27	10	12	17	10	10
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			2.6%			3.5%	
Peak Hour Factor		0.83			0.90			0.77			0.58	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	32	1,471	16	3	1,868	36	29	11	13	18	11	11
New Project Trips												
Trip Distribution IN		65%					2%					2%
Trip Distribution OUT				2%	65%	2%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	24	0	2	73	2	1	0	0	0	0	2
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	24	0	2	73	2	1	0	0	0	0	2
2019 Buildout Total	**32**	**1,495**	**16**	**5**	**1,941**	**38**	**30**	**11**	**13**	**18**	**11**	**13**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Tidewatch Drive Eastbound			Tidewatch Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	15	1,708	43	1	1,511	17	20	26	23	35	11	4
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			2.6%			3.5%	
Peak Hour Factor		0.96			0.87			0.86			0.66	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059	1.059
Approved Development Traffic												
2019 Background Traffic	16	1,809	46	1	1,600	18	21	28	24	37	12	4
New Project Trips												
Trip Distribution IN		65%					2%					2%
Trip Distribution OUT				2%	65%	2%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	81	0	1	48	1	3	0	0	0	0	3
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	81	0	1	48	1	3	0	0	0	0	3
2019 Buildout Total	**16**	**1,890**	**46**	**2**	**1,648**	**19**	**24**	**28**	**24**	**37**	**12**	**7**

INTERSECTION VOLUME DEVELOPMENT

Phase 2
SC 170 at Argent Boulevard
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Argent Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	17	1,090	0	0	1,599	434	350	0	33			
Pedestrians		0			0			0				
Heavy Vehicle %		3.9%			4.0%			5.4%				
Peak Hour Factor		0.77			0.93			0.79				
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	1.50%	1.50%	1.50%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.061	1.061	1.061	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	19	1,222	0	0	1,793	487	371	0	35	0	0	0
New Project Trips												
Trip Distribution IN					18%							
Trip Distribution OUT		18%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	62	0	0	20	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	62	0	0	20	0	0	0	0	0	0	0
2021 Buildout Total	**19**	**1,284**	**0**	**0**	**1,813**	**487**	**371**	**0**	**35**	**0**	**0**	**0**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Argent Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	32	1,627		0	1,244	398	437	0	58			
Pedestrians		0			0			0				
Heavy Vehicle %		3.9%			4.0%			5.4%			0.0%	
Peak Hour Factor		0.95			0.96			0.95				
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	36	1,824	0	0	1,395	446	490	0	65	0	0	0
New Project Trips												
Trip Distribution IN					18%							
Trip Distribution OUT		18%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	40	0	0	69	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	40	0	0	69	0	0	0	0	0	0	0
2021 Buildout Total	**36**	**1,864**	**0**	**0**	**1,464**	**446**	**490**	**0**	**65**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

Phase 2

Argent Boulevard at Jasper Station Road/Short Cut Drive

AM PEAK HOUR

Description	Argent Boulevard Northbound			Argent Boulevard Southbound			Jasper Station Road Eastbound			Short Cut Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	11	346	110	8	368	40	25	39	14	42	39	7
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.8%			5.0%			7.8%			5.3%	
Peak Hour Factor		0.88			0.90			0.70			0.88	
Annual Growth Rate	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Growth Factor	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061
Approved Development Traffic												
2021 Background Traffic	12	367	117	8	391	42	27	41	15	45	41	7
New Project Trips												
Trip Distribution IN			4%					2%				
Trip Distribution OUT										4%	2%	
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	5	0	0	0	0	2	0	14	7	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	5	0	0	0	0	2	0	14	7	0
2021 Buildout Total	**12**	**367**	**122**	**8**	**391**	**42**	**27**	**43**	**15**	**59**	**48**	**7**

PM PEAK HOUR

Description	Argent Boulevard Northbound			Argent Boulevard Southbound			Jasper Station Road Eastbound			Short Cut Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	17	448	45	8	392	28	23	37	13	39	31	12
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.8%			5.0%			7.8%			5.3%	
Peak Hour Factor		0.91			0.89			0.76			0.89	
Annual Growth Rate	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Growth Factor	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061	1.061
Approved Development Traffic												
2021 Background Traffic	18	475	48	8	416	30	24	39	14	41	33	13
New Project Trips												
Trip Distribution IN			4%					2%				
Trip Distribution OUT										4%	2%	
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	15	0	0	0	0	7	0	8	5	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	15	0	0	0	0	7	0	8	5	0
2021 Buildout Total	**18**	**475**	**63**	**8**	**416**	**30**	**24**	**46**	**14**	**49**	**38**	**13**

INTERSECTION VOLUME DEVELOPMENT

Phase 2
SC 170 at Short Cut Drive/Pritcher Point Road
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Short Cut Drive Eastbound			Pritcher Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	93	1,121	7	0	1,712	13	0	0	163	2	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		3.3%			3.9%			5.5%			30.0%	
Peak Hour Factor		0.82			0.93			0.85			0.50	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	104	1,257	8	0	1,919	15	0	0	183	2	0	0
New Project Trips												
Trip Distribution IN			25%	14%	4%			6%				
Trip Distribution OUT	2%	7%								38%	4%	11%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	6	24	29	15	5	0	0	7	0	132	15	38
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	6	24	29	15	5	0	0	7	0	132	15	38
2021 Buildout Total	**110**	**1,281**	**37**	**15**	**1,924**	**15**	**0**	**7**	**183**	**134**	**15**	**38**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Short Cut Drive Eastbound			Pritcher Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	74	1,674	0	0	1,266	10	3	0	98	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		3.3%			3.9%			5.5%			30.0%	
Peak Hour Factor		0.96			0.94			0.90			0.00	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	83	1,877	0	0	1,419	11	3	0	110	0	0	0
New Project Trips												
Trip Distribution IN			25%	14%	4%			6%				
Trip Distribution OUT	2%	7%								38%	4%	11%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	4	15	97	53	16	0	0	22	0	86	9	25
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	4	15	97	53	16	0	0	22	0	86	9	25
2021 Buildout Total	**87**	**1,892**	**97**	**53**	**1,435**	**11**	**3**	**22**	**110**	**86**	**9**	**25**

INTERSECTION VOLUME DEVELOPMENT

Phase 2
SC 170 at Red Oaks Drive/Site Access #2
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Red Oaks Drive Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	24	1,187	0	0	1,794	38	11	0	31	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.5%			4.0%			12.8%			2.0%	
Peak Hour Factor		0.81			0.93			0.81			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	27	1,331	0	0	2,011	43	12	0	35	0	0	0
New Project Trips												
Trip Distribution IN		25%	25%		4%				1%			
Trip Distribution OUT	1%	4%			38%					4%		5%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	3	43	29	0	137	0	0	0	1	14	0	16
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	3	43	29	0	137	0	0	0	1	14	0	16
2021 Buildout Total	**30**	**1,374**	**29**	**0**	**2,148**	**43**	**12**	**0**	**36**	**14**	**0**	**16**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Red Oaks Drive Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	44	1,690	0	0	1,372	18	42	0	32	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.5%			4.0%			12.8%			2.0%	
Peak Hour Factor		0.95			0.94			0.88			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	49	1,895	0	0	1,538	20	47	0	36	0	0	0
New Project Trips												
Trip Distribution IN		25%	25%		4%				1%			
Trip Distribution OUT	1%	4%			38%					4%		5%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	2	105	96	0	102	0	0	0	4	9	0	11
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	2	105	96	0	102	0	0	0	4	9	0	11
2021 Buildout Total	**51**	**2,000**	**96**	**0**	**1,640**	**20**	**47**	**0**	**40**	**9**	**0**	**11**

INTERSECTION VOLUME DEVELOPMENT

Phase 2
SC 170 at Cherry Point Road/Pearlstine Drive
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Pearlstine Drive Eastbound			Cherry Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	20	1,068	186	125	1,711	20	8	0	21	201	0	95
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.4%			4.0%			17.0%			3.5%	
Peak Hour Factor		0.80			0.93			0.48			0.57	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
2021 Background Traffic	22	1,197	209	140	1,918	22	9	0	24	225	0	107
New Project Trips												
Trip Distribution IN		50%	24%	5%				1%				
Trip Distribution OUT					42%					32%	1%	5%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	58	29	6	146	0	0	1	0	112	3	17
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	58	29	6	146	0	0	1	0	112	3	17
2021 Buildout Total	**22**	**1,255**	**238**	**146**	**2,064**	**22**	**9**	**1**	**24**	**337**	**3**	**124**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Pearlstine Drive Eastbound			Cherry Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	9	1,761	16	9	1,413	3	10	0	22	16	0	14
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.4%			4.0%			17.0%			3.5%	
Peak Hour Factor		0.95			0.95			0.62			0.83	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
2021 Background Traffic	10	1,974	18	10	1,584	3	11	0	25	18	0	16
New Project Trips												
Trip Distribution IN		50%	24%	5%				1%				
Trip Distribution OUT					42%					32%	1%	5%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	192	93	19	95	1	0	4	0	72	2	11
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	192	93	19	95	1	0	4	0	72	2	11
2021 Buildout Total	**10**	**2,166**	**111**	**29**	**1,679**	**4**	**11**	**4**	**25**	**90**	**2**	**27**

INTERSECTION VOLUME DEVELOPMENT

Phase 2
SC 170 at Schinger Avenue
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Schinger Avenue. Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	0	1,365	0	0	1,870	93	0	0	42	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			3.8%			2.0%	
Peak Hour Factor		0.88			0.90			0.55			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	0	1,530	0	0	2,097	104	0	0	47	0	0	0
New Project Trips												
Trip Distribution IN		74%										
Trip Distribution OUT					73%	1%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	87	0	0	254	4	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	87	0	0	254	4	0	0	0	0	0	0
2021 Buildout Total	**0**	**1,617**	**0**	**0**	**2,351**	**108**	**0**	**0**	**47**	**0**	**0**	**0**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Schinger Avenue. Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	0	1,761	0	0	1,423	22	0	0	106	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			3.8%			2.0%	
Peak Hour Factor		0.96			0.97			0.70			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	0	1,974	0	0	1,595	25	0	0	119	0	0	0
New Project Trips												
Trip Distribution IN		74%										
Trip Distribution OUT					73%	1%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	285	0	0	166	1	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	285	0	0	166	1	0	0	0	0	0	0
2021 Buildout Total	**0**	**2,259**	**0**	**0**	**1,761**	**26**	**0**	**0**	**119**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

Phase 2
SC 170 at River Walk Boulevard
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			River Walk Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	163	1,279	0	0	1,769	73	10	0	73	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.1%			3.8%			2.0%			2.0%	
Peak Hour Factor		0.86			0.94			0.63			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	183	1,434	0	0	1,983	82	11	0	82	0	0	0
New Project Trips												
Trip Distribution IN		69%					5%					
Trip Distribution OUT					69%	4%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	80	0	0	240	14	7	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	80	0	0	240	14	7	0	0	0	0	0
2021 Buildout Total	**183**	**1,514**	**0**	**0**	**2,223**	**96**	**18**	**0**	**82**	**0**	**0**	**0**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			River Walk Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	96	1,617	0	0	1,422	47	56	0	178	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.1%			3.8%			2.0%			2.0%	
Peak Hour Factor		0.95			0.94			0.74			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	108	1,813	0	0	1,594	53	63	0	200	0	0	0
New Project Trips												
Trip Distribution IN		69%					5%					
Trip Distribution OUT					69%	4%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	266	0	0	157	9	19	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	266	0	0	157	9	19	0	0	0	0	0
2021 Buildout Total	**108**	**2,079**	**0**	**0**	**1,751**	**62**	**82**	**0**	**200**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

Phase 2
SC 170 at Tidewatch Drive
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Tidewatch Drive Eastbound			Tidewatch Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	30	1,389	15	3	1,764	34	27	10	12	17	10	10
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			2.6%			3.5%	
Peak Hour Factor		0.83			0.90			0.77			0.58	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	34	1,557	17	3	1,978	38	30	11	13	19	11	11
New Project Trips												
Trip Distribution IN		65%					2%					2%
Trip Distribution OUT				2%	65%	2%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	75	0	7	226	7	2	0	0	0	0	3
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	75	0	7	226	7	2	0	0	0	0	3
2021 Buildout Total	**34**	**1,632**	**17**	**10**	**2,204**	**45**	**32**	**11**	**13**	**19**	**11**	**14**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Tidewatch Drive Eastbound			Tidewatch Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	15	1,708	43	1	1,511	17	20	26	23	35	11	4
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			2.6%			3.5%	
Peak Hour Factor		0.96			0.87			0.86			0.66	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121	1.121
Approved Development Traffic												
2021 Background Traffic	17	1,915	48	1	1,694	19	22	29	26	39	12	4
New Project Trips												
Trip Distribution IN		65%					2%					2%
Trip Distribution OUT				2%	65%	2%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	250	0	5	147	5	8	0	0	0	0	8
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	250	0	5	147	5	8	0	0	0	0	8
2021 Buildout Total	**17**	**2,165**	**48**	**6**	**1,841**	**24**	**30**	**29**	**26**	**39**	**12**	**12**

INTERSECTION VOLUME DEVELOPMENT

SC 170 at Argent Boulevard
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Argent Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	17	1,090	0	0	1,599	434	350	0	33			
Pedestrians		0			0			0				
Heavy Vehicle %		3.9%			4.0%			5.4%				
Peak Hour Factor		0.77			0.93			0.79				
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	1.50%	1.50%	1.50%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.093	1.093	1.093	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	20	1,294	0	0	1,898	515	383	0	36	0	0	0
New Project Trips												
Trip Distribution IN					18%							
Trip Distribution OUT		18%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	84	0	0	58	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	84	0	0	58	0	0	0	0	0	0	0
2023 Buildout Total	**20**	**1,378**	**0**	**0**	**1,956**	**515**	**383**	**0**	**36**	**0**	**0**	**0**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Argent Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	32	1,627		0	1,244	398	437	0	58			
Pedestrians		0			0			0				
Heavy Vehicle %		3.9%			4.0%			5.4%			0.0%	
Peak Hour Factor		0.95			0.96			0.95				
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	38	1,931	0	0	1,477	472	519	0	69	0	0	0
New Project Trips												
Trip Distribution IN					18%							
Trip Distribution OUT		18%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	83	0	0	99	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	83	0	0	99	0	0	0	0	0	0	0
2023 Buildout Total	**38**	**2,014**	**0**	**0**	**1,576**	**472**	**519**	**0**	**69**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

Argent Boulevard at Jasper Station Road/Short Cut Drive
AM PEAK HOUR

Description	Argent Boulevard Northbound			Argent Boulevard Southbound			Jasper Station Road Eastbound			Short Cut Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	11	346	110	8	368	40	25	39	14	42	39	7
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.8%			5.0%			7.8%			5.3%	
Peak Hour Factor		0.88			0.90			0.70			0.88	
Annual Growth Rate	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Growth Factor	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093
Approved Development Traffic												
2023 Background Traffic	12	378	120	9	402	44	27	43	15	46	43	8
New Project Trips												
Trip Distribution IN			4%					2%				
Trip Distribution OUT										4%	2%	
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	13	0	0	0	0	6	0	19	9	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	13	0	0	0	0	6	0	19	9	0
2023 Buildout Total	**12**	**378**	**133**	**9**	**402**	**44**	**27**	**49**	**15**	**65**	**52**	**8**

PM PEAK HOUR

Description	Argent Boulevard Northbound			Argent Boulevard Southbound			Jasper Station Road Eastbound			Short Cut Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	17	448	45	8	392	28	23	37	13	39	31	12
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.8%			5.0%			7.8%			5.3%	
Peak Hour Factor		0.91			0.89			0.76			0.89	
Annual Growth Rate	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Growth Factor	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093	1.093
Approved Development Traffic												
2023 Background Traffic	19	490	49	9	429	31	25	40	14	43	34	13
New Project Trips												
Trip Distribution IN			4%					2%				
Trip Distribution OUT										4%	2%	
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	0	21	0	0	0	0	11	0	18	9	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	21	0	0	0	0	11	0	18	9	0
2023 Buildout Total	**19**	**490**	**70**	**9**	**429**	**31**	**25**	**51**	**14**	**61**	**43**	**13**

INTERSECTION VOLUME DEVELOPMENT

SC 170 at Short Cut Drive/Pritcher Point Road
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Short Cut Drive Eastbound			Pritcher Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	93	1,121	7	0	1,712	13	0	0	163	2	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		3.3%			3.9%			5.5%			30.0%	
Peak Hour Factor		0.82			0.93			0.85			0.50	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	110	1,331	8	0	2,032	15	0	0	193	2	0	0
New Project Trips												
Trip Distribution IN			8%	13%	5%			6%				
Trip Distribution OUT	5%	13%								51%	1%	5%
Pass-by Project Trips												
Trip Distribution IN				20%	-20%							
Trip Distribution OUT										20%		15%
New Trips	23	61	26	42	16	0	0	19	0	238	5	23
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	23	61	26	42	16	0	0	19	0	238	5	23
2023 Buildout Total	**133**	**1,392**	**34**	**42**	**2,048**	**15**	**0**	**19**	**193**	**240**	**5**	**23**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Short Cut Drive Eastbound			Pritcher Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	74	1,674	0	0	1,266	10	3	0	98	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		3.3%			3.9%			5.5%			30.0%	
Peak Hour Factor		0.96			0.94			0.90			0.00	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	88	1,987	0	0	1,503	12	4	0	116	0	0	0
New Project Trips												
Trip Distribution IN			8%	13%	5%			6%				
Trip Distribution OUT	5%	13%								51%	1%	5%
Pass-by Project Trips												
Trip Distribution IN				20%	-20%							
Trip Distribution OUT										20%		15%
New Trips	22	60	45	70	29	0	0	32	0	234	5	23
Pass-By Trips	0	0	0	22	-22	0	0	0	0	20	0	15
Total Project Trips	22	60	45	92	7	0	0	32	0	254	5	38
2023 Buildout Total	**110**	**2,047**	**45**	**92**	**1,510**	**12**	**4**	**32**	**116**	**254**	**5**	**38**

INTERSECTION VOLUME DEVELOPMENT

SC 170 at Site Access #1
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			- Eastbound			Site Access #1 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	0	1,198	0	0	1,832	0				0	0	0
Pedestrians		0			0						0	
Heavy Vehicle %		4.5%			4.0%						2.0%	
Peak Hour Factor		0.81			0.93						0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	0	1,422	0	0	2,175	0	0	0	0	0	0	0
New Project Trips												
Trip Distribution IN		8%	23%		5%							
Trip Distribution OUT		6%			51%							12%
Pass-by Project Trips												
Trip Distribution IN		-25%	25%									
Trip Distribution OUT												10%
New Trips	0	54	74	0	254	0	0	0	0	0	0	56
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	54	74	0	254	0	0	0	0	0	0	56
2023 Buildout Total	**0**	**1,476**	**74**	**0**	**2,429**	**0**	**0**	**0**	**0**	**0**	**0**	**56**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			- Eastbound			Site Access #1 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	0	1,732	0	0	1,390	0				0	0	0
Pedestrians		0			0						0	
Heavy Vehicle %		4.5%			4.0%						2.0%	
Peak Hour Factor		0.95			0.94						0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	0	2,056	0	0	1,650	0	0	0	0	0	0	0
New Project Trips												
Trip Distribution IN		8%	23%		5%							
Trip Distribution OUT		6%			51%							12%
Pass-by Project Trips												
Trip Distribution IN		-25%	25%									
Trip Distribution OUT												10%
New Trips	0	72	127	0	263	0	0	0	0	0	0	55
Pass-By Trips	0	-27	27	0	0	0	0	0	0	0	0	10
Total Project Trips	0	45	154	0	263	0	0	0	0	0	0	65
2023 Buildout Total	**0**	**2,101**	**154**	**0**	**1,913**	**0**	**0**	**0**	**0**	**0**	**0**	**65**

INTERSECTION VOLUME DEVELOPMENT

SC 170 at Red Oaks Drive/Site Access #2
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Red Oaks Drive Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	24	1,187	0	0	1,794	38	11	0	31	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.5%			4.0%			12.8%			2.0%	
Peak Hour Factor		0.81			0.93			0.81			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	28	1,409	0	0	2,130	45	13	0	37	0	0	0
New Project Trips												
Trip Distribution IN		31%	26%	1%	4%			1%				
Trip Distribution OUT		2%			51%					4%	1%	4%
Pass-by Project Trips												
Trip Distribution IN		-50%	50%	5%	-5%							
Trip Distribution OUT										5%		50%
New Trips	0	110	84	3	251	0	0	3	0	19	5	18
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	110	84	3	251	0	0	3	0	19	5	18
2023 Buildout Total	**28**	**1,519**	**84**	**3**	**2,381**	**45**	**13**	**3**	**37**	**19**	**5**	**18**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Red Oaks Drive Eastbound			Site Access #2 Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	44	1,690	0	0	1,372	18	42	0	32	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.5%			4.0%			12.8%			2.0%	
Peak Hour Factor		0.95			0.94			0.88			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	52	2,006	0	0	1,629	21	50	0	38	0	0	0
New Project Trips												
Trip Distribution IN		31%	26%	1%	4%			1%				
Trip Distribution OUT		2%			51%					4%	1%	4%
Pass-by Project Trips												
Trip Distribution IN		-50%	50%	5%	-5%							
Trip Distribution OUT										5%		50%
New Trips	0	181	144	6	257	0	0	6	0	18	4	18
Pass-By Trips	0	-55	55	5	-5	0	0	0	0	5	0	50
Total Project Trips	0	126	199	11	252	0	0	6	0	23	4	68
2023 Buildout Total	**52**	**2,132**	**199**	**11**	**1,881**	**21**	**50**	**6**	**38**	**23**	**4**	**68**

INTERSECTION VOLUME DEVELOPMENT

SC 170 at Cherry Point Road/Pearlstine Drive
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Pearlstine Drive Eastbound			Cherry Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	20	1,068	186	125	1,711	20	8	0	21	201	0	95
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.4%			4.0%			17.0%			3.5%	
Peak Hour Factor		0.80			0.93			0.48			0.57	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
2023 Background Traffic	24	1,268	221	148	2,031	24	9	0	25	239	0	113
New Project Trips												
Trip Distribution IN		57%	17%	4%				1%				
Trip Distribution OUT					54%	1%				20%		2%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	185	54	14	253	3	0	3	0	93	0	9
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	185	54	14	253	3	0	3	0	93	0	9
2023 Buildout Total	**24**	**1,453**	**275**	**162**	**2,284**	**27**	**9**	**3**	**25**	**332**	**0**	**122**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Pearlstine Drive Eastbound			Cherry Point Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	9	1,761	16	9	1,413	3	10	0	22	16	0	14
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.4%			4.0%			17.0%			3.5%	
Peak Hour Factor		0.95			0.95			0.62			0.83	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
2023 Background Traffic	11	2,091	19	11	1,677	4	12	0	26	19	0	17
New Project Trips												
Trip Distribution IN		57%	17%	4%				1%				
Trip Distribution OUT					54%	1%				20%		2%
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	315	94	22	247	6	0	6	0	92	0	10
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	315	94	22	247	6	0	6	0	92	0	10
2023 Buildout Total	**11**	**2,406**	**113**	**33**	**1,924**	**10**	**12**	**6**	**26**	**111**	**0**	**27**

INTERSECTION VOLUME DEVELOPMENT

SC 170 at Schinger Avenue
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Schinger Avenue. Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	0	1,365	0	0	1,870	93	0	0	42	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			3.8%			2.0%	
Peak Hour Factor		0.88			0.90			0.55			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	0	1,620	0	0	2,220	110	0	0	50	0	0	0
New Project Trips												
Trip Distribution IN		74%										
Trip Distribution OUT					73%	1%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	239	0	0	341	5	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	239	0	0	341	5	0	0	0	0	0	0
2023 Buildout Total	**0**	**1,859**	**0**	**0**	**2,561**	**115**	**0**	**0**	**50**	**0**	**0**	**0**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Schinger Avenue. Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	0	1,761	0	0	1,423	22	0	0	106	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			3.8%			2.0%	
Peak Hour Factor		0.96			0.97			0.70			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	0	2,091	0	0	1,689	26	0	0	126	0	0	0
New Project Trips												
Trip Distribution IN		74%										
Trip Distribution OUT					73%	1%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	409	0	0	335	4	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	409	0	0	335	4	0	0	0	0	0	0
2023 Buildout Total	**0**	**2,500**	**0**	**0**	**2,024**	**30**	**0**	**0**	**126**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

SC 170 at River Walk Boulevard
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			River Walk Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	163	1,279	0	0	1,769	73	10	0	73	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.1%			3.8%			2.0%			2.0%	
Peak Hour Factor		0.86			0.94			0.63			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	193	1,518	0	0	2,100	87	12	0	87	0	0	0
New Project Trips												
Trip Distribution IN		69%					5%					
Trip Distribution OUT					69%	4%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	222	0	0	322	19	17	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	222	0	0	322	19	17	0	0	0	0	0
2023 Buildout Total	**193**	**1,740**	**0**	**0**	**2,422**	**106**	**29**	**0**	**87**	**0**	**0**	**0**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			River Walk Boulevard Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	96	1,617	0	0	1,422	47	56	0	178	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.1%			3.8%			2.0%			2.0%	
Peak Hour Factor		0.95			0.94			0.74			0.90	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	114	1,920	0	0	1,688	56	66	0	211	0	0	0
New Project Trips												
Trip Distribution IN		69%					5%					
Trip Distribution OUT					69%	4%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	381	0	0	317	18	28	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	381	0	0	317	18	28	0	0	0	0	0
2023 Buildout Total	**114**	**2,301**	**0**	**0**	**2,005**	**74**	**94**	**0**	**211**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

SC 170 at Tidewatch Drive
AM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Tidewatch Drive Eastbound			Tidewatch Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	30	1,389	15	3	1,764	34	27	10	12	17	10	10
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			2.6%			3.5%	
Peak Hour Factor		0.83			0.90			0.77			0.58	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	36	1,649	18	4	2,094	40	32	12	14	20	12	12
New Project Trips												
Trip Distribution IN		65%					2%					2%
Trip Distribution OUT				2%	65%	2%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	209	0	9	303	10	6	0	0	0	0	7
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	209	0	9	303	10	6	0	0	0	0	7
2023 Buildout Total	**36**	**1,858**	**18**	**13**	**2,397**	**50**	**38**	**12**	**14**	**20**	**12**	**19**

PM PEAK HOUR

Description	SC 170 Northbound			SC 170 Southbound			Tidewatch Drive Eastbound			Tidewatch Drive Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	15	1,708	43	1	1,511	17	20	26	23	35	11	4
Pedestrians		0			0			0			0	
Heavy Vehicle %		4.0%			3.7%			2.6%			3.5%	
Peak Hour Factor		0.96			0.87			0.86			0.66	
Annual Growth Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Growth Factor	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187
Approved Development Traffic												
2023 Background Traffic	18	2,028	51	1	1,794	20	24	31	27	42	13	5
New Project Trips												
Trip Distribution IN		65%					2%					2%
Trip Distribution OUT				2%	65%	2%						
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	359	0	9	298	10	11	0	0	0	0	11
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	359	0	9	298	10	11	0	0	0	0	11
2023 Buildout Total	**18**	**2,387**	**51**	**10**	**2,092**	**30**	**35**	**31**	**27**	**42**	**13**	**16**

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	163	2	0	0	93	1121	7	0	1712	13
Future Vol, veh/h	0	0	163	2	0	0	93	1121	7	0	1712	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	50	50	50	82	82	82	93	93	93
Heavy Vehicles, %	6	6	6	30	30	30	3	3	3	4	4	4
Mvmt Flow	0	0	192	4	0	0	113	1367	9	0	1841	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2758	3450	927	2518	3453	688	1855	0	0	1376	0	0
Stage 1	1848	1848	-	1598	1598	-	-	-	-	-	-	-
Stage 2	910	1602	-	920	1855	-	-	-	-	-	-	-
Critical Hdwy	7.62	6.62	7.02	8.1	7.1	7.5	4.16	-	-	4.18	-	-
Critical Hdwy Stg 1	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.56	4.06	3.36	3.8	4.3	3.6	2.23	-	-	2.24	-	-
Pot Cap-1 Maneuver	9	6	263	9	4	330	318	-	-	484	-	-
Stage 1	74	118	-	84	125	-	-	-	-	-	-	-
Stage 2	288	157	-	241	90	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	7	4	263	~ 2	3	330	318	-	-	484	-	-
Mov Cap-2 Maneuver	7	4	-	~ 2	3	-	-	-	-	-	-	-
Stage 1	48	118	-	54	81	-	-	-	-	-	-	-
Stage 2	186	101	-	65	90	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	48.3	$ 3322.5	1.7	0
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	318	-	-	263	2	484	-	-
HCM Lane V/C Ratio	0.357	-	-	0.729	2	-	-	-
HCM Control Delay (s)	22.5	-	-	48.3	$ 3322.5	0	-	-
HCM Lane LOS	C	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	1.6	-	-	5.1	1.4	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	21	201	0	95	20	1068	186	125	1711	20
Future Volume (veh/h)	8	0	21	201	0	95	20	1068	186	125	1711	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	17	0	44	353	0	167	25	1335	0	134	1840	22
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.48	0.48	0.48	0.57	0.57	0.57	0.80	0.80	0.80	0.93	0.93	0.93
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	46	20	51	185	0	277	154	1775	794	289	1929	23
Arrive On Green	0.18	0.00	0.18	0.18	0.00	0.18	0.04	0.51	0.00	0.08	0.55	0.55
Sat Flow, veh/h	0	110	284	634	0	1553	1740	3471	1553	1740	3513	42
Grp Volume(v), veh/h	61	0	0	353	0	167	25	1335	0	134	907	955
Grp Sat Flow(s),veh/h/ln	394	0	0	634	0	1553	1740	1736	1553	1740	1736	1820
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	10.0	0.7	30.7	0.0	3.4	49.7	50.0
Cycle Q Clear(g_c), s	17.9	0.0	0.0	17.9	0.0	10.0	0.7	30.7	0.0	3.4	49.7	50.0
Prop In Lane	0.28		0.72	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	116	0	0	185	0	277	154	1775	794	289	953	999
V/C Ratio(X)	0.53	0.00	0.00	1.91	0.00	0.60	0.16	0.75	0.00	0.46	0.95	0.96
Avail Cap(c_a), veh/h	116	0	0	185	0	277	297	1775	794	367	953	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	0.0	44.8	0.0	38.0	22.1	19.5	0.0	16.2	21.4	21.5
Incr Delay (d2), s/veh	4.3	0.0	0.0	430.2	0.0	3.7	0.5	3.0	0.0	1.2	19.7	19.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	27.1	0.0	4.5	0.4	15.4	0.0	1.8	28.9	30.4
LnGrp Delay(d),s/veh	40.6	0.0	0.0	475.0	0.0	41.7	22.6	22.5	0.0	17.4	41.1	41.0
LnGrp LOS	D			F		D	C	C		B	D	D
Approach Vol, veh/h		61			520			1360			1996	
Approach Delay, s/veh		40.6			335.8			22.5			39.5	
Approach LOS		D			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	63.8		25.0	15.5	60.0		25.0
Change Period (Y+Rc), s	7.7	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	12.3	* 51		17.9	12.3	* 51		17.9
Max Q Clear Time (g_c+I1), s	2.7	52.0		19.9	5.4	32.7		19.9
Green Ext Time (p_c), s	0.0	0.0		0.0	0.2	17.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	72.8
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	42	0	1365	1870	93
Future Vol, veh/h	0	42	0	1365	1870	93
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	88	88	90	90
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	76	0	1551	2078	103

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1091	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	207	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	207	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.2	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	207	-	-
HCM Lane V/C Ratio	-	0.369	-	-
HCM Control Delay (s)	-	32.2	-	-
HCM Lane LOS	-	D	-	-
HCM 95th %tile Q(veh)	-	1.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	10	12	17	10	10	30	1389	15	3	1764	34
Future Volume (veh/h)	27	10	12	17	10	10	30	1389	15	3	1764	34
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	35	13	16	29	17	17	36	1673	0	3	1960	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.77	0.77	0.77	0.58	0.58	0.58	0.83	0.83	0.83	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	202	200	170	204	198	169	161	2613	1169	218	2613	1169
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.75	0.75	0.00	0.75	0.75	0.00
Sat Flow, veh/h	1356	1845	1568	1349	1827	1553	219	3471	1553	289	3471	1553
Grp Volume(v), veh/h	35	13	16	29	17	17	36	1673	0	3	1960	0
Grp Sat Flow(s),veh/h/ln	1356	1845	1568	1349	1827	1553	219	1736	1553	289	1736	1553
Q Serve(g_s), s	2.6	0.7	1.0	2.1	0.9	1.1	12.1	24.9	0.0	0.5	34.7	0.0
Cycle Q Clear(g_c), s	3.5	0.7	1.0	2.8	0.9	1.1	46.8	24.9	0.0	25.4	34.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	200	170	204	198	169	161	2613	1169	218	2613	1169
V/C Ratio(X)	0.17	0.06	0.09	0.14	0.09	0.10	0.22	0.64	0.00	0.01	0.75	0.00
Avail Cap(c_a), veh/h	414	488	415	415	483	411	161	2613	1169	218	2613	1169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.9	43.3	43.4	44.5	43.4	43.4	20.9	6.4	0.0	12.4	7.6	0.0
Incr Delay (d2), s/veh	0.4	0.1	0.2	0.3	0.2	0.3	3.2	1.2	0.0	0.1	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.4	0.4	0.8	0.5	0.5	0.9	12.1	0.0	0.1	17.1	0.0
LnGrp Delay(d),s/veh	45.3	43.4	43.6	44.9	43.6	43.7	24.1	7.6	0.0	12.6	9.6	0.0
LnGrp LOS	D	D	D	D	D	D	C	A		B	A	
Approach Vol, veh/h		64			63			1709			1963	
Approach Delay, s/veh		44.5			44.2			7.9			9.6	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.0		18.1		90.0		18.1
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 81		28.6		* 81		28.6
Max Q Clear Time (g_c+I1), s		36.7		4.8		48.8		5.5
Green Ext Time (p_c), s		40.5		0.4		30.3		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	20.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	73	163	1279	1769	73
Future Vol, veh/h	10	73	163	1279	1769	73
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	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	86	86	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	16	116	190	1487	1882	78

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3044	980	1960	0	-	0
Stage 1	1921	-	-	-	-	-
Stage 2	1123	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 10	249	286	-	-	-
Stage 1	101	-	-	-	-	-
Stage 2	273	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 3	249	286	-	-	-
Mov Cap-2 Maneuver	~ 3	-	-	-	-	-
Stage 1	101	-	-	-	-	-
Stage 2	92	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 523.7	4.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	286	-	3	249	-	-
HCM Lane V/C Ratio	0.663	-	5.291	0.465	-	-
HCM Control Delay (s)	39.2	$	4117.1	31.4	-	-
HCM Lane LOS	E	-	F	D	-	-
HCM 95th %tile Q(veh)	4.3	-	3.4	2.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	31	24	1187	1794	38
Future Vol, veh/h	11	31	24	1187	1794	38
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	-	250	-	-	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	93	93
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	14	38	30	1465	1929	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2721	965	1929	0	-	0
Stage 1	1929	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.2	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.25	-	-	-
Pot Cap-1 Maneuver	17	255	290	-	-	-
Stage 1	99	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	15	255	290	-	-	-
Mov Cap-2 Maneuver	15	-	-	-	-	-
Stage 1	99	-	-	-	-	-
Stage 2	365	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	279.1	0.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	290	-	49	-	-
HCM Lane V/C Ratio	0.102	-	1.058	-	-
HCM Control Delay (s)	18.8	-	279.1	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0.3	-	4.6	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	350	33	17	1090	1599	434
Future Volume (veh/h)	350	33	17	1090	1599	434
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	443	0	22	1416	1719	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.79	0.79	0.77	0.77	0.93	0.93
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	367	328	143	2132	1697	759
Arrive On Green	0.21	0.00	0.03	0.61	0.49	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	443	0	22	1416	1719	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	18.1	0.0	0.5	22.6	41.6	0.0
Cycle Q Clear(g_c), s	18.1	0.0	0.5	22.6	41.6	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	367	328	143	2132	1697	759
V/C Ratio(X)	1.21	0.00	0.15	0.66	1.01	0.00
Avail Cap(c_a), veh/h	367	328	232	2132	1697	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	0.0	20.0	10.7	21.7	0.0
Incr Delay (d2), s/veh	116.2	0.0	0.5	1.7	25.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	0.0	0.3	11.1	25.7	0.0
LnGrp Delay(d),s/veh	149.6	0.0	20.5	12.3	46.8	0.0
LnGrp LOS	F		C	B	F	
Approach Vol, veh/h	443			1438	1719	
Approach Delay, s/veh	149.6			12.5	46.8	
Approach LOS	F			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.6	49.4				60.0		25.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.2	37.2				52.2		18.1
Max Q Clear Time (g_c+I1), s	2.5	43.6				24.6		20.1
Green Ext Time (p_c), s	0.0	0.0				23.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.7
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↰	↱
Traffic Vol, veh/h	25	39	14	42	39	7	11	346	110	8	368	40
Future Vol, veh/h	25	39	14	42	39	7	11	346	110	8	368	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	88	88	88	88	88	88	90	90	90
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	36	56	20	48	44	8	13	393	125	9	409	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	934	970	409	946	908	456	409	0	0	518	0	0
Stage 1	427	427	-	481	481	-	-	-	-	-	-	-
Stage 2	507	543	-	465	427	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	240	247	630	238	272	598	1134	-	-	1033	-	-
Stage 1	594	575	-	561	549	-	-	-	-	-	-	-
Stage 2	537	510	-	572	580	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	202	240	630	185	264	598	1134	-	-	1033	-	-
Mov Cap-2 Maneuver	202	240	-	185	264	-	-	-	-	-	-	-
Stage 1	584	568	-	552	540	-	-	-	-	-	-	-
Stage 2	479	502	-	494	573	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	30	32.6	0.2	0.2
HCM LOS	D	D		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1134	-	-	253	228	1033	-	-
HCM Lane V/C Ratio	0.011	-	-	0.44	0.439	0.009	-	-
HCM Control Delay (s)	8.2	0	-	30	32.6	8.5	0	-
HCM Lane LOS	A	A	-	D	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.1	2.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	98	0	0	0	74	1674	0	0	1266	10
Future Vol, veh/h	3	0	98	0	0	0	74	1674	0	0	1266	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	25	25	25	96	96	96	94	94	94
Heavy Vehicles, %	6	6	6	30	30	30	3	3	3	4	4	4
Mvmt Flow	3	0	109	0	0	0	77	1744	0	0	1347	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2378	3250	679	2571	3255	872	1357	0	0	1744	0	0
Stage 1	1352	1352	-	1898	1898	-	-	-	-	-	-	-
Stage 2	1026	1898	-	673	1357	-	-	-	-	-	-	-
Critical Hdwy	7.62	6.62	7.02	8.1	7.1	7.5	4.16	-	-	4.18	-	-
Critical Hdwy Stg 1	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.56	4.06	3.36	3.8	4.3	3.6	2.23	-	-	2.24	-	-
Pot Cap-1 Maneuver	17	8	385	8	5	244	498	-	-	348	-	-
Stage 1	153	209	-	52	85	-	-	-	-	-	-	-
Stage 2	244	111	-	351	170	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	15	7	385	5	4	244	498	-	-	348	-	-
Mov Cap-2 Maneuver	15	7	-	5	4	-	-	-	-	-	-	-
Stage 1	129	209	-	44	72	-	-	-	-	-	-	-
Stage 2	206	94	-	252	170	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.7	0	0.6	0
HCM LOS	E	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	222	-	348	-	-
HCM Lane V/C Ratio	0.155	-	-	0.506	-	-	-	-
HCM Control Delay (s)	13.5	-	-	36.7	0	0	-	-
HCM Lane LOS	B	-	-	E	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	2.6	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	22	16	0	14	9	1761	16	9	1413	3
Future Volume (veh/h)	10	0	22	16	0	14	9	1761	16	9	1413	3
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	16	0	35	19	0	17	9	1854	0	9	1487	3
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.62	0.62	0.62	0.83	0.83	0.83	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	80	13	78	212	0	129	236	2144	959	161	2195	4
Arrive On Green	0.08	0.00	0.08	0.08	0.00	0.08	0.02	0.62	0.00	0.02	0.62	0.62
Sat Flow, veh/h	273	156	937	1504	0	1553	1740	3471	1553	1740	3554	7
Grp Volume(v), veh/h	51	0	0	19	0	17	9	1854	0	9	726	764
Grp Sat Flow(s),veh/h/ln	1366	0	0	1504	0	1553	1740	1736	1553	1740	1736	1826
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	0.8	0.2	36.5	0.0	0.2	22.9	22.9
Cycle Q Clear(g_c), s	2.8	0.0	0.0	0.8	0.0	0.8	0.2	36.5	0.0	0.2	22.9	22.9
Prop In Lane	0.31		0.69	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	171	0	0	212	0	129	236	2144	959	161	1072	1127
V/C Ratio(X)	0.30	0.00	0.00	0.09	0.00	0.13	0.04	0.86	0.00	0.06	0.68	0.68
Avail Cap(c_a), veh/h	345	0	0	389	0	334	462	2144	959	387	1072	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	0.0	35.4	0.0	35.4	8.8	13.1	0.0	13.9	10.5	10.5
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.2	0.0	0.5	0.1	5.0	0.0	0.1	3.4	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	0.4	0.0	0.4	0.1	18.7	0.0	0.1	11.9	12.5
LnGrp Delay(d),s/veh	37.2	0.0	0.0	35.5	0.0	35.8	8.9	18.0	0.0	14.0	13.9	13.7
LnGrp LOS	D			D		D	A	B		B	B	B
Approach Vol, veh/h		51			36			1863			1499	
Approach Delay, s/veh		37.2			35.7			18.0			13.8	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.2	60.0		14.0	9.2	60.0		14.0
Change Period (Y+Rc), s	7.7	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	12.3	* 51		17.9	12.3	* 51		17.9
Max Q Clear Time (g_c+I1), s	2.2	24.9		2.8	2.2	38.5		4.8
Green Ext Time (p_c), s	0.0	23.9		0.3	0.0	12.2		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	106	0	1761	1423	22
Future Vol, veh/h	0	106	0	1761	1423	22
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	96	96	97	97
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	151	0	1834	1467	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	745	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	352	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	352	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	352	-	-
HCM Lane V/C Ratio	-	0.43	-	-
HCM Control Delay (s)	-	22.7	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	2.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	26	23	35	11	4	15	1708	43	1	1511	17
Future Volume (veh/h)	20	26	23	35	11	4	15	1708	43	1	1511	17
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	23	30	27	53	17	6	16	1779	0	1	1737	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.66	0.66	0.66	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	205	203	172	192	201	171	203	2609	1167	195	2609	1167
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.75	0.75	0.00	0.75	0.75	0.00
Sat Flow, veh/h	1369	1845	1568	1315	1827	1553	272	3471	1553	261	3471	1553
Grp Volume(v), veh/h	23	30	27	53	17	6	16	1779	0	1	1737	0
Grp Sat Flow(s),veh/h/ln	1369	1845	1568	1315	1827	1553	272	1736	1553	261	1736	1553
Q Serve(g_s), s	1.7	1.6	1.7	4.1	0.9	0.4	3.4	28.3	0.0	0.2	26.9	0.0
Cycle Q Clear(g_c), s	2.6	1.6	1.7	5.7	0.9	0.4	30.3	28.3	0.0	28.5	26.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	203	172	192	201	171	203	2609	1167	195	2609	1167
V/C Ratio(X)	0.11	0.15	0.16	0.28	0.08	0.04	0.08	0.68	0.00	0.01	0.67	0.00
Avail Cap(c_a), veh/h	417	487	414	394	483	410	203	2609	1167	195	2609	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.5	43.6	43.7	46.2	43.3	43.1	14.2	6.8	0.0	14.1	6.7	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.4	0.8	0.2	0.1	0.8	1.5	0.0	0.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.8	0.8	1.5	0.5	0.2	0.3	13.9	0.0	0.0	13.0	0.0
LnGrp Delay(d),s/veh	44.7	44.0	44.1	47.0	43.5	43.2	15.0	8.3	0.0	14.2	8.0	0.0
LnGrp LOS	D	D	D	D	D	D	B	A		B	A	
Approach Vol, veh/h		80			76			1795			1738	
Approach Delay, s/veh		44.2			45.9			8.4			8.0	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.0		18.3		90.0		18.3
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 81		28.6		* 81		28.6
Max Q Clear Time (g_c+I1), s		30.5		7.7		32.3		4.6
Green Ext Time (p_c), s		43.8		0.5		42.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Notes

Intersection	
Int Delay, s/veh	50.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	178	96	1617	1422	47
Future Vol, veh/h	56	178	96	1617	1422	47
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	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	95	95	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	76	241	101	1702	1513	50

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2591	781	1563	0	-	0
Stage 1	1538	-	-	-	-	-
Stage 2	1053	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 20	338	409	-	-	-
Stage 1	163	-	-	-	-	-
Stage 2	297	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 15	338	409	-	-	-
Mov Cap-2 Maneuver	~ 15	-	-	-	-	-
Stage 1	163	-	-	-	-	-
Stage 2	224	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 585.9	0.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	409	-	15	338	-	-
HCM Lane V/C Ratio	0.247	-	5.045	0.712	-	-
HCM Control Delay (s)	16.7	-	$ 2327	38.1	-	-
HCM Lane LOS	C	-	F	E	-	-
HCM 95th %tile Q(veh)	1	-	10.3	5.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	18.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	42	32	44	1690	1372	18
Future Vol, veh/h	42	32	44	1690	1372	18
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	-	250	-	-	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	95	95	94	94
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	48	36	46	1779	1460	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2442	730	1460	0	-	0
Stage 1	1460	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.2	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.25	-	-	-
Pot Cap-1 Maneuver	~ 26	365	444	-	-	-
Stage 1	180	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 23	365	444	-	-	-
Mov Cap-2 Maneuver	~ 23	-	-	-	-	-
Stage 1	180	-	-	-	-	-
Stage 2	290	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 754	0.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	444	-	39	-	-
HCM Lane V/C Ratio	0.104	-	2.156	-	-
HCM Control Delay (s)	14.1	-	$ 754	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.3	-	9.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	437	58	32	1627	1244	398
Future Volume (veh/h)	437	58	32	1627	1244	398
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	460	0	34	1713	1296	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.96	0.96
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	367	328	232	2132	1655	741
Arrive On Green	0.21	0.00	0.05	0.61	0.48	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	460	0	34	1713	1296	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	18.1	0.0	0.8	32.0	26.5	0.0
Cycle Q Clear(g_c), s	18.1	0.0	0.8	32.0	26.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	367	328	232	2132	1655	741
V/C Ratio(X)	1.25	0.00	0.15	0.80	0.78	0.00
Avail Cap(c_a), veh/h	367	328	301	2132	1655	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	0.0	14.1	12.5	18.6	0.0
Incr Delay (d2), s/veh	134.6	0.0	0.3	3.3	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	0.0	0.4	16.0	13.5	0.0
LnGrp Delay(d),s/veh	168.1	0.0	14.4	15.8	22.3	0.0
LnGrp LOS	F		B	B	C	
Approach Vol, veh/h	460			1747	1296	
Approach Delay, s/veh	168.1			15.8	22.3	
Approach LOS	F			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.7	48.3				60.0		25.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.2	37.2				52.2		18.1
Max Q Clear Time (g_c+I1), s	2.8	28.5				34.0		20.1
Green Ext Time (p_c), s	0.0	8.1				16.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.2
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		⇕			⇕			⇕			↰	↱
Traffic Vol, veh/h	23	37	13	39	31	12	17	448	45	8	392	28
Future Vol, veh/h	23	37	13	39	31	12	17	448	45	8	392	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	89	89	89	91	91	91	89	89	89
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	30	49	17	44	35	13	19	492	49	9	440	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1037	1037	440	1045	1012	517	440	0	0	542	0	0
Stage 1	458	458	-	554	554	-	-	-	-	-	-	-
Stage 2	579	579	-	491	458	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	204	226	605	204	236	552	1104	-	-	1012	-	-
Stage 1	571	557	-	511	509	-	-	-	-	-	-	-
Stage 2	490	491	-	554	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	171	218	605	160	227	552	1104	-	-	1012	-	-
Mov Cap-2 Maneuver	171	218	-	160	227	-	-	-	-	-	-	-
Stage 1	557	550	-	498	496	-	-	-	-	-	-	-
Stage 2	433	479	-	485	555	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	32.6	36.4	0.3	0.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1104	-	-	224	204	1012	-	-
HCM Lane V/C Ratio	0.017	-	-	0.429	0.452	0.009	-	-
HCM Control Delay (s)	8.3	0	-	32.6	36.4	8.6	0	-
HCM Lane LOS	A	A	-	D	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2	2.1	0	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	173	2	0	0	98	1187	7	0	1813	14
Future Vol, veh/h	0	0	173	2	0	0	98	1187	7	0	1813	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	150	175	-	250	250	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	50	50	50	82	82	82	93	93	93
Heavy Vehicles, %	6	6	6	30	30	30	3	3	3	4	4	4
Mvmt Flow	0	0	204	4	0	0	120	1448	9	0	1949	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2920	3644	982	2662	3652	724	1965	0	0	1448	0	0
Stage 1	1957	1957	-	1687	1687	-	-	-	-	-	-	-
Stage 2	963	1687	-	975	1965	-	-	-	-	-	-	-
Critical Hdwy	7.62	6.62	7.02	8.1	7.1	7.5	4.16	-	-	4.18	-	-
Critical Hdwy Stg 1	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.56	4.06	3.36	3.8	4.3	3.6	2.23	-	-	2.24	-	-
Pot Cap-1 Maneuver	6	5	241	7	3	311	288	-	-	454	-	-
Stage 1	63	104	-	73	112	-	-	-	-	-	-	-
Stage 2	267	142	-	222	78	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	4	3	241	~ 1	2	311	288	-	-	454	-	-
Mov Cap-2 Maneuver	28	43	-	76	~ -131	-	-	-	-	-	-	-
Stage 1	37	104	-	43	65	-	-	-	-	-	-	-
Stage 2	156	83	-	35	78	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	68	55	2	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	288	-	-	241	76	-	454	-	-
HCM Lane V/C Ratio	0.415	-	-	0.845	0.053	-	-	-	-
HCM Control Delay (s)	26.1	-	-	68	55	0	0	-	-
HCM Lane LOS	D	-	-	F	F	A	A	-	-
HCM 95th %tile Q(veh)	1.9	-	-	6.7	0.2	-	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	22	213	0	101	21	1131	197	132	1812	21
Future Volume (veh/h)	8	0	22	213	0	101	21	1131	197	132	1812	21
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	17	0	46	374	0	177	26	1414	0	142	1948	23
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.48	0.48	0.48	0.57	0.57	0.57	0.80	0.80	0.80	0.93	0.93	0.93
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	45	20	53	183	0	276	143	1774	794	272	1926	23
Arrive On Green	0.18	0.00	0.18	0.18	0.00	0.18	0.04	0.51	0.00	0.08	0.55	0.55
Sat Flow, veh/h	0	110	299	624	0	1553	1740	3471	1553	1740	3514	41
Grp Volume(v), veh/h	63	0	0	374	0	177	26	1414	0	142	960	1011
Grp Sat Flow(s),veh/h/ln	409	0	0	624	0	1553	1740	1736	1553	1740	1736	1820
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	10.6	0.7	33.8	0.0	3.7	55.1	55.1
Cycle Q Clear(g_c), s	17.9	0.0	0.0	17.9	0.0	10.6	0.7	33.8	0.0	3.7	55.1	55.1
Prop In Lane	0.27		0.73	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	118	0	0	183	0	276	143	1774	794	272	951	997
V/C Ratio(X)	0.53	0.00	0.00	2.05	0.00	0.64	0.18	0.80	0.00	0.52	1.01	1.01
Avail Cap(c_a), veh/h	118	0	0	183	0	276	284	1774	794	349	951	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	0.0	44.8	0.0	38.3	23.4	20.3	0.0	18.3	22.7	22.7
Incr Delay (d2), s/veh	4.5	0.0	0.0	490.2	0.0	4.9	0.6	3.8	0.0	1.5	31.5	31.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	29.9	0.0	4.9	0.4	17.0	0.0	2.1	34.5	36.3
LnGrp Delay(d),s/veh	40.9	0.0	0.0	535.0	0.0	43.2	24.0	24.1	0.0	19.9	54.2	54.6
LnGrp LOS	D			F		D	C	C		B	F	F
Approach Vol, veh/h		63			551			1440			2113	
Approach Delay, s/veh		40.9			377.0			24.1			52.1	
Approach LOS		D			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.8	63.7		25.0	15.5	60.0		25.0
Change Period (Y+Rc), s	7.7	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	12.3	* 51		17.9	12.3	* 51		17.9
Max Q Clear Time (g_c+I1), s	2.7	57.1		19.9	5.7	35.8		19.9
Green Ext Time (p_c), s	0.0	0.0		0.0	0.2	14.7		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		85.2
HCM 2010 LOS		F

Notes

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	44	0	1445	1980	98
Future Vol, veh/h	0	44	0	1445	1980	98
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	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	88	88	90	90
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	80	0	1642	2200	109

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1154	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	187	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	187	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37.9	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	187	-	-
HCM Lane V/C Ratio	-	0.428	-	-
HCM Control Delay (s)	-	37.9	-	-
HCM Lane LOS	-	E	-	-
HCM 95th %tile Q(veh)	-	2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	11	13	18	11	11	32	1471	16	3	1868	36
Future Volume (veh/h)	29	11	13	18	11	11	32	1471	16	3	1868	36
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	38	14	17	31	19	19	39	1772	0	3	2076	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.77	0.77	0.77	0.58	0.58	0.58	0.83	0.83	0.83	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	201	201	171	204	199	169	141	2611	1168	196	2611	1168
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.75	0.75	0.00	0.75	0.75	0.00
Sat Flow, veh/h	1351	1845	1568	1346	1827	1553	195	3471	1553	263	3471	1553
Grp Volume(v), veh/h	38	14	17	31	19	19	39	1772	0	3	2076	0
Grp Sat Flow(s),veh/h/ln	1351	1845	1568	1346	1827	1553	195	1736	1553	263	1736	1553
Q Serve(g_s), s	2.8	0.7	1.1	2.3	1.0	1.2	16.7	28.0	0.0	0.6	39.9	0.0
Cycle Q Clear(g_c), s	3.8	0.7	1.1	3.0	1.0	1.2	56.6	28.0	0.0	28.6	39.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	201	171	204	199	169	141	2611	1168	196	2611	1168
V/C Ratio(X)	0.19	0.07	0.10	0.15	0.10	0.11	0.28	0.68	0.00	0.02	0.80	0.00
Avail Cap(c_a), veh/h	411	488	414	413	483	410	141	2611	1168	196	2611	1168
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.1	43.3	43.4	44.6	43.4	43.5	25.7	6.8	0.0	14.0	8.3	0.0
Incr Delay (d2), s/veh	0.4	0.1	0.3	0.3	0.2	0.3	4.8	1.4	0.0	0.1	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.4	0.5	0.9	0.5	0.5	1.1	13.6	0.0	0.1	19.7	0.0
LnGrp Delay(d),s/veh	45.6	43.4	43.7	45.0	43.6	43.8	30.5	8.2	0.0	14.2	10.9	0.0
LnGrp LOS	D	D	D	D	D	D	C	A		B	B	
Approach Vol, veh/h		69			69			1811			2079	
Approach Delay, s/veh		44.7			44.3			8.7			10.9	
Approach LOS		D			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.0		18.2		90.0		18.2
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 81		28.6		* 81		28.6
Max Q Clear Time (g_c+I1), s		41.9		5.0		58.6		5.8
Green Ext Time (p_c), s		37.1		0.4		22.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	77	173	1354	1873	77
Future Vol, veh/h	11	77	173	1354	1873	77
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	300	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	86	86	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	17	122	201	1574	1993	82

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3224	1037	2074	0	-	0
Stage 1	2034	-	-	-	-	-
Stage 2	1190	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 7	228	257	-	-	-
Stage 1	87	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 2	228	257	-	-	-
Mov Cap-2 Maneuver	42	-	-	-	-	-
Stage 1	87	-	-	-	-	-
Stage 2	55	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	50.7	6.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	257	-	42	228	-	-
HCM Lane V/C Ratio	0.783	-	0.416	0.536	-	-
HCM Control Delay (s)	55.7	-	141.8	37.7	-	-
HCM Lane LOS	F	-	F	E	-	-
HCM 95th %tile Q(veh)	5.9	-	1.4	2.9	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	33	25	1257	1900	40
Future Vol, veh/h	12	33	25	1257	1900	40
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	-	250	-	-	225
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	93	93
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	15	41	31	1552	2043	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2881	1022	2043	0	-	0
Stage 1	2043	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.2	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.25	-	-	-
Pot Cap-1 Maneuver	~ 13	233	261	-	-	-
Stage 1	86	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 11	233	261	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	86	-	-	-	-	-
Stage 2	339	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	47.2	0.4	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	261	-	139	-	-
HCM Lane V/C Ratio	0.118	-	0.4	-	-
HCM Control Delay (s)	20.6	-	47.2	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.4	-	1.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	361	34	18	1154	1693	460
Future Volume (veh/h)	361	34	18	1154	1693	460
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	457	0	23	1499	1820	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.79	0.79	0.77	0.77	0.93	0.93
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	367	328	145	2132	1693	758
Arrive On Green	0.21	0.00	0.03	0.61	0.49	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	457	0	23	1499	1820	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	18.1	0.0	0.5	24.9	41.5	0.0
Cycle Q Clear(g_c), s	18.1	0.0	0.5	24.9	41.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	367	328	145	2132	1693	758
V/C Ratio(X)	1.25	0.00	0.16	0.70	1.07	0.00
Avail Cap(c_a), veh/h	367	328	232	2132	1693	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	0.0	20.0	11.1	21.8	0.0
Incr Delay (d2), s/veh	131.3	0.0	0.5	2.0	45.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.9	0.0	0.3	12.2	30.4	0.0
LnGrp Delay(d),s/veh	164.8	0.0	20.5	13.1	66.8	0.0
LnGrp LOS	F		C	B	F	
Approach Vol, veh/h	457			1522	1820	
Approach Delay, s/veh	164.8			13.2	66.8	
Approach LOS	F			B	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.7	49.3				60.0		25.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.2	37.2				52.2		18.1
Max Q Clear Time (g_c+I1), s	2.5	43.5				26.9		20.1
Green Ext Time (p_c), s	0.0	0.0				22.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.1
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↰	↱
Traffic Vol, veh/h	26	40	14	43	40	7	11	356	113	8	356	41
Future Vol, veh/h	26	40	14	43	40	7	11	356	113	8	356	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	88	88	88	88	88	88	90	90	90
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	37	57	20	49	45	8	13	405	128	9	396	46

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	933	971	396	946	907	469	396	0	0	533	0	0
Stage 1	413	413	-	494	494	-	-	-	-	-	-	-
Stage 2	520	558	-	452	413	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	240	247	640	238	272	588	1146	-	-	1020	-	-
Stage 1	605	583	-	551	542	-	-	-	-	-	-	-
Stage 2	528	502	-	581	588	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	201	240	640	184	264	588	1146	-	-	1020	-	-
Mov Cap-2 Maneuver	201	240	-	184	264	-	-	-	-	-	-	-
Stage 1	595	576	-	542	533	-	-	-	-	-	-	-
Stage 2	469	494	-	501	581	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	30.6	33.2	0.2	0.2
HCM LOS	D	D		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1146	-	-	252	227	1020	-	-
HCM Lane V/C Ratio	0.011	-	-	0.454	0.451	0.009	-	-
HCM Control Delay (s)	8.2	0	-	30.6	33.2	8.6	0	-
HCM Lane LOS	A	A	-	D	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.2	2.2	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	104	0	0	0	78	1772	0	0	1340	11
Future Vol, veh/h	3	0	104	0	0	0	78	1772	0	0	1340	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	150	175	-	250	250	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	25	25	25	96	96	96	94	94	94
Heavy Vehicles, %	6	6	6	30	30	30	3	3	3	4	4	4
Mvmt Flow	3	0	116	0	0	0	81	1846	0	0	1426	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2516	3439	719	2721	3445	923	1437	0	0	1846	0	0
Stage 1	1431	1431	-	2008	2008	-	-	-	-	-	-	-
Stage 2	1085	2008	-	713	1437	-	-	-	-	-	-	-
Critical Hdwy	7.62	6.62	7.02	8.1	7.1	7.5	4.16	-	-	4.18	-	-
Critical Hdwy Stg 1	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.56	4.06	3.36	3.8	4.3	3.6	2.23	-	-	2.24	-	-
Pot Cap-1 Maneuver	13	6	362	6	4	224	463	-	-	317	-	-
Stage 1	136	191	-	43	74	-	-	-	-	-	-	-
Stage 2	224	98	-	330	153	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	11	5	362	4	3	224	463	-	-	317	-	-
Mov Cap-2 Maneuver	68	54	-	27	32	-	-	-	-	-	-	-
Stage 1	112	191	-	35	61	-	-	-	-	-	-	-
Stage 2	185	81	-	225	153	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.5	0	0.6	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	463	-	-	323	-	-	317	-	-
HCM Lane V/C Ratio	0.175	-	-	0.368	-	-	-	-	-
HCM Control Delay (s)	14.4	-	-	22.5	0	0	0	-	-
HCM Lane LOS	B	-	-	C	A	A	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	1.6	-	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	0	23	17	0	15	10	1865	17	10	1496	3
Future Volume (veh/h)	11	0	23	17	0	15	10	1865	17	10	1496	3
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	18	0	37	20	0	18	11	1963	0	11	1575	3
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.62	0.62	0.62	0.83	0.83	0.83	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	82	13	78	214	0	131	221	2132	954	148	2183	4
Arrive On Green	0.08	0.00	0.08	0.08	0.00	0.08	0.02	0.61	0.00	0.02	0.61	0.61
Sat Flow, veh/h	291	155	917	1514	0	1553	1740	3471	1553	1740	3555	7
Grp Volume(v), veh/h	55	0	0	20	0	18	11	1963	0	11	769	809
Grp Sat Flow(s),veh/h/ln	1363	0	0	1514	0	1553	1740	1736	1553	1740	1736	1826
Q Serve(g_s), s	0.8	0.0	0.0	0.0	0.0	0.9	0.2	42.0	0.0	0.2	25.7	25.7
Cycle Q Clear(g_c), s	3.1	0.0	0.0	0.9	0.0	0.9	0.2	42.0	0.0	0.2	25.7	25.7
Prop In Lane	0.33		0.67	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	172	0	0	214	0	131	221	2132	954	148	1066	1121
V/C Ratio(X)	0.32	0.00	0.00	0.09	0.00	0.14	0.05	0.92	0.00	0.07	0.72	0.72
Avail Cap(c_a), veh/h	343	0	0	387	0	332	439	2132	954	366	1066	1121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	0.0	0.0	35.5	0.0	35.5	9.7	14.3	0.0	16.7	11.2	11.2
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.2	0.0	0.5	0.1	8.0	0.0	0.2	4.2	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.4	0.0	0.4	0.1	22.3	0.0	0.1	13.4	14.1
LnGrp Delay(d),s/veh	37.5	0.0	0.0	35.7	0.0	35.9	9.8	22.3	0.0	16.9	15.4	15.2
LnGrp LOS	D			D		D	A	C		B	B	B
Approach Vol, veh/h		55			38			1974			1589	
Approach Delay, s/veh		37.5			35.8			22.3			15.3	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	60.0		14.2	9.5	60.0		14.2
Change Period (Y+Rc), s	7.7	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	12.3	* 51		17.9	12.3	* 51		17.9
Max Q Clear Time (g_c+I1), s	2.2	27.7		2.9	2.2	44.0		5.1
Green Ext Time (p_c), s	0.0	22.1		0.3	0.0	7.2		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	112	0	1865	1507	23
Future Vol, veh/h	0	112	0	1865	1507	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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	96	96	97	97
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	160	0	1943	1554	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	789	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	329	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	329	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.9	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	329	-	-
HCM Lane V/C Ratio	-	0.486	-	-
HCM Control Delay (s)	-	25.9	-	-
HCM Lane LOS	-	D	-	-
HCM 95th %tile Q(veh)	-	2.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	28	24	37	12	4	16	1809	46	1	1600	18
Future Volume (veh/h)	21	28	24	37	12	4	16	1809	46	1	1600	18
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	24	33	28	56	18	6	17	1884	0	1	1839	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.66	0.66	0.66	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	205	203	172	189	201	171	183	2609	1167	174	2609	1167
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.75	0.75	0.00	0.75	0.75	0.00
Sat Flow, veh/h	1368	1845	1568	1310	1827	1553	246	3471	1553	236	3471	1553
Grp Volume(v), veh/h	24	33	28	56	18	6	17	1884	0	1	1839	0
Grp Sat Flow(s),veh/h/ln	1368	1845	1568	1310	1827	1553	246	1736	1553	236	1736	1553
Q Serve(g_s), s	1.7	1.8	1.8	4.4	1.0	0.4	4.2	32.0	0.0	0.3	30.3	0.0
Cycle Q Clear(g_c), s	2.7	1.8	1.8	6.1	1.0	0.4	34.6	32.0	0.0	32.2	30.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	203	172	189	201	171	183	2609	1167	174	2609	1167
V/C Ratio(X)	0.12	0.16	0.16	0.30	0.09	0.04	0.09	0.72	0.00	0.01	0.70	0.00
Avail Cap(c_a), veh/h	416	487	414	391	482	410	183	2609	1167	174	2609	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.5	43.7	43.7	46.5	43.3	43.1	16.2	7.3	0.0	16.1	7.1	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.4	0.9	0.2	0.1	1.0	1.8	0.0	0.1	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	0.8	1.6	0.5	0.2	0.3	15.6	0.0	0.0	14.9	0.0
LnGrp Delay(d),s/veh	44.8	44.1	44.1	47.3	43.5	43.1	17.3	9.1	0.0	16.1	8.7	0.0
LnGrp LOS	D	D	D	D	D	D	B	A		B	A	
Approach Vol, veh/h		85			80			1901			1840	
Approach Delay, s/veh		44.3			46.2			9.2			8.7	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.0		18.3		90.0		18.3
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 81		28.6		* 81		28.6
Max Q Clear Time (g_c+I1), s		34.2		8.1		36.6		4.7
Green Ext Time (p_c), s		42.6		0.5		40.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.5
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	75

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	59	188	102	1712	1506	50
Future Vol, veh/h	59	188	102	1712	1506	50
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	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	95	95	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	80	254	107	1802	1602	53

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2745	828	1655	0	-	0
Stage 1	1629	-	-	-	-	-
Stage 2	1116	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 16	314	377	-	-	-
Stage 1	146	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 11	314	377	-	-	-
Mov Cap-2 Maneuver	~ 11	-	-	-	-	-
Stage 1	146	-	-	-	-	-
Stage 2	197	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 870.8	1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	377	-	11	314	-	-
HCM Lane V/C Ratio	0.285	-	7.248	0.809	-	-
HCM Control Delay (s)	18.3	-	$ 3482.8	51.1	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.2	-	11.2	6.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	34	47	1789	1453	19
Future Vol, veh/h	44	34	47	1789	1453	19
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	-	250	-	-	225
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	95	95	94	94
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	50	39	49	1883	1546	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2587	773	1546	0	-	0
Stage 1	1546	-	-	-	-	-
Stage 2	1041	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.2	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.25	-	-	-
Pot Cap-1 Maneuver	~ 21	342	411	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 18	342	411	-	-	-
Mov Cap-2 Maneuver	99	-	-	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	265	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	64.4	0.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	411	-	143	-	-
HCM Lane V/C Ratio	0.12	-	0.62	-	-
HCM Control Delay (s)	15	-	64.4	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.4	-	3.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	463	61	34	1723	1317	421
Future Volume (veh/h)	463	61	34	1723	1317	421
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	487	0	36	1814	1372	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.96	0.96
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	367	328	218	2132	1649	738
Arrive On Green	0.21	0.00	0.05	0.61	0.48	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	487	0	36	1814	1372	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	18.1	0.0	0.8	35.9	29.2	0.0
Cycle Q Clear(g_c), s	18.1	0.0	0.8	35.9	29.2	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	367	328	218	2132	1649	738
V/C Ratio(X)	1.33	0.00	0.17	0.85	0.83	0.00
Avail Cap(c_a), veh/h	367	328	283	2132	1649	738
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	0.0	15.2	13.3	19.4	0.0
Incr Delay (d2), s/veh	164.9	0.0	0.4	4.5	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.4	0.0	0.4	18.2	15.1	0.0
LnGrp Delay(d),s/veh	198.4	0.0	15.6	17.8	24.4	0.0
LnGrp LOS	F		B	B	C	
Approach Vol, veh/h	487			1850	1372	
Approach Delay, s/veh	198.4			17.7	24.4	
Approach LOS	F			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.8	48.2				60.0		25.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.2	37.2				52.2		18.1
Max Q Clear Time (g_c+I1), s	2.8	31.2				37.9		20.1
Green Ext Time (p_c), s	0.0	5.8				13.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.9
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	24	38	13	40	32	12	18	462	46	8	404	29
Future Vol, veh/h	24	38	13	40	32	12	18	462	46	8	404	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	89	89	89	91	91	91	89	89	89
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	32	50	17	45	36	13	20	508	51	9	454	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1069	1070	454	1078	1045	533	454	0	0	558	0	0
Stage 1	472	472	-	573	573	-	-	-	-	-	-	-
Stage 2	597	598	-	505	472	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	194	216	594	194	226	541	1091	-	-	998	-	-
Stage 1	561	549	-	499	499	-	-	-	-	-	-	-
Stage 2	479	481	-	544	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	160	208	594	149	217	541	1091	-	-	998	-	-
Mov Cap-2 Maneuver	160	208	-	149	217	-	-	-	-	-	-	-
Stage 1	546	542	-	486	486	-	-	-	-	-	-	-
Stage 2	421	468	-	474	547	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	36	40.6	0.3	0.2
HCM LOS	E	E		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1091	-	-	212	192	998	-	-
HCM Lane V/C Ratio	0.018	-	-	0.465	0.492	0.009	-	-
HCM Control Delay (s)	8.4	0	-	36	40.6	8.6	0	-
HCM Lane LOS	A	A	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.3	2.4	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	173	45	4	12	100	1195	17	5	1814	14
Future Volume (veh/h)	0	2	173	45	4	12	100	1195	17	5	1814	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1792	1900	1900	1462	1462	1845	1845	1845	1827	1827	1900
Adj Flow Rate, veh/h	0	2	204	50	4	13	122	1457	0	5	1951	15
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.82	0.82	0.82	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	30	30	30	3	3	3	4	4	4
Cap, veh/h	0	3	300	123	7	253	152	2162	967	193	2038	16
Arrive On Green	0.00	0.20	0.20	0.20	0.20	0.20	0.04	0.62	0.00	0.01	0.58	0.58
Sat Flow, veh/h	0	15	1511	323	36	1242	1757	3505	1568	1740	3531	27
Grp Volume(v), veh/h	0	0	206	54	0	13	122	1457	0	5	958	1008
Grp Sat Flow(s),veh/h/ln	0	0	1526	359	0	1242	1757	1752	1568	1740	1736	1822
Q Serve(g_s), s	0.0	0.0	14.6	6.3	0.0	1.0	3.3	31.9	0.0	0.1	60.9	61.2
Cycle Q Clear(g_c), s	0.0	0.0	14.6	20.9	0.0	1.0	3.3	31.9	0.0	0.1	60.9	61.2
Prop In Lane	0.00		0.99	0.93		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	0	0	303	131	0	253	152	2162	967	193	1002	1052
V/C Ratio(X)	0.00	0.00	0.68	0.41	0.00	0.05	0.80	0.67	0.00	0.03	0.96	0.96
Avail Cap(c_a), veh/h	0	0	303	210	0	357	164	2162	967	296	1039	1091
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	43.4	52.5	0.0	37.5	28.2	14.7	0.0	13.4	23.3	23.4
Incr Delay (d2), s/veh	0.0	0.0	6.1	2.1	0.0	0.1	23.2	0.8	0.0	0.1	17.9	17.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	6.7	1.8	0.0	0.3	3.2	15.6	0.0	0.1	34.0	35.7
LnGrp Delay(d),s/veh	0.0	0.0	49.5	54.5	0.0	37.6	51.4	15.5	0.0	13.5	41.2	41.2
LnGrp LOS			D	D		D	D	B		B	D	D
Approach Vol, veh/h		206			67			1579			1971	
Approach Delay, s/veh		49.5			51.3			18.3			41.1	
Approach LOS		D			D			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	79.1		30.2	12.2	74.5		30.2
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0
Max Green Setting (Gmax), s	7.5	68.5		13.0	6.0	70.0		33.0
Max Q Clear Time (g_c+I1), s	2.1	33.9		16.6	5.3	63.2		22.9
Green Ext Time (p_c), s	0.0	31.0		0.0	0.0	4.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	32.3
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	22	249	1	107	21	1151	206	134	1858	21
Future Volume (veh/h)	8	0	22	249	1	107	21	1151	206	134	1858	21
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	17	0	46	277	1	119	26	1439	0	144	1998	23
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.48	0.48	0.48	0.90	0.90	0.90	0.80	0.80	0.80	0.93	0.93	0.93
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	39	17	47	181	0	340	107	1794	802	241	2093	24
Arrive On Green	0.22	0.00	0.22	0.22	0.22	0.22	0.02	0.52	0.00	0.07	0.60	0.60
Sat Flow, veh/h	0	80	216	550	2	1553	1740	3471	1553	1740	3515	40
Grp Volume(v), veh/h	63	0	0	278	0	119	26	1439	0	144	985	1036
Grp Sat Flow(s),veh/h/ln	295	0	0	552	0	1553	1740	1736	1553	1740	1736	1820
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	7.7	0.8	40.5	0.0	4.3	62.8	63.4
Cycle Q Clear(g_c), s	25.9	0.0	0.0	25.9	0.0	7.7	0.8	40.5	0.0	4.3	62.8	63.4
Prop In Lane	0.27		0.73	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	103	0	0	181	0	340	107	1794	802	241	1034	1084
V/C Ratio(X)	0.61	0.00	0.00	1.53	0.00	0.35	0.24	0.80	0.00	0.60	0.95	0.96
Avail Cap(c_a), veh/h	103	0	0	181	0	340	132	1794	802	264	1034	1084
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	0.0	0.0	50.6	0.0	39.1	27.0	23.6	0.0	22.6	22.4	22.5
Incr Delay (d2), s/veh	10.1	0.0	0.0	265.7	0.0	0.6	1.2	3.9	0.0	3.2	18.7	18.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	19.3	0.0	3.3	0.5	20.4	0.0	2.7	35.2	37.0
LnGrp Delay(d),s/veh	49.6	0.0	0.0	316.3	0.0	39.8	28.2	27.5	0.0	25.8	41.0	41.2
LnGrp LOS	D			F		D	C	C		C	D	D
Approach Vol, veh/h		63			397			1465			2165	
Approach Delay, s/veh		49.6			233.4			27.5			40.1	
Approach LOS		D			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	79.1		33.0	15.6	69.8		33.0
Change Period (Y+Rc), s	4.0	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	4.3	* 70		25.9	9.5	* 61		25.9
Max Q Clear Time (g_c+I1), s	2.8	65.4		27.9	6.3	42.5		27.9
Green Ext Time (p_c), s	0.0	4.9		0.0	0.1	17.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	44	0	1474	2061	99
Future Vol, veh/h	0	44	0	1474	2061	99
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	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	88	88	90	90
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	80	0	1675	2290	110

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1200	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	174	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	174	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	42.2	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	174	-	-
HCM Lane V/C Ratio	-	0.46	-	-
HCM Control Delay (s)	-	42.2	-	-
HCM Lane LOS	-	E	-	-
HCM 95th %tile Q(veh)	-	2.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	11	13	18	11	12	32	1495	16	5	1941	38
Future Volume (veh/h)	30	11	13	18	11	12	32	1495	16	5	1941	38
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	39	14	17	31	19	21	39	1801	0	6	2157	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.77	0.77	0.77	0.58	0.58	0.58	0.83	0.83	0.83	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	234	232	197	237	229	195	121	2476	1108	181	2476	1108
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.71	0.71	0.00	0.71	0.71	0.00
Sat Flow, veh/h	1348	1845	1568	1346	1827	1553	180	3471	1553	255	3471	1553
Grp Volume(v), veh/h	39	14	17	31	19	21	39	1801	0	6	2157	0
Grp Sat Flow(s),veh/h/ln	1348	1845	1568	1346	1827	1553	180	1736	1553	255	1736	1553
Q Serve(g_s), s	2.4	0.6	0.9	1.9	0.9	1.1	19.5	28.8	0.0	1.3	43.8	0.0
Cycle Q Clear(g_c), s	3.3	0.6	0.9	2.6	0.9	1.1	63.3	28.8	0.0	30.1	43.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	232	197	237	229	195	121	2476	1108	181	2476	1108
V/C Ratio(X)	0.17	0.06	0.09	0.13	0.08	0.11	0.32	0.73	0.00	0.03	0.87	0.00
Avail Cap(c_a), veh/h	479	567	482	482	561	477	121	2476	1108	181	2476	1108
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.4	35.9	36.0	37.0	36.0	36.1	34.1	8.0	0.0	16.9	10.1	0.0
Incr Delay (d2), s/veh	0.3	0.1	0.2	0.2	0.2	0.2	6.9	1.9	0.0	0.3	4.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.3	0.4	0.7	0.4	0.5	1.2	14.2	0.0	0.1	21.9	0.0
LnGrp Delay(d),s/veh	37.8	36.0	36.2	37.2	36.1	36.3	41.0	9.9	0.0	17.3	14.7	0.0
LnGrp LOS	D	D	D	D	D	D	D	A		B	B	
Approach Vol, veh/h		70			71			1840			2163	
Approach Delay, s/veh		37.0			36.7			10.5			14.7	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		75.0		18.1		75.0		18.1
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 66		28.6		* 66		28.6
Max Q Clear Time (g_c+I1), s		45.8		4.6		65.3		5.3
Green Ext Time (p_c), s		20.0		0.4		1.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	77	173	1380	1950	81
Future Vol, veh/h	14	77	173	1380	1950	81
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	300	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	86	86	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	22	122	201	1605	2074	86

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3323	1080	2161	0	-	0
Stage 1	2118	-	-	-	-	-
Stage 2	1205	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 6	214	238	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 1	214	238	-	-	-
Mov Cap-2 Maneuver	31	-	-	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	38	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	75.8	7.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	238	-	31	214	-	-
HCM Lane V/C Ratio	0.845	-	0.717	0.571	-	-
HCM Control Delay (s)	68.8	-	261.2	42.1	-	-
HCM Lane LOS	F	-	F	E	-	-
HCM 95th %tile Q(veh)	6.7	-	2.4	3.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	33	4	0	6	28	1271	9	0	1944	40
Future Vol, veh/h	12	0	33	4	0	6	28	1271	9	0	1944	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	250	-	150	150	-	225
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	90	90	90	81	81	81	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	4	4	4
Mvmt Flow	15	0	41	4	0	7	35	1569	11	0	2090	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2944	3728	1045	2683	3728	785	2090	0	0	1569	0	0
Stage 1	2090	2090	-	1638	1638	-	-	-	-	-	-	-
Stage 2	854	1638	-	1045	2090	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.2	-	-	4.18	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.25	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 7	4	225	10	4	336	250	-	-	407	-	-
Stage 1	54	93	-	105	157	-	-	-	-	-	-	-
Stage 2	320	157	-	245	93	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 6	3	225	7	3	336	250	-	-	407	-	-
Mov Cap-2 Maneuver	37	52	-	56	38	-	-	-	-	-	-	-
Stage 1	46	93	-	90	135	-	-	-	-	-	-	-
Stage 2	270	135	-	201	93	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	59.7	40.7	0.5	0
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	250	-	-	37	225	112	407	-	-
HCM Lane V/C Ratio	0.138	-	-	0.4	0.181	0.099	-	-	-
HCM Control Delay (s)	21.7	-	-	156.4	24.5	40.7	0	-	-
HCM Lane LOS	C	-	-	F	C	E	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	1.3	0.6	0.3	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	361	34	18	1174	1699	460
Future Volume (veh/h)	361	34	18	1174	1699	460
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	457	0	23	1525	1827	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.79	0.79	0.77	0.77	0.93	0.93
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	444	397	138	2212	1845	825
Arrive On Green	0.26	0.00	0.05	0.64	0.53	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	457	0	23	1525	1827	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	36.1	0.0	0.0	39.8	72.9	0.0
Cycle Q Clear(g_c), s	36.1	0.0	0.0	39.8	72.9	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	444	397	138	2212	1845	825
V/C Ratio(X)	1.03	0.00	0.17	0.69	0.99	0.00
Avail Cap(c_a), veh/h	444	397	138	2212	1845	825
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	0.0	63.2	16.4	32.4	0.0
Incr Delay (d2), s/veh	50.2	0.0	0.6	1.8	18.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.3	0.0	0.9	19.6	39.6	0.0
LnGrp Delay(d),s/veh	102.1	0.0	63.7	18.2	51.3	0.0
LnGrp LOS	F		E	B	D	
Approach Vol, veh/h	457			1548	1827	
Approach Delay, s/veh	102.1			18.9	51.3	
Approach LOS	F			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.8	82.2				97.0		43.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.0	74.4				89.2		36.1
Max Q Clear Time (g_c+I1), s	2.0	74.9				41.8		38.1
Green Ext Time (p_c), s	3.8	0.0				15.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.2
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	26	41	14	47	42	7	11	356	114	8	379	41
Future Vol, veh/h	26	41	14	47	42	7	11	356	114	8	379	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	200	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	88	88	88	88	88	88	90	90	90
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	37	59	20	53	48	8	13	405	130	9	421	46

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	896	869	421	908	869	405	421	0	0	405	0	0
Stage 1	439	439	-	430	430	-	-	-	-	-	-	-
Stage 2	457	430	-	478	439	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	255	284	620	253	287	639	1122	-	-	1138	-	-
Stage 1	585	568	-	598	578	-	-	-	-	-	-	-
Stage 2	572	573	-	563	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	214	276	620	201	279	639	1122	-	-	1138	-	-
Mov Cap-2 Maneuver	214	276	-	201	279	-	-	-	-	-	-	-
Stage 1	575	562	-	588	568	-	-	-	-	-	-	-
Stage 2	509	563	-	483	567	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	27	31.3	0.2	0.2
HCM LOS	D	D		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1122	-	-	277	243	1138	-	-
HCM Lane V/C Ratio	0.011	-	-	0.418	0.449	0.008	-	-
HCM Control Delay (s)	8.2	0	-	27	31.3	8.2	0	-
HCM Lane LOS	A	A	-	D	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2	2.2	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	7	104	28	3	8	78	1777	33	17	1346	11
Future Volume (veh/h)	3	7	104	28	3	8	78	1777	33	17	1346	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1792	1900	1900	1462	1462	1845	1845	1845	1827	1827	1900
Adj Flow Rate, veh/h	3	8	116	31	3	9	81	1851	0	18	1432	12
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	30	30	30	3	3	3	4	4	4
Cap, veh/h	51	13	153	186	13	135	221	1981	886	186	1994	17
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.04	0.57	0.00	0.04	0.57	0.57
Sat Flow, veh/h	14	119	1406	863	119	1242	1757	3505	1568	1740	3528	30
Grp Volume(v), veh/h	127	0	0	34	0	9	81	1851	0	18	704	740
Grp Sat Flow(s),veh/h/ln	1540	0	0	982	0	1242	1757	1752	1568	1740	1736	1822
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	0.5	1.8	36.2	0.0	0.0	22.1	22.1
Cycle Q Clear(g_c), s	5.9	0.0	0.0	2.3	0.0	0.5	1.8	36.2	0.0	0.0	22.1	22.1
Prop In Lane	0.02		0.91	0.91		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	217	0	0	199	0	135	221	1981	886	186	981	1030
V/C Ratio(X)	0.59	0.00	0.00	0.17	0.00	0.07	0.37	0.93	0.00	0.10	0.72	0.72
Avail Cap(c_a), veh/h	319	0	0	267	0	217	239	1981	886	203	981	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	0.0	30.5	0.0	29.7	14.8	14.9	0.0	32.6	11.8	11.8
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.4	0.0	0.2	1.0	9.7	0.0	0.2	4.5	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	0.7	0.0	0.2	0.9	19.9	0.0	0.4	11.6	12.1
LnGrp Delay(d),s/veh	34.7	0.0	0.0	30.9	0.0	30.0	15.9	24.6	0.0	32.9	16.3	16.1
LnGrp LOS	C			C		C	B	C		C	B	B
Approach Vol, veh/h		127			43			1932			1462	
Approach Delay, s/veh		34.7			30.7			24.3			16.4	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.2	49.0		15.1	10.2	49.0		15.1
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0
Max Green Setting (Gmax), s	4.0	42.0		13.0	4.0	42.0		13.0
Max Q Clear Time (g_c+I1), s	2.0	38.2		7.9	3.8	24.1		4.3
Green Ext Time (p_c), s	1.5	3.3		0.4	0.0	8.9		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1	23	40	1	19	10	1928	47	16	1527	4
Future Volume (veh/h)	11	1	23	40	1	19	10	1928	47	16	1527	4
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	18	2	37	48	1	23	11	2029	0	17	1607	4
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.62	0.62	0.62	0.83	0.83	0.83	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	90	21	89	240	4	155	212	2393	1071	148	2220	6
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.01	0.69	0.00	0.62	0.62	0.62
Sat Flow, veh/h	267	214	892	1450	40	1553	1740	3471	1553	204	3552	9
Grp Volume(v), veh/h	57	0	0	49	0	23	11	2029	0	17	785	826
Grp Sat Flow(s),veh/h/ln	1373	0	0	1491	0	1553	1740	1736	1553	204	1736	1825
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.0	0.2	32.6	0.0	5.1	23.1	23.1
Cycle Q Clear(g_c), s	2.7	0.0	0.0	1.9	0.0	1.0	0.2	32.6	0.0	32.8	23.1	23.1
Prop In Lane	0.32		0.65	0.98		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	201	0	0	244	0	155	212	2393	1071	148	1085	1141
V/C Ratio(X)	0.28	0.00	0.00	0.20	0.00	0.15	0.05	0.85	0.00	0.11	0.72	0.72
Avail Cap(c_a), veh/h	298	0	0	343	0	269	287	2393	1071	148	1085	1141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.4	0.0	0.0	31.1	0.0	30.7	8.7	8.6	0.0	22.7	9.6	9.6
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.4	0.0	0.4	0.1	4.0	0.0	1.6	4.2	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	1.0	0.0	0.5	0.1	16.5	0.0	0.3	12.2	12.7
LnGrp Delay(d),s/veh	32.2	0.0	0.0	31.5	0.0	31.1	8.8	12.6	0.0	24.3	13.8	13.6
LnGrp LOS	C			C		C	A	B		C	B	B
Approach Vol, veh/h		57			72			2040			1628	
Approach Delay, s/veh		32.2			31.3			12.6			13.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	4.8	55.2		14.5		60.0		14.5
Change Period (Y+Rc), s	4.0	* 8.6		7.1		* 8.6		7.1
Max Green Setting (Gmax), s	4.8	* 43		12.9		* 51		12.9
Max Q Clear Time (g_c+I1), s	2.2	34.8		3.9		34.6		4.7
Green Ext Time (p_c), s	0.0	8.4		0.3		16.2		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	112	0	1958	1560	24
Future Vol, veh/h	0	112	0	1958	1560	24
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	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	96	96	97	97
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	160	0	2040	1608	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	816	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	316	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	316	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	316	-	-
HCM Lane V/C Ratio	-	0.506	-	-
HCM Control Delay (s)	-	27.5	-	-
HCM Lane LOS	-	D	-	-
HCM 95th %tile Q(veh)	-	2.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	28	24	37	12	7	16	1890	46	2	1648	19
Future Volume (veh/h)	24	28	24	37	12	7	16	1890	46	2	1648	19
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	28	33	28	56	18	11	17	1969	0	2	1894	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.66	0.66	0.66	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	268	261	222	252	259	220	155	2353	1053	142	2353	1053
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.68	0.68	0.00	0.68	0.68	0.00
Sat Flow, veh/h	1362	1845	1568	1310	1827	1553	233	3471	1553	217	3471	1553
Grp Volume(v), veh/h	28	33	28	56	18	11	17	1969	0	2	1894	0
Grp Sat Flow(s),veh/h/ln	1362	1845	1568	1310	1827	1553	233	1736	1553	217	1736	1553
Q Serve(g_s), s	1.5	1.3	1.3	3.2	0.7	0.5	4.6	35.1	0.0	0.6	32.2	0.0
Cycle Q Clear(g_c), s	2.2	1.3	1.3	4.5	0.7	0.5	36.8	35.1	0.0	35.7	32.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	261	222	252	259	220	155	2353	1053	142	2353	1053
V/C Ratio(X)	0.10	0.13	0.13	0.22	0.07	0.05	0.11	0.84	0.00	0.01	0.80	0.00
Avail Cap(c_a), veh/h	543	634	539	517	628	534	155	2353	1053	142	2353	1053
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.9	31.2	31.2	33.2	30.9	30.9	22.5	10.0	0.0	23.2	9.5	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.3	0.4	0.1	0.1	1.4	3.7	0.0	0.2	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.7	0.6	1.2	0.4	0.2	0.4	17.6	0.0	0.0	16.0	0.0
LnGrp Delay(d),s/veh	32.1	31.4	31.5	33.6	31.1	31.0	24.0	13.7	0.0	23.4	12.5	0.0
LnGrp LOS	C	C	C	C	C	C	C	B		C	B	
Approach Vol, veh/h		89			85			1986			1896	
Approach Delay, s/veh		31.6			32.7			13.8			12.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		65.0		18.2		65.0		18.2
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 56		28.6		* 56		28.6
Max Q Clear Time (g_c+I1), s		37.7		6.5		38.8		4.2
Green Ext Time (p_c), s		18.1		0.6		17.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	65	188	102	1799	1556	53
Future Vol, veh/h	65	188	102	1799	1556	53
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	300	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	95	95	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	88	254	107	1894	1655	56

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2846	856	1712	0	-	0
Stage 1	1684	-	-	-	-	-
Stage 2	1162	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 14	301	358	-	-	-
Stage 1	136	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 10	301	358	-	-	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	136	-	-	-	-	-
Stage 2	182	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	77.2	1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	358	-	101	301	-	-
HCM Lane V/C Ratio	0.3	-	0.87	0.844	-	-
HCM Control Delay (s)	19.3	-	133	57.9	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.2	-	5	7.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	0	35	3	0	4	48	1824	31	0	1487	19
Future Vol, veh/h	44	0	35	3	0	4	48	1824	31	0	1487	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	250	-	150	150	-	225
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	90	90	90	95	95	95	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	4	4	4
Mvmt Flow	50	0	40	3	0	4	51	1920	33	0	1582	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2643	3603	791	2812	3603	960	1582	0	0	1920	0	0
Stage 1	1582	1582	-	2021	2021	-	-	-	-	-	-	-
Stage 2	1061	2021	-	791	1582	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.2	-	-	4.18	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.25	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 11	5	332	8	5	257	398	-	-	296	-	-
Stage 1	114	167	-	60	101	-	-	-	-	-	-	-
Stage 2	239	101	-	349	167	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 10	4	332	6	4	257	398	-	-	296	-	-
Mov Cap-2 Maneuver	65	54	-	41	47	-	-	-	-	-	-	-
Stage 1	99	167	-	52	88	-	-	-	-	-	-	-
Stage 2	205	88	-	307	167	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	94.7	55.5	0.4	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	398	-	-	65	332	79	296	-	-
HCM Lane V/C Ratio	0.127	-	-	0.769	0.12	0.098	-	-	-
HCM Control Delay (s)	15.4	-	-	156.3	17.3	55.5	0	-	-
HCM Lane LOS	C	-	-	F	C	F	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.5	0.4	0.3	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	463	61	34	1736	1340	421
Future Volume (veh/h)	463	61	34	1736	1340	421
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	487	0	36	1827	1396	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.96	0.96
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	481	429	215	1936	1365	611
Arrive On Green	0.28	0.00	0.08	0.56	0.39	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	487	0	36	1827	1396	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	25.1	0.0	0.0	44.2	35.4	0.0
Cycle Q Clear(g_c), s	25.1	0.0	0.0	44.2	35.4	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	481	429	215	1936	1365	611
V/C Ratio(X)	1.01	0.00	0.17	0.94	1.02	0.00
Avail Cap(c_a), veh/h	481	429	215	1936	1365	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.5	0.0	38.3	18.6	27.3	0.0
Incr Delay (d2), s/veh	44.4	0.0	0.4	10.9	30.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	0.0	0.9	23.7	22.6	0.0
LnGrp Delay(d),s/veh	76.9	0.0	38.6	29.5	57.5	0.0
LnGrp LOS	F		D	C	F	
Approach Vol, veh/h	487			1863	1396	
Approach Delay, s/veh	76.9			29.6	57.5	
Approach LOS	E			C	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.8	43.2				58.0		32.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.0	35.4				50.2		25.1
Max Q Clear Time (g_c+I1), s	2.0	37.4				46.2		27.1
Green Ext Time (p_c), s	4.2	0.0				3.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.2
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	24	41	13	43	33	12	18	462	51	8	404	29
Future Vol, veh/h	24	41	13	43	33	12	18	462	51	8	404	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	200	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	89	89	89	91	91	91	89	89	89
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	32	54	17	48	37	13	20	508	56	9	454	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1045	1019	454	1054	1019	508	454	0	0	508	0	0
Stage 1	472	472	-	547	547	-	-	-	-	-	-	-
Stage 2	573	547	-	507	472	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	201	231	594	201	234	559	1091	-	-	1042	-	-
Stage 1	561	549	-	516	513	-	-	-	-	-	-	-
Stage 2	494	508	-	543	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	166	222	594	154	225	559	1091	-	-	1042	-	-
Mov Cap-2 Maneuver	166	222	-	154	225	-	-	-	-	-	-	-
Stage 1	546	542	-	502	499	-	-	-	-	-	-	-
Stage 2	434	494	-	469	547	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	34.4	40.4	0.3	0.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1091	-	-	222	197	1042	-	-
HCM Lane V/C Ratio	0.018	-	-	0.462	0.502	0.009	-	-
HCM Control Delay (s)	8.4	0	-	34.4	40.4	8.5	0	-
HCM Lane LOS	A	A	-	D	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.2	2.5	0	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	183	2	0	0	104	1257	8	0	1919	15
Future Vol, veh/h	0	0	183	2	0	0	104	1257	8	0	1919	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	150	175	-	250	250	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	50	50	50	82	82	82	93	93	93
Heavy Vehicles, %	6	6	6	30	30	30	3	3	3	4	4	4
Mvmt Flow	0	0	215	4	0	0	127	1533	10	0	2063	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3092	3859	1040	2819	3867	766	2080	0	0	1533	0	0
Stage 1	2072	2072	-	1787	1787	-	-	-	-	-	-	-
Stage 2	1020	1787	-	1032	2080	-	-	-	-	-	-	-
Critical Hdwy	7.62	6.62	7.02	8.1	7.1	7.5	4.16	-	-	4.18	-	-
Critical Hdwy Stg 1	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.56	4.06	3.36	3.8	4.3	3.6	2.23	-	-	2.24	-	-
Pot Cap-1 Maneuver	5	3	220	5	2	290	260	-	-	421	-	-
Stage 1	53	90	-	62	98	-	-	-	-	-	-	-
Stage 2	246	127	-	203	67	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	3	2	220	0	1	290	260	-	-	421	-	-
Mov Cap-2 Maneuver	21	35	-	39	228	-	-	-	-	-	-	-
Stage 1	27	90	-	32	50	-	-	-	-	-	-	-
Stage 2	126	65	-	4	67	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	101.6	107.6	2.4	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	260	-	-	220	39	-	421	-	-
HCM Lane V/C Ratio	0.488	-	-	0.979	0.103	-	-	-	-
HCM Control Delay (s)	31.4	-	-	101.6	107.6	0	0	-	-
HCM Lane LOS	D	-	-	F	F	A	A	-	-
HCM 95th %tile Q(veh)	2.5	-	-	8.7	0.3	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	0	24	225	0	107	22	1197	209	140	1918	22
Future Volume (veh/h)	9	0	24	225	0	107	22	1197	209	140	1918	22
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	19	0	50	395	0	188	28	1496	0	151	2062	24
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.48	0.48	0.48	0.57	0.57	0.57	0.80	0.80	0.80	0.93	0.93	0.93
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	46	20	52	184	0	276	147	1774	794	256	1920	22
Arrive On Green	0.18	0.00	0.18	0.18	0.00	0.18	0.04	0.51	0.00	0.08	0.55	0.55
Sat Flow, veh/h	0	110	290	630	0	1553	1740	3471	1553	1740	3514	41
Grp Volume(v), veh/h	69	0	0	395	0	188	28	1496	0	151	1016	1070
Grp Sat Flow(s),veh/h/ln	400	0	0	630	0	1553	1740	1736	1553	1740	1736	1820
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	11.4	0.7	37.3	0.0	3.9	54.9	54.9
Cycle Q Clear(g_c), s	17.9	0.0	0.0	17.9	0.0	11.4	0.7	37.3	0.0	3.9	54.9	54.9
Prop In Lane	0.28		0.72	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	117	0	0	184	0	276	147	1774	794	256	948	994
V/C Ratio(X)	0.59	0.00	0.00	2.15	0.00	0.68	0.19	0.84	0.00	0.59	1.07	1.08
Avail Cap(c_a), veh/h	117	0	0	184	0	276	284	1774	794	333	948	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	0.0	0.0	44.8	0.0	38.7	23.3	21.1	0.0	20.2	22.8	22.8
Incr Delay (d2), s/veh	7.7	0.0	0.0	535.2	0.0	6.6	0.6	5.1	0.0	2.2	50.5	51.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	32.4	0.0	5.4	0.4	18.9	0.0	2.3	39.4	41.5
LnGrp Delay(d),s/veh	44.2	0.0	0.0	580.1	0.0	45.3	23.9	26.2	0.0	22.3	73.3	74.2
LnGrp LOS	D			F		D	C	C		C	F	F
Approach Vol, veh/h		69			583			1524			2237	
Approach Delay, s/veh		44.2			407.6			26.2			70.3	
Approach LOS		D			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	63.5		25.0	15.6	60.0		25.0
Change Period (Y+Rc), s	7.7	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	12.3	* 51		17.9	12.3	* 51		17.9
Max Q Clear Time (g_c+I1), s	2.7	56.9		19.9	5.9	39.3		19.9
Green Ext Time (p_c), s	0.0	0.0		0.0	0.2	11.7		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		99.2
HCM 2010 LOS		F

Notes

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	47	0	1530	2097	104
Future Vol, veh/h	0	47	0	1530	2097	104
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	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	88	88	90	90
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	85	0	1739	2330	116

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1223	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	168	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	168	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	46.7	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	168	-	-
HCM Lane V/C Ratio	-	0.509	-	-
HCM Control Delay (s)	-	46.7	-	-
HCM Lane LOS	-	E	-	-
HCM 95th %tile Q(veh)	-	2.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	11	13	19	11	11	34	1557	17	3	1978	38
Future Volume (veh/h)	30	11	13	19	11	11	34	1557	17	3	1978	38
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	39	14	17	33	19	19	41	1876	0	3	2198	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.77	0.77	0.77	0.58	0.58	0.58	0.83	0.83	0.83	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	202	202	171	204	200	170	123	2611	1168	176	2611	1168
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.75	0.75	0.00	0.75	0.75	0.00
Sat Flow, veh/h	1351	1845	1568	1346	1827	1553	173	3471	1553	237	3471	1553
Grp Volume(v), veh/h	39	14	17	33	19	19	41	1876	0	3	2198	0
Grp Sat Flow(s),veh/h/ln	1351	1845	1568	1346	1827	1553	173	1736	1553	237	1736	1553
Q Serve(g_s), s	2.9	0.7	1.1	2.4	1.0	1.2	22.7	31.6	0.0	0.7	46.3	0.0
Cycle Q Clear(g_c), s	3.9	0.7	1.1	3.2	1.0	1.2	69.0	31.6	0.0	32.3	46.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	202	171	204	200	170	123	2611	1168	176	2611	1168
V/C Ratio(X)	0.19	0.07	0.10	0.16	0.10	0.11	0.33	0.72	0.00	0.02	0.84	0.00
Avail Cap(c_a), veh/h	411	487	414	413	483	410	123	2611	1168	176	2611	1168
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.1	43.3	43.4	44.7	43.4	43.5	32.4	7.2	0.0	15.9	9.1	0.0
Incr Delay (d2), s/veh	0.5	0.1	0.2	0.4	0.2	0.3	7.2	1.7	0.0	0.2	3.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.4	0.5	0.9	0.5	0.5	1.3	15.5	0.0	0.1	22.9	0.0
LnGrp Delay(d),s/veh	45.6	43.4	43.7	45.1	43.6	43.8	39.6	9.0	0.0	16.1	12.6	0.0
LnGrp LOS	D	D	D	D	D	D	D	A		B	B	
Approach Vol, veh/h		70			71			1917			2201	
Approach Delay, s/veh		44.7			44.3			9.6			12.6	
Approach LOS		D			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.0		18.2		90.0		18.2
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 81		28.6		* 81		28.6
Max Q Clear Time (g_c+I1), s		48.3		5.2		71.0		5.9
Green Ext Time (p_c), s		31.9		0.4		10.2		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	82	183	1434	1983	82
Future Vol, veh/h	11	82	183	1434	1983	82
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	300	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	86	86	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	17	130	213	1667	2110	87

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3412	1098	2197	0	-	0
Stage 1	2153	-	-	-	-	-
Stage 2	1259	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 5	208	230	-	-	-
Stage 1	75	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	208	230	-	-	-
Mov Cap-2 Maneuver	~ 15	-	-	-	-	-
Stage 1	75	-	-	-	-	-
Stage 2	~ 17	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	117.4	9.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	230	-	15	208	-	-
HCM Lane V/C Ratio	0.925	-	1.164	0.626	-	-
HCM Control Delay (s)	86.3	-	$ 638.4	47.5	-	-
HCM Lane LOS	F	-	F	E	-	-
HCM 95th %tile Q(veh)	7.9	-	2.7	3.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	35	27	1331	2011	43
Future Vol, veh/h	12	35	27	1331	2011	43
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	-	250	-	-	225
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	93	93
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	15	43	33	1643	2162	46

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3050	1081	2162	0	-	0
Stage 1	2162	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.2	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.25	-	-	-
Pot Cap-1 Maneuver	~ 10	213	234	-	-	-
Stage 1	74	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 9	213	234	-	-	-
Mov Cap-2 Maneuver	57	-	-	-	-	-
Stage 1	74	-	-	-	-	-
Stage 2	311	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	56.6	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	234	-	125	-	-
HCM Lane V/C Ratio	0.142	-	0.464	-	-
HCM Control Delay (s)	22.9	-	56.6	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0.5	-	2.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	371	35	19	1222	1793	487
Future Volume (veh/h)	371	35	19	1222	1793	487
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	470	0	25	1587	1928	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.79	0.79	0.77	0.77	0.93	0.93
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	367	328	149	2132	1686	754
Arrive On Green	0.21	0.00	0.04	0.61	0.49	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	470	0	25	1587	1928	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	18.1	0.0	0.6	27.6	41.3	0.0
Cycle Q Clear(g_c), s	18.1	0.0	0.6	27.6	41.3	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	367	328	149	2132	1686	754
V/C Ratio(X)	1.28	0.00	0.17	0.74	1.14	0.00
Avail Cap(c_a), veh/h	367	328	232	2132	1686	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	0.0	19.9	11.7	21.9	0.0
Incr Delay (d2), s/veh	145.7	0.0	0.5	2.4	72.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.4	0.0	0.3	13.7	36.6	0.0
LnGrp Delay(d),s/veh	179.2	0.0	20.4	14.1	94.1	0.0
LnGrp LOS	F		C	B	F	
Approach Vol, veh/h	470			1612	1928	
Approach Delay, s/veh	179.2			14.2	94.1	
Approach LOS	F			B	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.9	49.1				60.0		25.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.2	37.2				52.2		18.1
Max Q Clear Time (g_c+I1), s	2.6	43.3				29.6		20.1
Green Ext Time (p_c), s	0.0	0.0				21.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	72.0
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	27	41	15	45	41	7	12	367	117	8	391	42
Future Vol, veh/h	27	41	15	45	41	7	12	367	117	8	391	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	88	88	88	88	88	88	90	90	90
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	39	59	21	51	47	8	14	417	133	9	434	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	990	1029	434	1003	963	484	434	0	0	550	0	0
Stage 1	452	452	-	511	511	-	-	-	-	-	-	-
Stage 2	538	577	-	492	452	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	220	228	609	218	253	577	1110	-	-	1005	-	-
Stage 1	576	560	-	540	532	-	-	-	-	-	-	-
Stage 2	516	492	-	553	565	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	181	221	609	164	245	577	1110	-	-	1005	-	-
Mov Cap-2 Maneuver	181	221	-	164	245	-	-	-	-	-	-	-
Stage 1	565	553	-	530	522	-	-	-	-	-	-	-
Stage 2	455	483	-	471	558	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	35.9	39.9	0.2	0.2
HCM LOS	E	E		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1110	-	-	231	205	1005	-	-
HCM Lane V/C Ratio	0.012	-	-	0.513	0.516	0.009	-	-
HCM Control Delay (s)	8.3	0	-	35.9	39.9	8.6	0	-
HCM Lane LOS	A	A	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.7	2.6	0	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	110	0	0	0	83	1877	0	0	1419	11
Future Vol, veh/h	3	0	110	0	0	0	83	1877	0	0	1419	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	150	175	-	250	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	25	25	25	96	96	96	94	94	94
Heavy Vehicles, %	6	6	6	30	30	30	3	3	3	4	4	4
Mvmt Flow	3	0	122	0	0	0	86	1955	0	0	1510	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2666	3643	761	2883	3649	978	1521	0	0	1955	0	0
Stage 1	1515	1515	-	2128	2128	-	-	-	-	-	-	-
Stage 2	1151	2128	-	755	1521	-	-	-	-	-	-	-
Critical Hdwy	7.62	6.62	7.02	8.1	7.1	7.5	4.16	-	-	4.18	-	-
Critical Hdwy Stg 1	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.56	4.06	3.36	3.8	4.3	3.6	2.23	-	-	2.24	-	-
Pot Cap-1 Maneuver	10	5	339	5	3	204	430	-	-	287	-	-
Stage 1	120	174	-	36	63	-	-	-	-	-	-	-
Stage 2	204	84	-	310	138	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	8	4	339	3	2	204	430	-	-	287	-	-
Mov Cap-2 Maneuver	8	4	-	3	2	-	-	-	-	-	-	-
Stage 1	96	174	-	29	50	-	-	-	-	-	-	-
Stage 2	163	67	-	198	138	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	78.2	0	0.7	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	430	-	-	162	-	-	287	-	-
HCM Lane V/C Ratio	0.201	-	-	0.775	-	-	-	-	-
HCM Control Delay (s)	15.5	-	-	78.2	0	0	0	-	-
HCM Lane LOS	C	-	-	F	A	A	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	5	-	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	0	25	18	0	16	10	1974	18	10	1584	3
Future Volume (veh/h)	11	0	25	18	0	16	10	1974	18	10	1584	3
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	18	0	40	22	0	19	11	2078	0	11	1667	3
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.62	0.62	0.62	0.83	0.83	0.83	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	80	13	81	216	0	133	202	2129	952	131	2180	4
Arrive On Green	0.09	0.00	0.09	0.09	0.00	0.09	0.02	0.61	0.00	0.02	0.61	0.61
Sat Flow, veh/h	275	148	941	1520	0	1553	1740	3471	1553	1740	3555	6
Grp Volume(v), veh/h	58	0	0	22	0	19	11	2078	0	11	814	856
Grp Sat Flow(s),veh/h/ln	1364	0	0	1520	0	1553	1740	1736	1553	1740	1736	1826
Q Serve(g_s), s	0.9	0.0	0.0	0.0	0.0	0.9	0.2	48.3	0.0	0.2	28.6	28.6
Cycle Q Clear(g_c), s	3.3	0.0	0.0	1.0	0.0	0.9	0.2	48.3	0.0	0.2	28.6	28.6
Prop In Lane	0.31		0.69	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	173	0	0	216	0	133	202	2129	952	131	1064	1120
V/C Ratio(X)	0.33	0.00	0.00	0.10	0.00	0.14	0.05	0.98	0.00	0.08	0.76	0.76
Avail Cap(c_a), veh/h	342	0	0	387	0	332	420	2129	952	348	1064	1120
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	0.0	0.0	35.5	0.0	35.4	10.7	15.6	0.0	20.4	11.8	11.8
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.2	0.0	0.5	0.1	14.6	0.0	0.3	5.2	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.5	0.0	0.4	0.1	27.1	0.0	0.2	15.1	15.8
LnGrp Delay(d),s/veh	37.6	0.0	0.0	35.7	0.0	35.9	10.8	30.2	0.0	20.7	17.0	16.8
LnGrp LOS	D			D		D	B	C		C	B	B
Approach Vol, veh/h		58			41			2089			1681	
Approach Delay, s/veh		37.6			35.8			30.1			16.9	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	60.0		14.3	9.5	60.0		14.3
Change Period (Y+Rc), s	7.7	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	12.3	* 51		17.9	12.3	* 51		17.9
Max Q Clear Time (g_c+I1), s	2.2	30.6		3.0	2.2	50.3		5.3
Green Ext Time (p_c), s	0.0	19.9		0.3	0.0	1.1		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

Notes

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	119	0	1974	1595	25
Future Vol, veh/h	0	119	0	1974	1595	25
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	96	96	97	97
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	170	0	2056	1644	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	835	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	307	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	307	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.4	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	307	-	-
HCM Lane V/C Ratio	-	0.554	-	-
HCM Control Delay (s)	-	30.4	-	-
HCM Lane LOS	-	D	-	-
HCM 95th %tile Q(veh)	-	3.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	29	26	39	12	4	17	1915	48	1	1694	19
Future Volume (veh/h)	22	29	26	39	12	4	17	1915	48	1	1694	19
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	26	34	30	59	18	6	18	1995	0	1	1947	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.66	0.66	0.66	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	205	203	173	189	201	171	163	2608	1167	154	2608	1167
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.75	0.75	0.00	0.75	0.75	0.00
Sat Flow, veh/h	1368	1845	1568	1307	1827	1553	222	3471	1553	211	3471	1553
Grp Volume(v), veh/h	26	34	30	59	18	6	18	1995	0	1	1947	0
Grp Sat Flow(s),veh/h/ln	1368	1845	1568	1307	1827	1553	222	1736	1553	211	1736	1553
Q Serve(g_s), s	1.9	1.8	1.9	4.6	1.0	0.4	5.4	36.4	0.0	0.3	34.4	0.0
Cycle Q Clear(g_c), s	2.8	1.8	1.9	6.5	1.0	0.4	39.8	36.4	0.0	36.7	34.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	203	173	189	201	171	163	2608	1167	154	2608	1167
V/C Ratio(X)	0.13	0.17	0.17	0.31	0.09	0.04	0.11	0.76	0.00	0.01	0.75	0.00
Avail Cap(c_a), veh/h	416	487	414	390	482	410	163	2608	1167	154	2608	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.6	43.7	43.7	46.6	43.3	43.1	18.9	7.9	0.0	18.6	7.6	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.5	0.9	0.2	0.1	1.4	2.2	0.0	0.1	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.9	0.8	1.7	0.5	0.2	0.4	18.0	0.0	0.0	16.9	0.0
LnGrp Delay(d),s/veh	44.9	44.1	44.2	47.6	43.5	43.1	20.3	10.1	0.0	18.7	9.6	0.0
LnGrp LOS	D	D	D	D	D	D	C	B		B	A	
Approach Vol, veh/h		90			83			2013			1948	
Approach Delay, s/veh		44.3			46.4			10.2			9.6	
Approach LOS		D			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.0		18.3		90.0		18.3
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 81		28.6		* 81		28.6
Max Q Clear Time (g_c+I1), s		38.7		8.5		41.8		4.8
Green Ext Time (p_c), s		40.0		0.6		37.2		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	113.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	63	200	108	1813	1594	53
Future Vol, veh/h	63	200	108	1813	1594	53
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	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	95	95	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	85	270	114	1908	1696	56

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2906	876	1752	0	-	0
Stage 1	1724	-	-	-	-	-
Stage 2	1182	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 12	292	345	-	-	-
Stage 1	129	-	-	-	-	-
Stage 2	254	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 8	292	345	-	-	-
Mov Cap-2 Maneuver	~ 8	-	-	-	-	-
Stage 1	129	-	-	-	-	-
Stage 2	170	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1312.6	1.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	345	-	8	292	-	-
HCM Lane V/C Ratio	0.33	-	10.642	0.926	-	-
HCM Control Delay (s)	20.5	-	$ 5243.9	74.2	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.4	-	12.2	8.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	36	49	1895	1538	20
Future Vol, veh/h	47	36	49	1895	1538	20
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	-	250	-	-	225
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	95	95	94	94
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	53	41	52	1995	1636	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2737	818	1636	0	-	0
Stage 1	1636	-	-	-	-	-
Stage 2	1101	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.2	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.25	-	-	-
Pot Cap-1 Maneuver	~ 16	319	379	-	-	-
Stage 1	144	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 14	319	379	-	-	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	144	-	-	-	-	-
Stage 2	242	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	87.2	0.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	379	-	128	-	-
HCM Lane V/C Ratio	0.136	-	0.737	-	-
HCM Control Delay (s)	16	-	87.2	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0.5	-	4.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	490	65	36	1824	1395	446
Future Volume (veh/h)	490	65	36	1824	1395	446
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	516	0	38	1920	1453	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.96	0.96
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	367	328	203	2132	1644	735
Arrive On Green	0.21	0.00	0.05	0.61	0.47	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	516	0	38	1920	1453	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	18.1	0.0	0.9	40.6	32.2	0.0
Cycle Q Clear(g_c), s	18.1	0.0	0.9	40.6	32.2	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	367	328	203	2132	1644	735
V/C Ratio(X)	1.41	0.00	0.19	0.90	0.88	0.00
Avail Cap(c_a), veh/h	367	328	266	2132	1644	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	0.0	16.7	14.2	20.3	0.0
Incr Delay (d2), s/veh	198.4	0.0	0.4	6.7	7.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.8	0.0	0.4	21.2	17.0	0.0
LnGrp Delay(d),s/veh	231.8	0.0	17.1	20.8	27.6	0.0
LnGrp LOS	F		B	C	C	
Approach Vol, veh/h	516			1958	1453	
Approach Delay, s/veh	231.8			20.8	27.6	
Approach LOS	F			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.9	48.1				60.0		25.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.2	37.2				52.2		18.1
Max Q Clear Time (g_c+I1), s	2.9	34.2				42.6		20.1
Green Ext Time (p_c), s	0.0	2.9				9.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.0
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↰	↱
Traffic Vol, veh/h	24	39	14	41	33	13	18	475	48	8	416	30
Future Vol, veh/h	24	39	14	41	33	13	18	475	48	8	416	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	89	89	89	91	91	91	89	89	89
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	32	51	18	46	37	15	20	522	53	9	467	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1099	1099	467	1108	1073	548	467	0	0	575	0	0
Stage 1	485	485	-	588	588	-	-	-	-	-	-	-
Stage 2	614	614	-	520	485	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	185	207	584	185	217	530	1079	-	-	983	-	-
Stage 1	552	542	-	490	491	-	-	-	-	-	-	-
Stage 2	469	473	-	534	547	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	151	199	584	139	208	530	1079	-	-	983	-	-
Mov Cap-2 Maneuver	151	199	-	139	208	-	-	-	-	-	-	-
Stage 1	537	535	-	477	478	-	-	-	-	-	-	-
Stage 2	409	460	-	461	540	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	39.2	45.6	0.3	0.2
HCM LOS	E	E		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1079	-	-	203	182	983	-	-
HCM Lane V/C Ratio	0.018	-	-	0.499	0.537	0.009	-	-
HCM Control Delay (s)	8.4	0	-	39.2	45.6	8.7	0	-
HCM Lane LOS	A	A	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.5	2.8	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	7	183	134	15	38	110	1281	37	15	1924	15
Future Volume (veh/h)	0	7	183	134	15	38	110	1281	37	15	1924	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1792	1900	1462	1462	1462	1845	1845	1845	1827	1827	1900
Adj Flow Rate, veh/h	0	8	215	149	17	42	134	1562	0	16	2069	16
Adj No. of Lanes	0	1	0	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.82	0.82	0.82	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	30	30	30	3	3	3	4	4	4
Cap, veh/h	0	12	316	124	313	283	139	2182	976	177	2068	16
Arrive On Green	0.00	0.21	0.21	0.21	0.21	0.21	0.05	0.62	0.00	0.01	0.59	0.59
Sat Flow, veh/h	0	55	1477	905	1462	1242	1757	3505	1568	1740	3530	27
Grp Volume(v), veh/h	0	0	223	149	17	42	134	1562	0	16	1016	1069
Grp Sat Flow(s),veh/h/ln	0	0	1532	905	1462	1242	1757	1752	1568	1740	1736	1822
Q Serve(g_s), s	0.0	0.0	18.7	11.3	1.3	3.8	6.5	42.5	0.0	0.5	81.8	82.0
Cycle Q Clear(g_c), s	0.0	0.0	18.7	30.0	1.3	3.8	6.5	42.5	0.0	0.5	81.8	82.0
Prop In Lane	0.00		0.96	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	0	0	328	124	313	283	139	2182	976	177	1017	1067
V/C Ratio(X)	0.00	0.00	0.68	1.20	0.05	0.15	0.96	0.72	0.00	0.09	1.00	1.00
Avail Cap(c_a), veh/h	0	0	328	124	313	283	139	2182	976	249	1017	1067
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	50.6	66.7	43.7	43.2	45.5	18.0	0.0	16.6	29.0	29.0
Incr Delay (d2), s/veh	0.0	0.0	5.6	144.2	0.1	0.2	64.5	1.1	0.0	0.2	28.0	28.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	8.4	9.8	0.5	1.3	7.7	20.7	0.0	0.3	46.9	49.2
LnGrp Delay(d),s/veh	0.0	0.0	56.1	210.9	43.8	43.5	110.0	19.1	0.0	16.8	57.0	57.0
LnGrp LOS			E	F	D	D	F	B		B	E	F
Approach Vol, veh/h		223			208			1696			2101	
Approach Delay, s/veh		56.1			163.4			26.3			56.7	
Approach LOS		E			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	94.1		37.0	14.0	89.0		37.0
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0
Max Green Setting (Gmax), s	7.6	81.4		30.0	7.0	82.0		30.0
Max Q Clear Time (g_c+I1), s	2.5	44.5		20.7	8.5	84.0		32.0
Green Ext Time (p_c), s	0.0	34.0		1.7	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	1	24	337	3	124	22	1255	238	146	2064	22
Future Volume (veh/h)	9	1	24	337	3	124	22	1255	238	146	2064	22
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1827	1827	1900	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	19	2	50	374	3	138	28	1569	0	157	2219	24
Adj No. of Lanes	0	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	0.48	0.48	0.48	0.90	0.90	0.90	0.80	0.80	0.80	0.93	0.93	0.93
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	55	20	87	374	4	205	110	2086	933	265	2329	25
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.02	0.60	0.00	0.07	0.66	0.66
Sat Flow, veh/h	124	148	647	2563	33	1525	1740	3471	1553	1740	3518	38
Grp Volume(v), veh/h	71	0	0	374	0	141	28	1569	0	157	1093	1150
Grp Sat Flow(s),veh/h/ln	918	0	0	1281	0	1558	1740	1736	1553	1740	1736	1820
Q Serve(g_s), s	0.6	0.0	0.0	5.1	0.0	10.2	0.7	39.0	0.0	3.7	68.0	68.7
Cycle Q Clear(g_c), s	10.8	0.0	0.0	15.9	0.0	10.2	0.7	39.0	0.0	3.7	68.0	68.7
Prop In Lane	0.27		0.70	1.00		0.98	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	162	0	0	374	0	209	110	2086	933	265	1149	1205
V/C Ratio(X)	0.44	0.00	0.00	1.00	0.00	0.67	0.26	0.75	0.00	0.59	0.95	0.95
Avail Cap(c_a), veh/h	162	0	0	374	0	209	133	2086	933	317	1149	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.0	0.0	0.0	54.5	0.0	48.8	27.7	17.2	0.0	20.0	18.2	18.4
Incr Delay (d2), s/veh	1.9	0.0	0.0	46.5	0.0	8.2	1.2	2.6	0.0	2.1	17.1	17.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	8.5	0.0	4.9	0.6	19.3	0.0	3.3	37.6	39.9
LnGrp Delay(d),s/veh	48.9	0.0	0.0	100.9	0.0	57.0	28.9	19.8	0.0	22.1	35.3	35.4
LnGrp LOS	D			F		E	C	B		C	D	D
Approach Vol, veh/h		71			515			1597			2400	
Approach Delay, s/veh		48.9			88.9			19.9			34.5	
Approach LOS		D			F			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	87.0		23.0	15.7	79.8		23.0
Change Period (Y+Rc), s	6.0	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	4.6	* 78		15.9	11.5	* 69		15.9
Max Q Clear Time (g_c+I1), s	12.7	70.7		17.9	5.7	41.0		12.8
Green Ext Time (p_c), s	0.0	7.6		0.0	0.2	27.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	35.8
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	47	0	1617	2351	108
Future Vol, veh/h	0	47	0	1617	2351	108
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	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	88	88	90	90
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	85	0	1838	2612	120

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1366	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	135	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	135	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	69.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	135	-	-
HCM Lane V/C Ratio	-	0.633	-	-
HCM Control Delay (s)	-	69.2	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	3.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	11	13	19	11	14	34	1632	17	10	2204	45
Future Volume (veh/h)	32	11	13	19	11	14	34	1632	17	10	2204	45
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	42	14	17	33	19	24	41	1966	0	11	2449	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.77	0.77	0.77	0.58	0.58	0.58	0.83	0.83	0.83	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	162	165	141	165	164	139	96	2770	1239	170	2770	1239
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.80	0.80	0.00	0.80	0.80	0.00
Sat Flow, veh/h	1345	1845	1568	1346	1827	1553	135	3471	1553	217	3471	1553
Grp Volume(v), veh/h	42	14	17	33	19	24	41	1966	0	11	2449	0
Grp Sat Flow(s),veh/h/ln	1345	1845	1568	1346	1827	1553	135	1736	1553	217	1736	1553
Q Serve(g_s), s	4.0	0.9	1.3	3.1	1.3	1.9	40.0	35.2	0.0	3.3	64.6	0.0
Cycle Q Clear(g_c), s	5.2	0.9	1.3	4.0	1.3	1.9	104.5	35.2	0.0	38.5	64.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	162	165	141	165	164	139	96	2770	1239	170	2770	1239
V/C Ratio(X)	0.26	0.08	0.12	0.20	0.12	0.17	0.43	0.71	0.00	0.06	0.88	0.00
Avail Cap(c_a), veh/h	330	396	336	333	392	333	96	2770	1239	170	2770	1239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.2	55.7	55.9	57.5	55.8	56.1	45.1	6.3	0.0	15.3	9.2	0.0
Incr Delay (d2), s/veh	0.8	0.2	0.4	0.6	0.3	0.6	13.2	1.6	0.0	0.7	4.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.5	0.6	1.2	0.7	0.8	1.8	17.0	0.0	0.2	32.0	0.0
LnGrp Delay(d),s/veh	59.1	55.9	56.2	58.1	56.2	56.7	58.3	7.9	0.0	16.0	13.8	0.0
LnGrp LOS	E	E	E	E	E	E	E	A		B	B	
Approach Vol, veh/h		73			76			2007			2460	
Approach Delay, s/veh		57.8			57.2			8.9			13.8	
Approach LOS		E			E			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		115.0		18.4		115.0		18.4
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 1.1E2		28.6		* 1.1E2		28.6
Max Q Clear Time (g_c+I1), s		66.6		6.0		106.5		7.2
Green Ext Time (p_c), s		39.0		0.5		0.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	82	183	1514	2223	96
Future Vol, veh/h	18	82	183	1514	2223	96
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	300	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	86	86	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	29	130	213	1760	2365	102

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3722	1234	2467	0	-	0
Stage 1	2416	-	-	-	-	-
Stage 2	1306	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 3	168	~ 179	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	218	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	168	~ 179	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s		19.4	0
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	~ 179	-	-	168	-	-
HCM Lane V/C Ratio	1.189	-	-	0.775	-	-
HCM Control Delay (s)	179.7	-	-	75.9	-	-
HCM Lane LOS	F	-	-	F	-	-
HCM 95th %tile Q(veh)	11.3	-	-	5	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	36	14	0	16	30	1374	29	0	2148	43
Future Vol, veh/h	12	0	36	14	0	16	30	1374	29	0	2148	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	250	-	150	150	-	225
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	90	90	90	81	81	81	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	4	4	4
Mvmt Flow	15	0	44	16	0	18	37	1696	36	0	2310	46

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3232	4080	1155	2925	4080	848	2310	0	0	1696	0	0
Stage 1	2310	2310	-	1770	1770	-	-	-	-	-	-	-
Stage 2	922	1770	-	1155	2310	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.2	-	-	4.18	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.25	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 4	2	190	~ 7	2	305	204	-	-	363	-	-
Stage 1	39	71	-	86	135	-	-	-	-	-	-	-
Stage 2	291	135	-	209	71	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 3	2	190	~ 5	2	305	204	-	-	363	-	-
Mov Cap-2 Maneuver	26	40	-	43	24	-	-	-	-	-	-	-
Stage 1	32	71	-	70	111	-	-	-	-	-	-	-
Stage 2	224	111	-	160	71	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	86.8	70.1	0.6	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	204	-	-	26	190	43	305	363	-	-
HCM Lane V/C Ratio	0.182	-	-	0.57	0.234	0.362	0.058	-	-	-
HCM Control Delay (s)	26.5	-	-	258.5	29.6	130.2	17.5	0	-	-
HCM Lane LOS	D	-	-	F	D	F	C	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	1.8	0.9	1.2	0.2	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	371	35	19	1284	1813	487
Future Volume (veh/h)	371	35	19	1284	1813	487
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	470	0	25	1668	1949	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.79	0.79	0.77	0.77	0.93	0.93
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	449	401	129	2226	1884	843
Arrive On Green	0.26	0.00	0.05	0.64	0.54	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	470	0	25	1668	1949	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	39.1	0.0	0.0	49.8	81.4	0.0
Cycle Q Clear(g_c), s	39.1	0.0	0.0	49.8	81.4	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	449	401	129	2226	1884	843
V/C Ratio(X)	1.05	0.00	0.19	0.75	1.03	0.00
Avail Cap(c_a), veh/h	449	401	129	2226	1884	843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.5	0.0	68.2	18.6	34.3	0.0
Incr Delay (d2), s/veh	55.1	0.0	0.7	2.4	30.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.5	0.0	1.0	24.4	46.6	0.0
LnGrp Delay(d),s/veh	110.5	0.0	68.9	20.9	64.6	0.0
LnGrp LOS	F		E	C	F	
Approach Vol, veh/h	470			1693	1949	
Approach Delay, s/veh	110.5			21.6	64.6	
Approach LOS	F			C	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.8	89.2				104.0		46.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.0	81.4				96.2		39.1
Max Q Clear Time (g_c+I1), s	2.0	83.4				51.8		41.1
Green Ext Time (p_c), s	4.0	0.0				18.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	52.2
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	27	43	15	59	48	7	12	367	122	8	391	42
Future Vol, veh/h	27	43	15	59	48	7	12	367	122	8	391	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	200	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	88	88	88	88	88	88	90	90	90
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	39	61	21	67	55	8	14	417	139	9	434	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	928	896	434	938	896	417	434	0	0	417	0	0
Stage 1	452	452	-	444	444	-	-	-	-	-	-	-
Stage 2	476	444	-	494	452	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	242	273	609	241	277	629	1110	-	-	1126	-	-
Stage 1	576	560	-	587	570	-	-	-	-	-	-	-
Stage 2	559	565	-	551	565	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	265	609	187	269	629	1110	-	-	1126	-	-
Mov Cap-2 Maneuver	197	265	-	187	269	-	-	-	-	-	-	-
Stage 1	565	554	-	576	559	-	-	-	-	-	-	-
Stage 2	489	554	-	467	559	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	30.1	27.9	0.2	0.1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	WBLn2	SWL	SWT	SWR
Capacity (veh/h)	1110	-	-	262	187	290	1126	-	-
HCM Lane V/C Ratio	0.012	-	-	0.463	0.359	0.216	0.008	-	-
HCM Control Delay (s)	8.3	0	-	30.1	34.6	20.8	8.2	0	-
HCM Lane LOS	A	A	-	D	D	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.3	1.5	0.8	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	22	110	86	9	25	87	1892	97	53	1435	11
Future Volume (veh/h)	3	22	110	86	9	25	87	1892	97	53	1435	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1792	1900	1462	1462	1462	1845	1845	1845	1827	1827	1900
Adj Flow Rate, veh/h	3	24	122	96	10	28	91	1971	0	56	1527	12
Adj No. of Lanes	0	1	0	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	30	30	30	3	3	3	4	4	4
Cap, veh/h	43	40	188	198	214	182	205	2078	930	128	2014	16
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.04	0.59	0.00	0.02	0.57	0.57
Sat Flow, veh/h	10	274	1280	970	1462	1242	1757	3505	1568	1740	3530	28
Grp Volume(v), veh/h	149	0	0	96	10	28	91	1971	0	56	750	789
Grp Sat Flow(s),veh/h/ln	1563	0	0	970	1462	1242	1757	1752	1568	1740	1736	1822
Q Serve(g_s), s	0.0	0.0	0.0	3.0	0.5	1.7	2.2	45.9	0.0	0.0	28.7	28.7
Cycle Q Clear(g_c), s	7.9	0.0	0.0	10.9	0.5	1.7	2.2	45.9	0.0	0.0	28.7	28.7
Prop In Lane	0.02		0.82	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	271	0	0	198	214	182	205	2078	930	128	990	1040
V/C Ratio(X)	0.55	0.00	0.00	0.48	0.05	0.15	0.44	0.95	0.00	0.44	0.76	0.76
Avail Cap(c_a), veh/h	274	0	0	200	217	184	250	2078	930	172	990	1040
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	0.0	0.0	37.0	32.1	32.7	17.4	16.6	0.0	41.7	14.2	14.3
Incr Delay (d2), s/veh	2.3	0.0	0.0	1.8	0.1	0.4	1.5	10.8	0.0	2.3	5.4	5.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	0.0	2.4	0.2	0.6	1.1	25.0	0.0	1.4	15.0	15.7
LnGrp Delay(d),s/veh	37.6	0.0	0.0	38.8	32.2	33.0	18.9	27.4	0.0	44.0	19.7	19.4
LnGrp LOS	D			D	C	C	B	C		D	B	B
Approach Vol, veh/h		149			134			2062			1595	
Approach Delay, s/veh		37.6			37.1			27.1			20.4	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	59.0		19.9	10.8	57.0		19.9
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0
Max Green Setting (Gmax), s	4.0	52.0		13.0	6.0	50.0		13.0
Max Q Clear Time (g_c+I1), s	2.0	47.9		9.9	4.2	30.7		12.9
Green Ext Time (p_c), s	0.4	3.6		0.4	0.0	10.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	4	25	90	2	27	10	2166	111	29	1679	4
Future Volume (veh/h)	11	4	25	90	2	27	10	2166	111	29	1679	4
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1827	1827	1900	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	18	6	40	108	2	33	11	2280	0	31	1767	4
Adj No. of Lanes	0	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	0.62	0.62	0.62	0.83	0.83	0.83	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	77	26	81	444	8	138	191	2506	1121	115	2360	5
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.01	0.72	0.00	0.66	0.66	0.66
Sat Flow, veh/h	244	275	864	2577	90	1477	1740	3471	1553	160	3553	8
Grp Volume(v), veh/h	64	0	0	108	0	35	11	2280	0	31	863	908
Grp Sat Flow(s),veh/h/ln	1383	0	0	1288	0	1566	1740	1736	1553	160	1736	1826
Q Serve(g_s), s	0.8	0.0	0.0	0.0	0.0	1.8	0.2	45.2	0.0	16.2	28.2	28.3
Cycle Q Clear(g_c), s	3.6	0.0	0.0	2.5	0.0	1.8	0.2	45.2	0.0	56.5	28.2	28.3
Prop In Lane	0.28		0.62	1.00		0.94	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	183	0	0	444	0	146	191	2506	1121	115	1153	1213
V/C Ratio(X)	0.35	0.00	0.00	0.24	0.00	0.24	0.06	0.91	0.00	0.27	0.75	0.75
Avail Cap(c_a), veh/h	262	0	0	594	0	238	254	2506	1121	115	1153	1213
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	0.0	36.1	0.0	35.7	9.5	9.6	0.0	34.6	9.5	9.5
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.3	0.0	0.8	0.1	6.3	0.0	5.7	4.5	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	1.2	0.0	0.8	0.1	23.4	0.0	0.9	14.6	15.3
LnGrp Delay(d),s/veh	37.7	0.0	0.0	36.4	0.0	36.6	9.6	15.8	0.0	40.3	14.0	13.8
LnGrp LOS	D			D		D	A	B		D	B	B
Approach Vol, veh/h		64			143			2291			1802	
Approach Delay, s/veh		37.7			36.4			15.8			14.4	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	4.9	65.1		15.0		70.0		15.0
Change Period (Y+Rc), s	4.0	* 8.6		7.1		* 8.6		7.1
Max Green Setting (Gmax), s	4.6	* 53		12.9		* 61		12.9
Max Q Clear Time (g_c+I1), s	2.2	58.5		4.5		47.2		5.6
Green Ext Time (p_c), s	0.0	0.0		0.6		13.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	119	0	2259	1761	26
Future Vol, veh/h	0	119	0	2259	1761	26
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	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	96	96	97	97
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	170	0	2353	1815	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	921	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	269	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	269	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	38.8	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	269	-	-
HCM Lane V/C Ratio	-	0.632	-	-
HCM Control Delay (s)	-	38.8	-	-
HCM Lane LOS	-	E	-	-
HCM 95th %tile Q(veh)	-	3.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	29	26	39	12	12	17	2165	48	6	1841	24
Future Volume (veh/h)	30	29	26	39	12	12	17	2165	48	6	1841	24
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	35	34	30	59	18	18	18	2255	0	7	2116	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.66	0.66	0.66	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	214	213	181	199	211	180	132	2566	1148	111	2566	1148
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.74	0.74	0.00	0.74	0.74	0.00
Sat Flow, veh/h	1353	1845	1568	1307	1827	1553	188	3471	1553	164	3471	1553
Grp Volume(v), veh/h	35	34	30	59	18	18	18	2255	0	7	2116	0
Grp Sat Flow(s),veh/h/ln	1353	1845	1568	1307	1827	1553	188	1736	1553	164	1736	1553
Q Serve(g_s), s	2.5	1.7	1.8	4.4	0.9	1.1	7.3	50.0	0.0	3.4	42.1	0.0
Cycle Q Clear(g_c), s	3.4	1.7	1.8	6.1	0.9	1.1	49.4	50.0	0.0	53.4	42.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	213	181	199	211	180	132	2566	1148	111	2566	1148
V/C Ratio(X)	0.16	0.16	0.17	0.30	0.09	0.10	0.14	0.88	0.00	0.06	0.82	0.00
Avail Cap(c_a), veh/h	432	510	434	410	506	430	132	2566	1148	111	2566	1148
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.3	41.2	41.2	43.9	40.8	40.9	25.5	10.0	0.0	29.9	9.0	0.0
Incr Delay (d2), s/veh	0.4	0.3	0.4	0.8	0.2	0.2	2.1	4.7	0.0	1.1	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.9	0.8	1.6	0.5	0.5	0.5	25.2	0.0	0.2	20.8	0.0
LnGrp Delay(d),s/veh	42.7	41.5	41.6	44.8	41.0	41.1	27.7	14.7	0.0	31.0	12.2	0.0
LnGrp LOS	D	D	D	D	D	D	C	B		C	B	
Approach Vol, veh/h		99			95			2273			2123	
Approach Delay, s/veh		42.0			43.4			14.8			12.2	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		85.0		18.4		85.0		18.4
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 76		28.6		* 76		28.6
Max Q Clear Time (g_c+I1), s		55.4		8.1		52.0		5.4
Green Ext Time (p_c), s		20.6		0.6		24.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	16.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	82	200	108	2079	1751	62
Future Vol, veh/h	82	200	108	2079	1751	62
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	300	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	95	95	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	111	270	114	2188	1863	66

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3218	964	1929	0	-	0
Stage 1	1896	-	-	-	-	-
Stage 2	1322	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 7	~ 255	294	-	-	-
Stage 1	~ 104	-	-	-	-	-
Stage 2	213	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 4	~ 255	294	-	-	-
Mov Cap-2 Maneuver	~ 74	-	-	-	-	-
Stage 1	~ 104	-	-	-	-	-
Stage 2	130	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	192.1	1.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	294	-	74	255	-	-
HCM Lane V/C Ratio	0.387	-	1.497	1.06	-	-
HCM Control Delay (s)	24.8	-	$ 378.4	115.7	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.8	-	9.1	11.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	0	40	9	0	11	51	2000	96	0	1640	20
Future Vol, veh/h	47	0	40	9	0	11	51	2000	96	0	1640	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	250	-	150	150	-	225
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	90	90	90	95	95	95	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	4	4	4
Mvmt Flow	53	0	45	10	0	12	54	2105	101	0	1745	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2905	3958	872	3085	3958	1053	1745	0	0	2105	0	0
Stage 1	1745	1745	-	2213	2213	-	-	-	-	-	-	-
Stage 2	1160	2213	-	872	1745	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.2	-	-	4.18	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.25	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 7	3	294	~ 5	3	223	343	-	-	250	-	-
Stage 1	90	139	-	45	80	-	-	-	-	-	-	-
Stage 2	208	80	-	312	139	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 6	3	294	~ 4	3	223	343	-	-	250	-	-
Mov Cap-2 Maneuver	~ 50	42	-	30	36	-	-	-	-	-	-	-
Stage 1	76	139	-	38	67	-	-	-	-	-	-	-
Stage 2	166	67	-	264	139	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	159.7	91.4	0.4	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	343	-	-	50	294	30	223	250	-	-
HCM Lane V/C Ratio	0.157	-	-	1.068	0.155	0.333	0.055	-	-	-
HCM Control Delay (s)	17.4	-	-	279	19.5	176.2	22.1	0	-	-
HCM Lane LOS	C	-	-	F	C	F	C	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	4.7	0.5	1.1	0.2	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	490	65	36	1864	1464	446
Future Volume (veh/h)	490	65	36	1864	1464	446
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	516	0	38	1962	1525	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.96	0.96
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	534	477	157	2053	1709	764
Arrive On Green	0.31	0.00	0.05	0.59	0.49	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	516	0	38	1962	1525	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	44.0	0.0	0.0	79.2	59.3	0.0
Cycle Q Clear(g_c), s	44.0	0.0	0.0	79.2	59.3	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	534	477	157	2053	1709	764
V/C Ratio(X)	0.97	0.00	0.24	0.96	0.89	0.00
Avail Cap(c_a), veh/h	544	486	157	2053	1709	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.7	0.0	63.4	28.6	34.3	0.0
Incr Delay (d2), s/veh	29.8	0.0	0.8	11.9	7.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.3	0.0	1.5	41.3	30.2	0.0
LnGrp Delay(d),s/veh	80.5	0.0	64.2	40.5	41.9	0.0
LnGrp LOS	F		E	D	D	
Approach Vol, veh/h	516			2000	1525	
Approach Delay, s/veh	80.5			40.9	41.9	
Approach LOS	F			D	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.8	81.2				96.0		53.1
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.0	73.4				88.2		47.1
Max Q Clear Time (g_c+I1), s	2.0	61.3				81.2		46.0
Green Ext Time (p_c), s	4.3	7.4				5.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	24	46	14	49	38	13	18	475	63	8	416	30
Future Vol, veh/h	24	46	14	49	38	13	18	475	63	8	416	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	200	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	89	89	89	91	91	91	89	89	89
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	32	61	18	55	43	15	20	522	69	9	467	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1075	1047	467	1087	1047	522	467	0	0	522	0	0
Stage 1	485	485	-	562	562	-	-	-	-	-	-	-
Stage 2	590	562	-	525	485	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	192	223	584	191	225	549	1079	-	-	1029	-	-
Stage 1	552	542	-	506	505	-	-	-	-	-	-	-
Stage 2	484	500	-	530	547	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	154	214	584	140	216	549	1079	-	-	1029	-	-
Mov Cap-2 Maneuver	154	214	-	140	216	-	-	-	-	-	-	-
Stage 1	537	535	-	492	491	-	-	-	-	-	-	-
Stage 2	418	486	-	450	540	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	38.8	34.6	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	WBLn2	SWL	SWT	SWR
Capacity (veh/h)	1079	-	-	213	140	256	1029	-	-
HCM Lane V/C Ratio	0.018	-	-	0.519	0.393	0.224	0.009	-	-
HCM Control Delay (s)	8.4	0	-	38.8	46.5	23.1	8.5	0	-
HCM Lane LOS	A	A	-	E	E	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.7	1.7	0.8	0	-	-

Intersection	
Int Delay, s/veh	9.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	193	2	0	0	110	1331	8	0	2032	15
Future Vol, veh/h	0	0	193	2	0	0	110	1331	8	0	2032	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	150	175	-	150	0	-	-
Veh in Median Storage, #	-	2	-	-	2	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	50	50	50	82	82	82	93	93	93
Heavy Vehicles, %	6	6	6	30	30	30	3	3	3	4	4	4
Mvmt Flow	0	0	227	4	0	0	134	1623	10	0	2185	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3273	4084	1101	2983	4092	812	2201	0	0	1623	0	0
Stage 1	2193	2193	-	1891	1891	-	-	-	-	-	-	-
Stage 2	1080	1891	-	1092	2201	-	-	-	-	-	-	-
Critical Hdwy	7.62	6.62	7.02	8.1	7.1	7.5	4.16	-	-	4.18	-	-
Critical Hdwy Stg 1	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.56	4.06	3.36	3.8	4.3	3.6	2.23	-	-	2.24	-	-
Pot Cap-1 Maneuver	3	2	~ 200	4	1	269	232	-	-	388	-	-
Stage 1	44	78	-	53	86	-	-	-	-	-	-	-
Stage 2	226	112	-	185	57	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	2	1	~ 200	-	0	269	232	-	-	388	-	-
Mov Cap-2 Maneuver	18	37	-	20	24	-	-	-	-	-	-	-
Stage 1	19	78	-	22	36	-	-	-	-	-	-	-
Stage 2	95	47	-	-	57	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	154.1		3	0
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	232	-	-	200	-	-	388	-	-
HCM Lane V/C Ratio	0.578	-	-	1.135	-	-	-	-	-
HCM Control Delay (s)	39.8	-	-	154.1	-	0	0	-	-
HCM Lane LOS	E	-	-	F	-	A	A	-	-
HCM 95th %tile Q(veh)	3.2	-	-	11.1	-	-	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	0	25	239	0	113	24	1268	221	148	2031	24
Future Volume (veh/h)	9	0	25	239	0	113	24	1268	221	148	2031	24
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	19	0	52	419	0	198	30	1585	0	159	2184	26
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.48	0.48	0.48	0.57	0.57	0.57	0.80	0.80	0.80	0.93	0.93	0.93
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	45	20	54	182	0	276	150	1773	793	240	1913	23
Arrive On Green	0.18	0.00	0.18	0.18	0.00	0.18	0.05	0.51	0.00	0.08	0.54	0.54
Sat Flow, veh/h	0	110	302	621	0	1553	1740	3471	1553	1740	3513	42
Grp Volume(v), veh/h	71	0	0	419	0	198	30	1585	0	159	1077	1133
Grp Sat Flow(s),veh/h/ln	413	0	0	621	0	1553	1740	1736	1553	1740	1736	1820
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	12.1	0.8	41.3	0.0	4.2	54.8	54.8
Cycle Q Clear(g_c), s	17.9	0.0	0.0	17.9	0.0	12.1	0.8	41.3	0.0	4.2	54.8	54.8
Prop In Lane	0.27		0.73	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	119	0	0	182	0	276	150	1773	793	240	945	990
V/C Ratio(X)	0.60	0.00	0.00	2.30	0.00	0.72	0.20	0.89	0.00	0.66	1.14	1.14
Avail Cap(c_a), veh/h	119	0	0	182	0	276	284	1773	793	316	945	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	0.0	44.9	0.0	39.0	23.2	22.1	0.0	21.5	22.9	22.9
Incr Delay (d2), s/veh	8.0	0.0	0.0	602.8	0.0	8.6	0.6	7.4	0.0	3.2	75.7	77.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	35.5	0.0	5.8	0.5	21.4	0.0	2.5	45.9	48.4
LnGrp Delay(d),s/veh	44.5	0.0	0.0	647.7	0.0	47.5	23.9	29.5	0.0	24.7	98.6	100.0
LnGrp LOS	D			F		D	C	C		C	F	F
Approach Vol, veh/h		71			617			1615			2369	
Approach Delay, s/veh		44.5			455.1			29.4			94.3	
Approach LOS		D			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	63.4		25.0	15.6	60.0		25.0
Change Period (Y+Rc), s	7.7	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	12.3	* 51		17.9	12.3	* 51		17.9
Max Q Clear Time (g_c+I1), s	2.8	56.8		19.9	6.2	43.3		19.9
Green Ext Time (p_c), s	0.0	0.0		0.0	0.2	7.9		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		118.8
HCM 2010 LOS		F

Notes

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	50	0	1620	2220	110
Future Vol, veh/h	0	50	0	1620	2220	110
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	88	88	90	90
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	91	0	1841	2467	122

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1294	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	151	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	151	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	59.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	151	-	-
HCM Lane V/C Ratio	-	0.602	-	-
HCM Control Delay (s)	-	59.6	-	-
HCM Lane LOS	-	F	-	-
HCM 95th %tile Q(veh)	-	3.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	12	14	20	12	12	36	1649	18	4	2094	40
Future Volume (veh/h)	32	12	14	20	12	12	36	1649	18	4	2094	40
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	42	16	18	34	21	21	43	1987	0	4	2327	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.77	0.77	0.77	0.58	0.58	0.58	0.83	0.83	0.83	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	200	202	172	203	200	170	104	2610	1167	156	2610	1167
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.75	0.75	0.00	0.75	0.75	0.00
Sat Flow, veh/h	1346	1845	1568	1343	1827	1553	152	3471	1553	213	3471	1553
Grp Volume(v), veh/h	42	16	18	34	21	21	43	1987	0	4	2327	0
Grp Sat Flow(s),veh/h/ln	1346	1845	1568	1343	1827	1553	152	1736	1553	213	1736	1553
Q Serve(g_s), s	3.1	0.8	1.1	2.5	1.1	1.3	26.7	36.0	0.0	1.2	54.7	0.0
Cycle Q Clear(g_c), s	4.3	0.8	1.1	3.4	1.1	1.3	81.4	36.0	0.0	37.2	54.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	202	172	203	200	170	104	2610	1167	156	2610	1167
V/C Ratio(X)	0.21	0.08	0.10	0.17	0.10	0.12	0.41	0.76	0.00	0.03	0.89	0.00
Avail Cap(c_a), veh/h	408	487	414	411	483	410	104	2610	1167	156	2610	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.3	43.3	43.4	44.8	43.4	43.5	42.4	7.8	0.0	18.6	10.1	0.0
Incr Delay (d2), s/veh	0.5	0.2	0.3	0.4	0.2	0.3	11.7	2.2	0.0	0.3	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.4	0.5	1.0	0.6	0.6	1.6	17.6	0.0	0.1	27.4	0.0
LnGrp Delay(d),s/veh	45.8	43.5	43.7	45.2	43.6	43.8	54.1	10.0	0.0	18.9	15.3	0.0
LnGrp LOS	D	D	D	D	D	D	D	A		B	B	
Approach Vol, veh/h		76			76			2030			2331	
Approach Delay, s/veh		44.8			44.4			10.9			15.3	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.0		18.3		90.0		18.3
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 81		28.6		* 81		28.6
Max Q Clear Time (g_c+I1), s		56.7		5.4		83.4		6.3
Green Ext Time (p_c), s		24.3		0.5		0.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	87	193	1518	2100	73
Future Vol, veh/h	12	87	193	1518	2100	73
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	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	86	86	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	19	138	224	1765	2234	78

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3604	1156	2312	0	-	0
Stage 1	2273	-	-	-	-	-
Stage 2	1331	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 4	190	~ 207	-	-	-
Stage 1	64	-	-	-	-	-
Stage 2	211	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	0	190	~ 207	-	-	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	64	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s		15.3	0
HCM LOS	-		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	~ 207	-	-	190	-	-
HCM Lane V/C Ratio	1.084	-	-	0.727	-	-
HCM Control Delay (s)	135.4	-	-	62.4	-	-
HCM Lane LOS	F	-	-	F	-	-
HCM 95th %tile Q(veh)	10.3	-	-	4.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	18.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	37	28	1409	2130	45
Future Vol, veh/h	13	37	28	1409	2130	45
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	-	250	-	-	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	93	93
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	16	46	35	1740	2290	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3229	1145	2290	0	-	0
Stage 1	2290	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.2	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.25	-	-	-
Pot Cap-1 Maneuver	~ 7	193	208	-	-	-
Stage 1	62	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 6	193	208	-	-	-
Mov Cap-2 Maneuver	~ 6	-	-	-	-	-
Stage 1	62	-	-	-	-	-
Stage 2	284	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1258.7	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	208	-	21	-	-
HCM Lane V/C Ratio	0.166	-	2.939	-	-
HCM Control Delay (s)	25.7	-	$ 1258.7	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0.6	-	8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	383	36	20	1294	1898	515
Future Volume (veh/h)	383	36	20	1294	1898	515
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	485	0	26	1681	2041	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.79	0.79	0.77	0.77	0.93	0.93
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	367	328	150	2132	1682	752
Arrive On Green	0.21	0.00	0.04	0.61	0.48	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	485	0	26	1681	2041	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	18.1	0.0	0.6	30.8	41.2	0.0
Cycle Q Clear(g_c), s	18.1	0.0	0.6	30.8	41.2	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	367	328	150	2132	1682	752
V/C Ratio(X)	1.32	0.00	0.17	0.79	1.21	0.00
Avail Cap(c_a), veh/h	367	328	232	2132	1682	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	0.0	19.9	12.3	21.9	0.0
Incr Delay (d2), s/veh	162.7	0.0	0.5	3.1	101.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.1	0.0	0.3	15.4	43.4	0.0
LnGrp Delay(d),s/veh	196.1	0.0	20.4	15.3	123.7	0.0
LnGrp LOS	F		C	B	F	
Approach Vol, veh/h	485			1707	2041	
Approach Delay, s/veh	196.1			15.4	123.7	
Approach LOS	F			B	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	49.0				60.0		25.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.2	37.2				52.2		18.1
Max Q Clear Time (g_c+I1), s	2.6	43.2				32.8		20.1
Green Ext Time (p_c), s	0.0	0.0				18.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	88.3
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	27	43	15	46	43	8	12	378	120	9	402	44
Future Vol, veh/h	27	43	15	46	43	8	12	378	120	9	402	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	88	88	88	88	88	88	90	90	90
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	39	61	21	52	49	9	14	430	136	10	447	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1021	1060	447	1033	992	498	447	0	0	566	0	0
Stage 1	467	467	-	525	525	-	-	-	-	-	-	-
Stage 2	554	593	-	508	467	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	209	219	599	208	243	566	1098	-	-	991	-	-
Stage 1	565	552	-	530	524	-	-	-	-	-	-	-
Stage 2	506	484	-	542	557	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	169	212	599	152	235	566	1098	-	-	991	-	-
Mov Cap-2 Maneuver	169	212	-	152	235	-	-	-	-	-	-	-
Stage 1	554	544	-	520	514	-	-	-	-	-	-	-
Stage 2	442	475	-	457	549	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	40.2	45.5	0.2	0.2
HCM LOS	E	E		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1098	-	-	219	194	991	-	-
HCM Lane V/C Ratio	0.012	-	-	0.554	0.568	0.01	-	-
HCM Control Delay (s)	8.3	0	-	40.2	45.5	8.7	0	-
HCM Lane LOS	A	A	-	E	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3	3.1	0	-	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	116	0	0	0	88	1987	0	0	1503	12
Future Vol, veh/h	4	0	116	0	0	0	88	1987	0	0	1503	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	150	175	-	150	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	25	25	25	96	96	96	94	94	94
Heavy Vehicles, %	6	6	6	30	30	30	3	3	3	4	4	4
Mvmt Flow	4	0	129	0	0	0	92	2070	0	0	1599	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2823	3858	806	3052	3865	1035	1612	0	0	2070	0	0
Stage 1	1605	1605	-	2253	2253	-	-	-	-	-	-	-
Stage 2	1218	2253	-	799	1612	-	-	-	-	-	-	-
Critical Hdwy	7.62	6.62	7.02	8.1	7.1	7.5	4.16	-	-	4.18	-	-
Critical Hdwy Stg 1	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.62	5.62	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.56	4.06	3.36	3.8	4.3	3.6	2.23	-	-	2.24	-	-
Pot Cap-1 Maneuver	8	3	317	3	2	186	396	-	-	258	-	-
Stage 1	105	157	-	29	53	-	-	-	-	-	-	-
Stage 2	185	73	-	290	123	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	7	2	317	1	2	186	396	-	-	258	-	-
Mov Cap-2 Maneuver	7	2	-	1	2	-	-	-	-	-	-	-
Stage 1	81	157	-	22	41	-	-	-	-	-	-	-
Stage 2	142	56	-	172	123	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	157.7	0	0.7	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	396	-	-	128	-	-	258	-	-
HCM Lane V/C Ratio	0.231	-	-	1.042	-	-	-	-	-
HCM Control Delay (s)	16.8	-	-	157.7	0	0	0	-	-
HCM Lane LOS	C	-	-	F	A	A	A	-	-
HCM 95th %tile Q(veh)	0.9	-	-	7.4	-	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	0	26	19	0	17	11	2091	19	11	1677	4
Future Volume (veh/h)	12	0	26	19	0	17	11	2091	19	11	1677	4
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1624	1900	1900	1827	1827	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	19	0	42	23	0	20	12	2201	0	12	1765	4
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	0
Peak Hour Factor	0.62	0.62	0.62	0.83	0.83	0.83	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	80	13	81	218	0	135	186	2123	950	126	2173	5
Arrive On Green	0.09	0.00	0.09	0.09	0.00	0.09	0.02	0.61	0.00	0.02	0.61	0.61
Sat Flow, veh/h	279	146	938	1527	0	1553	1740	3471	1553	1740	3553	8
Grp Volume(v), veh/h	61	0	0	23	0	20	12	2201	0	12	862	907
Grp Sat Flow(s),veh/h/ln	1363	0	0	1527	0	1553	1740	1736	1553	1740	1736	1826
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.0	1.0	0.2	51.4	0.0	0.2	32.2	32.2
Cycle Q Clear(g_c), s	3.5	0.0	0.0	1.0	0.0	1.0	0.2	51.4	0.0	0.2	32.2	32.2
Prop In Lane	0.31		0.69	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	174	0	0	218	0	135	186	2123	950	126	1061	1116
V/C Ratio(X)	0.35	0.00	0.00	0.11	0.00	0.15	0.06	1.04	0.00	0.10	0.81	0.81
Avail Cap(c_a), veh/h	341	0	0	386	0	331	400	2123	950	340	1061	1116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	0.0	35.5	0.0	35.5	12.1	16.3	0.0	21.4	12.6	12.6
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.2	0.0	0.5	0.1	29.8	0.0	0.3	6.8	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	0.5	0.0	0.4	0.1	33.0	0.0	0.2	17.1	18.1
LnGrp Delay(d),s/veh	37.8	0.0	0.0	35.7	0.0	36.0	12.3	46.2	0.0	21.7	19.4	19.1
LnGrp LOS	D			D		D	B	F		C	B	B
Approach Vol, veh/h		61			43			2213			1781	
Approach Delay, s/veh		37.8			35.9			46.0			19.3	
Approach LOS		D			D			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.7	60.0		14.4	9.7	60.0		14.4
Change Period (Y+Rc), s	7.7	* 8.6		7.1	7.7	* 8.6		7.1
Max Green Setting (Gmax), s	12.3	* 51		17.9	12.3	* 51		17.9
Max Q Clear Time (g_c+I1), s	2.2	34.2		3.0	2.2	53.4		5.5
Green Ext Time (p_c), s	0.0	16.7		0.4	0.0	0.0		0.3

Intersection Summary		
HCM 2010 Ctrl Delay		34.1
HCM 2010 LOS		C

Notes

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	126	0	2091	1689	26
Future Vol, veh/h	0	126	0	2091	1689	26
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	96	96	97	97
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	180	0	2178	1741	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	884	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.98	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.34	-	-	-	-
Pot Cap-1 Maneuver	0	285	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	285	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	285	-	-
HCM Lane V/C Ratio	-	0.632	-	-
HCM Control Delay (s)	-	37	-	-
HCM Lane LOS	-	E	-	-
HCM 95th %tile Q(veh)	-	4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	31	27	42	13	5	18	2028	51	1	1794	20
Future Volume (veh/h)	24	31	27	42	13	5	18	2028	51	1	1794	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	28	36	31	64	20	8	19	2112	0	1	2062	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.66	0.66	0.66	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	203	204	173	187	202	171	143	2608	1167	135	2608	1167
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.75	0.75	0.00	0.75	0.75	0.00
Sat Flow, veh/h	1363	1845	1568	1303	1827	1553	198	3471	1553	188	3471	1553
Grp Volume(v), veh/h	28	36	31	64	20	8	19	2112	0	1	2062	0
Grp Sat Flow(s),veh/h/ln	1363	1845	1568	1303	1827	1553	198	1736	1553	188	1736	1553
Q Serve(g_s), s	2.0	1.9	1.9	5.1	1.1	0.5	7.1	41.9	0.0	0.4	39.4	0.0
Cycle Q Clear(g_c), s	3.1	1.9	1.9	7.0	1.1	0.5	46.5	41.9	0.0	42.3	39.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	204	173	187	202	171	143	2608	1167	135	2608	1167
V/C Ratio(X)	0.14	0.18	0.18	0.34	0.10	0.05	0.13	0.81	0.00	0.01	0.79	0.00
Avail Cap(c_a), veh/h	413	487	414	387	482	410	143	2608	1167	135	2608	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.8	43.7	43.7	46.9	43.4	43.1	22.5	8.6	0.0	22.0	8.3	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.5	1.1	0.2	0.1	1.9	2.8	0.0	0.1	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.0	0.9	1.9	0.6	0.2	0.5	20.7	0.0	0.0	19.5	0.0
LnGrp Delay(d),s/veh	45.1	44.1	44.2	48.0	43.6	43.2	24.4	11.4	0.0	22.1	10.8	0.0
LnGrp LOS	D	D	D	D	D	D	C	B		C	B	
Approach Vol, veh/h		95			92			2131			2063	
Approach Delay, s/veh		44.4			46.6			11.5			10.8	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.0		18.4		90.0		18.4
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 81		28.6		* 81		28.6
Max Q Clear Time (g_c+I1), s		44.3		9.0		48.5		5.1
Green Ext Time (p_c), s		35.7		0.6		31.8		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Notes

Intersection	
Int Delay, s/veh	159.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	66	211	114	1920	1688	56
Future Vol, veh/h	66	211	114	1920	1688	56
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	300	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	95	95	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	89	285	120	2021	1796	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3077	928	1855	0	-	0
Stage 1	1826	-	-	-	-	-
Stage 2	1251	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 9	~ 270	314	-	-	-
Stage 1	113	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 6	~ 270	314	-	-	-
Mov Cap-2 Maneuver	~ 6	-	-	-	-	-
Stage 1	113	-	-	-	-	-
Stage 2	144	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1855.8	1.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	314	-	6	270	-	-
HCM Lane V/C Ratio	0.382	-	14.865	1.056	-	-
HCM Control Delay (s)	23.4	-	$ 7432.1	111.5	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.7	-	13	11.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	58

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	38	52	2006	1629	21
Future Vol, veh/h	50	38	52	2006	1629	21
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	-	250	-	-	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	95	95	94	94
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	57	43	55	2112	1733	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2898	866	1733	0	-	0
Stage 1	1733	-	-	-	-	-
Stage 2	1165	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.2	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.25	-	-	-
Pot Cap-1 Maneuver	~ 13	297	347	-	-	-
Stage 1	128	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 11	297	347	-	-	-
Mov Cap-2 Maneuver	~ 11	-	-	-	-	-
Stage 1	128	-	-	-	-	-
Stage 2	218	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 2323.7	0.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	347	-	19	-	-
HCM Lane V/C Ratio	0.158	-	5.263	-	-
HCM Control Delay (s)	17.3	-	$ 2323.7	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0.6	-	13	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	519	69	38	1931	1477	472
Future Volume (veh/h)	519	69	38	1931	1477	472
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1827	1827	1827	1827
Adj Flow Rate, veh/h	546	0	40	2033	1539	0
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.96	0.96
Percent Heavy Veh, %	5	5	4	4	4	4
Cap, veh/h	367	328	189	2132	1638	733
Arrive On Green	0.21	0.00	0.05	0.61	0.47	0.00
Sat Flow, veh/h	1723	1538	1740	3563	3563	1553
Grp Volume(v), veh/h	546	0	40	2033	1539	0
Grp Sat Flow(s),veh/h/ln	1723	1538	1740	1736	1736	1553
Q Serve(g_s), s	18.1	0.0	0.9	46.4	35.7	0.0
Cycle Q Clear(g_c), s	18.1	0.0	0.9	46.4	35.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	367	328	189	2132	1638	733
V/C Ratio(X)	1.49	0.00	0.21	0.95	0.94	0.00
Avail Cap(c_a), veh/h	367	328	249	2132	1638	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	0.0	18.5	15.3	21.3	0.0
Incr Delay (d2), s/veh	233.6	0.0	0.6	11.3	11.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.4	0.0	0.5	25.1	19.6	0.0
LnGrp Delay(d),s/veh	267.0	0.0	19.0	26.6	33.1	0.0
LnGrp LOS	F		B	C	C	
Approach Vol, veh/h	546			2073	1539	
Approach Delay, s/veh	267.0			26.4	33.1	
Approach LOS	F			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	12.1	47.9				60.0		25.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.2	37.2				52.2		18.1
Max Q Clear Time (g_c+I1), s	2.9	37.7				48.4		20.1
Green Ext Time (p_c), s	0.0	0.0				3.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.5
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↰	↱
Traffic Vol, veh/h	25	40	14	40	34	13	19	490	49	9	429	31
Future Vol, veh/h	25	40	14	40	34	13	19	490	49	9	429	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	89	89	89	91	91	91	89	89	89
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	33	53	18	45	38	15	21	538	54	10	482	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1136	1136	482	1145	1109	565	482	0	0	592	0	0
Stage 1	502	502	-	607	607	-	-	-	-	-	-	-
Stage 2	634	634	-	538	502	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	174	197	572	174	207	519	1065	-	-	969	-	-
Stage 1	541	532	-	478	482	-	-	-	-	-	-	-
Stage 2	457	464	-	522	537	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	139	188	572	128	198	519	1065	-	-	969	-	-
Mov Cap-2 Maneuver	139	188	-	128	198	-	-	-	-	-	-	-
Stage 1	525	524	-	464	468	-	-	-	-	-	-	-
Stage 2	396	450	-	448	529	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	45.1	50.9	0.3	0.2
HCM LOS	E	F		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	SWL	SWT	SWR
Capacity (veh/h)	1065	-	-	189	171	969	-	-
HCM Lane V/C Ratio	0.02	-	-	0.55	0.572	0.01	-	-
HCM Control Delay (s)	8.4	0	-	45.1	50.9	8.8	0	-
HCM Lane LOS	A	A	-	E	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.9	3	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	19	193	240	5	23	133	1392	34	42	2048	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1792	1792	1462	1462	1462	1845	1845	1845	1827	1827	1900
Adj Flow Rate, veh/h	0	22	0	267	6	0	162	1698	0	45	2202	16
Adj No. of Lanes	0	1	1	2	1	1	1	2	1	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.82	0.82	0.82	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	30	30	30	3	3	3	4	4	4
Cap, veh/h	0	34	138	251	237	231	177	2326	1187	191	2175	16
Arrive On Green	0.00	0.02	0.00	0.09	0.16	0.00	0.07	0.66	0.00	0.02	0.62	0.62
Sat Flow, veh/h	0	1792	1524	2700	1462	1242	1757	3505	1568	1740	3532	26
Grp Volume(v), veh/h	0	22	0	267	6	0	162	1698	0	45	1081	1137
Grp Sat Flow(s),veh/h/ln	0	1792	1524	1350	1462	1242	1757	1752	1568	1740	1736	1822
Q Serve(g_s), s	0.0	1.7	0.0	13.0	0.5	0.0	8.7	44.1	0.0	1.3	86.0	86.0
Cycle Q Clear(g_c), s	0.0	1.7	0.0	13.0	0.5	0.0	8.7	44.1	0.0	1.3	86.0	86.0
Prop In Lane	0.00		1.00	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	0	34	138	251	237	231	177	2326	1187	191	1069	1122
V/C Ratio(X)	0.00	0.65	0.00	1.06	0.03	0.00	0.91	0.73	0.00	0.24	1.01	1.01
Avail Cap(c_a), veh/h	0	167	251	251	345	323	177	2326	1187	243	1069	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	68.0	0.0	63.3	49.2	0.0	49.5	15.3	0.0	15.3	26.8	26.8
Incr Delay (d2), s/veh	0.0	18.7	0.0	74.1	0.0	0.0	43.6	1.2	0.0	0.6	30.3	30.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.0	0.0	7.4	0.2	0.0	8.4	21.6	0.0	0.7	50.0	52.5
LnGrp Delay(d),s/veh	0.0	86.8	0.0	137.5	49.3	0.0	93.1	16.5	0.0	15.9	57.1	57.1
LnGrp LOS		F		F	D		F	B		B	F	F
Approach Vol, veh/h		22			273			1860			2263	
Approach Delay, s/veh		86.8			135.5			23.2			56.3	
Approach LOS		F			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	99.7	20.0	9.6	17.0	93.0		29.6
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0		7.0
Max Green Setting (Gmax), s	7.5	88.5	13.0	13.0	10.0	86.0		33.0
Max Q Clear Time (g_c+I1), s	3.3	46.1	15.0	3.7	10.7	88.0		2.5
Green Ext Time (p_c), s	0.0	40.0	0.0	0.0	0.0	0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	47.4
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	3	25	332	0	122	24	1453	275	162	2284	27
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1624	1624	1900	1827	1827	1900	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	19	6	52	369	0	136	30	1816	0	174	2456	29
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	0.48	0.48	0.48	0.90	0.90	0.90	0.80	0.80	0.80	0.93	0.93	0.93
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	112	8	73	348	0	292	51	2031	909	196	2473	29
Arrive On Green	0.06	0.06	0.06	0.10	0.00	0.19	0.59	0.59	0.00	0.07	0.70	0.70
Sat Flow, veh/h	1088	145	1257	3375	0	1553	130	3471	1553	1740	3514	41
Grp Volume(v), veh/h	19	0	58	369	0	136	30	1816	0	174	1211	1274
Grp Sat Flow(s),veh/h/ln	1088	0	1402	1688	0	1553	130	1736	1553	1740	1736	1820
Q Serve(g_s), s	2.4	0.0	5.9	15.0	0.0	11.3	1.7	66.2	0.0	7.5	99.4	100.7
Cycle Q Clear(g_c), s	2.4	0.0	5.9	15.0	0.0	11.3	85.2	66.2	0.0	7.5	99.4	100.7
Prop In Lane	1.00		0.90	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	112	0	81	348	0	292	51	2031	909	196	1221	1281
V/C Ratio(X)	0.17	0.00	0.72	1.06	0.00	0.47	0.59	0.89	0.00	0.89	0.99	1.00
Avail Cap(c_a), veh/h	146	0	124	348	0	340	51	2031	909	221	1221	1281
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.7	0.0	67.4	65.3	0.0	52.5	72.7	26.2	0.0	40.4	21.1	21.3
Incr Delay (d2), s/veh	0.7	0.0	11.1	65.1	0.0	1.2	41.3	6.6	0.0	30.0	23.7	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.5	10.1	0.0	5.0	1.8	33.4	0.0	8.5	55.1	58.5
LnGrp Delay(d),s/veh	66.4	0.0	78.5	130.4	0.0	53.7	114.0	32.8	0.0	70.4	44.8	45.3
LnGrp LOS	E		E	F		D	F	C		E	D	D
Approach Vol, veh/h		77			505			1846			2659	
Approach Delay, s/veh		75.5			109.7			34.1			46.7	
Approach LOS		E			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6	7	8
Phs Duration (G+Y+Rc), s		111.0		34.5	17.2	93.8	19.0	15.5
Change Period (Y+Rc), s		* 8.6		7.1	7.7	* 8.6	4.0	7.1
Max Green Setting (Gmax), s		* 1E2		31.9	11.6	* 83	15.0	12.9
Max Q Clear Time (g_c+I1), s		102.7		13.3	9.5	87.2	17.0	7.9
Green Ext Time (p_c), s		0.0		1.1	0.1	0.0	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	48.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	50	0	1859	2561	115
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	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	88	88	90	90
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	91	0	2112	2846	128

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3965	1487	2973	0	-	0
Stage 1	2909	-	-	-	-	-
Stage 2	1056	-	-	-	-	-
Critical Hdwy	6.88	6.98	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	2.24	-	-	-
Pot Cap-1 Maneuver	2	111	112	-	-	-
Stage 1	27	-	-	-	-	-
Stage 2	291	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	2	111	112	-	-	-
Mov Cap-2 Maneuver	25	-	-	-	-	-
Stage 1	27	-	-	-	-	-
Stage 2	291	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	113.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	112	-	111	-	-
HCM Lane V/C Ratio	-	-	0.819	-	-
HCM Control Delay (s)	0	-	113.4	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	4.7	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	56	1476	74	0	2429
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	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	81	81	93	93
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	0	62	1822	91	0	2612

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3128	911	0	0	1822	0
Stage 1	1822	-	-	-	-	-
Stage 2	1306	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.18	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.24	-
Pot Cap-1 Maneuver	9	277	-	-	324	-
Stage 1	114	-	-	-	-	-
Stage 2	218	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	9	277	-	-	324	-
Mov Cap-2 Maneuver	9	-	-	-	-	-
Stage 1	114	-	-	-	-	-
Stage 2	218	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	277	324	-
HCM Lane V/C Ratio	-	-	0.225	-	-
HCM Control Delay (s)	-	-	21.7	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	38	12	14	20	12	19	36	1858	18	13	2397	50
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	49	16	18	34	21	33	43	2239	0	14	2663	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.77	0.77	0.77	0.58	0.58	0.58	0.83	0.83	0.83	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	159	166	141	164	164	139	68	2769	1239	125	2769	1239
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.80	0.80	0.00	0.80	0.80	0.00
Sat Flow, veh/h	1331	1845	1568	1343	1827	1553	109	3471	1553	166	3471	1553
Grp Volume(v), veh/h	49	16	18	34	21	33	43	2239	0	14	2663	0
Grp Sat Flow(s),veh/h/ln	1331	1845	1568	1343	1827	1553	109	1736	1553	166	1736	1553
Q Serve(g_s), s	4.7	1.1	1.4	3.2	1.4	2.6	17.5	49.0	0.0	7.0	88.9	0.0
Cycle Q Clear(g_c), s	6.1	1.1	1.4	4.2	1.4	2.6	106.4	49.0	0.0	56.0	88.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	166	141	164	164	139	68	2769	1239	125	2769	1239
V/C Ratio(X)	0.31	0.10	0.13	0.21	0.13	0.24	0.63	0.81	0.00	0.11	0.96	0.00
Avail Cap(c_a), veh/h	325	396	336	331	392	333	68	2769	1239	125	2769	1239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.7	55.7	55.9	57.7	55.9	56.4	63.8	7.7	0.0	23.6	11.7	0.0
Incr Delay (d2), s/veh	1.1	0.3	0.4	0.6	0.3	0.9	36.8	2.7	0.0	1.8	10.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.6	0.6	1.2	0.7	1.2	2.3	24.0	0.0	0.4	45.4	0.0
LnGrp Delay(d),s/veh	59.8	56.0	56.3	58.3	56.2	57.3	100.5	10.4	0.0	25.4	22.0	0.0
LnGrp LOS	E	E	E	E	E	E	F	B		C	C	
Approach Vol, veh/h		83			88			2282			2677	
Approach Delay, s/veh		58.3			57.4			12.0			22.0	
Approach LOS		E			E			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		115.0		18.4		115.0		18.4
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 1.1E2		28.6		* 1.1E2		28.6
Max Q Clear Time (g_c+I1), s		90.9		6.2		108.4		8.1
Green Ext Time (p_c), s		15.5		0.5		0.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	21.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	29	87	193	1740	2422	106
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	300	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	86	86	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	46	138	224	2023	2577	113

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	4093	1345	2689	0	-	0
Stage 1	2633	-	-	-	-	-
Stage 2	1460	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 2	142	~ 146	-	-	-
Stage 1	~ 40	-	-	-	-	-
Stage 2	180	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 2	142	~ 146	-	-	-
Mov Cap-2 Maneuver	~ 37	-	-	-	-	-
Stage 1	~ 40	-	-	-	-	-
Stage 2	180	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	196.5	32.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	~ 146	-	37	142	-	-
HCM Lane V/C Ratio	1.537	-	1.244	0.973	-	-
HCM Control Delay (s)	$ 328.4	-	$ 397	129.7	-	-
HCM Lane LOS	F	-	F	F	-	-
HCM 95th %tile Q(veh)	15.3	-	4.8	7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	3	37	19	5	18	28	1519	84	3	2381	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	250	-	150	150	-	225
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	90	90	90	81	81	81	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	4	4	4
Mvmt Flow	16	4	46	21	6	20	35	1875	104	3	2560	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3577	4511	1280	3232	4511	938	2560	0	0	1875	0	0
Stage 1	2567	2567	-	1944	1944	-	-	-	-	-	-	-
Stage 2	1010	1944	-	1288	2567	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.2	-	-	4.18	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.25	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 2	~ 1	157	~ 4	~ 1	266	162	-	-	309	-	-
Stage 1	26	52	-	67	110	-	-	-	-	-	-	-
Stage 2	257	110	-	173	52	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 1	~ 1	157	~ 2	~ 1	266	162	-	-	309	-	-
Mov Cap-2 Maneuver	17	29	-	30	13	-	-	-	-	-	-	-
Stage 1	20	51	-	53	86	-	-	-	-	-	-	-
Stage 2	174	86	-	113	51	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	189.5	268.4	0.6	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	162	-	-	18	157	24	266	309	-	-
HCM Lane V/C Ratio	0.213	-	-	1.097	0.291	1.111	0.075	0.01	-	-
HCM Control Delay (s)	33.2	-	-	$ 541.9	37.1	$ 455	19.6	16.8	-	-
HCM Lane LOS	D	-	-	F	E	F	C	C	-	-
HCM 95th %tile Q(veh)	0.8	-	-	2.8	1.1	3.3	0.2	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	383	36	20	1378	1956	515
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1900	1827	1827	1827	1827
Adj Flow Rate, veh/h	485	0	26	1790	2103	0
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.79	0.79	0.77	0.77	0.93	0.93
Percent Heavy Veh, %	5	0	4	4	4	4
Cap, veh/h	506	237	156	2569	2173	972
Arrive On Green	0.15	0.00	0.05	0.74	0.63	0.00
Sat Flow, veh/h	3447	1615	1740	3563	3563	1553
Grp Volume(v), veh/h	485	0	26	1790	2103	0
Grp Sat Flow(s),veh/h/ln	1723	1615	1740	1736	1736	1553
Q Serve(g_s), s	18.2	0.0	0.0	36.0	74.7	0.0
Cycle Q Clear(g_c), s	18.2	0.0	0.0	36.0	74.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	506	237	156	2569	2173	972
V/C Ratio(X)	0.96	0.00	0.17	0.70	0.97	0.00
Avail Cap(c_a), veh/h	506	237	156	2569	2173	972
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.0	0.0	57.6	9.1	23.0	0.0
Incr Delay (d2), s/veh	29.5	0.0	0.5	1.6	13.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.0	0.9	17.5	39.3	0.0
LnGrp Delay(d),s/veh	84.5	0.0	58.1	10.7	36.1	0.0
LnGrp LOS	F		E	B	D	
Approach Vol, veh/h	485			1816	2103	
Approach Delay, s/veh	84.5			11.3	36.1	
Approach LOS	F			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.8	89.2				104.0		26.0
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.0	81.4				96.2		19.1
Max Q Clear Time (g_c+I1), s	2.0	76.7				38.0		20.2
Green Ext Time (p_c), s	4.1	4.2				22.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	27	49	15	65	52	8	12	378	133	9	402	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	200	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	88	88	88	88	88	88	90	90	90
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	39	70	21	74	59	9	14	430	151	10	447	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	958	924	447	969	924	430	447	0	0	430	0	0
Stage 1	467	467	-	457	457	-	-	-	-	-	-	-
Stage 2	491	457	-	512	467	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	231	263	599	230	266	619	1098	-	-	1114	-	-
Stage 1	565	552	-	578	563	-	-	-	-	-	-	-
Stage 2	548	558	-	539	557	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	183	255	599	171	258	619	1098	-	-	1114	-	-
Mov Cap-2 Maneuver	183	255	-	171	258	-	-	-	-	-	-	-
Stage 1	554	545	-	567	552	-	-	-	-	-	-	-
Stage 2	473	547	-	448	550	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	34.2	31.9	0.2	0.2
HCM LOS	D	D		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	WBLn2	SWL	SWT	SWR
Capacity (veh/h)	1098	-	-	249	171	280	1114	-	-
HCM Lane V/C Ratio	0.012	-	-	0.522	0.432	0.244	0.009	-	-
HCM Control Delay (s)	8.3	0	-	34.2	41.2	21.9	8.3	0	-
HCM Lane LOS	A	A	-	D	E	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.8	2	0.9	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	32	116	254	5	38	110	2047	45	92	1510	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1792	1792	1462	1462	1462	1845	1845	1845	1827	1827	1900
Adj Flow Rate, veh/h	4	36	0	282	6	0	115	2132	0	98	1606	13
Adj No. of Lanes	0	1	1	2	1	1	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.96	0.96	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	30	30	30	3	3	3	4	4	4
Cap, veh/h	32	51	111	287	273	267	196	2231	1165	111	2197	18
Arrive On Green	0.03	0.03	0.00	0.11	0.19	0.00	0.04	0.64	0.00	0.03	0.62	0.62
Sat Flow, veh/h	116	1639	1524	2700	1462	1242	1757	3505	1568	1740	3529	29
Grp Volume(v), veh/h	40	0	0	282	6	0	115	2132	0	98	789	830
Grp Sat Flow(s),veh/h/ln	1755	0	1524	1350	1462	1242	1757	1752	1568	1740	1736	1822
Q Serve(g_s), s	1.7	0.0	0.0	14.7	0.5	0.0	3.9	79.8	0.0	2.9	44.5	44.6
Cycle Q Clear(g_c), s	3.2	0.0	0.0	14.7	0.5	0.0	3.9	79.8	0.0	2.9	44.5	44.6
Prop In Lane	0.10		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	82	0	111	287	273	267	196	2231	1165	111	1081	1134
V/C Ratio(X)	0.49	0.00	0.00	0.98	0.02	0.00	0.59	0.96	0.00	0.88	0.73	0.73
Avail Cap(c_a), veh/h	188	0	204	287	362	343	246	2231	1165	111	1081	1134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.9	0.0	0.0	63.1	47.0	0.0	24.3	23.8	0.0	66.8	18.5	18.5
Incr Delay (d2), s/veh	4.4	0.0	0.0	48.7	0.0	0.0	2.8	11.1	0.0	51.1	4.4	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	7.4	0.2	0.0	2.5	41.7	0.0	5.4	22.6	23.7
LnGrp Delay(d),s/veh	72.3	0.0	0.0	111.8	47.0	0.0	27.1	35.0	0.0	117.9	22.8	22.7
LnGrp LOS	E			F	D		C	C		F	C	C
Approach Vol, veh/h		40			288			2247			1717	
Approach Delay, s/veh		72.3			110.4			34.6			28.2	
Approach LOS		E			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	97.0	22.0	11.4	13.0	95.0		33.4
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0		7.0
Max Green Setting (Gmax), s	4.0	90.0	15.0	13.0	10.0	84.0		35.0
Max Q Clear Time (g_c+I1), s	4.9	81.8	16.7	5.2	5.9	46.6		2.5
Green Ext Time (p_c), s	0.0	7.1	0.0	0.1	0.1	15.4		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	6	26	111	0	27	11	2406	113	33	1924	10
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1624	1624	1900	1827	1827	1900	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	19	10	42	134	0	33	12	2533	0	35	2025	11
Adj No. of Lanes	1	1	0	2	1	0	1	2	1	1	2	0
Peak Hour Factor	0.62	0.62	0.62	0.83	0.83	0.83	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	17	17	17	4	4	4	4	4	4	4	4	4
Cap, veh/h	123	16	67	150	0	205	138	2608	1167	63	2660	14
Arrive On Green	0.06	0.06	0.06	0.04	0.00	0.13	0.75	0.75	0.00	0.75	0.75	0.75
Sat Flow, veh/h	1195	273	1148	3375	0	1553	203	3471	1553	124	3540	19
Grp Volume(v), veh/h	19	0	52	134	0	33	12	2533	0	35	992	1044
Grp Sat Flow(s),veh/h/ln	1195	0	1421	1688	0	1553	203	1736	1553	124	1736	1824
Q Serve(g_s), s	2.1	0.0	4.8	5.3	0.0	2.5	4.9	90.6	0.0	10.8	44.7	44.9
Cycle Q Clear(g_c), s	2.1	0.0	4.8	5.3	0.0	2.5	49.9	90.6	0.0	101.4	44.7	44.9
Prop In Lane	1.00		0.81	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	123	0	83	150	0	205	138	2608	1167	63	1304	1370
V/C Ratio(X)	0.15	0.00	0.63	0.89	0.00	0.16	0.09	0.97	0.00	0.55	0.76	0.76
Avail Cap(c_a), veh/h	168	0	136	150	0	264	138	2608	1167	63	1304	1370
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.8	0.0	62.1	64.1	0.0	51.9	24.2	15.4	0.0	65.9	9.7	9.8
Incr Delay (d2), s/veh	0.6	0.0	7.7	43.6	0.0	0.4	1.2	12.0	0.0	30.5	4.2	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.1	3.4	0.0	1.1	0.3	46.9	0.0	1.8	22.7	23.9
LnGrp Delay(d),s/veh	61.4	0.0	69.8	107.8	0.0	52.3	25.5	27.5	0.0	96.4	13.9	13.8
LnGrp LOS	E		E	F		D	C	C		F	B	B
Approach Vol, veh/h		71			167			2545			2071	
Approach Delay, s/veh		67.6			96.8			27.4			15.3	
Approach LOS		E			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6	7	8
Phs Duration (G+Y+Rc), s		110.0		24.9		110.0	10.0	14.9
Change Period (Y+Rc), s		* 8.6		7.1		* 8.6	4.0	7.1
Max Green Setting (Gmax), s		* 1E2		22.9		* 1E2	6.0	12.9
Max Q Clear Time (g_c+I1), s		103.4		4.5		92.6	7.3	6.8
Green Ext Time (p_c), s		0.0		0.4		8.8	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	25.2
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	126	0	2500	2024	30
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	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	96	96	97	97
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	180	0	2604	2087	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3404	1059	2118	0	-	0
Stage 1	2102	-	-	-	-	-
Stage 2	1302	-	-	-	-	-
Critical Hdwy	6.88	6.98	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	2.24	-	-	-
Pot Cap-1 Maneuver	5	217	247	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	5	217	247	-	-	-
Mov Cap-2 Maneuver	68	-	-	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	215	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	70.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	247	-	217	-	-
HCM Lane V/C Ratio	-	-	0.829	-	-
HCM Control Delay (s)	0	-	70.8	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	6.2	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	65	2101	154	0	1913
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	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	81	81	93	93
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	0	72	2594	190	0	2057

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3622	1297	0	0	2594	0
Stage 1	2594	-	-	-	-	-
Stage 2	1028	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.18	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.24	-
Pot Cap-1 Maneuver	4	153	-	-	159	-
Stage 1	42	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	4	153	-	-	159	-
Mov Cap-2 Maneuver	4	-	-	-	-	-
Stage 1	42	-	-	-	-	-
Stage 2	306	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	48	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	153	159	-
HCM Lane V/C Ratio	-	-	0.472	-	-
HCM Control Delay (s)	-	-	48	0	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	2.2	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	31	27	42	13	16	18	2387	51	10	2092	30
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1827	1827	1827	1827	1827	1827	1827	1827	1827
Adj Flow Rate, veh/h	41	36	31	64	20	24	19	2486	0	11	2405	0
Adj No. of Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.86	0.86	0.86	0.66	0.66	0.66	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	4	4	4	4	4	4
Cap, veh/h	161	166	141	148	164	140	102	2769	1239	91	2769	1239
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.80	0.80	0.00	0.80	0.80	0.00
Sat Flow, veh/h	1344	1845	1568	1303	1827	1553	141	3471	1553	130	3471	1553
Grp Volume(v), veh/h	41	36	31	64	20	24	19	2486	0	11	2405	0
Grp Sat Flow(s),veh/h/ln	1344	1845	1568	1303	1827	1553	141	1736	1553	130	1736	1553
Q Serve(g_s), s	3.9	2.4	2.4	6.4	1.3	1.9	13.7	68.1	0.0	8.8	60.9	0.0
Cycle Q Clear(g_c), s	5.2	2.4	2.4	8.8	1.3	1.9	74.6	68.1	0.0	76.9	60.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	166	141	148	164	140	102	2769	1239	91	2769	1239
V/C Ratio(X)	0.25	0.22	0.22	0.43	0.12	0.17	0.19	0.90	0.00	0.12	0.87	0.00
Avail Cap(c_a), veh/h	328	395	336	310	392	333	102	2769	1239	91	2769	1239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.2	56.3	56.4	60.4	55.9	56.1	33.5	9.6	0.0	37.0	8.9	0.0
Incr Delay (d2), s/veh	0.8	0.6	0.8	2.0	0.3	0.6	4.0	5.1	0.0	2.7	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.3	1.1	2.4	0.7	0.8	0.6	33.7	0.0	0.4	29.9	0.0
LnGrp Delay(d),s/veh	59.1	57.0	57.1	62.4	56.2	56.7	37.5	14.8	0.0	39.7	12.9	0.0
LnGrp LOS	E	E	E	E	E	E	D	B		D	B	
Approach Vol, veh/h		108			108			2505			2416	
Approach Delay, s/veh		57.8			60.0			14.9			13.0	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		115.0		18.4		115.0		18.4
Change Period (Y+Rc), s		* 8.6		6.4		* 8.6		6.4
Max Green Setting (Gmax), s		* 1.1E2		28.6		* 1.1E2		28.6
Max Q Clear Time (g_c+I1), s		78.9		10.8		76.6		7.2
Green Ext Time (p_c), s		27.3		0.7		29.6		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	15.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	36

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	94	211	114	2301	2005	74
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	300	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	95	95	94	94
Heavy Vehicles, %	2	2	4	4	4	4
Mvmt Flow	127	285	120	2422	2133	79

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3623	1106	2212	0	-	0
Stage 1	2172	-	-	-	-	-
Stage 2	1451	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.18	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.24	-	-	-
Pot Cap-1 Maneuver	~ 4	~ 205	227	-	-	-
Stage 1	~ 73	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 2	~ 205	227	-	-	-
Mov Cap-2 Maneuver	~ 50	-	-	-	-	-
Stage 1	~ 73	-	-	-	-	-
Stage 2	~ 86	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 440.4	1.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	227	-	50	205	-	-
HCM Lane V/C Ratio	0.529	-	2.541	1.391	-	-
HCM Control Delay (s)	37.4	-	$ 873.6	247.4	-	-
HCM Lane LOS	E	-	F	F	-	-
HCM 95th %tile Q(veh)	2.8	-	13.2	16.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	17.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	50	6	38	23	4	68	52	2132	199	11	1881	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	250	-	150	150	-	225
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	90	90	90	95	95	95	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	4	4	4
Mvmt Flow	57	7	43	26	4	76	55	2244	209	12	2001	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3258	4378	1001	3381	4378	1122	2001	0	0	2244	0	0
Stage 1	2024	2024	-	2354	2354	-	-	-	-	-	-	-
Stage 2	1234	2354	-	1027	2024	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.2	-	-	4.18	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.25	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 4	~ 2	241	~ 3	~ 2	200	272	-	-	220	-	-
Stage 1	59	100	-	36	68	-	-	-	-	-	-	-
Stage 2	187	68	-	251	100	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 2	~ 2	241	~ 2	~ 2	200	272	-	-	220	-	-
Mov Cap-2 Maneuver	~ 27	27	-	~ 22	22	-	-	-	-	-	-	-
Stage 1	~ 47	95	-	29	54	-	-	-	-	-	-	-
Stage 2	85	54	-	181	95	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 562.2	188.2	0.5	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	272	-	-	27	241	22	200	220	-	-
HCM Lane V/C Ratio	0.201	-	-	2.357	0.179	1.364	0.378	0.053	-	-
HCM Control Delay (s)	21.5	-	-	$ 928	23.2	$ 577.7	33.5	22.3	-	-
HCM Lane LOS	C	-	-	F	C	F	D	C	-	-
HCM 95th %tile Q(veh)	0.7	-	-	7.7	0.6	3.9	1.6	0.2	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	519	69	38	2014	1576	472
Number	3	18	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1900	1827	1827	1827	1827
Adj Flow Rate, veh/h	546	0	40	2120	1642	0
Adj No. of Lanes	2	1	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.96	0.96
Percent Heavy Veh, %	5	0	4	4	4	4
Cap, veh/h	612	287	221	2287	1715	767
Arrive On Green	0.18	0.00	0.08	0.66	0.49	0.00
Sat Flow, veh/h	3447	1615	1740	3563	3563	1553
Grp Volume(v), veh/h	546	0	40	2120	1642	0
Grp Sat Flow(s),veh/h/ln	1723	1615	1740	1736	1736	1553
Q Serve(g_s), s	13.9	0.0	0.0	48.1	40.8	0.0
Cycle Q Clear(g_c), s	13.9	0.0	0.0	48.1	40.8	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	612	287	221	2287	1715	767
V/C Ratio(X)	0.89	0.00	0.18	0.93	0.96	0.00
Avail Cap(c_a), veh/h	618	289	221	2287	1715	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.1	0.0	38.1	13.4	21.8	0.0
Incr Delay (d2), s/veh	15.1	0.0	0.4	8.0	13.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	0.9	25.2	22.7	0.0
LnGrp Delay(d),s/veh	51.2	0.0	38.5	21.5	35.6	0.0
LnGrp LOS	D		D	C	D	
Approach Vol, veh/h	546			2160	1642	
Approach Delay, s/veh	51.2			21.8	35.6	
Approach LOS	D			C	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.8	52.2				67.0		22.9
Change Period (Y+Rc), s	7.8	7.8				7.8		6.9
Max Green Setting (Gmax), s	7.0	44.4				59.2		16.1
Max Q Clear Time (g_c+I1), s	2.0	42.8				50.1		15.9
Green Ext Time (p_c), s	4.5	1.3				7.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	30.7
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	25	51	14	61	43	13	19	490	70	9	429	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	200	-	-	-	-	200	-	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	89	89	89	91	91	91	89	89	89
Heavy Vehicles, %	8	8	8	5	5	5	5	5	5	5	5	5
Mvmt Flow	33	67	18	69	48	15	21	538	77	10	482	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1114	1082	482	1125	1082	538	482	0	0	538	0	0
Stage 1	502	502	-	580	580	-	-	-	-	-	-	-
Stage 2	612	580	-	545	502	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.58	6.28	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.58	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4.072	3.372	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	181	212	572	180	215	537	1065	-	-	1015	-	-
Stage 1	541	532	-	495	495	-	-	-	-	-	-	-
Stage 2	470	491	-	517	537	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	140	203	572	125	206	537	1065	-	-	1015	-	-
Mov Cap-2 Maneuver	140	203	-	125	206	-	-	-	-	-	-	-
Stage 1	525	525	-	480	480	-	-	-	-	-	-	-
Stage 2	399	476	-	430	529	-	-	-	-	-	-	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	47.1	45.5	0.3	0.2
HCM LOS	E	E		

Minor Lane/Major Mvmt	NEL	NET	NER	EBLn1	WBLn1	WBLn2	SWL	SWT	SWR
Capacity (veh/h)	1065	-	-	198	125	240	1015	-	-
HCM Lane V/C Ratio	0.02	-	-	0.598	0.548	0.262	0.01	-	-
HCM Control Delay (s)	8.4	0	-	47.1	64.2	25.2	8.6	0	-
HCM Lane LOS	A	A	-	E	F	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	3.3	2.6	1	0	-	-

Arterial Level of Service: NB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Tidewatch Drive	I	55	16.8	6.7	23.5	0.17	26.6	D
Cherry Point Rd.	I	52	37.8	24.4	62.2	0.46	26.7	D
Argent Blvd.	I	45	54.2	12.6	66.8	0.68	36.5	B
Total	I		108.8	43.7	152.5	1.31	31.0	C

Arterial Level of Service: SB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Argent Blvd.	I	55	5.8	28.9	34.7	0.06	6.2	F
Pearlstine Dr.	I	45	54.2	24.9	79.1	0.68	30.8	C
Tidewatch Drive	I	52	37.8	8.5	46.3	0.46	35.9	B
Total	I		97.8	62.3	160.1	1.20	27.0	D

Arterial Level of Service: NB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Tidewatch Drive	I	55	16.8	13.7	30.5	0.17	20.5	E
Cherry Point Rd.	I	52	37.8	26.8	64.6	0.46	25.7	D
Pritcher Point Rd.	I	45	32.5	41.5	74.0	0.34	16.3	E
Argent Blvd.	I	45	33.2	22.6	55.8	0.34	22.1	D
Total	I		120.3	104.6	224.9	1.31	21.0	D

Arterial Level of Service: SB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Argent Blvd.	I	55	5.8	24.0	29.8	0.06	7.3	F
Short Cut Rd.	I	45	33.2	26.9	60.1	0.34	20.5	E
Pearlstine Dr.	I	45	32.5	13.1	45.6	0.34	26.5	D
Tidewatch Drive	I	52	37.8	12.4	50.2	0.46	33.1	C
Total	I		109.3	76.4	185.7	1.20	23.2	D

Arterial Level of Service: NB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	16.8	8.7	25.5	0.17	24.5	D
Cherry Point Rd.	I	52	37.8	33.9	71.7	0.46	23.2	D
	I	45	54.2	15.8	70.0	0.68	34.8	B
Total	I		108.8	58.4	167.2	1.31	28.2	C

Arterial Level of Service: SB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	5.8	68.3	74.1	0.06	2.9	F
Pearlstine Dr.	I	45	54.2	74.0	128.2	0.68	19.0	E
Tidewatch Drive	I	52	37.8	12.9	50.7	0.46	32.7	C
Total	I		97.8	155.2	253.0	1.20	17.1	E

Arterial Level of Service: NB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	16.8	10.5	27.3	0.17	22.9	D
Cherry Point Rd.	I	52	37.8	18.2	56.0	0.46	29.6	C
Argent Blvd.	I	45	54.2	27.7	81.9	0.68	29.8	C
Total	I		108.8	56.4	165.2	1.31	28.6	C

Arterial Level of Service: SB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Argent Blvd.	I	55	5.8	27.8	33.6	0.06	6.5	F
Pearlstine Dr.	I	45	54.2	12.0	66.2	0.68	36.8	B
Tidewatch Drive	I	52	37.8	10.0	47.8	0.46	34.7	B
Total	I		97.8	49.8	147.6	1.20	29.2	C

Arterial Level of Service: NB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	I	55	16.8	9.5	26.3	0.17	23.7	D
Cherry Point Rd.	I	52	37.8	36.3	74.1	0.46	22.4	D
Pritcher Point Rd.	I	45	32.5	19.8	52.3	0.34	23.1	D
Argent Blvd	I	45	33.2	10.9	44.1	0.34	27.9	C
Total	I		120.3	76.5	196.8	1.31	24.0	D

Arterial Level of Service: SB SC 170

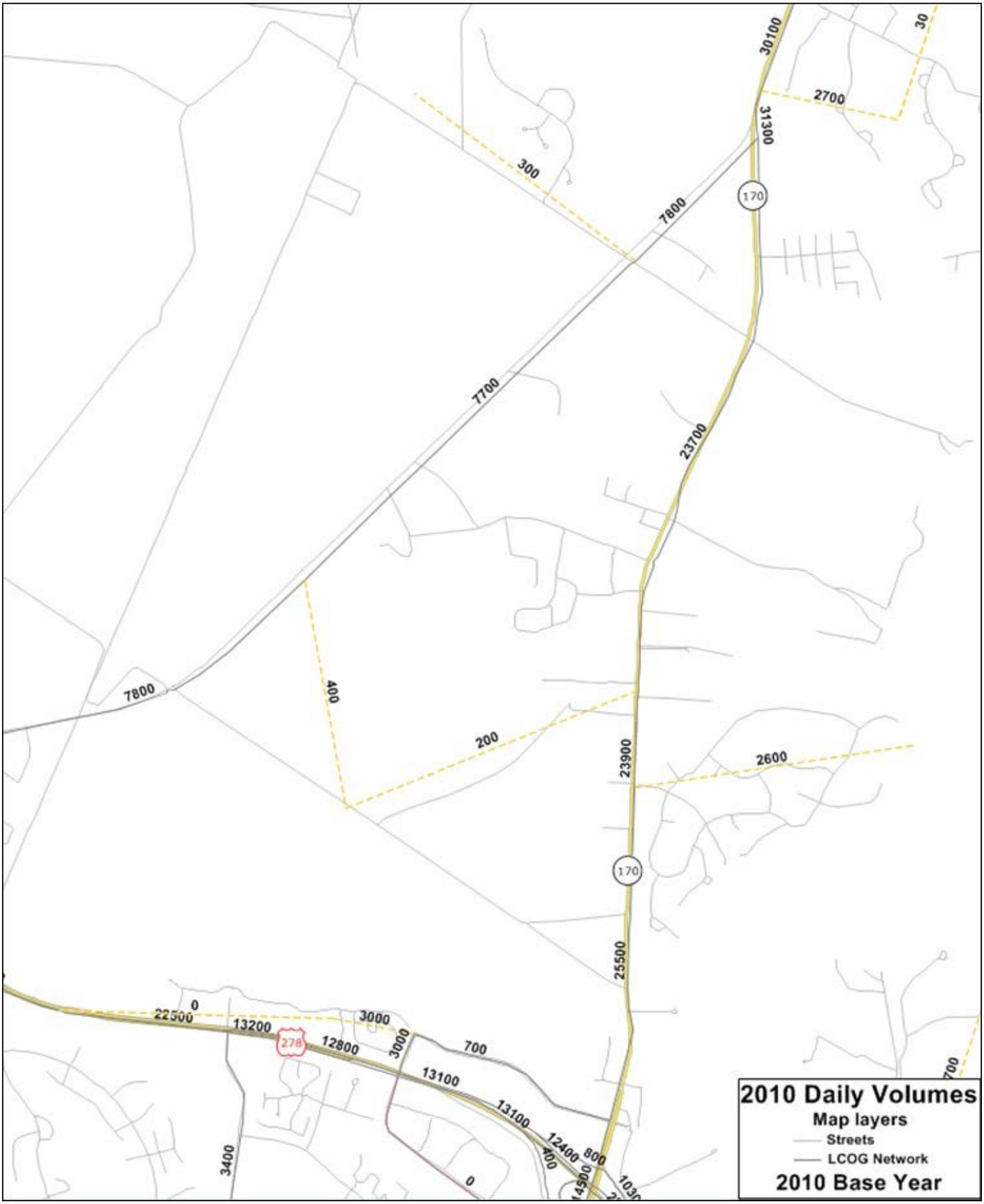
Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Argent Blvd	I	55	5.8	26.0	31.8	0.06	6.8	F
Short Cut Rd.	I	45	33.2	55.1	88.3	0.34	14.0	F
Pearlstine Dr.	I	45	32.5	42.9	75.4	0.34	16.0	F
Tidewatch Drive	I	52	37.8	17.6	55.4	0.46	30.0	C
Total	I		109.3	141.6	250.9	1.20	17.2	E

Arterial Level of Service: NB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Tidewatch Drive	I	55	16.8	14.0	30.8	0.17	20.3	E
Cherry Point Rd.	I	52	37.8	27.6	65.4	0.46	25.4	D
Pritcher Point Rd.	I	45	32.5	38.9	71.4	0.34	16.9	E
Argent Blvd.	I	45	33.2	22.7	55.9	0.34	22.0	D
Total	I		120.3	103.2	223.5	1.31	21.1	D

Arterial Level of Service: SB SC 170

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Argent Blvd.	I	55	5.8	24.1	29.9	0.06	7.3	F
Short Cut Rd.	I	45	33.2	26.9	60.1	0.34	20.5	E
Pearlstine Dr.	I	45	32.5	13.2	45.7	0.34	26.4	D
Tidewatch Drive	I	52	37.8	12.6	50.4	0.46	32.9	C
Total	I		109.3	76.8	186.1	1.20	23.2	D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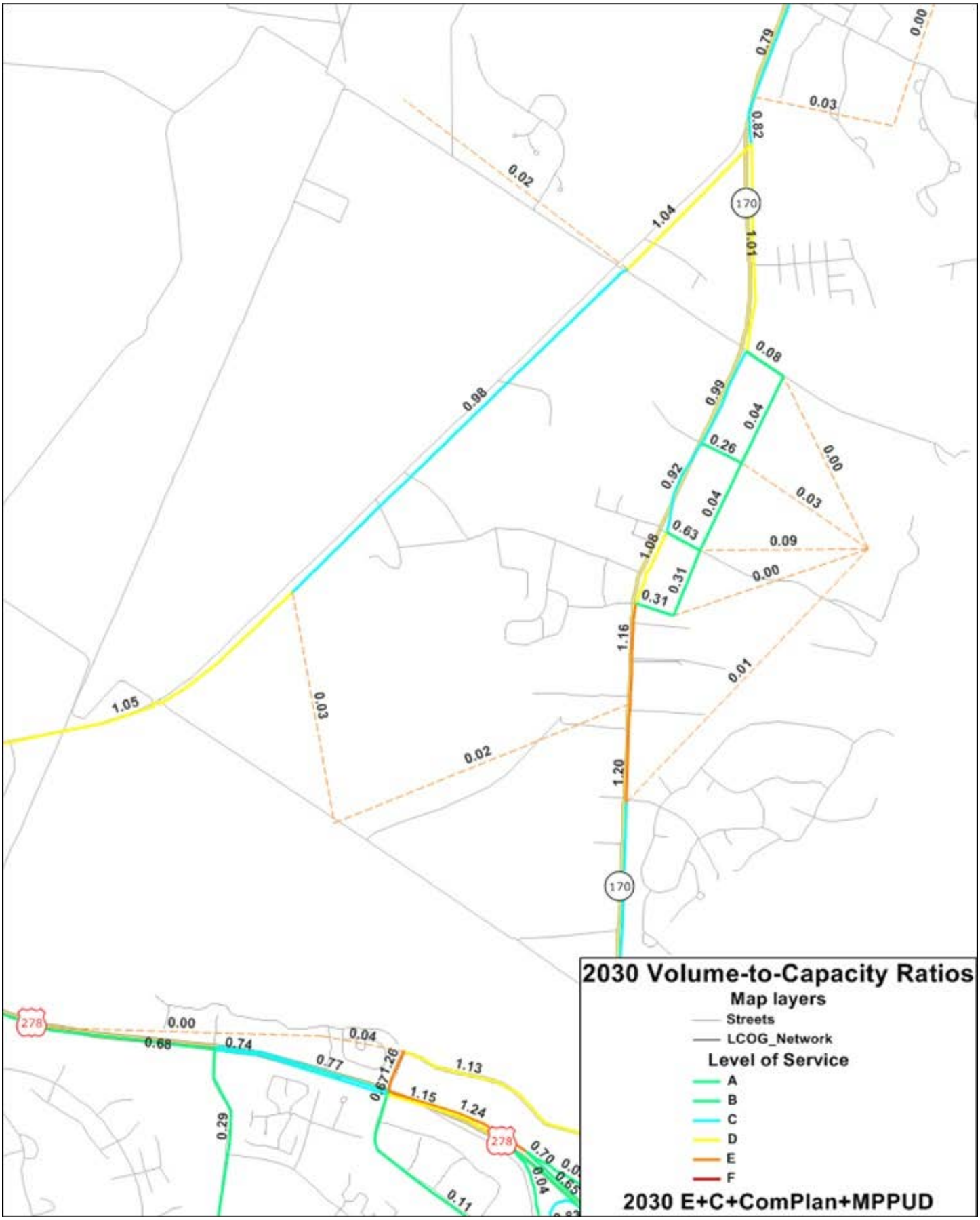
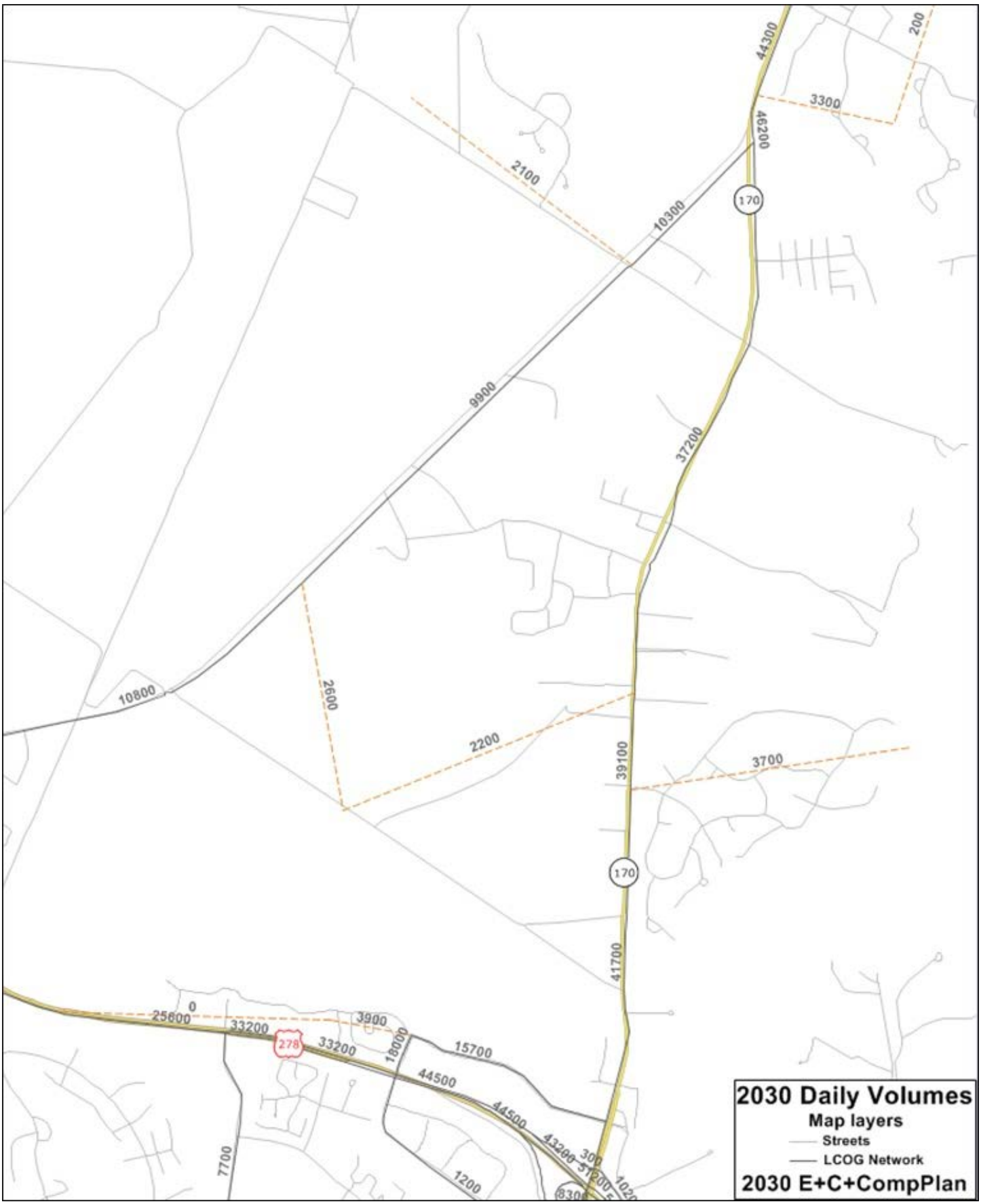
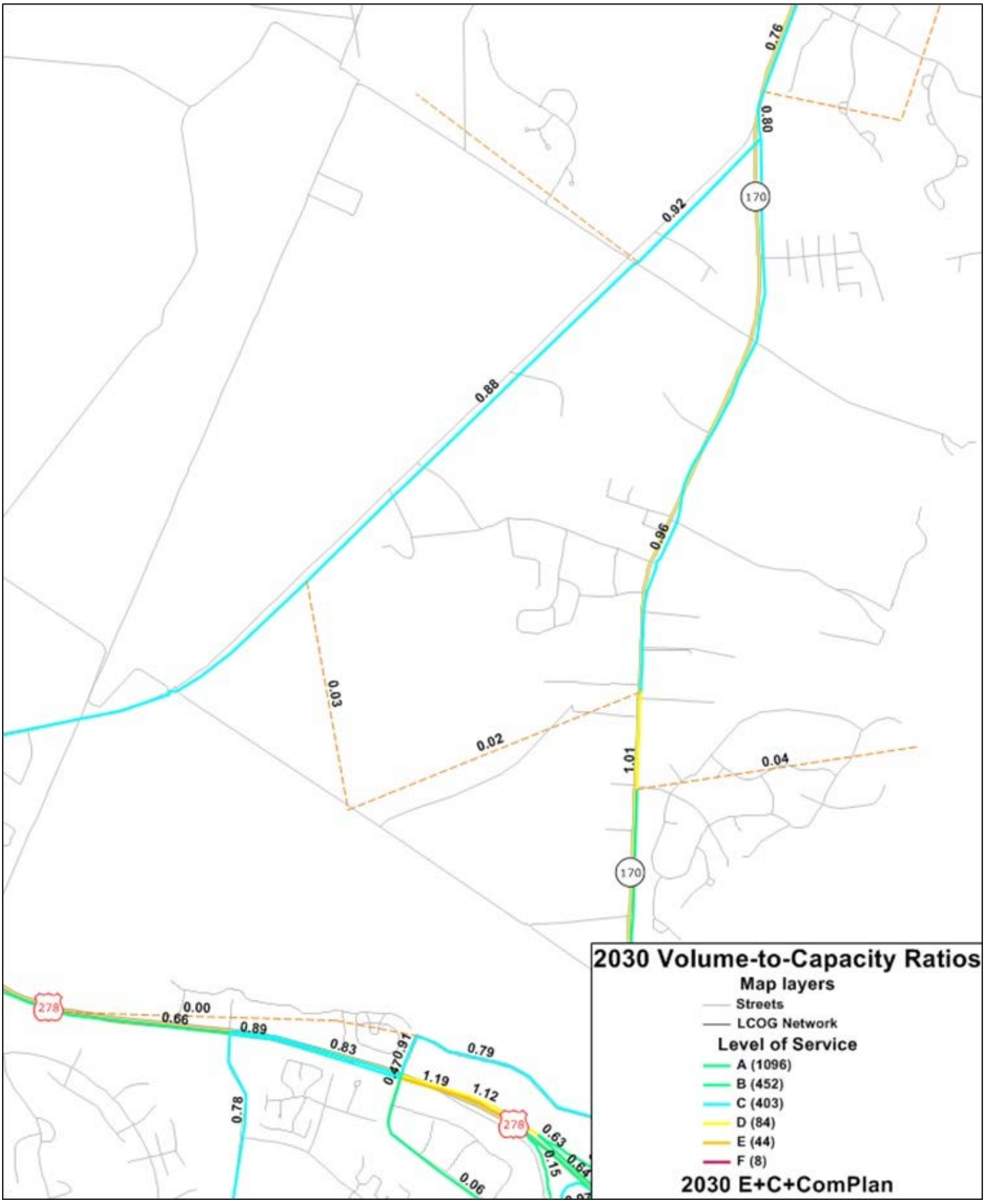
2700
31300
300
7800
170
7700
23700
7800
400
200
23900
2600
170
25500
0
22500
13200
3000
278
12800
3000
700
13100
13100
12400
800
400
3400
0
2010 Daily Volumes
Map layers
Streets
LCOG Network
2010 Base Year


2030 Volume-to-Capacity Ratios
Map layers
Streets
LCOG_Network
Level of Service
A
B
C
D
E
F
2030 E+C+ComPlan+MPPUD
170
278
0.79
0.00
0.03
0.82
0.02
1.04
1.01
0.08
0.98
0.99
0.04
0.26
0.00
0.92
0.03
0.04
0.63
1.08
0.09
0.31
0.00
0.31
1.16
0.01
1.05
0.03
0.02
1.20
0.00
0.68
0.74
0.04
0.77
1.26
1.13
0.29
1.15
1.24
0.70
0.11


44300
200
3300
46200
2100
10300
170
9900
37200
10800
2600
2200
39100
3700
170
41700
0
25600
33200
3900
278
33200
18000
15700
44500
44500
43200
7700
1200
2030 Daily Volumes
Map layers
Streets
LCOG Network
2030 E+C+CompPlan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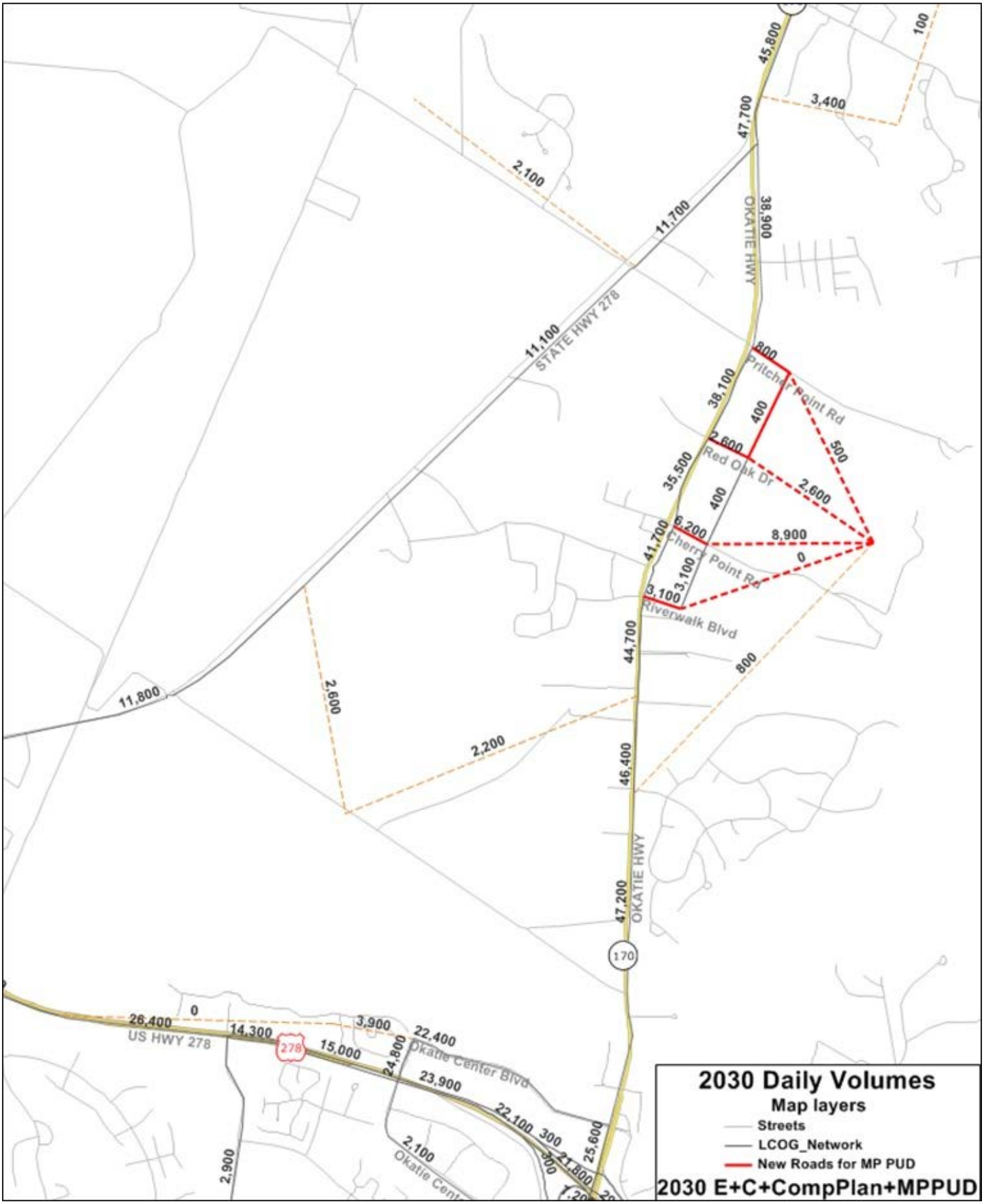
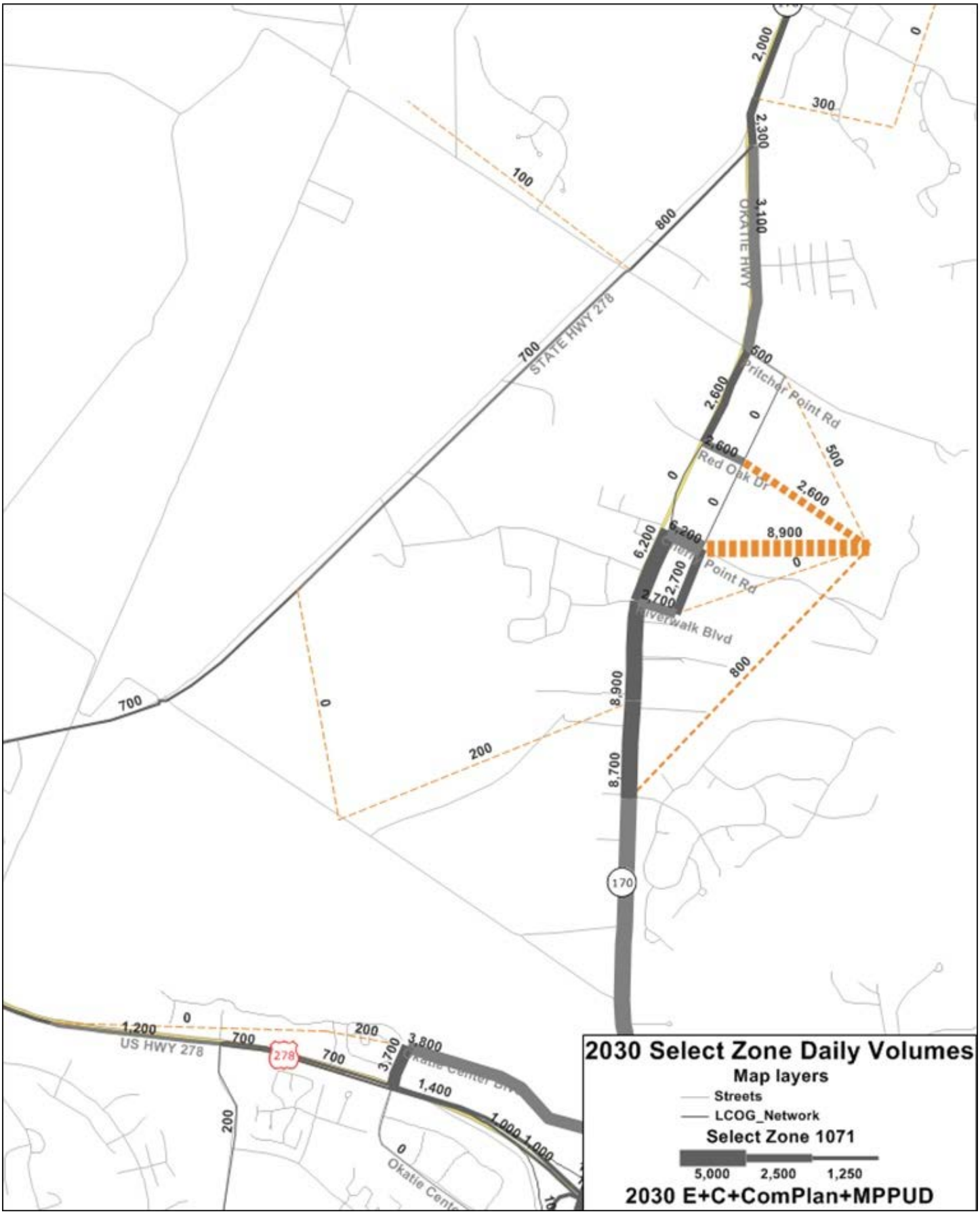
0.80
170
0.92
0.88
0.96
0.03
0.02
1.01
0.04
170
278
0.00
0.66
0.89
0.83
0.47
0.91
0.79
1.19
1.12
278
0.78
0.63
0.15
0.64
0.06
2030 Volume-to-Capacity Ratios
Map layers
Streets
LCOG Network
Level of Service
A (1096)
B (452)
C (403)
D (84)
E (44)
F (8)
2030 E+C+ComPlan


2030 Daily Volumes
Map layers
Streets
LCOG_Network
New Roads for MP PUD
2030 E+C+CompPlan+MPPUD
OKATIE HWY
STATE HWY 278
US HWY 278
Pritchard Point Rd
Red Oak Dr
Cherry Point Rd
Riverwalk Blvd
Okatie Center Blvd
45,800
47,700
38,900
11,700
11,100
38,100
35,500
41,700
44,700
46,400
47,200
11,800
2,100
3,400
100
800
400
2,600
500
6,200
8,900
0
3,100
2,200
26,400
14,300
15,000
24,800
23,900
22,400
3,900
22,100
300
25,600
21,800
2,900
170
278


2030 Select Zone Daily Volumes
Map layers
Streets
LCOG_Network
Select Zone 1071
5,000
2,500
1,250
2030 E+C+ComPlan+MPPUD
OKATIE HWY
STATE HWY 278
US HWY 278
Pritchett Point Rd
Red Oak Dr
Riverwalk Blvd
Okatie Center Blvd
2,000
2,300
3,100
2,600
6,200
2,700
8,900
8,700
3,700
3,800
1,400
1,200
300
100
800
700
500
200
0
170
278

SC 170/US 278 Corridor Study Analysis Findings and Recommended Access Management Standards

Prepared for:
Beaufort County

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December 2003

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The SC 170 and US 278 corridors are key arterials in Beaufort County. These arterials currently serve high traffic volumes during the peak hours, with the US 278 corridor serving heavy seasonal traffic flow to/from Hilton Head Island and the Town of Bluffton. In the face of high existing volumes and strong projected growth in the area, Beaufort County is interested in maximizing the available capacity on these existing roadway corridors that link the City of Beaufort, Town of Bluffton, Hilton Head Island, and I-95. The SC 170 corridor north of US 278 borders Jasper County, which is also projecting high growth into the future.

At the request of Beaufort County, Day Wilburn Associates, Inc. (DWA) has performed an analysis of the SC 170 corridor from US 278 to Old Baileys Road and the US 278 corridor from SC 170 to the Jasper County Line. The study of the SC 170 corridor began by considering application of the existing US 278 corridor access management standards (east of SC 170). The existing access management standards for the US 278 corridor are documented in the US 278 Immediate Needs Study, 2000, by Wilbur Smith Associates, Inc. (WS). The existing US 278 standards were overlaid onto the SC 170 roadway network and major development access locations, and the intersection spacing criteria were modified slightly to fit the conditions along the SC 170 corridor. Analysis of traffic conditions along the SC 170 corridor revealed that the proposed standards provide good operations which maximize available throughput. These draft SC 170 corridor standards were used as the basis for development of draft Countywide Access Management Standards, in conjunction with the Comprehensive Plan update. The draft Countywide Access Management Standards are documented in Beaufort County Access Management Standards, September 2002, by DWA.

DWA then performed additional analysis along the SC 170 corridor north of US 278 and along US 278 west of SC 170 with additional planned development, including the USC New River Campus. The following paragraphs summarize the need for access management standards along the US 278 and SC 170 corridors and describe the consistency in application of the access management standards along US 278 east and west of SC 170, as well as along SC 170 north of US 278.

Need for Access Management Standards

The Beaufort County Draft Comprehensive Plan Future Land Use Update, January 2003, indicates southern Beaufort County grew by 73% in the 1990s, and the county as a whole was the fastest growing county in South Carolina. The future land use plan indicates the County has a capacity for 177,000 additional residents. This additional growth will further strain the arterial roadway network in Beaufort County, including the US 278 and SC 170 corridors.

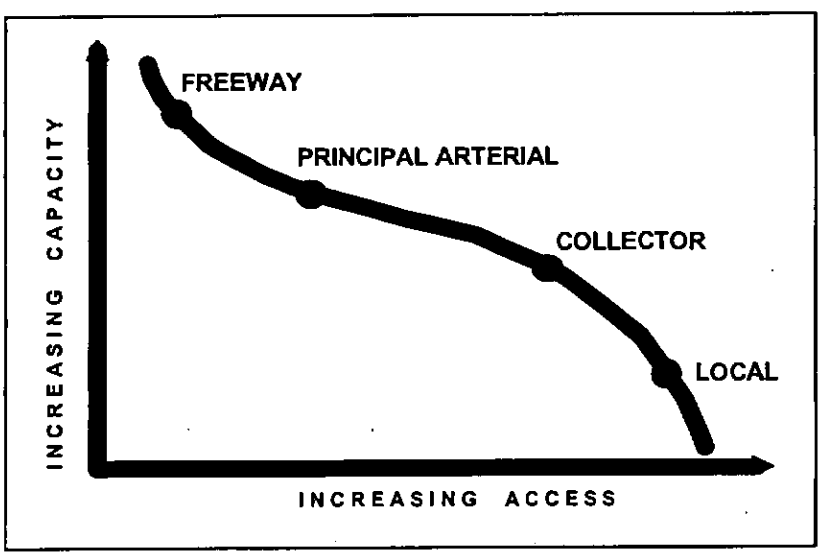
The US 278 and SC 170 corridors are designated as principal arterials on the County's Functional Classification Map. These are the only roads in southern Beaufort County providing for long distance through travel. Therefore, the through capacity along these roadways must be.

preserved, as indicated in the Comprehensive Plan. Preserving the throughput capacity in a manner consistent with serving long trips along the corridor means preserving capacity at a reasonable corridor level of service (LOS) to allow consistent travel times with minimal stopping.

Physical barriers provide constraints on implementation of new parallel principal arterials, including:

- Distances between Beaufort and Bluffton/Hilton Head
- Wetlands and waterways which limiting capacity expansion
- Increased development reducing available routes and increasing right-of-way cost

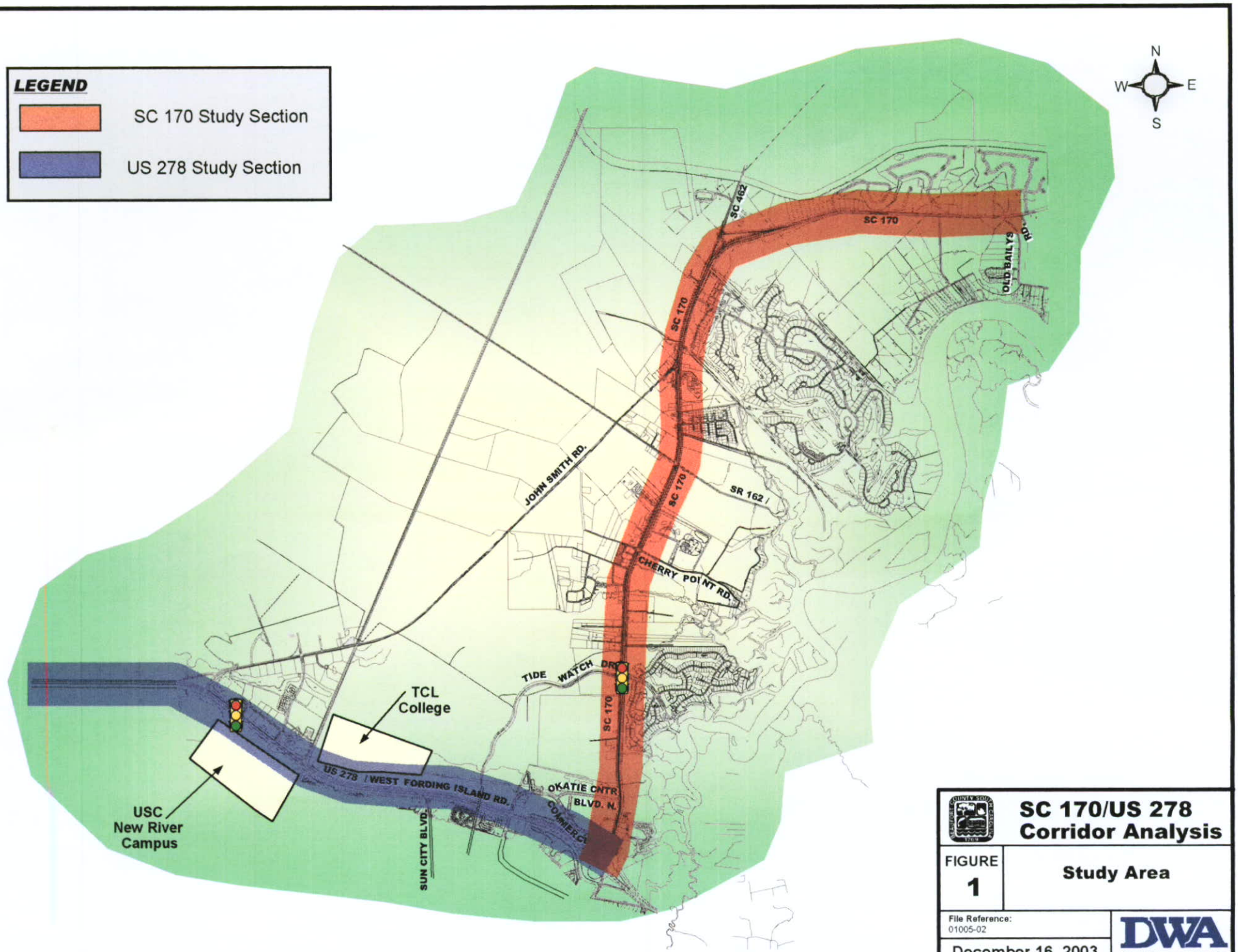
Therefore, preservation of the existing capacity to satisfy long trips is needed to accommodate the planned growth, as indicated in the County's Comprehensive Plan and accounted for in the Countywide TRANPLAN travel demand model.



As this graphic shows, as a roadway provides more access it will experience reduced capacity. A principal arterial such as US 278 and SC 170 focuses on mobility as a priority over local access.

The County's comprehensive planning process and other planning efforts have recognized the goal of focusing on mobility for the US 278 and SC 170 corridors. It would be more expensive and have greater impacts to install a new continuous parallel roadway to satisfy long trips versus installing shorter connecting roadways to accommodate shorter trips. Therefore, the operational strategy for the US 278 and SC 170 corridors includes:

- Maximize the throughput capacity along US 278 and SC 170.
- Use existing parallel roadways, such as Bluffton Parkway, to satisfy shorter trips, and install additional parallel roadway connections.
- Use backside connections and interparcel access to minimize the need for travel along US 278 or SC 170 to access development generated trips from within the local area.



SC 170/US 278 Corridor Analysis

FIGURE 1

Study Area

File Reference: 01005-02

December 16, 2003

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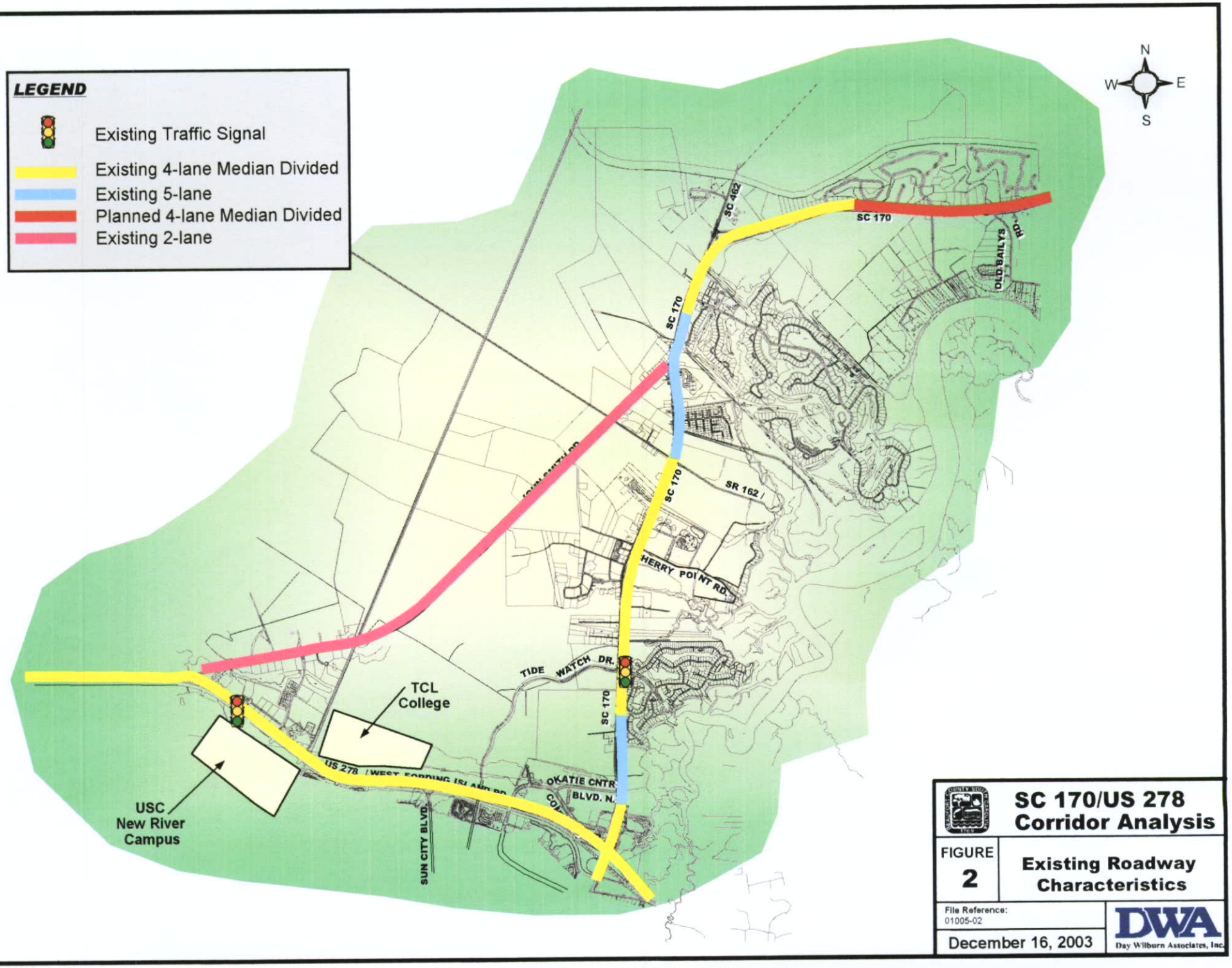

SC 170/US 278 Corridor Analysis

FIGURE 2 — **Existing Roadway Characteristics**

File Reference: 01005-02

December 16, 2003

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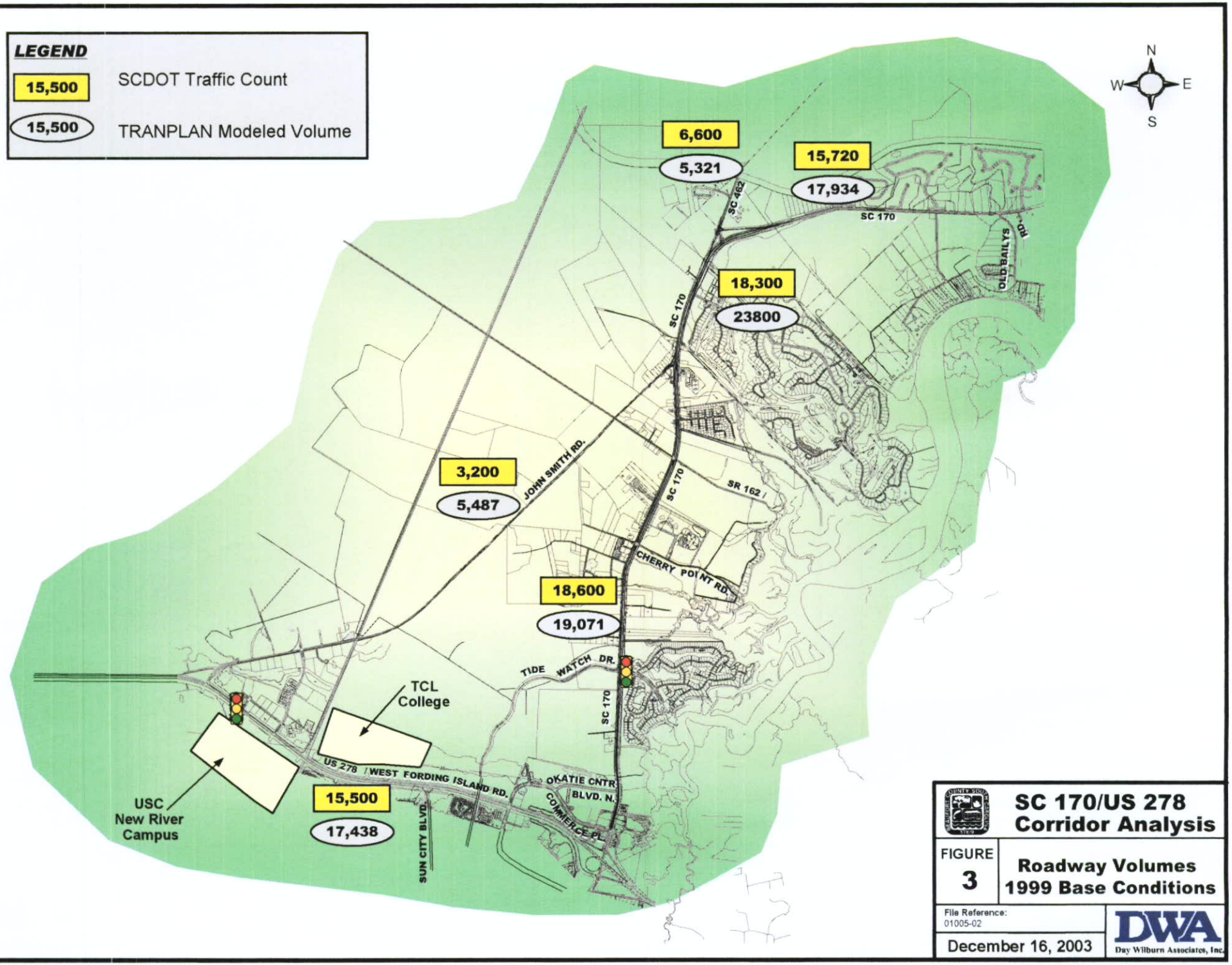
LEGEND
15,500
SCDOT Traffic Count
15,500
TRANPLAN Modeled Volume
N
W
E
S
6,600
5,321
15,720
17,934
SC 462
SC 170
OLD BAILYS RD.
18,300
23800
SC 170
JOHN SMITH RD.
3,200
5,487
SC 170
SR 162
CHERRY POINT RD.
18,600
19,071
TIDE WATCH DR.
SC 170
TCL College
US 278 / WEST FORDING ISLAND RD.
OKATIE CNTR BLVD. N.
COMMERCE PL.
USC New River Campus
15,500
17,438
SUN CITY BLVD.
SC 170/US 278 Corridor Analysis
FIGURE 3
Roadway Volumes 1999 Base Conditions
File Reference: 01005-02
December 16, 2003
DWA
Day Wilburn Associates, Inc.

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In addition to the operational benefits of less frequent interruptions to mainline traffic flow, the spacing of access points facilitates use of minor arterials and collectors to provide connections to final trip origins/destinations.

Analysis Area

The following corridor sections were examined as a part of this analysis:

- SC 170 from US 278 to Old Baileys Road
- US 278 from SC 170 to Jasper County Line

This study area is shown in Figure 1. Existing roadway conditions, including the location of existing traffic signals and the number of travel lanes on each section of roadway, are shown in Figure 2. As this figure indicates, the study corridors are primarily four-lane divided roads with some existing five-lane sections (including two-way left turn lanes). Discussions with SCDOT revealed that the locations of existing median breaks was negotiated as a part of the right-of-way purchase along these corridors. Therefore, the existing breaks in access along the corridors are likely to remain in place. Existing traffic volumes for the 1999 base year conditions are shown in Figure 3. These volumes indicate conditions below the capacities of the SC 170 and US 278 corridors with few existing signalized access points.

New Development Considered in Analysis

The corridor analysis considered planned growth above the growth by TAZ already provided in the growth assumptions for the Beaufort County TRANPLAN model. The TRANPLAN model was modified to account for the following growth:

- *Specific growth planned along SC 170 in Beaufort County was considered*
  - Growth assumed in Beaufort County TRANPLAN model to reflect buildout conditions (year 2020) was used as a starting point
  - Beaufort County TAZ 74 disaggregated to account for development patterns along east side of SC 170
  - Additional growth planned in vicinity of Cherry Point Road / Pritcher Point Road was added to model (TAZs 90 and 91)

- *Jasper County growth planned in the Branigar Plan was included in analysis*
  - Additional TAZs added west of SC 170 and north of US 278 to account for Branigar Planned Development in Jasper County
  - Additional primary roadway network in Jasper County and/or new interchange with I-95 was not considered

- *Additional College Campus growth was considered along US 278*
  - Additional growth added in new TAZ 107 to account for USC New River Campus south of US 278
  - Additional growth added in new TAZ 108 to account for TCL College north of US 278

Analysis Methodology

A variety of analysis tools were used to determine the roadway capacity available along sections of the corridor and compare it to projected volumes with access management standards applied along the corridor. The corridor analysis was performed using future year 2020 traffic volumes obtained from modifying the Beaufort County TRANPLAN model to reflect additional planned development in Beaufort County and adjacent portions of Jasper County, as documented in SC 170/US 278 Corridor Study Travel Demand Model Technical Memorandum, September 2003. The paragraphs below indicate the analysis steps undertaken.

Modification of County TRANPLAN Model

The Beaufort County TRANPLAN model was used to project future buildout traffic volumes for year 2020 (refer to Figure 4). The TRANPLAN runs included:

- Base year conditions
- 2020 E+C network
- 2020 E+C network with potential roadway connections in Jasper County, including widening of John Smith Road to five-lane section and connection of roadway from Tide Watch Drive to John Smith Road

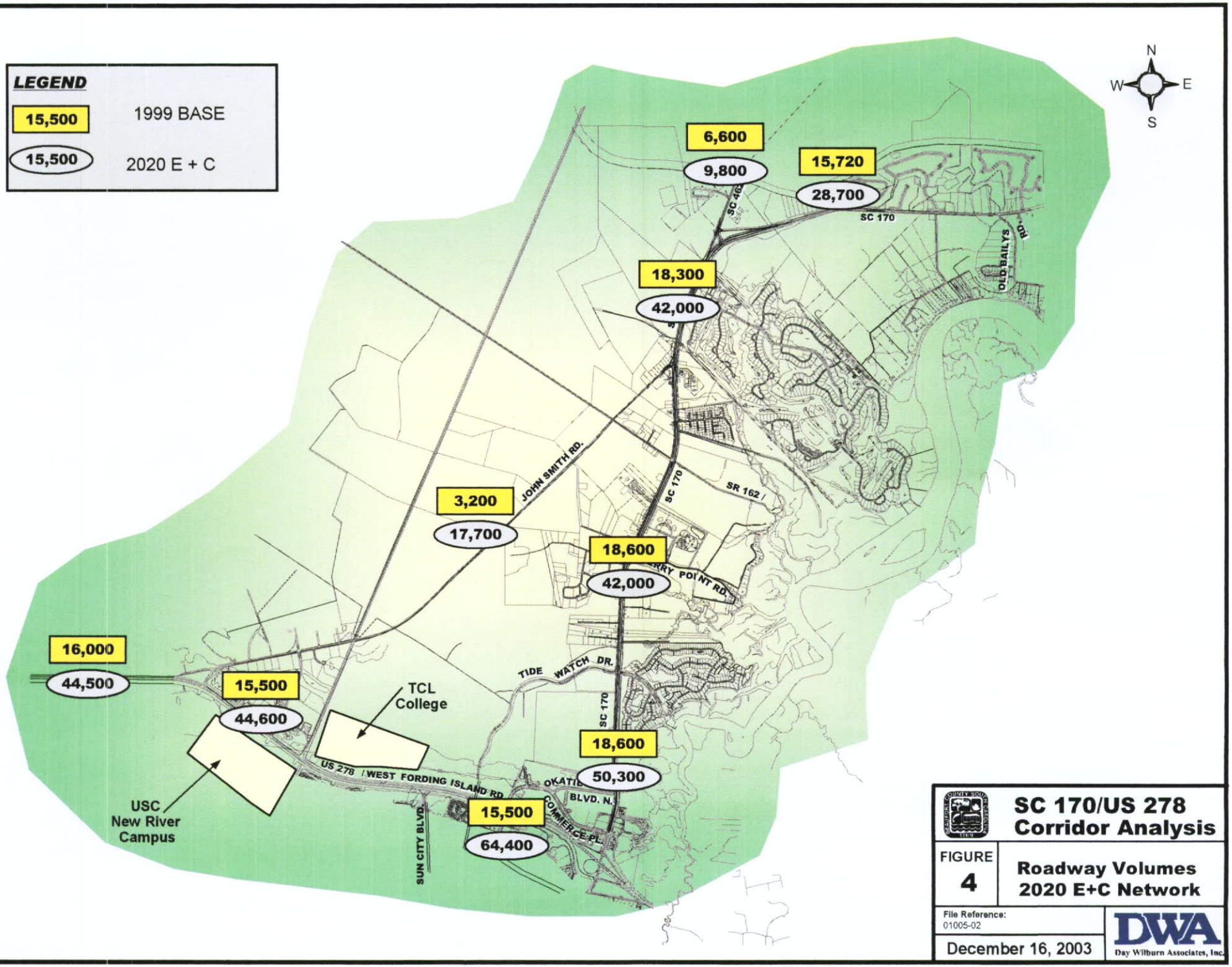
Corridor Capacity Determined

The corridor capacity was determined through examination of operations along the arterial as a whole as well as at typical intersections. Arterial analysis was conducted using HCM methodology to examine potential access spacing. Individual intersection analysis was performed using Synchro software to determine the throughput capacity at typical intersections with projected future operations.

Corridor Capacity Compared to Future Projected Volumes at Buildout (2020)

The capacity of the corridor was compared to future projected traffic volumes at buildout for the following two future conditions:

- 2020 E+C
- 2020 E+C with potential improvements to roadway network currently under consideration by Jasper County



SC 170/US 278 Corridor Analysis

FIGURE 4

Roadway Volumes 2020 E+C Network

File Reference: 01005-02

December 16, 2003

DWA Day Wilburn Associates, Inc.

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Existing US 278 Access Management Standards Considered for Application

The corridor analysis began with the existing access management standards, currently adopted by the County and applied along US 278 east of SC 170, including the following:

- Full signalized access – 3,600' spacing
- Directional signalized access – 2,000' spacing
- Right-in-right out only driveway spacing – 1,000'

As intersection spacing standards were considered for SC 170 north of US 278, the existing US 278 access management standards were modified to reflect likely signalized access needs as reflected by local development patterns and existing roadway network. This resulted in the following signal spacing standards:

- Full signalized access – 3,200' spacing
- Directional signalized access – 1,900' spacing
- Right-in/right-out only driveway spacing – 500'

These draft SC 170 corridor standards were used as the basis for development of draft Countywide Access Management Standards, in conjunction with the Comprehensive Plan update. DWA then performed additional analysis along the SC 170 corridor north of US 278 and along US 278 west of SC 170 with additional planned development, including the USC New River Campus.

As the modified intersection spacing standards were applied, they were compared to the existing US 278 access management standards, currently applied east of SC 170. The section of SC 170 north of US 278 has more frequent intersections with arterial and collector streets and existing major development access points than are present along US 278 east of SC 170, where the existing access management standards are in place. Similarly, the US 278 corridor from Sun City through John Smith Road has more frequent intersections with existing roads and planned college access locations than are present along US 278 east of SC 170. The modified signal spacing developed along US 278 west of SC 170 and along SC 170 north of US 278 fit with these roadway and major access spacings, while providing adequate signal spacing so that interaction between traffic signals does not limit throughput capacity.

Study Findings and Conclusions

Analysis of the SC 170 and US 278 corridors has resulted in the study findings and conclusions described below. The analysis indicates access management is needed to maximize the use of the existing roadway for servicing through vehicles as traffic volumes increase in the future. The access management standards allow the roadway to operate with less friction, at levels closer to the available volume throughput at the intersections. With frequent signal spacing, usable roadway capacity can decrease 15-20% due to friction and multiple stops.

Projected Traffic Volume Growth

The TRANPLAN results indicate significant traffic volume growth to year 2020 (4-5% per year):

- Traffic volumes along SC 170 are projected to increase by 26,000 vpd through 2020 (4.7% per year)
- Traffic volumes along US 278 are projected to increase by 35,000 vpd through 2020 (5.5% per year)

Comparison of Projected Volumes to Corridor Capacity

The arterial analysis confirmed the intersection spacing standards are appropriate to facilitate through traffic flow along the corridors. Though less than the original 3,600', the reduced spacing is not short enough to change the operating environment from rural/suburban to urban which results in slower overall travel speeds, increased travel time, and reduced throughput capacity. Therefore, these spacings are recommended for application in the DWA study, through implementation of access management standards, as part of a corridor management plan for the study corridors.

The maximum throughput capacity was determined based on arterial analysis using HCS software and operations of critical intersections using Synchro software. Based on this analysis, the following maximum capacities were achieved based on the operational factors as indicated:

- US 278 maximum capacity of 44,600 vpd based on assumed corridor operational factors (90% or 40,000 vpd used for arterial capacity):
  - Directional distribution of 65%
  - K factor of 10%
  - Cycle length of 160 seconds = allowable through delay
  - 55% of green time allocated to through movement
  - 20% of approach vehicles turning at intersection
- SC 170 maximum capacity of 43,000 based on assumed corridor operational factors (90% or 39,000 vpd used for arterial capacity):
  - Directional distribution of 65%
  - K factor of 10%
  - Cycle length of 130 seconds = allowable through delay
  - 55% of green time allocated to through movement
  - 20% of approach vehicles turning at intersection

These capacities result in individual intersection approach LOS equal to the cycle length (130 to 160 seconds), which represents LOS F conditions for that intersection approach. However, with intersection spacing per the indicated spacing standards, the corridor is projected to operate with overall travel times indicating LOS D conditions.

A comparison of the calculated roadway volume to capacity (v/c) with access management standards implemented is shown in Table 1.

Table 1
Comparison of Projected Daily Volume to Available Daily Capacity for US 278 and SC 170 Corridors

Segment	1999 Volume SCDOT Count	2020 Model Volume	Throughput Capacity	2020 V/C W/ recs	2020 Volume Under(Over) Capacity
US 278 west of John Smith Rd.	16,000	44,500	40,000	1.11	(4,500)
US 278 from USC Campus to John Smith Rd.	15,500	44,600	40,000	1.12	(4,600)
US 278 from SC 170 to USC Campus	15,500	64,400	40,000	1.61	(24,400)
SC 170 from US 278 to Tide Watch Dr.	18,600	50,300	33,000[1]	0.15	(17,300)
SC 170 from Tide Watch Dr. to John Smith Rd.	18,600	42,000	39,000	1.08	(3,000)
SC 170 north of John Smith Rd.	18,300	42,000	39,000	1.08	(3,000)

[1] The proximity of signalized intersections on this section of SC 170 limits throughput capacity to values less than that for other sections.

As this tables shows. the 2020 v/c ratios are near or over capacity for both roadways. In addition, each of the links is projected to be over capacity in year 2020. Most of the roadway segments are anticipated to be slightly over capacity, with the exception of US 278 just west of SC 170 and SC 170 just north of US 278, both of which experience significant capacity deficiencies.

Identification of Continuing Deficiencies

The analysis indicates that, even with access management standards in place, significant capacity deficiencies will remain in some areas, including:

- US 278 east of the New River Campus – Heavy traffic volume demand in this area is well over capacity (24,400 vpd deficiency). Development of the USC New River Campus and TCL College contribute to the additional travel demand in this area.
- SC 170 north of US 278 – A concentration of volumes in this area combines with planned signal spacing that is less than recommended in the access management standards, resulting in a major capacity deficiency (projected at 17,300 vpd).

Roadway modifications being considered by Jasper County include widening John Smith Road to five lanes and providing a roadway connection from John Smith Road to Tide Watch Drive. These improvements could reduce the additional capacity needs along SC 170 from Tide Watch Drive to US 278 by 4,150 vpd (a continuing capacity deficiency of 13,150 vpd will remain on this section).

The results of the current corridor analysis along US 278 are consistent with the previous US 278 corridor study in identifying the potential benefits of access management. However, the revised land use assumptions in the current analysis indicate the potential need to continue access management west of SC 170, along with the need for additional through roadway capacity along US 278 (potential six-lane section) and/or parallel roadways to accommodate the high projected volumes (64,400 vpd resulting in a capacity deficiency of 24,400 vpd).

Signal Spacing Exception to Recommended Standards

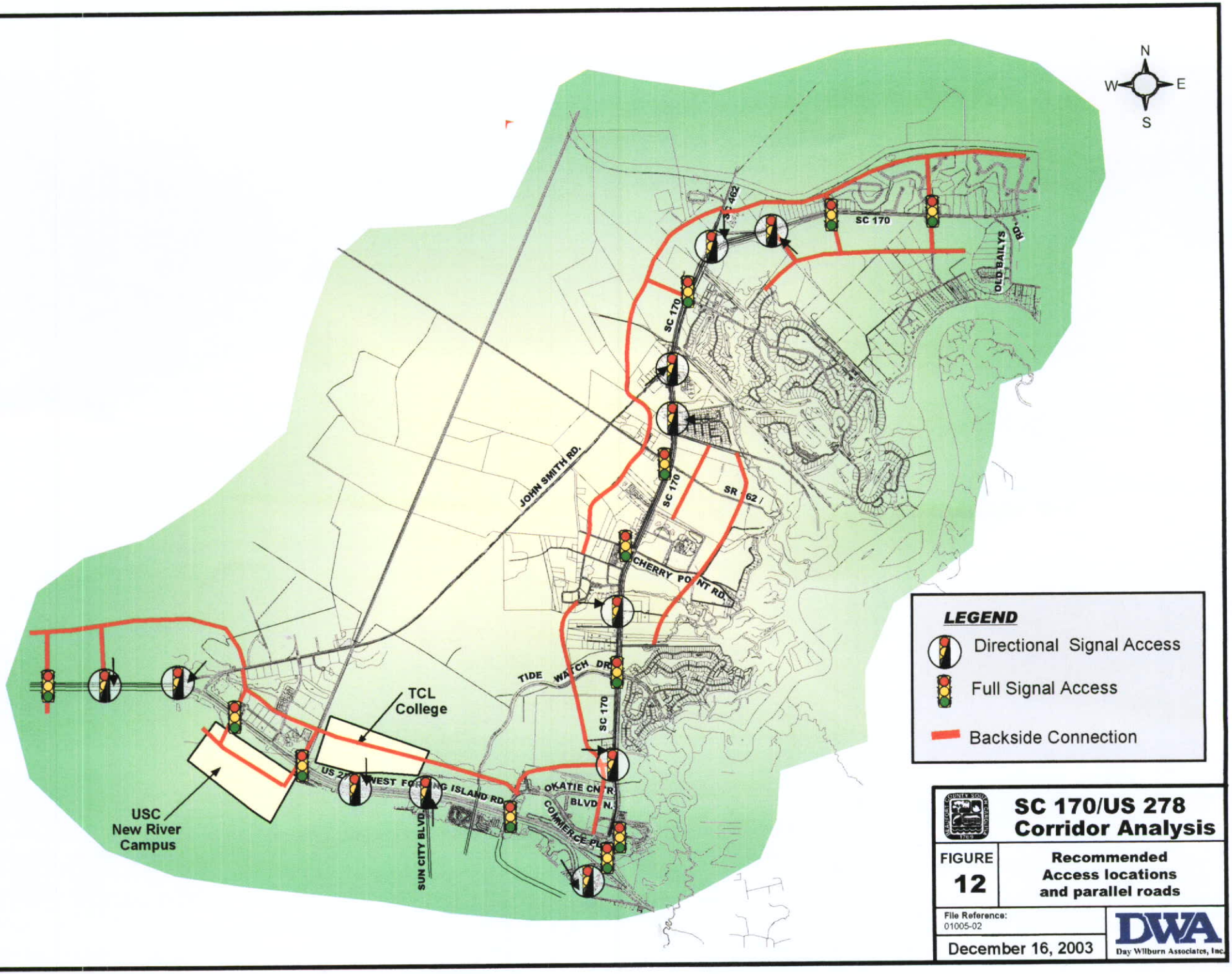
Due to the existing property boundaries of the USC New River Campus site and the location of its access points relative to the existing roadway network, an exception to the recommended signal spacing standard is recommended to allow a spacing of 2,640 feet between the following full signalized access points:

- US 278 at New River Campus West Access/Wal-Mart Access Road - The Wal-Mart access road north of US 278 is planned for extension to John Smith Road, providing an intersection with through capabilities from the USC New River Campus to John Smith Road.
- US 278 at New River Campus East Access/TCL College West Access - This access point will serve both colleges and connect to an east/west road, which will lead from the TCL New River Campus across New River Parkway to the Wal-Mart site. Connection of the signalized access point north to intersect with John Smith Road is recommended to provide multiple travel paths to the north for access to the colleges without requiring travel on US 278.

The spacing exception of 2,640' is at the low end of the recommended spacing for signalized intersections to maximize throughput. These intersections should be closely coordinated to maximize US 278 throughput and minimize friction between intersections.

Need for Parallel Roadway Connections and Backside Access

For the recommended access management standards to work effectively, implementation of parallel roadway connections and backside access is needed. Achieving the capacities indicated in this study requires maximizing utilization of the arterial through movement at the intersections, as well as increasing the spacing of access locations. The analysis assumptions include the allocation of a minimum of 55% of the signal green time to the main roadway through movement. Implementation of this green time split with fewer access points can result in backups of vehicles on the side streets unless alternative access is provided to satisfy local trips. Roads parallel to the principal arterials with connection to the parcels via side roads or backside access is critical to serving local trips without the need to access the arterial for traveling a few blocks. The Access Management Plan drawings shown in Figures 5 through 11 provide a concept for implementation of parallel roadways along the SC 170 and US 278 corridors. An overview of the recommended parallel roadways is shown in Figure 12.



SC 170/US 278 Corridor Analysis

FIGURE 12	Recommended Access locations and parallel roads
File Reference: 01005-02	DWA Day Wilburn Associates, Inc.
December 16, 2003	

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Providing additional capacity parallel to SC 170 and US 278 is recommended for study, in conjunction with increasing the development of college campuses and Branigar Master Plan, as a part of the Beaufort County Southern Regional Study. Installation of backside and parallel roadway connections can reduce the need for drivers to access the main roadway for short trips.

In the area of SC 170 between Tide Watch Drive and John Smith Road, if the backside connections accommodate 25% of generated traffic in adjacent TAZs assigned to SC 170, a total trip reduction of 5,700 vpd will result on this section. However, assuming the same 25% capture rate in the critical area of SC 170 north of US 278, the backside connection west of SC 170 would amount to a total trip reduction of only 550 vpd on this congested section.

The results of the corridor analysis provide specific guidance regarding the application of access management standards, including:

- Based on analysis of projected buildout (year 2020) conditions along the SC 170 and US 278 corridors, application of the Countywide Access Management Standards is strongly recommended. In conjunction with these standards, incorporation of future signalized access points only as defined in this study into the Corridor Management Plans for US 278 and SC 170 is critical.
- Eight signal locations are proposed along the US 278 corridor (four full access signals and four directional access signals)
- Fifteen signal locations are proposed along the SC 170 corridor (eight full access signals and seven directional access signals)
- Backside connections are recommended along the SC 170 and US 278 corridors in conjunction with implementation of the access locations within a Corridor Management Plan.

Recommended Access Locations

The following signal locations are recommended along the US 278 corridor (refer to Figures 5, 6, and 7):

- Second median break west of John Smith Road (full signal access)
- First median break west of John Smith Road (directional signal access –north side)
- John Smith Road (directional signal access – north side)
- Wal-Mart Entrance/USC New River Campus (full signal access)
- USC New River Campus East Entrance (full signal access)
- TCL Campus (directional signal access – north side)
- Sun City Boulevard (directional signal access – south side)
- Oakatie Boulevard (full signal access)

The following signal locations are proposed along the SC 170 corridor (refer to Figures 8 through 11):

- US 278 Eastbound ramp (directional signal access – west side)
- US 278 Westbound ramp (full signal access)
- Oakatie Boulevard (full signal accesss)
- Oakatie Center (directional signal access (west side)
- Tide Watch Drive (full signal access)
- Median break north of Tide Watch Drive (directional signal access – west side)
- Cherry Point Road (full signal access)
- Pritcher Point Road (full signal access)
- Residential development north of Prichard Point Road (directional signal access – east side)
- John Smith Road (directional signal access – west side)
- Old Field Plantation Entrance (full signal access)
- SC 462 (directional access – north side)
- Median break east of SC 462 (directional access – south side)
- Median break west of Old Baileys Road (full access)
- Camp St. Mary's Road (full access)

Backside connections are recommended along the SC 170 and US 278 corridors in conjunction with implementation of the access locations within a corridor management plan (refer to Figure 12).

Opportunities to provide additional capacity parallel to SC 170 and US 278 are recommended for study, in conjunction with increasing development of college campuses and Branigar Master Plan, as a part of the Beaufort County Southern Regional Study.

Recommended Access Management Standards

Based on analysis of projected buildout (year 2020) conditions along the SC 170 and US 278 corridors, application of the Countywide Access Management Standards is recommended. In conjunction with these standards, incorporation of the future signalized access points, defined in this study and identified above, is recommended for incorporation in the Corridor Management Plans for US 278 and SC 170.

The application of access management standards can improve the efficiency of a transportation network. Access management is a tool that can help prevent traffic congestion by limiting and controlling vehicles entering, exiting, and turning along a corridor. Traffic movement is facilitated by minimizing the potential disruptions to the vehicles in the roadway. Effective access standards benefit a community by reducing accidents, increasing roadway capacity, providing better access to businesses, and improving mobility.

The recommended access management standards for US 278 west of SC 170 and for SC 170 north of US 278 address the following:

- Number of Driveways
- Driveway Spacing and Corner Clearance
- Driveway Design
- Driveway Linkages
- Acceleration and Deceleration Lanes
- Driveway Retrofit Techniques
- Signal Spacing
- Median Breaks
- Backside Access

The following sections explain the various access management techniques and establish standards for each technique.

Signal Spacing

The placement of traffic signals significantly impacts the ability to move traffic along a roadway. Signals placed too closely together can impede the flow of traffic on the roadway. Traffic signals should only be erected if they are warranted for a particular location and, if warranted, should follow specific placement guidelines. The following signal spacing shall apply along the study corridors:

- Full signalized access – 3200' spacing
- Directional signalized access – 1,900' spacing

A full signalized access location provides signalized access to both sides of the arterial. A directional signalized access provides signalized access to one side of the arterial. The other side remains free flowing past the signalized access point. On the side of the arterial where access is provided, the arterial traffic is stopped. On the side of the arterial where access is not provided, the movements to and from the accessed side of the arterial are provided via acceleration and deceleration lanes on the left side of the free flowing arterial section. By requiring only one side of the arterial to stop, this unique signal configuration requires coordination of flow for only one direction, simplifying signal operations (since there is no need to provide signal coordination in two directions).

Signal Operations to Maximize Throughput

Maintaining throughput capacity along the SC 170 and US 278 corridors requires the maximizing the available green time along the corridor. Therefore, all signalized intersections shall provide a minimum of 55% of the signal cycle length for through movement green time for US 278 and SC 170. Along the corridor as a whole, an average of 65% of the signal cycle shall be allocated to for through movement green time for US 278 and SC 170.

Median Breaks

Median breaks along a roadway have a significant effect on the ability to move traffic safely. A median break allows for potential conflict created by traffic crossing over several lanes of traffic. Median breaks should only be allowed at specific intervals to minimize the number of potential conflict points. New median breaks shall not be permitted along US 278 or SC 170 unless they are replacing a closed median break to provide a better location for a full or directional signal in a manner consistent with the signal locations identified for the corridors and included in the Corridor Management Plan.

Number of Driveways

A minimum of one point of access to a property will be allowed. Additional access points above the one permitted may be granted provided the continuous roadway frontage of the property exceeds 200 feet. Driveways should be limited to the number needed to provide adequate access to a property. Factors such as alignment with opposing driveways and minimum spacing requirements will have a bearing on the location and number of driveways approved. Refer to Table 2.

Table 2
Maximum Number of Driveways per Frontage

Length of Frontage	Maximum Number of Driveways
200 feet or less	1
200+ to 600 feet	2
600+ to 1,000 feet	3
1,000+ to 1,500 feet	4
More than 1,500 feet	4 plus 1 per each additional 500 feet of frontage

SCDOT Access and Roadside Management Standards

Driveway Spacing and Corner Clearance

Driveway spacing and corner clearance standards are an essential tool used to manage potential conflicts between through traffic and traffic generated by development. The establishment of driveway and corner clearance standards serves to limit the number of potential conflict points and separate potential conflict points. These standards are particularly effective in preventing future traffic problems in lightly to moderately developed areas likely to develop in the future.

Driveways should be located away from other intersections to minimize the potential for conflict. When possible, access should be limited or denied along higher class roadways and access should be provided from the lower class intersecting roadway. A minimum driveway spacing of 500' shall be maintained along SC 170 and US 278. Driveway spacing shall be measured from the closest edge of pavement to the next closest edge of pavement. All driveways shall be right-in and right-out only unless located at an existing median break location. If safety issues associated with left turns into or out of a driveway that is not identified as a future signalized access location in the Corridor Management Plan exist, the safety issues shall be mitigated through conversion of the driveway to right-in and right-out access only.

Driveway Design

Traffic entering and exiting developments creates potential conflict with vehicles traveling on the roadway. Appropriate driveway design can improve safety and reduce congestion. Driveways should be designed to allow vehicles to enter and exit the roadway quickly and safely with minimum impact to the traffic on the roadway. Driveways should have appropriate turn radii and driveway width. The throat of a driveway must be adequate in depth in order to allow a vehicle to queue as it enters or exits the highway. An access point must also be designed to accommodate appropriate vehicle types. Table 3 outlines driveway width and turn radii standards. The principal elements of driveway design are outlined in SCDOT's Access and Roadside Management Standards.

Driveway Linkages

There are several techniques for linking driveways to improve access from the roadway and between parcels. Shared driveways serve two or more adjacent properties that may or may not be comprised of land from each property. Shared driveways allow for larger driveway spacing and improved management of traffic entering and exiting a development.

Cross access driveways interconnect the parking facilities of two or more abutting properties. They are always comprised of land from both properties. Cross access driveways provide an opportunity for vehicles to move between developments without using the roadway. Cross access driveways reduce traffic on the roadway and reduce the potential for conflict between entering, exiting, and through traffic.

Table 3
Driveway Width and Tuning Radii

Land Use or Design Vehicle	Driveway Width (feet)	Turning Radii (feet)
Single Residence (with curb and gutter)	10-16	5-10
Single Residence (with shoulder)	10-16	10-20
Small Apartment Complex (with curb and gutter)	10-16	5-10
Small Apartment Complex (with shoulder)	10-16	10-20
Large Apartment Complex	24-40	20-40
Urban Commercial (One-Way)	14-24	See Design Vehicle Type Below
Urban Commercial (Two-Way)	24-40	See Design Vehicle Type Below
Rural Commercial (One-Way)	18-24	See Design Vehicle Type Below
Rural Commercial (Two-Way)	24-50	See Design Vehicle Type Below
Industrial (Single Unit Truck)		40
Industrial (WB-40 Tractor Trailer)		40
Industrial (WB-50 Tractor Trailer)		50
Industrial (WB-62 Tractor Trailer)		50

The land comprising the shared or cross access driveways should be recorded as an easement and serve as a covenant attached to the property. Joint maintenance agreements should also be incorporated into the property deed. Linkages requiring mutually executed easements should be required between adjoining properties to provide movement without requiring a return to the public roadway.

A circulation road may be used as the linkage when a uniform setback line is established on a number of properties so that drives at the front of the building can be interconnected. A common road should be provided if possible to avoid the striping of lots.

A system of joint-use driveways and cross access easements should be established wherever feasible. Vehicle and pedestrian links to adjacent properties with provisions for stubbed out connections should be required when adjacent land is not developed.

Acceleration and Deceleration Lanes

Acceleration and deceleration lanes on corridors providing access into and out of developments that produce a substantial number of trips can reduce the slowing and stopping of traffic caused by turning vehicles. The purpose of an acceleration or deceleration lane is to enhance motorist safety and the through movement of vehicles on the corridor. These lanes are desirable features on any road, but offer the most benefit on principal arterials. These lanes are needed when the volume of traffic turning at a site is high enough in relation to the through traffic to constitute the potential for disruption.

A traffic impact study will be required according to the *Beaufort County Traffic Impact Analysis Ordinance* to determine the need for acceleration or deceleration lanes. Beaufort County staff will review the traffic impact study to determine the need for acceleration or deceleration lanes.

Driveway Retrofit Techniques

Opportunities to bring existing driveways to the current standards appear when a business changes ownership or when any improvements to the existing driveways or parking lots occur. As changes are made to previously developed property or to the roadway, driveways will be evaluated for the need to be relocated, consolidated, or eliminated if they do not meet the access management standards.

Backside Access

The development of backside access roads provides an opportunity to remove turning traffic from the roadway and serve businesses with alternate access. Backside access to businesses provides exposure to a greater number of businesses, thus increasing commercial value, and improves intersection spacing on cross roads. Traffic that would otherwise enter and exit from the main roadway has access to a large number of businesses from a safer, less conflicting location.

Where feasible, a backside access road should be provided. Developments should be designed to connect to existing backside access, where provided. Where feasible, a continuous backside access road shall be provided either immediately behind the buffer yard or, if outlots are provided, along the rear property line of the outlots.

Where backside access does not exist, developments should be designed to allow for future backside access through construction of circulation roads to the rear and parking on the side and in the rear of properties.

Additional Guidelines

In addition to the aforementioned guidelines, it is recommended that multimodal access be considered, planned and incorporated. Signalized intersections should have marked crosswalks and appropriate crosswalk signalization.

Unless specifically stated otherwise, SCDOT Roadside Management Standards should be followed. The recommended guidelines in this document should be utilized in addition to the SCDOT strategies. When they are in conflict, the stricter requirement shall govern.

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

WalCam Land Exchange Proposal

Council Committee:

Natural Resources

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

Stefanie M. Nagid, Passive Parks Manager

Issues for Consideration:

The exchange of 78.2 acres of County-owned property (a portion of New Riverside) for 146.5 acres of WalCam-owned property (adjacent to New Riverside).

Points to Consider:

WalCam has removed the first thinning timber revenue incentive from the original proposal as presented to NRC in November 2018. The appraisals indicate a $30,000 property value difference in favor of the WalCam piece.

Funding & Liability Factors:

Each party pays their own closing costs. No monetary exchange between the parties.

Council Options:

1) Approve the proposal as presented in the WalCam letter of intent dated February 20, 2019; 2) Do not approve the proposal.

Recommendation:

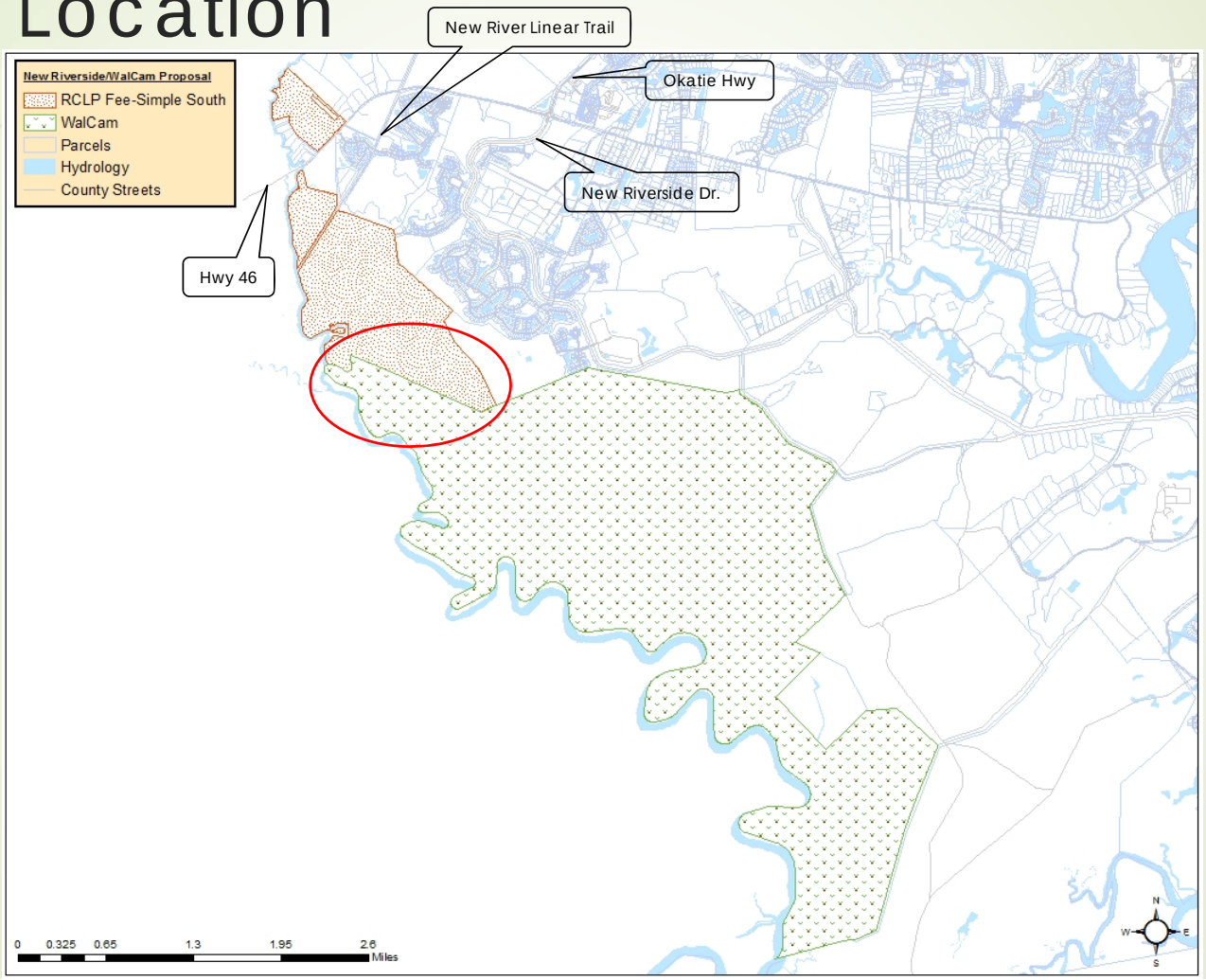
Do not approve the proposal as presented in the WalCam letter of intent dated February 20, 2019. Counter-offer to reconsider the proposal if the first thinning timber harvest revenue is added to the letter of intent.

New Riverside/WalCam Proposal

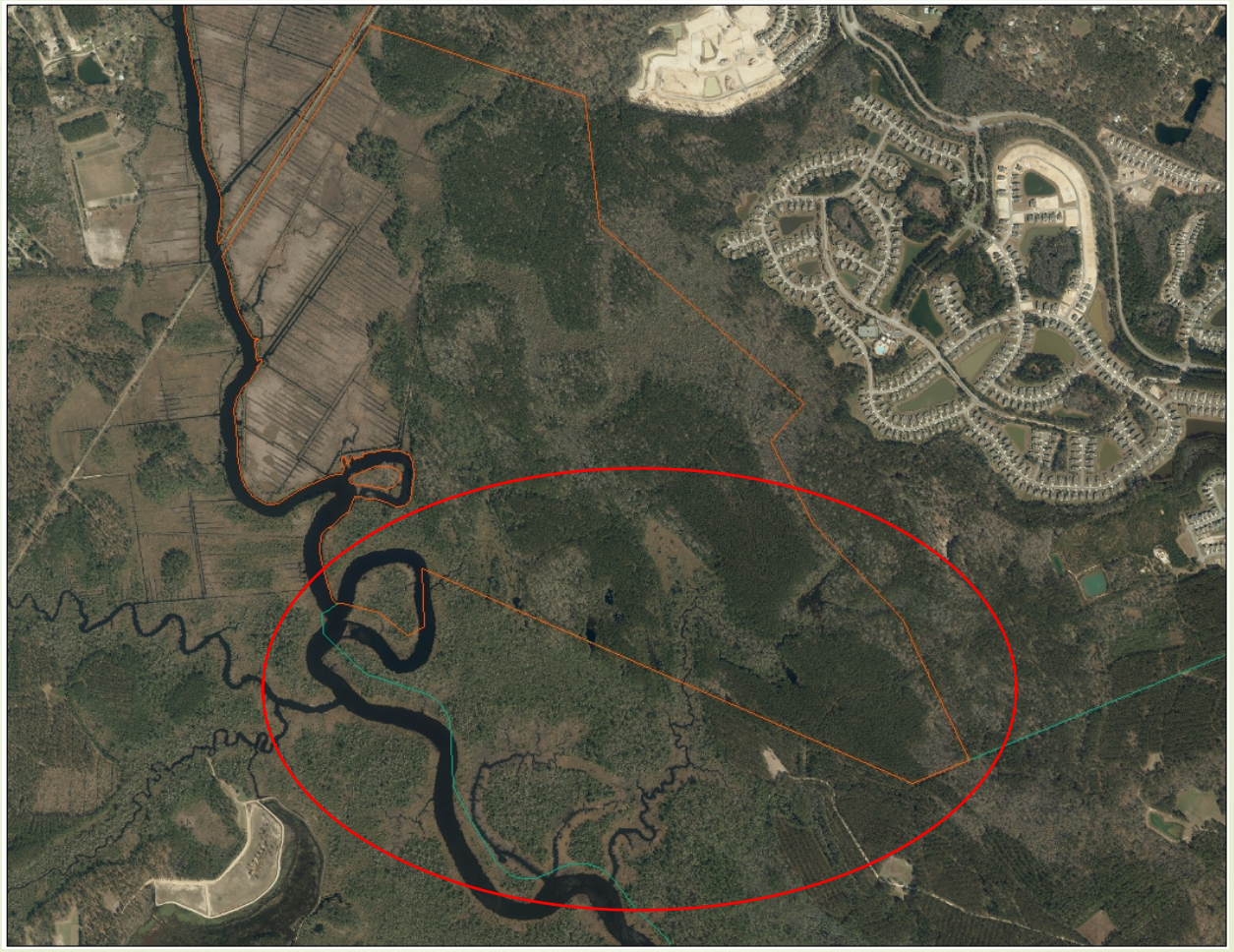
Presented By:

Stefanie Nagid

Location


New River Linear Trail
Okatie Hwy
New Riverside Dr.
Hwy 46
New Riverside/WalCam Proposal
RCLP Fee-Simple South
WalCam
Parcels
Hydrology
County Streets
0 0.325 0.65 1.3 1.95 2.6
Miles
N
W
E
S

New Riverside/WalCam



Considerations

Pros:

- ~5,250 feet of additional river frontage and interior creeks
- Increased mature wetland forest acreage
- Full ownership of oxbow island
- Reduced potential for trespassing off park property
- Creation of contiguous property boundary

Cons:

- Loss of 43 acres of timber land
- First thinning revenue incentive removed from the proposal
- Decreased upland acreage for land-based hiking trails
- Full loss of current and future timber revenue

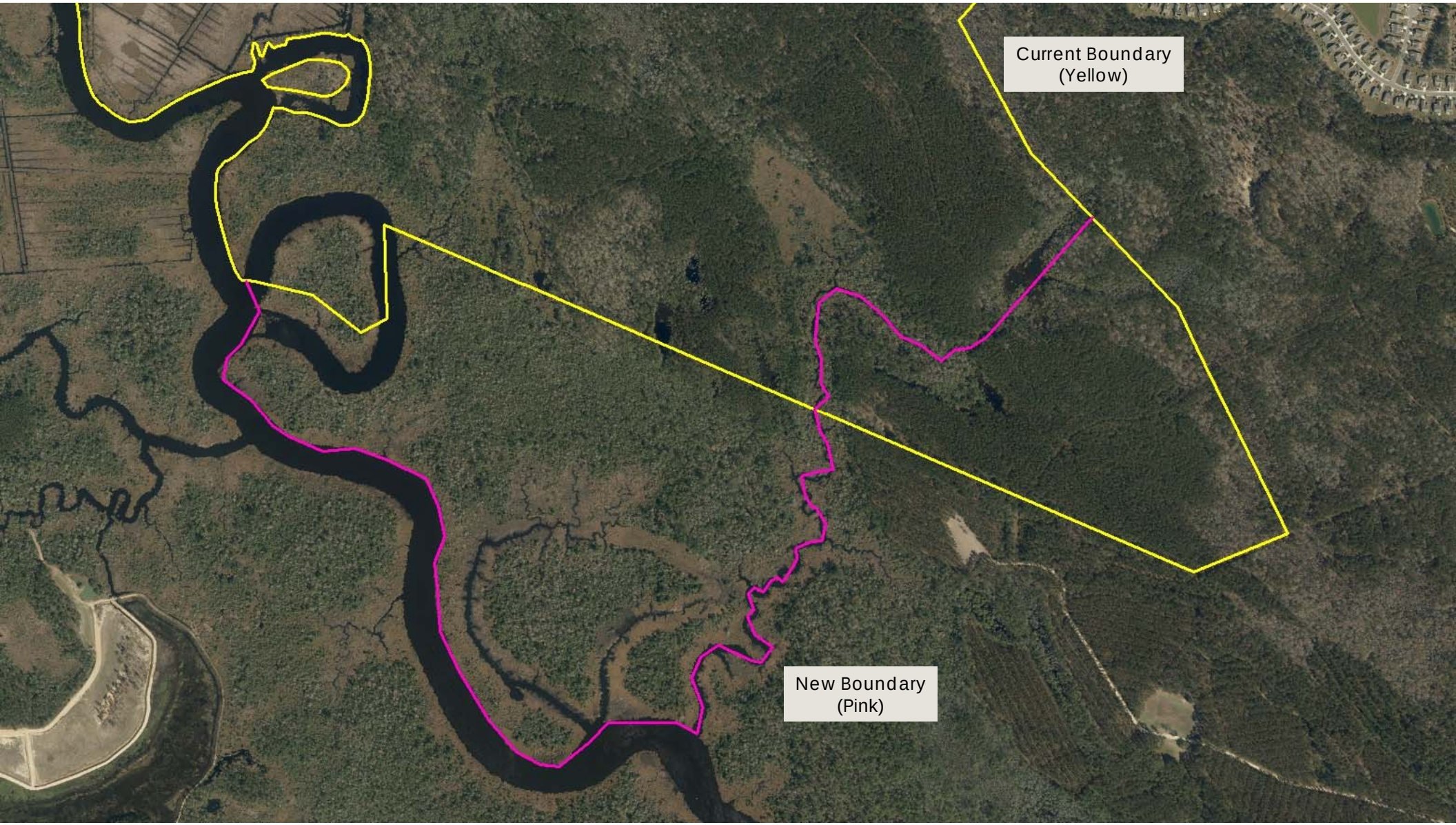
Comparison

County Property

- 78.2 acres
- $320,000 appraised value
- Exchange:
  - Loss of 43 acres of timbered upland
  - Gain of 68.3 acres of mature wetland forest
  - Gain of $30,000 in property value
  - Loss of current and future timber revenue

WalCam Property

- 146.5 acres
- $350,000 appraised value
- Exchange:
  - Loss of 68.3 acres of unusable wetland
  - Gain of 43 acres of useable upland
  - Gain of current and future timber revenue
  - Loss of $30,000 in property value


Current Boundary
(Yellow)
New Boundary
(Pink)

Staff Recommendation:

Do Not Approve WalCam Letter of Intent dated February 20, 2019.

Counter-offer to reconsider if WalCam adds the first thinning timber harvest revenue to the letter of intent.

WALCAM LAND GROUP, LLC
416 Travis Street, Suite 715
Shreveport, Louisiana 71101
(318) 465-5055

February 20, 2019

Community Development Department
c/o Ms. Stefanie M. Nagid
Passive Parks Manager
County Administration Bldg.
100 Ribaut Road, Room 115
Beaufort, SC 29902

Re: Letter of Intent for Exchange of Property.

Dear Ms. Nagid:

Pursuant to our recent discussions, this Letter of Intent will set out the proposed terms and conditions for a property exchange between Beaufort County, South Carolina (the "County") and WalCam Land Group, LLC ("WalCam"). The primary purpose of this exchange is to improve the property boundaries for both parties.

WalCam proposes to transfer to the County a tract comprising approximately 146.5 acres out of the Palmetto Bluff Managed Forest ("Proposed Parcel A") in exchange for the transfer of a tract comprising approximately 78.2 acres ("Proposed Parcel 6-B") from the County to WalCam.

The boundaries of Proposed Parcel A are generally depicted on the map attached hereto as Exhibit A. The final boundaries of Proposed Parcel A will be determined by a survey. The boundaries of Proposed Parcel 6-B are generally depicted on the map attached hereto as Exhibit B. The final boundaries of Proposed Parcel 6-B will be determined by survey.

WalCam will pay the cost to obtain an appraisal on Proposed Parcel A from a mutually agreeable appraiser, and the County will pay the cost to obtain an appraisal on Proposed Parcel 6-B from a mutually agreeable appraiser.

This Letter of Intent, the appraisals and the proposed exchange are subject to approval by the County's Natural Resource Committee and by the County Council. The title to both Parcels must be good, valid and merchantable and must qualify for title insurance having only the usual and customary exceptions and exclusions. The County acknowledges that Proposed Parcel A is subject to, and will remain subject to, certain recorded covenants and restrictions as part of the Palmetto Bluff Managed Forest Tract.

Upon approval by the County Council, the parties will initiate the closing with the County closing attorney. WalCam will pay for the survey, any necessary title work, and the preparation and recordation of the deed for Proposed Parcel A. The County will pay for the survey, any necessary title work, and the preparation and recordation of the deed for Proposed Parcel 6-B. Each party, at its cost, shall have the right to obtain title opinions or title policies on the parcel being acquired. WalCam and the County will jointly pay the fees of the closing attorney.

If this Letter of Intent accurately describes our agreement, please have it signed in the space indicated below, and return a fully-signed copy to me.

Respectfully,

WalCam Land Group, LLC

By
Edward R. Campbell, III, Manager

APPROVED this ___ day of _____, 2019, subject to the conditions set forth above.

BEAUFORT COUNTY, SOUTH CAROLINA

By: _____

Name: _____

Title: _____

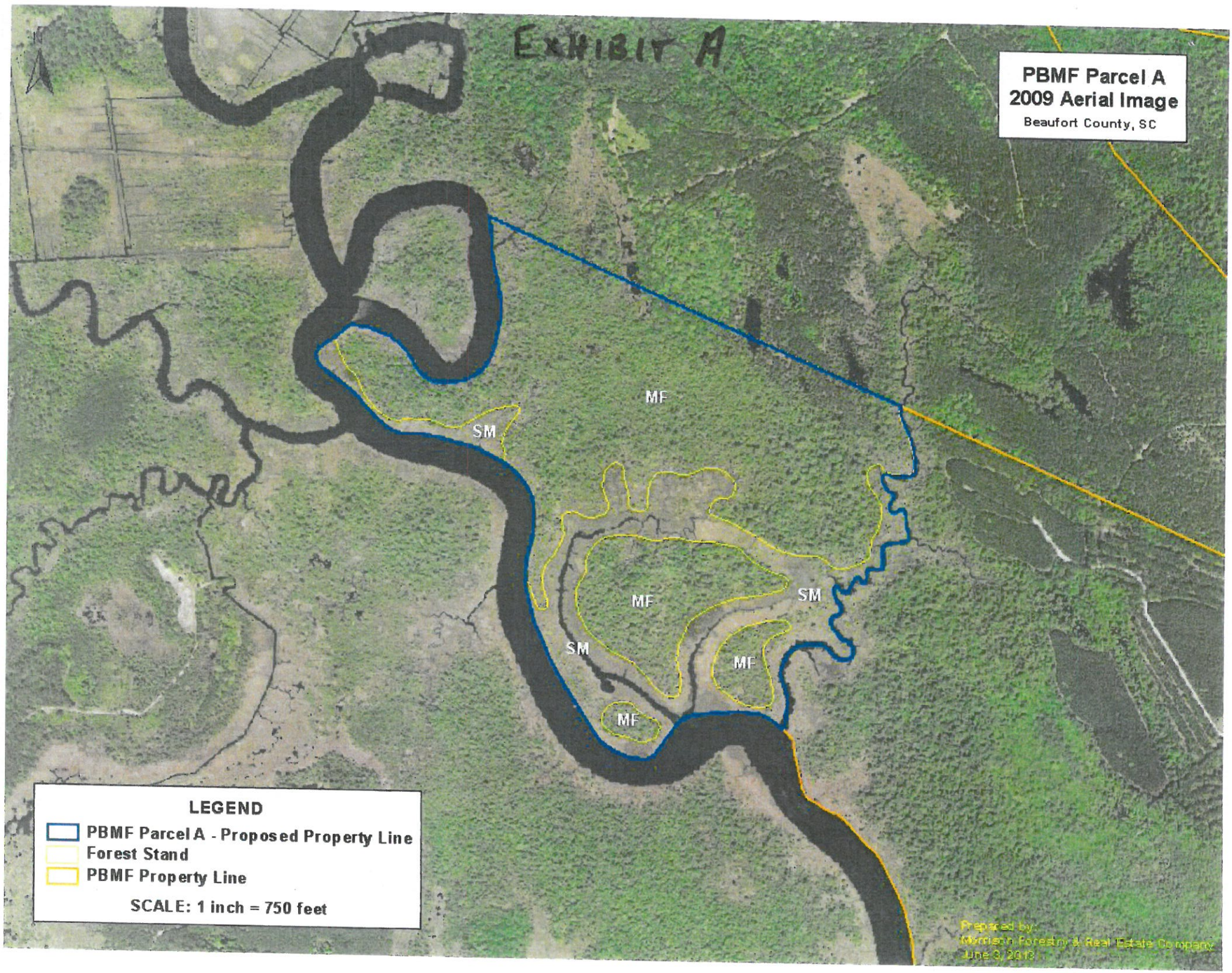


EXHIBIT A
PBMF Parcel A
2009 Aerial Image
Beaufort County, SC
MF
SM
MF
SM
SM
MF
MF
LEGEND
PBMF Parcel A - Proposed Property Line
Forest Stand
PBMF Property Line
SCALE: 1 inch = 750 feet
Prepared by:
Morrison Forestry & Real Estate Company
June 3, 2013

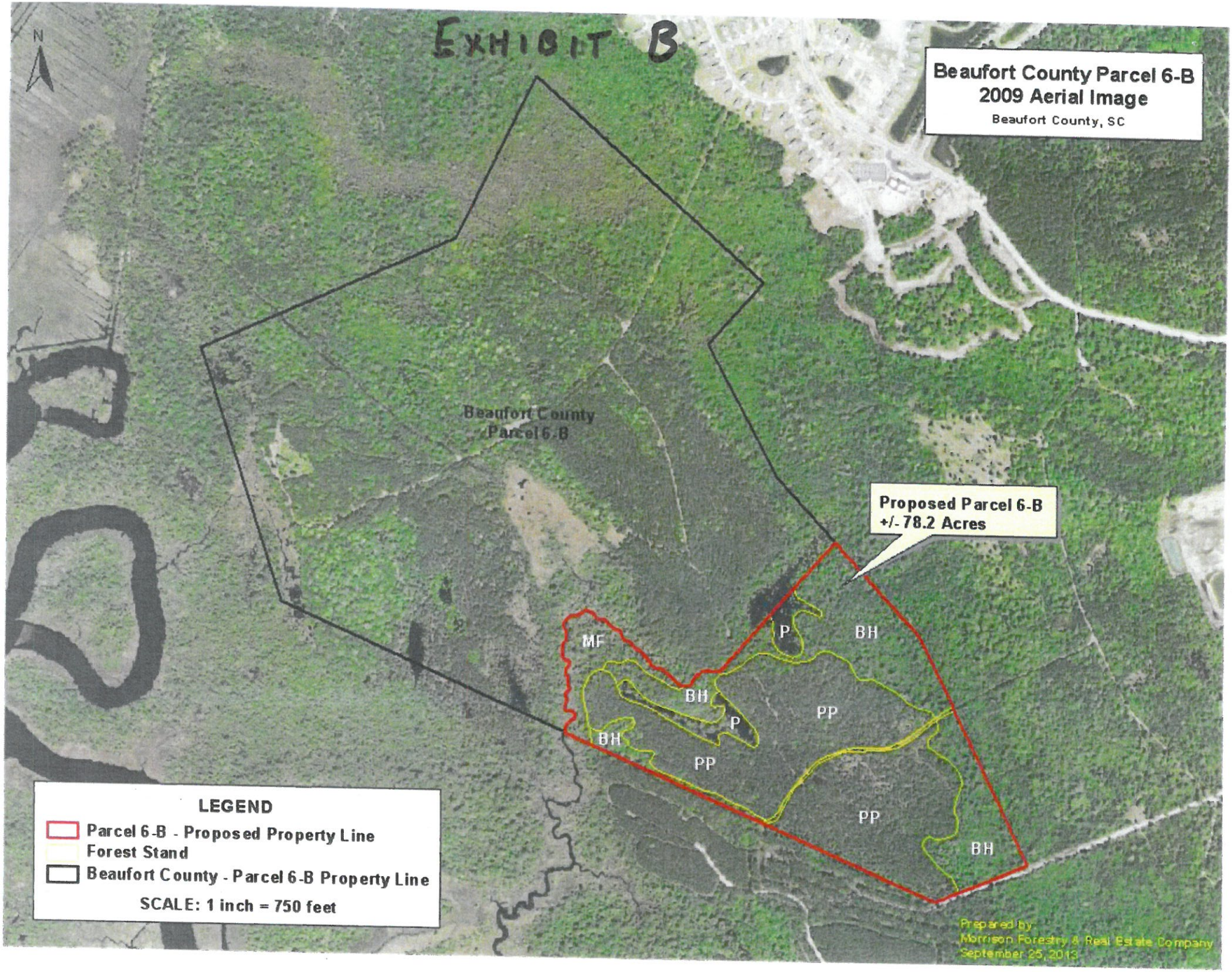


EXHIBIT B
N
Beaufort County Parcel 6-B
2009 Aerial Image
Beaufort County, SC
Beaufort County
Parcel 6-B
Proposed Parcel 6-B
+/- 78.2 Acres
MF
P
BH
BH
P
PP
BH
PP
PP
BH
LEGEND
Parcel 6-B - Proposed Property Line
Forest Stand
Beaufort County - Parcel 6-B Property Line
SCALE: 1 inch = 750 feet
Prepared by
Morrison Forestry & Real Estate Company
September 25, 2013

APPRAISAL

Of

Parcel 6-B

Beaufort County

Prepared for Beaufort County, SC

February 14, 2019
Beaufort County, SC

Re: Appraisal of Tract 6-B, 78.2 acres west of Bluffton, located in Beaufort County, South Carolina

I have prepared an appraisal report for the subject real estate. The effective date of the appraisal is January 30, 2019, the date of the property inspection. The purpose of this appraisal is to estimate the market value as is of the property as described in this appraisal report, in unencumbered fee simple title of ownership. I estimate this value to be:

Three Hundred Twenty Thousand Dollars
($320,000**).**

This report is based on a physical analysis of the site, a locational analysis of the market area, and an economic analysis of the market for properties such as the subject. The following report will set forth those data, assumptions, and analyses that led to the market value estimate. This report is based on the complete appraisal process as defined by the Uniform Standards of Professional Appraisal Practice.

I appreciate your business. If you have any questions, please do not hesitate to call.

Sincerely,
HOLSTEIN APPRAISALS

Richard H. Holstein, IV, P.E.
Certified General Appraiser
SC #5509 | GA #345673
NC #A7477 | FL #RZ4049

APPRAISAL SUMMARY

Client:	Beaufort County, SC
Land Owner:	Beaufort County, SC
Subject Property:	Tract 6-B, 78.2 acres west of Bluffton
Objective of Report:	To estimate market value
Intended Use:	Support of land exchange transaction
Property Rights Appraised:	Fee Simple
Highest and Best Use:	Recreational
Value Estimate:	$320,000
Effective Date of Appraisal:	January 30, 2019
Date of Appraisal Report:	February 14, 2019
Appraiser:	Richard H. Holstein IV

Holstein
APPRAISALS
521 W Railroad Avenue
Batesburg, SC 29006
803.532.3955
Www.Holsteinappraisals.Com

TABLE OF CONTENTS

PART 1: FACTUAL DATA

PROPERTY IDENTIFICATION

The subject consists of 78.2 +/- net acres of woodland 7.6 miles west of Bluffton, SC on the New River. It is identified as a portion of Beaufort County Tax Parcel R610 043 000 0001 (p), 78.2, acres.

SITE MAP

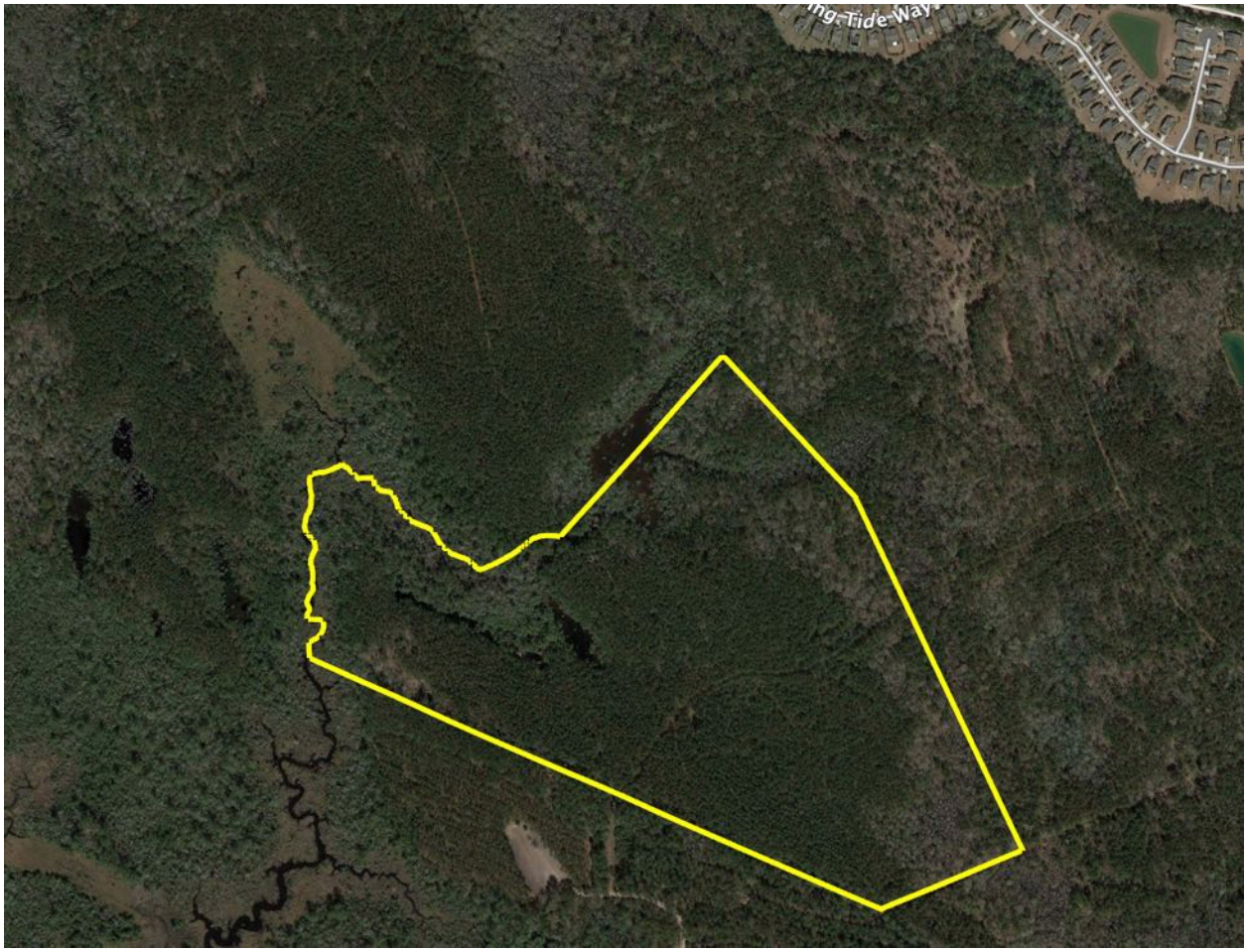


Figure 1. Based on the Beaufort County GIS and maps supplied by the owner.

LEGAL DESCRIPTION

As appraised, the property has no formal legal description. For the purposes of this appraisal, the property is defined as the 78.2-acre portion of Beaufort County Tax Parcel R614 045 000 0019 shown in the previous drawing.

ADMINISTRATIVE INFORMATION

APPRAISAL OBJECTIVE

The purpose of this appraisal is to estimate the market value of the subject property.

INTENDED USE OF THE APPRAISAL

Support of land exchange transaction.

INTENDED USERS

The report is for the use of Beaufort County, SC.

DEFINITION OF VALUE

The most probable price that a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their best interests;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in terms of cash in United States dollars or in terms of financial arrangements comparable thereto; and
5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

SCOPE OF WORK

The Uniform Standards of Professional Appraisal Practice (USPAP) suggests that appraisers define the scope of work when undertaking an appraisal assignment. Since the subject property is real estate, the USAPAP development standards for real property (Standard 1) are applicable. USPAP considers the scope of work in an appraisal to be acceptable when it is consistent with:

1. The expectations of participants in the market for the same or similar appraisal services; and
2. What the appraiser's peer's actions would be in performing the same or a similar assignment in compliance in USPAP

The scope of work may include written or oral instructions from the client. The analysis included in this re-port is an "appraisal assignment," whereby the appraiser is retained to act as a disinterested third party and to render an unbiased opinion.

The scope of the assignment includes:

- Preliminary analysis of the appraisal problem
- A physical visit to the subject property and a tour of the neighborhood

- Researching public sales information
- Analyzing the highest and best use of the land and improvements (if any)
- Developing the cost approach (where applicable), income approach (where applicable), and sales comparison approaches to value to determine the market value of the subject properties
- A final value conclusion

The appraiser researches the market to obtain the data necessary to the appraisal. This research may include contacting other appraisers, brokers, developers, lenders, title companies, national cost services and a thorough study of government records, particularly in the Assessors and Recorders offices. The appraiser verifies sales and lease data with parties directly involved with the transaction where possible and verifies all other data by the best means available. The appraiser uses the information most applicable to the particular appraisal assignment. I withheld nothing pertinent that could affect the opinion of value. There are no limitations in the scope of this report beyond those listed in the assumptions and limiting conditions and those dis-cussed specifically in the body of the report.

A REAL ESTATE APPRAISAL DEFINED

A real estate appraisal is an estimate of value of identified real estate. An appraiser develops a credible appraisal by a systematically researching the market, analyzing the market information, and applying that analysis to the subject property. An appraisal should be the logical conclusion and considered opinion of a skilled and unbiased practitioner.

In estimating the most probable price that a property will bring in the open market, the best evidence of what will happen in the market is usually what has happened most recently. Market data reflect not only economic anticipation but also emotion, bias, uninformed decisions, unique buyer and seller motivations, and other un-usual factors and situations that influence market transactions. The appraiser must analyze this “history” and also consider existing currents in the market that may affect value as of the date of the appraisal. The appraiser’s mission is to interpret the market, not to set the market by imposing his or her own biases and value judgments over prevalent market indications.

“Most probable price” connotes a statistical approach to estimating value; however, in most cases, the available market data samples are too few for statistically significant conclusions. Thus, the appraiser must rely on his or her training, experience, and judgment to correlate diverse information into value conclusions while maintaining strict impartiality. “Most probable” also connotes likelihood based on evidence that leads to a value judgment; it is not a certainty. Therefore, the appraisal report should contain documentation and explanation sufficient for the reader to judge the reasonableness of the appraiser's conclusions.

PROPERTY RIGHTS APPRAISED

I have appraised the marketable, fee simple title to the subject property, but I am not qualified to express a legal opinion as to the title of the subject property.

EFFECTIVE DATE OF THE APPRAISAL

The effective date of the appraisal is January 30, 2019, the date of the property inspection.

OWNERSHIP HISTORY OF THE PROPERTY

The present owner acquired the property in a series of non-market transactions. There have been no market transfers of the property in the previous five years.

SALES AGREEMENT OR CONTRACT

None. However, a land exchange agreement is pending.

HYPOTHETICAL CONDITIONS/EXTRAORDINARY ASSUMPTIONS

This appraisal assumes that the tract will have legal access. This appraisal also assumes that the tract has deed restrictions in place that prohibit development as discussed later in this report.

MARKET ANALYSIS

The key market factors affecting this property is the Lowcountry recreational land market.

BEAUFORT COUNTY MARKET CONDITIONS—RECREATIONAL PROPERTIES

I have spoken with representatives from the County Tax Assessor's Office, local realtors, foresters, farm credit representatives, and appraisers that are active in the subject area. The general consensus was, like I have found in other rural South Carolina communities, that after a minor "boom" driven by recreational buyers in the mid 2000s and a resulting market decline, general rural real estate prices have stabilized in the past 36 to 48 months. There appears to be some recovery in some areas of the county, as several larger Lowcountry estates have sold recently. However, as discussed in the appraisal, the subject is physically and legally constrained to recreational use only. I have used only the most recent, nearest sales and have adjusted them for time/market conditions as appropriate based on the sales analysis that follows.

PROPERTY DESCRIPTION

LOCATION AND ACCESS

The property is located on the Beaufort-Jasper County line approximately 7.8 miles west of Bluffton. The property has no road frontage or public access. Internal access is gained (assumed) by an easement through the adjacent property to the east. There are no internal access roads or tracks and internal access is via foot only.

LAND USE

The land has been in woodland use for over 20 years.

TIMBER

The timber was appraised by Morrison Forestry and Real Estate Company Inc. A copy of the timber appraisal is in the Addendum. For non-commercial timberland acreages such as the subject, the stumpage value is typically all contributory toward the overall property value.

TERRAIN, DRAINAGE

The tract has an irregular shape that does not affect the utility of the land significantly. The topography is level and drainage is poor.

SOIL INFORMATION

The tract consists of Argent fine sandy loam and Santee fine sandy loam. Santee loam is a nearly level, very poorly drained soil found in low areas along drainageways occurring in irregular patterns of 25 to 1,200 acres in size. The most serious management problem is the seasonal high water table. Most of the Santee acreage is in woodland. Loblolly pine, sweetgum, water tupelo, and sycamore are among the trees suitable to plant. Argent Fine Sandy Loam, rated VIw, is typically found in depressions and drainageways on low stream terraces. It is not suitable for crops and pasture without drainage. It is suited to water-tolerant trees in its native state.

WATER RIGHTS

Water rights are not an economic consideration in the subject market.

MINERAL RIGHTS

The value of mineral interests, the economic feasibility of extracting minerals from the subject property, or any anticipated future income from the production of minerals is unknown to the appraiser. This appraisal is not an exhaustive study of the actual or potential mineral production and is based on the best information available as of the effective date of the appraisal. The final opinion of value in the appraisal report includes miner-al rights of the subject property.

UTILITIES

Electricity and telephone are available along New Riverside Road approximately 0.8 miles to the northeast along the assumed easement access road.

TAXES AND ASSESSMENTS

A copy of the most recent Beaufort County property card is included in the Addendum; however, the subject is only a small portion of the overall tax parcel.

ZONING

The tract is in an unzoned area of Beaufort County; however, all land is subject to Beaufort County development regulations. Regardless, this appraisal is part of a land-swap transaction in which both parties assume that each tract is precluded from development by deed restrictions. I was unable to find any reference to these restrictions; however, this appraisal is being conducted under the assumption that development is legally precluded.

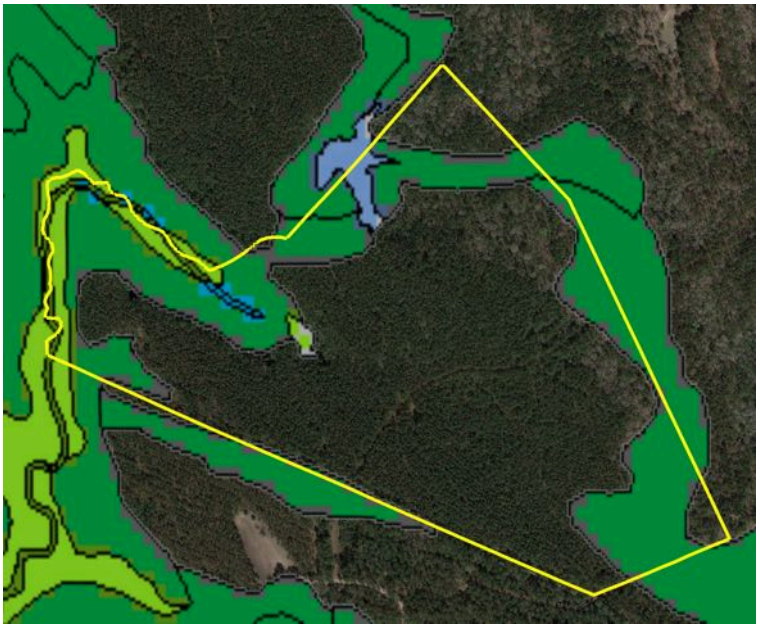
EASEMENTS, ENCROACHMENTS AND DEED RESTRICTIONS

Note: The owners of the parcel are under the impression that there are deed restrictions in place that prohibit subdivision and development of the tract. I was unable to verify this. There was no mention of development restrictions in the last property transfer deed (Beaufort County Deed Book 1535 Page 1681, 2/1/2002). Regardless,

the physical limitations of the land discussed in the following sections would likely preclude any type of cost effective development.

WETLANDS

According to the National Wetlands Inventory (NWI) map, only about 26 acres of the land are wetland areas. However, the upland areas are pine flatwoods with a very high water table. Although the 52 acres of pine flatwoods would not likely be categorized as jurisdictional wetlands if formally delineated, the seasonal flooding and extremely high groundwater table would likely mimic the characteristics of wetlands and likely preclude development of the land.



FLOOD ZONE

The tract lies on FEMA FIRM map sheet 45017C0060B dated April 16, 2007. All of the subject appears in the 100-year flood zone.

HAZARDS

I am not an environmental consultant and do not have the expertise necessary to determine the existence of environmental hazards. While I observed nothing on the subject that would lead me to suspect a hazardous condition, nondisclosure should not be taken as an indication that such a problem does not exist. An expert in the field should be consulted if any interested party has questions on environmental factors.

ADJACENT PROPERTY USES

All adjacent properties are in woodland usage.

LAND IMPROVEMENTS

None.

BUILDING IMPROVEMENTS

None.

PART II: DATA ANALYSIS AND CONCLUSIONS

HIGHEST AND BEST USE

Highest and best use (HBU) is the most probable use of land or improved property that is legally permissible, physically possible, financially feasible (and appropriately supportable) from the market, and which results in maximum profitability.

The highest and best use of a specific site is typically estimated based on market actions, which reflect prices paid for similar sites under certain uses and in certain locations. The more intense or profitable the use to which the land is put, the higher the price. These actions establish growth or expansion patterns within a geographic location. Surrounding land uses typically determine the most profitable use and the highest price expected for a site.

Highest and best use analysis takes the contribution of a specific use to the community into account as well as benefits to individual property owners. Also, the motivation of a particular purchaser or investor contributes to this determination. The concept of highest and best use represents the premise upon which value is based. If market value is defined as "most probable selling price," then highest and best use may be considered "most probable selling price." The highest and best use may be considered most probable use, or in the context of investment value, the "most profitable use."

When determining the highest and best use of a property, one must address the highest and best use of the site as vacant and the highest and best use of the site as improved. The existing use of the property may or may not be different from the highest and best use of the site. If a site is improved, the existing use will continue unless and until land value as if vacant exceeds the sum of the value of the entire property in its existing use and the cost to remove the improvements.

LEGALLY PERMISSIBLE

The property is in an unzoned portion of the county. Portions of the property are potential wetland and all portions of the property are in the 100-year FEMA flood zone. There is an ***assumed*** legal restriction that precludes development of the land which would supplant most zoning restrictions if present.

PHYSICALLY POSSIBLE

There are severe physical limitations due to wetness and flooding.

FINANCIALLY FEASIBLE

The subject is in southwest Beaufort County and is adjacent to areas of subdivision and development. If it were physically possible, subdivision and development would likely be feasible. The area is still too remote for most commercial uses.

HIGHEST AND BEST USE

The tract has physical and assumed legal restrictions that effectively limit the highest and best use to recreational/ woodland.

THE APPRAISAL OR VALUATION PROCESS

The appraisal process is a method of gathering and analyzing information that will assist in the valuation of property. There are three accepted approaches to estimating value. It is preferable to use all three approaches; however, in many cases the available data or the characteristics of the subject property may render a particular approach inappropriate.

THE THREE APPROACHES TO VALUE

The cost approach recognizes that a potential purchaser has the option to buy unimproved land and construct improvements instead of purchasing an existing improved property. The cost approach is most applicable when the improvements are relatively new and represent the highest and best use of the land. In this approach, the land is valued as if vacant based on market data. Then, the replacement or reproduction cost less accrued depreciation of the improvements is added to the land value. The cost approach is most reliable when (1) construction cost data is readily available; (2) depreciation can be checked in the market; and (3) the buildings satisfy the highest and best use of the land.

An appraiser uses the sales comparison approach to estimate market value by analyzing sales of properties similar to the subject. The appraiser typically uses six common elements of comparison: (1) property rights conveyed; (2) financing terms; (3) conditions of sale; (4) date of sale; (5) location; and (6) physical characteristics. This approach is adapted to the appraisal of property types which are frequently bought and sold, and is based on the premise that the subject will likely sell for the same price as the sale provided they are equal. The reliability of this approach is best when direct comparisons require few judgment adjustments.

The basic premise behind the income approach is that value is equal to the present worth of future benefits. This approach is most applicable to a property whose earning power is the critical element affecting its value. The purchase of an income-producing property represents the exchange of a present sum for the right to receive anticipated future income. The reliability of this approach is dependent upon the accuracy of the net income estimate, the duration of the net income, and the capitalization or discount rate.

THE APPRAISAL PROCESS AS APPLIED TO THIS REPORT

The income approach was not applicable, as it is unlikely that the subject would be purchased purely for its ability to produce income. As property is unimproved, the cost approach was not applicable, and I used only the sales comparison approach based on similar land sales.

SALES COMPARISON APPROACH

SALES COMPARISON

The land was valued using the sales comparison approach for vacant land sales.

UNITS OF COMPARISON

The unit of comparison for agricultural land is price per acre.

SELECTION OF COMPARABLE SALES

I searched for comparable sales in Beaufort County and adjacent areas of Jasper county to the west and found 10 comparable sales. As the property has legal and physical restrictions similar to easement-constrained land, I have included three sales of similar properties with conservation easements (Sales 7, 8, and 9). The summary of the sales appears below:

Sale	County	Sale Date	Sale Price	Acres	$/Acre (gross)	Est. Improv. Value	Est. Timber value	$/Bare Land Acre
1	Jasper	13-Sep-16	$450,100	148	$3,047	$0	$19,500	$2,915
2	Jasper	28-May-15	$105,000	60	$1,756	$0	$0	$1,756
3	Beaufort	16-Dec-16	$3,730,000	636	$5,868	$0	$0	$5,868
4	Beaufort	15-Mar-17	$1,260,737	231	$5,465	$0	$0	$5,465
5	Beaufort	5-Apr-16	$182,500	22	$8,372	$15,000	$0	$7,683
6	Jasper	23-Feb-17	$1,200,000	206	$5,831	$0	$0	$5,831
7	Beaufort	10-Aug-16	$867,000	231	$3,753	$0	$288,750	$2,503
8	Georgetown	15-Dec-15	$2,000,000	1046	$1,912	$0	$0	$1,912
9	Williamsburg	26-Sep-18	$750,000	220	$3,404	$0	$99,135	$2,954
10	Jasper	5-May-16	$260,000	89	$2,915	$0	$0	$2,915

COMPARABLE SALES DESCRIPTION AND ANALYSIS

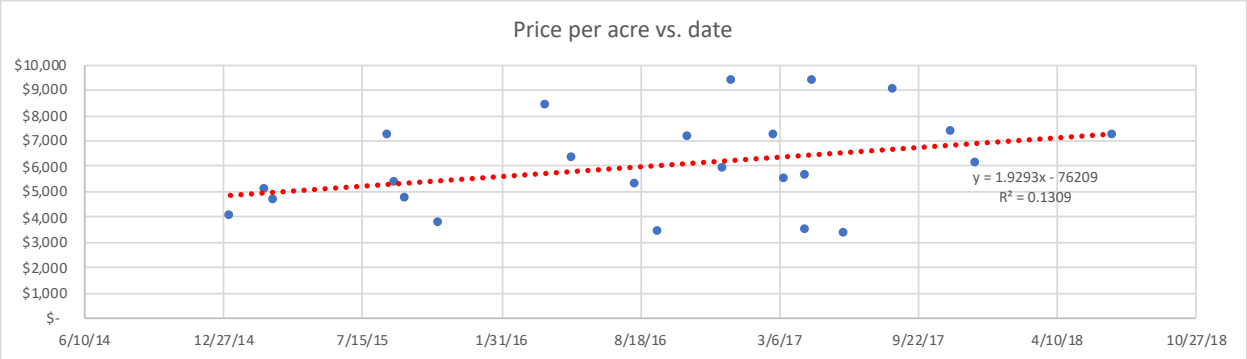
Individual comparable sales data sheets and detailed comparable sales analysis sheets are in the Addendum. A comparable sales map precedes the comparable sales sheets.

CONTRIBUTORY VALUE OF THE IMPROVEMENTS

None. (There are no improvements).

QUANTITATIVE ADJUSTMENTS TO THE SALES

Market Conditions (Time). To determine if a time adjustment was required, I analyzed 25 sales between 20 and 800 acres in Beaufort County between January 2015 and the present time. Plotting $/acre vs date indicates a moderate appreciation rate.



The slope of the linear trendline indicates that for every additional day of time, the $/acre increases by $1.93. This was the factor used to adjust the comparable sales in the sales grid. The low R^2 value indicates that only about 13% of the difference between the sales is due to date—the rest is attributable to other factors.

Improvements. I adjusted the sales for improvements, when applicable, based on tax assessor data and a cursory external inspection or from some-one with direct knowledge of the sale.

Timber. Sales were adjusted for timber value, when applicable, based on either data from someone with firsthand knowledge of the sale or a cursory physical inspection and analysis of aerial photography.

Land Quality and Use. Sales were adjusted for land use category based on a statistical analysis of the land component categories in the comparable sale properties. The subject and sales were broken down into land use categories, and the relative contributory value of each category was adjusted until the standard deviation was minimized. This becomes, in effect, a land quality adjustment based on a paired sales comparison technique. This analysis is shown in the following table.

Sale Information	Land Use Categories	Subject	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Sale 9	Sale 10	Sale Totals
	Cropland acres	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Open Land acres	0.0	0.0	8.5	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	10.5
	Upland woodland acres	0.0	30.0	26.3	407.7	157.7	21.0	125.8	0.0	446.0	0.0	48.8	1263.2
	Lowland woodland acres	110.5	16.0	10.0	228.0	68.0	0.0	80.0	231.0	600.0	220.3	40.4	1493.7
	Marsh/swamp acres	36.0	101.7	15.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	121.7
	Ponds acres	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Overall unadjusted bare land value per acre		$2,915	$1,756	$5,868	$5,465	$7,295	$5,831	$2,503	$1,912	$2,954	$2,915	

Average undadjusted bare land value per acre: $4,193
Standard deviation of AVG unadjusted values: 51.3%

Land Category Adjustment		Relative Values
	Cropland	100%
	Open Land	100%
	Upland woodland	87%
	Lowland woodland	32%
	Marsh/swamp	18%
	Ponds	100%

AFTER land category adjustment		Subject	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Sale 9	Sale 10	Average value of each land use category	STD DEV across each land use category
	Cropland (100%) indicated value/ac		$8,653	$2,810	$8,692	$7,862	$8,266	$8,852	$7,720	$3,430	$9,112	$4,674	$7,007	34.3%
	Open Land (100%) indicated value/ac		$8,653	$2,810	$8,692	$7,862	$8,266	$8,852	$7,720	$3,430	$9,112	$4,674	$7,007	34.3%
	Upland woodland (87%) indicated value/ac		$7,539	$2,449	$7,574	$6,850	$7,203	$7,714	$6,727	$2,988	$7,939	$4,073	$6,106	34.3%
	Lowland woodland (32%) indicated value/ac		$2,806	$911	$2,818	$2,549	$2,680	$2,870	$2,503	$1,112	$2,954	$1,516	$2,272	34.3%
	Marsh/swamp (18%) indicated value/ac		$1,568	$509	$1,575	$1,425	$1,498	$1,604	$1,399	$622	$1,651	$847	$1,270	34.3%
	Ponds (100%) indicated value/ac		$8,653	$2,810	$8,692	$7,862	$8,266	$8,852	$7,720	$3,430	$9,112	$4,674	$7,007	34.3%
	Total acres	146.5	147.7	59.8	635.7	230.7	23.0	205.8	231.0	1046.0	220.3	89.2		
	weighted (equivalent) acres	42.4	49.8	37.4	429.1	160.4	20.3	135.6	74.9	583.2	71.4	55.6		
	Equivalency ratio (weighted/actual)	0.289	0.337	0.625	0.675	0.695	0.883	0.659	0.324	0.558	0.324	0.624		
	weighted 100% value		$8,653	$2,810	$8,692	$7,862	$8,266	$8,852	$7,720	$3,430	$9,112	$4,674		

Summary of Land Use Category Analysis

	BEFORE: single value all categores	AFTER: Avg value by category	AFTER: Tot acres in sample
Cropland value/acre	$4,193	$7,007	0.0
Open Land value/acre		$7,007	10.5
Upland woodland value/acre		$6,106	1263.2
Lowland woodland value/acre		$2,272	1493.7
Marsh/swamp value/acre		$1,270	121.7
Ponds value/acre		$7,007	0.0
Average:	$4,193	Weighted avereage:	$3,923
Std. Dev.:	51.3%	Std. Dev.:	34.3%

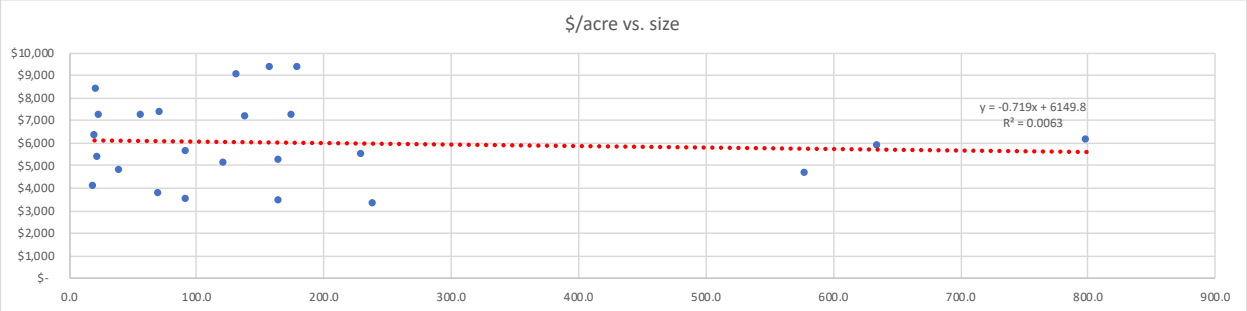
Reduction in STD DEV: 17.0%

Notes:
1. Values in tan shaded cells are populated by the non-adjusted comparable sales information.
2. Values in rose shaded cells are computed values based on the land use category analysis.
3. Values highlighted in yellow are variables used in the analysis.

The analysis shows that when the relative values of the land categories are adjusted as shown above, the standard deviation drops from 51.3% to 34.3%, indicating a statistical difference in the marketplace between these categories.

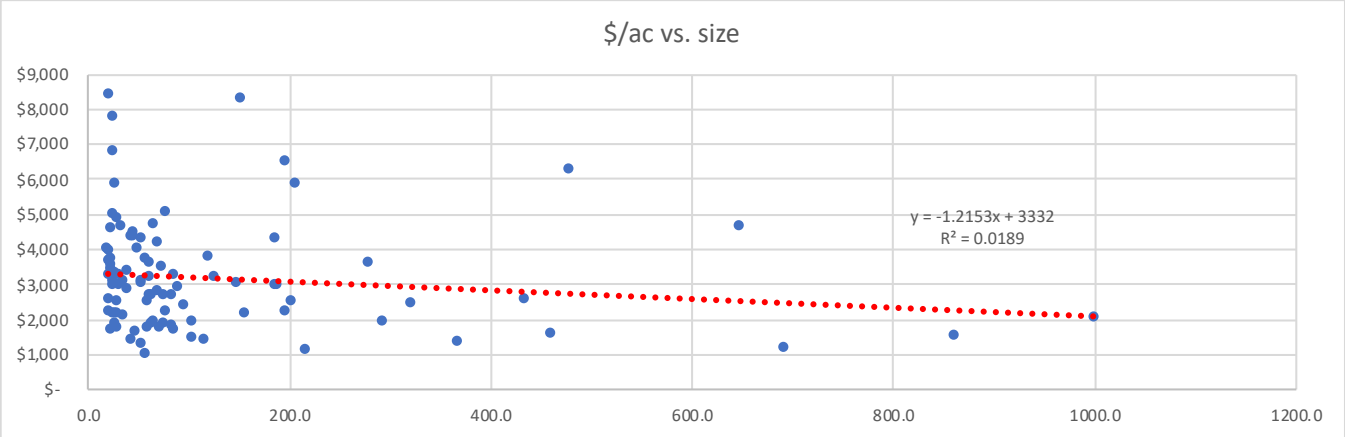
Adjustments to the sales grid based on this analysis were made in the "Land Quality and Use" section. This analysis allows the simultaneous use of sales containing a wide variety of land use categories that are adjusted for the market mathematically.

Size. In some agricultural markets, there is often little or no differences seen on a per-acre value due to size, as the "acre" is seen as a commodity. For the size adjustment, I considered the same 25 sales as used in the time adjustment (the comparable sales in the sales grid are included in the 25):



When the comparable sales are adjusted for all other quantitative factors, the linear trendline indicates that for each additional acre, the value per acre drops $0.72, which was the basis for the size adjustment in the sales grid. However, the R^2 value indicates very little of the difference is due to size. This is not uncommon in recreational and agricultural land markets.

A study of 95 sales in adjacent Jasper County indicates a similar trend:



SALES GRID

Analysis and Comparision of Sales

	Sale	SUBJECT	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Sale 9	Sale 10
Sales Information	Buyer		Christine and Qalil Ismail	Cowan Investments LLC	Pritchard Farm LLC	Magnolia Residential Investors LLC	Reid, James and Sarania	Pritchard Farm LLC	Coosaw Land, LLC	Open Space Institute Land Trust	Wiltown Crossing Farm LLC	JR Lex2 LLC
	Seller		Tobes Place LLC	Mungin Creek Partners LLC	New Riverside LLC	DR Horton Inc.	Cunningham Real Estate	Monroe, William J. Jr.	Lands End Plantation	Springwood Timberlands	Barker LLC	Thomas, Rita A
	County		Jasper	Jasper	Beaufort	Beaufort	Beaufort	Jasper	Beaufort	Georgetown	Williamsburg	Jasper
	Sale Date		9/13/16	5/28/15	12/16/16	3/15/17	4/5/16	2/23/17	8/10/16	12/15/15	9/26/18	5/5/16
	Price		$450,100	$105,000	$3,730,000	$1,260,737	$182,500	$1,200,000	$867,000	$2,000,000	$750,000	$260,000
	Land Acres	78.2	147.72	59.78	635.65	230.7	22.96	205.8	231	1046.29	220.3	89.2
	Est. Timber Contribution*	$101,591	$19,500	$0	$0	$0	$0	$0	$288,750	$0	$99,135	$0
	Est. Impr. Contribution	$0	$0	$0	$0	$0	$15,000	$0	$0	$0	$0	$0
	Est. Bare land value		$430,600	$105,000	$3,730,000	$1,260,737	$167,500	$1,200,000	$578,250	$2,000,000	$650,865	$260,000
	Est. Bare land value/acre		$2,915	$1,756	$5,868	$5,465	$7,295	$5,831	$2,503	$1,912	$2,954	$2,915
Land Use Information (acres)	Cropland											
	Open Land			8.5			2.0					
	Upland woodland		30.0	26.3	407.7	157.7	21.0	125.8		446.0		48.8
	Lowland woodland	78.2	16.0	10.0	228.0	68.0		80.0	231.0	600.0	220.3	40.4
	Marsh/swamp		101.7	15.0		5.0						
	Ponds											
Quantitative Adjustments ($/acre)	Gross price per acre		**$3,047**	**$1,756**	**$5,868**	**$5,465**	**$7,949**	**$5,831**	**$3,753**	**$1,912**	**$3,404**	**$2,915**
	Land Quality/use		-$109	-$845	-$3,050	-$2,916	-$4,615	-$2,961	$0	-$800	$0	-$1,399
	Timber		$1,167	$1,299	$1,299	$1,299	$1,299	$1,299	$49	$1,299	$849	$1,299
	Improvements		$0	$0	$0	$0	-$653	$0	$0	$0	$0	$0
	Adj. total for time calculation		**$4,105**	**$2,210**	**$4,117**	**$3,848**	**$3,979**	**$4,170**	**$3,802**	**$2,411**	**$4,254**	**$2,815**
	Time adjustment		$739	$1,142	$659	$583	$876	$600	$768	$971	$107	$850
	Adj total for size calculation		**$4,843**	**$3,352**	**$4,776**	**$4,431**	**$4,855**	**$4,770**	**$4,570**	**$3,381**	**$4,361**	**$3,665**
	Size adjustment		$50	-$13	$401	$110	-$40	$92	$110	$697	$102	$8
	Adjusted per-acre value:		**$4,893**	**$3,339**	**$5,178**	**$4,541**	**$4,815**	**$4,861**	**$4,680**	**$4,078**	**$4,463**	**$3,673**
Qualitative Adjustments (%)	Conditions of sale											
	Location, access, frontage		-10.0%		-10.0%	-10.0%	-10.0%	-10.0%	-5.0%	-5.0%	-5.0%	
	Condition, Topography			10.0%								
	Other				-10.0%	-10.0%			-5.0%			
	Total % Adjustments:		-10.0%	10.0%	-20.0%	-20.0%	-10.0%	-10.0%	-10.0%	-5.0%	-5.0%	0.0%
	Indicated value/acre		**$4,404**	**$3,673**	**$4,142**	**$3,633**	**$4,334**	**$4,375**	**$4,212**	**$3,874**	**$4,240**	**$3,673**

Final Analysis

Mean Value Indication:	$4,056	
Standard Deviation:	$311	8% of the mean
Median Value:	$4,177	
Selected per-acre value:	**$4,100**	
Indicated Value:	**$320,620**	

QUALITATIVE (SUBJECTIVE) ADJUSTMENTS

Sales were adjusted for conditions of sale, location, access, frontage, condition and topography on a percentage basis based on our experience in the subject market.

Location/access/frontage. The subject has an extended (assumed) dirt easement access only. This was inferior to most of the comparable sales which were adjusted downward accordingly.

Condition/topography. Sale 2 was significantly wetter than the subject with a deep swamp splitting the land and was adjusted upward accordingly.

Other/amenity. Sale 3 was adjusted upward for its superior recreational amenity; Sale 4 was adjusted downward for its potential for subdivision; and Sale 7 was adjusted downward slightly for its superior marsh frontage.

SALES COMPARISON APPROACH SUMMARY

10 sales were used in the final analysis. The largest sale was 1046.3 acres; the smallest was 23.0 acres; the average size was 288.9 acres. The mean value indication was $4,056 per acre; the median was $4,177 per acre; and the standard deviation was $311 per acre, or 7.7% of the mean. Based on these data, I selected a value of $4,100 per acre for an indicated value of $320,620.

INCOME APPROACH

The income approach was not used.

COST APPROACH

I did not use the cost approach based on the previous discussion.

RECONCILIATION AND FINAL OPINION OF VALUE

The sales comparison approach was the primary approach to value. Based on this analysis, my opinion of value is the sales comparison approach estimate rounded to:

Three Hundred Twenty Thousand Dollars
($320,000).

APPRAISAL CERTIFICATION

I, Richard H. Holstein IV, the undersigned appraiser, do hereby certify that:

1. The statements of fact contained in this report are true and correct.

2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

3. I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

4. I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

5. I have no bias with respect to the subject property that is the subject of this report or to the parties involved with this assignment.

6. My engagement in this assignment was not contingent upon developing or reporting predetermined results.

7. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

8. My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standard of Professional Appraisal Practice.

9. I have made a personal inspection of the property that is the subject of this report.

10. No one provided significant real property appraisal assistance to the person signing this certification.

Richard H. Holstein IV
SC License No. 5509, Exp. 6/30/2020
NC License No. A7477, Exp. 6/30/2019
GA License No. 345673, Exp. 9/30/2019
FL License No. RZ4049, Exp. 11/30/2020
Date Signed: February 14, 2019

EXPOSURE AND MARKETING TIME ESTIMATES

Marketing Period is defined as:

An estimate of the amount of time it might take to sell an interest in real property at its estimated market value during the period immediately after the effective date of the appraisal, the anticipated time required to expose the property to a pool of prospective purchasers with time for negotiation, the exercise of due diligence, and the consummation of a sale price supportable by concurrent market conditions. Marketing time differs from exposure time, which is always presumed to precede the effective date of the appraisal.

Estimating a marketing period is subjective due to the many forces operating in the market. The rise and fall in interest rates, general state of the economy, size of a property, changes in land uses and marketing expertise all impact a marketing period. All the above plus several additional factors would play a role in the time it would take to sell the subject property. Since many of these forces are unpredictable, we feel it is necessary to qualify any marketing estimate.

In estimating a marketing period, the appraiser may use statistical information of comparable sales to conclude the number of days on the market or obtain an estimate from active participants or brokers in the marketplace. Usually, the latter method is more reliable as there are many factors involved in any market example, the most important of which is pricing. Market value (see above definition) as estimated and the costs and other estimates used in arriving at the estimate of value is as of the date of the appraisal. Because markets upon which these estimates and conclusions are based upon are dynamic in nature, they are subject to change over time. Further, the report and value estimates are subject to change if future physical, financial, or other conditions differ from conditions as of the date of the appraisal.

In applying the market value definition to this appraisal, I estimate a reasonable exposure time of 12 months. Exposure time is the estimated length of time the property interest being appraised would have been offered in the market prior to the hypothetical consummation of a sale at market value on the effective date on the appraisal; exposure time is always presumed to precede the effective date of the appraisal.

Marketing time, however, is an estimate of the amount of time it takes to sell a property interest at the estimated market value during the period after the effective date of the appraisal. An estimate of market time is not intended to be a prediction of a date of sale. It is inappropriate to assume that the value as of the effective date of appraisal remains stable during a marketing period. Additionally, the appraiser(s) have considered market factors external to this report and have concluded that a reasonable marketing time for the property is 12 months.

ASSUMPTIONS AND LIMITING CONDITIONS

1. This appraisal report is for no purpose other than property valuation, and the appraisers are neither qualified nor attempting to go beyond that narrow scope. The reader should be aware that there are also inherent limitations to the accuracy of the information and analysis contained in this appraisal. Before making any decision based on the information and analysis contained in this report, it is critically important to read this entire section to understand these limitations.

2. The appraiser assumes that the utilization of the land and improvements is within the boundaries of the property lines of the property described and that there is no encroachment or trespass unless noted with the report.

3. The appraiser has made no survey of the property and no responsibility is assumed in connection with such matters. Any maps, plats, or drawings reproduced and included in this report are intended only for the purpose of showing spatial relationships. The reliability of the information contained on any such map or drawing is assumed by the appraiser and cannot be guaranteed to be correct. A surveyor should be consulted if there is any concern on boundaries, setbacks, encroachments, or other survey matters.

4. The appraiser assumes no responsibility for matters of a legal nature that affect title to the property nor is an opinion of title rendered. We assume that the title is good and marketable. The value estimate is given without regard to any questions of title, boundaries, encumbrances, or encroachments.

5. The appraiser assumes that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless noncompliance is stated, defined, and considered in the appraisal report. We did not perform a comprehensive examination of laws and regulations affecting the subject property.

6. The appraiser assumes compliance with all applicable zoning and use regulations and restrictions, unless nonconformity has been stated, defined, and considered in the appraisal report. Information and analysis shown in this report concerning these items is based only on a rudimentary investigation. Any significant question should be addressed to local zoning or land use officials and/or an attorney.

7. The appraiser assumes that all required licenses, consents, or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based. Appropriate government officials and/or an attorney should be consulted if an interested party has any questions or concerns on these items since we have not made a comprehensive examination of laws and regulations affecting the subject property.

8. This appraisal is not a report on the physical items that are a part of this property. Although the appraisal may contain information about the physical items being appraised (including their adequacy and/or condition), it should be clearly understood that this information is only to be used as a general guide for property valuation and not as a complete or detailed physical report. The appraisers are not construction, forestry, engineering, environmental, or legal experts, and any statement given on these matters in this report should be considered preliminary in nature.

9. The observed condition of the foundation, roof, exterior walls, interior walls, floors, heating system, plumbing, insulation, electrical service, and all mechanicals and construction is based on a casual inspection only and no detailed inspection was made. For instance, we are not experts on heating systems and no attempt was made to inspect the interior of the furnace. The structures were not checked for building code violations, and it is assumed that all buildings meet applicable building codes unless so stated in the report.

10. Some items, such as conditions behind walls, above ceilings, behind locked doors, or under the ground are not exposed to casual view and, therefore, were not inspected. The existence of insulation, if any is mentioned, was found by conversation with others and/or circumstantial evidence. Since it is not exposed to view, the accuracy of any statements about insulation cannot be guaranteed.

11. The appraiser assumes that there are no hidden or unapparent conditions of the property, sub-soil, or structures that would render it more or less valuable. We assume no responsibility for such conditions, or for the engineering that may be required to discover such factors. Since no engineering or percolation tests were made, no liability is assumed for soil conditions. Sub-surface rights (mineral and oil) were not considered in making this appraisal.

12. We assume that any wells and septic systems are in good working condition and of sufficient size and capacity for the stated highest and best use.

13. We are not environmental consultants and do not have the expertise necessary to determine the existence of environmental hazards. If we know of any problems of this nature that we believe would create a significant problem, they are disclosed in this report. However, nondisclosure should not be taken as an indication that such a problem does not exist. An expert in the field should be consulted if any interested party has questions on environmental factors.

14. We conducted no chemical or scientific tests on the subject property, and we assume that the air, water, ground and general environment associated with the property present no physical or health hazard of any kind unless otherwise noted in the report. We further assume that the lot does not contain any type of dump site and that there are no underground tanks (or any underground source) leaking toxic or hazardous chemicals into the groundwater or the environment unless otherwise noted in the report.

15. The age of any improvements to the subject property mentioned in this report should be considered a rough estimate. We are not sufficiently skilled in the construction trades to be able to reliably estimate the age of improvements by observation. We therefore re-ly on circumstantial evidence that may come into our possession (such as dates on architectural plans) or conversations with those who might be somewhat familiar with the history of the property such as property owners, onsite personnel, or others. Parties interested in knowing the exact age of improvements on the land should contact us to ascertain the source of our data and then make a decision as to whether they wish to pursue additional investigation.

16. Because we made no detailed inspection and because such knowledge goes beyond the scope of this appraisal, any observed condition or other comments given in this appraisal report should not be taken as a guarantee that a problem does not exist. Specifically, we make no guarantee of adequacy or condition of the foundation, roof, exterior walls, interior walls, floors, heating system, air conditioning system, plumbing, electrical service, insulation, or any other detailed construction matters. If any interested party is concerned about the existence, condition, or adequacy of any particular item, a construction expert should be hired for a detailed investigation.

17. This appraisal has been performed with a limited amount of data. Data limitations result from a lack or certain areas of expertise by the appraiser (that go beyond the scope of the ordinary knowledge of an appraiser), the inability of the appraiser to view certain portions of the property, the inherent limitations of relying upon information provided by others, etc.

18. There is also an economic constraint. The appraisal budget (and the fee for this appraisal) did not contain unlimited funds for investigation. We have spent our time and effort in the investigative stage of this appraisal in those areas where we think it will do the most good, but inevitably there is a significant possibility that we do not possess all information relevant to the subject property.

19. Before relying on any statement made in this appraisal report, interested parties should contact us for the exact extent of our data collection on any point that they believe to be important to their decision making. This will enable such interested parties to deter-mine whether they think the extent of our data gathering process was adequate for their needs or whether they would like to pursue additional data gathering for a higher level of certainty.

20. Information (including projections of income and expenses) provided by local sources, such as government agencies, financial institutions, accountants, attorneys, and others is assumed to be true, correct, and reliable. The appraiser assumes no responsibility for the accuracy of such information.

21. The comparable sales data relied upon in the appraisal are believed to be from reliable sources. Though all the comparable sales were examined, it was not possible to inspect them all in detail. The value conclusions are subject to the accuracy of said data.

22. Engineering analyses of the subject property were neither provided for use nor made as a part of this appraisal contract. Any representation as to the suitability of the property for uses suggested in this analysis is, therefore, based only on a rudimentary investigation by the appraiser and the value conclusions are subject to said limitations.

23. All values shown in the appraisal report are projections based on our analysis as of the date of the appraisal. These values may not be valid in other time periods or as conditions change. We take no responsibility for events, conditions, or circumstances affecting the property's market value that take place subsequent to either the date of value contained in this report or the date of our field inspection, whichever occurs first.

24. Since projected mathematical models and other projections are based on estimates and assumptions that are inherently subject to uncertainty and variation depending upon evolving events, we do not represent them as results that will actually be achieved.

25. This appraisal is an estimate of value based on an analysis of information known to us at the time the appraisal was made. We do not assume any responsibility for incorrect analysis because of incorrect or incomplete information. If new information of significance comes to light, the value given in this report is subject to change without notice.

26. Opinions and estimates expressed herein represent our best judgment but should not be construed as advice or recommendation to act. Any actions taken by you, the client, or any others should be based on your own judgment, and the decision process should con-sider many factors other than just the value estimate and information given in this report.

27. Appraisal reports are technical documents addressed to the specific technical needs of clients. Casual readers should understand that this report does not contain all of the information we have concerning the subject property or the real estate market. While no factors we believe to be significant but unknown to the client have been knowingly withheld, it is always possible that we have information of significance which may be important to others but which does not seem to be important to us.

28. Appraisal reports made for lenders are technical documents specifically made to lender requirements. Casual readers are cautioned about their limitations and cautioned against possible misinterpretation of the information contained in these reports.

29. The appraiser should be contacted with any questions before this report is relied on for decision making.

30. This appraisal was prepared at the request of and for the exclusive use of the client to whom the appraisal is addressed. No third party shall have any right to use or rely upon this appraisal for any purpose.

31. There are no requirements, by reason of this appraisal, to give testimony or appear in court or any pretrial conference or appearance required by subpoena with reference to the property in question, unless sufficient notice is given to allow adequate preparation and additional fees are paid by the client at our regular rates for such appearances and the necessary preparation.

32. This report is made for the information and/or guidance of the client. Possession of this report or a copy thereof does not carry with it a right of publication. No part of this report shall be conveyed to the public through advertising, public relations, news, sales, or other media without the written consent and approval of the appraiser. Nor shall the appraiser, firm, or professional organization of which the appraiser is a member be identified without the written consent of the appraiser.

33. The intended users of this report should not give copies to others. Certainly, legal advice should be obtained on potential liability issues before this is done. Anyone who gives out an incomplete or altered copy of the appraisal report (including all attachments) does so at their own risk and assumes complete liability for any harm caused by giving out an incomplete or altered copy. Neither the appraiser nor this company assumes any liability for harm caused by reliance upon an incomplete or altered copy of the appraisal report given out by others. Anyone with a question on whether their copy of an appraisal report is incomplete or altered should contact our office.

34. Values and conclusions for various components of the subject parcel as contained within this report are valid only when making a summation; they are not to be used independently for any purpose and must be considered invalid if so used. The allocation of the total value in this report between land and improvements applies only under the reported highest and best use of the property. The separate valuations for land and buildings must not be used in conjunction with any other appraisal and are invalid if so used.

APPRAISER EXPERIENCE

RICHARD H. HOLSTEIN IV, P.E.

APPRAISAL EXPERIENCE:

I started in the appraisal business in 2005 after careers in the military and engineering. I moved back home to South Carolina and joined my father at Holstein Appraisals, where he had spent the previous 20 years developing a specialized appraisal business focusing on agricultural properties, agri-business, rural estates, conservation easements, and other non-standard rural properties across South Carolina, North Carolina, and Georgia. My appraisals range from broiler farms to feed mills to rural commercial properties. I have appraised some of the largest farming operations in South Carolina and Georgia, including the nation's largest peach farm and largest onion farm. I have appraised wildlife refuges in excess of 150,000 acres for the federal government; but I have also appraised plenty of small 5-acre rural tracts for individuals. ***I truly enjoy the variety and the challenge of the appraisal business.***

EDUCATION:

M.S. CIVIL ENGINEERING, North Carolina State University, 1994

B.S. MECHANICAL ENGINEERING, Clemson University, 1984

CAREER HIGHLIGHTS:

HOLSTEIN APPRAISALS. Certified General Real Estate Appraiser specializing in complex income-producing agricultural properties, conservation easements, rural estate properties, and general agri-business. **2005 – Present**

TETRA TECH. Louisville, KY Operations Manager in charge of a 30-person engineering office specializing in water/wastewater system design, structural engineering, and environmental engineering. **1997 – 2008.**

RADIAN INTERNATIONAL LLC. Staff Environmental Engineer, Raleigh, NC specializing in air quality, air pollution control technologies, and water quality projects. **1994 – 1997.**

U.S. ARMY. Military Intelligence Officer in the airborne forces, serving in a variety of command and staff positions in the 519th Military Intelligence Battalion, including command of a POW interrogation company and other operational intelligence units in a variety of theaters of operation in peacetime and combat. **1985 - 1994**

CLIENTS:

GOVERNMENT
USDA Farm Service Agency
USDA NRCS
US Department of the Interior
US Fish and Wildlife Service
Several counties in SC
South Carolina Forestry Commission

CORPORATE
BB&T
First Citizens Bank
AgSouth Farm Credit ACA
AgCarolina Farm Credit
AgAmerica Lending
Bank of America
BankMeridian
Enterprise Bank
TD Bank NA
Wells Fargo Bank
Rabo Agrifinance
South Carolina Rural Rehabilitation Corporation
Congaree State Bank
The Nature Conservancy

APPRAISAL HIGHLIGHTS:

EDUCATION BEYOND CERTIFICATION COURSES:
Valuation of Environmentally Damaged Properties, Chicago, IL, 2006
Conservation Easements Seminar, Columbia, SC, 2007
FHA Appraisal Certification, Charleston, SC, 2007
Timberland Valuation Seminar, Columbia, SC, 2008
Valuation of Historic Properties, Charleston, SC, 2009
Foreclosure and REO Properties, Columbia, SC, 2010
Environmental Considerations for Appraisers, Columbia, SC, 2010
40-hour UASFLA (Yellow Book) Certification, Denver, CO, 2011
Ground Lease analysis, Columbia, SC, 2016
Appraisal of Poultry Facilities, Greensboro, NC 2017
Appraisal of Dairy Facilities, Des Moines, IA 2018
Land Use Category Analysis, Des Moines, IA 2018

REGISTRATIONS, ETC.

Certified General Appraiser
SC 5509 | NC A7477 | GA 345673
SC Registered Professional Engineer
25438 (inactive status)
KY Registered Professional Engineer
21325 (inactive status)

STATE CERTIFICATIONS

South Carolina Department of Labor, Licensing and Regulation
Real Estate Appraisers Board
CERTIFIES THAT:
RICHARD H HOLSTEIN IV
IS AUTHORIZED TO PRACTICE
Certified General Appraiser

LICENSE NO.
AB .5509 CG

EXPIRATION DATE: 06/30/2020

To verify current license status, go to http://verify.llronline.com/LicLookup/LookupMain.aspx

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Florida dbpr
STATE OF FLORIDA DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

RZ4049 ISSUED: 11/02/2018
CERTIFIED GENERAL APPRAISER
HOLSTEIN, RICHARD HENRY IV

Signature
LICENSED UNDER CHAPTER 475, FLORIDA STATUTES
EXPIRATION DATE: NOVEMBER 30, 2020

RICHARD HENRY HOLSTEIN

ORIGINALLY LICENSED
06/30/2011

345673
Status ACTIVE

END OF RENEWAL
09/30/2019

CERTIFIED GENERAL REAL PROPERTY APPRAISER

THIS LICENSE EXPIRES IF YOU FAIL TO PAY RENEWAL FEES OR IF YOU FAIL TO COMPLETE ANY REQUIRED EDUCATION IN A TIMELY MANNER.

State of Georgia
Real Estate Commission
Suite 1000 - International Tower
229 Peachtree Street, N.E.
Atlanta, GA 30303-1605

LYNN DEMPSEY
Real Estate Commissioner

47135733

NORTH CAROLINA APPRAISAL BOARD
APPRAISER QUALIFICATION CARD
Expires June 30, 2019

REGISTRATION / LICENSE / CERTIFICATE HOLDER
18 RICHARD H HOLSTEIN IV 19

A7477	G	Y
APPRAISER NUMBER	TYPE	NATIONAL REGISTRY

APPRAISER'S SIGNATURE EXECUTIVE DIRECTOR

ADDENDUM

PHOTOGRAPHS

All photographs were taken on the inspection date of the appraisal, January 30, 2019.

Figure 2. Access (assumed easement from adjacent property)

Figure 3. Typical timber, pine flatwoods

Figure 4. Area of good pine timber, center of tract

Figure 5. Depression indicating high groundwater levels

COMPARABLE SALES MAP

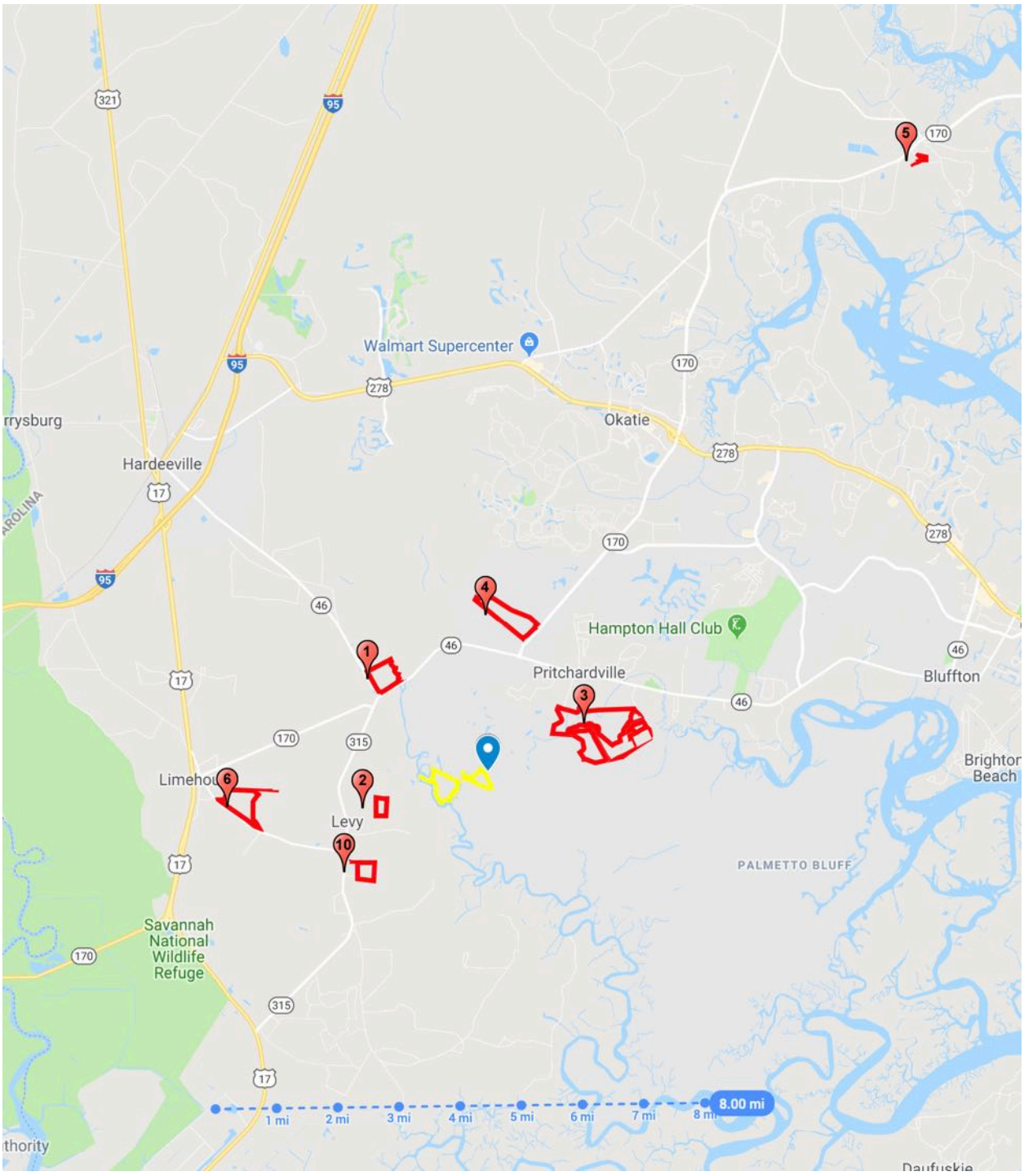


Figure 6. Subject indicated by the blue pin

COMPARABLE SALE INFORMATION SHEETS

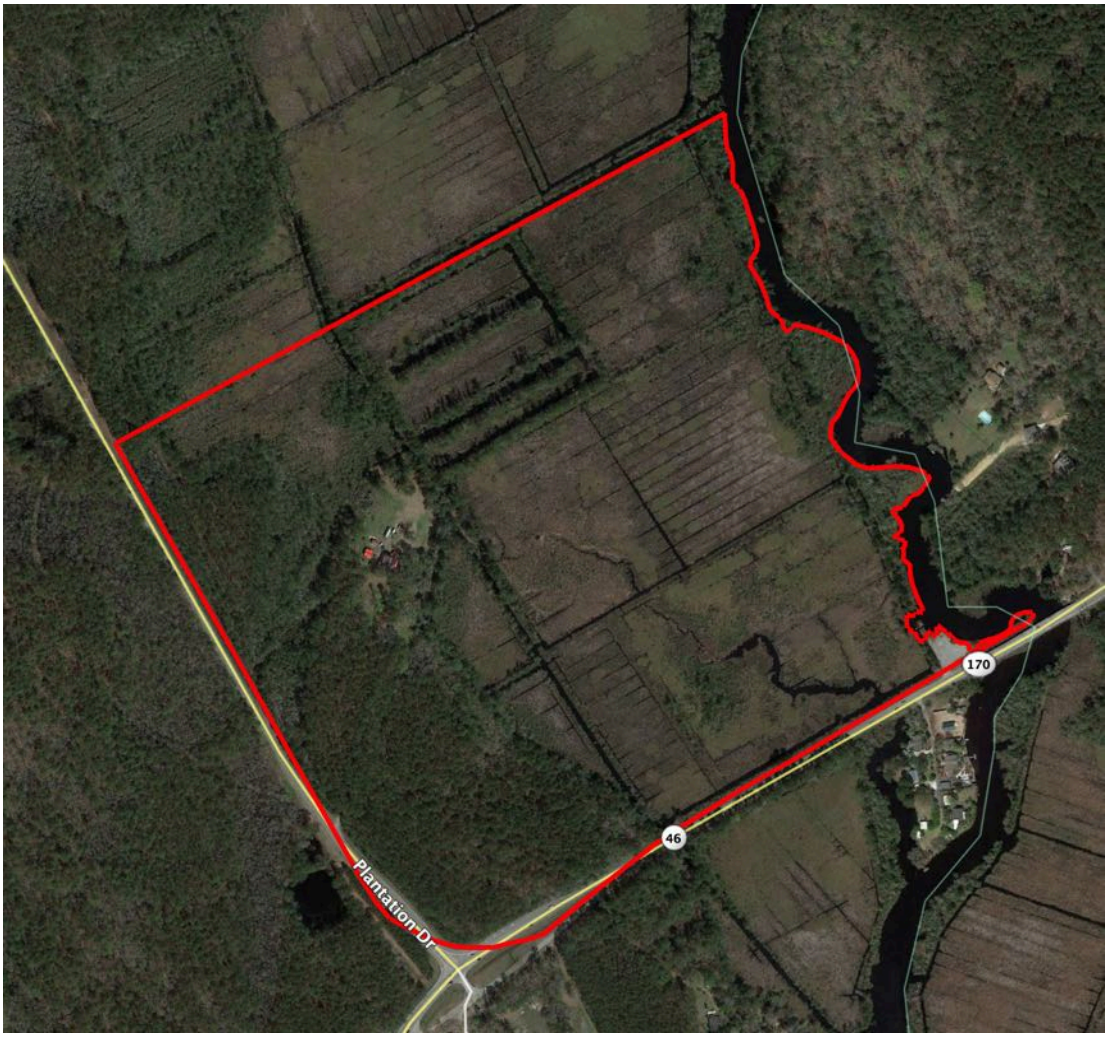
Sale 1

Buyer: Christine and Qalil Ismail
Seller: Tobes Place LLC
Purchase Price: $450,100
Acres: 147.72
Tax Map: 040-00-04-004
Location: 8.9 miles west of Bluffton
Short Description: Woodland Tract

County: Jasper
Sale Date: 13-Sep-16
Deed Ref:
Zoning:
Gross price/ac: $3,047
Land price/ac: $2,915

Timber Value: $19,500
Leases, contracts: None
Est. Impr. Value: $0

Tract included old rice fiels and low woodland with frontage on the New River. As rice fields are protected areas, they are treated as tidal marsh in the analysis. Sale included an old farmhouse with little value.



Sale 1 Detail

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Natural pines and hardwoods, mix of merchantable and pre-merchantable timber	**$19,500**

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$8,653	$0
	Open Land		100%	$8,653	$0
	Upland woodland	30	87%	$7,539	$226,185
	Lowland woodland	16	32%	$2,806	$44,890
	Marsh/swamp	101.72	18%	$1,568	$159,525
	Ponds		100%	$8,653	$0
	Total:	**147.72**			**$430,600**
	From Description:	147.72			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value
					$0
					$0
					$0
			0		$0

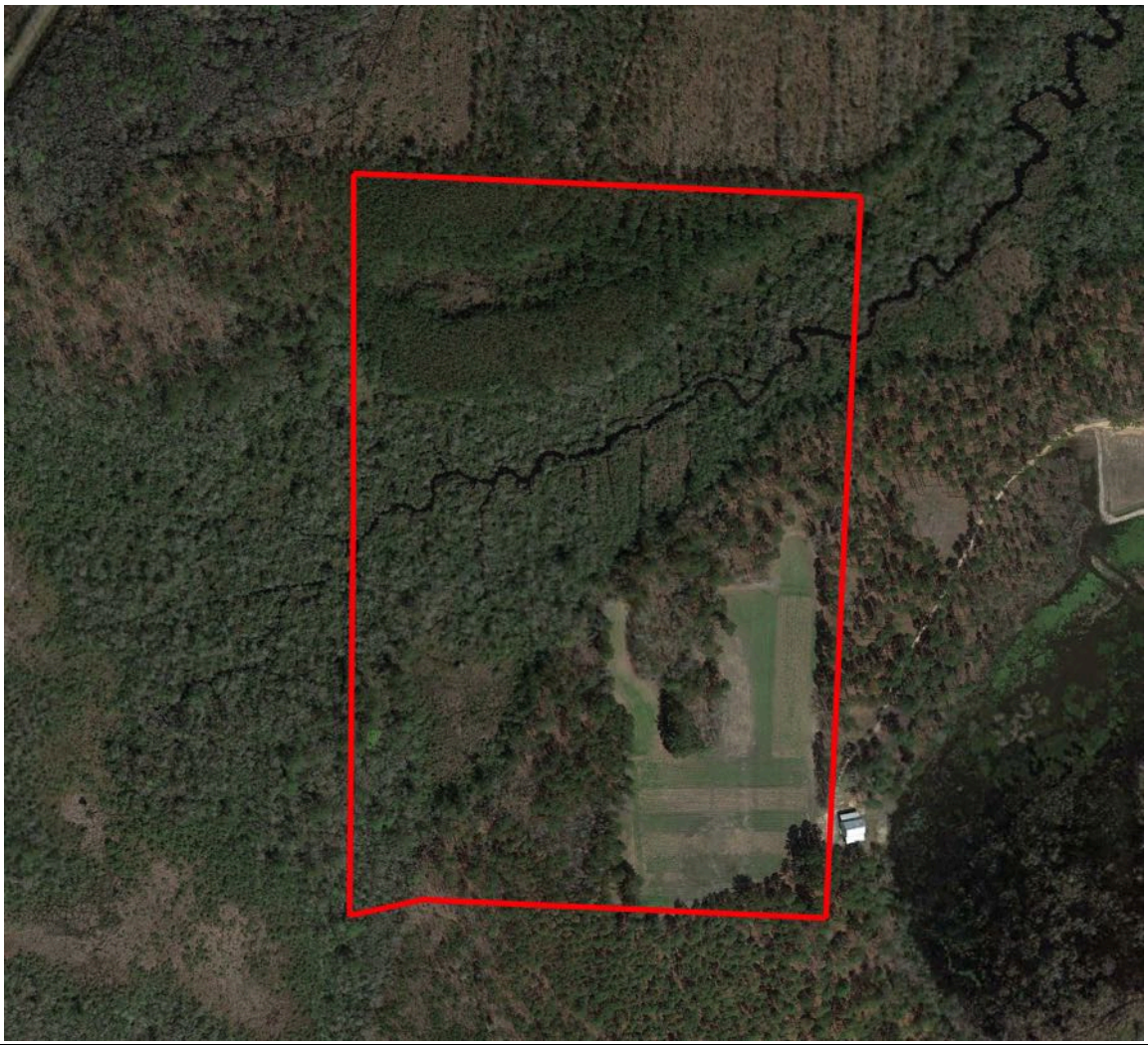
Sale 2

Buyer: Cowan Investments LLC
Seller: Mungin Creek Partners LLC
Purchase Price: $105,000
Acres: 59.78
Tax Map: 039-00-11-015
Location: 6.4 miles SE of Hardeeville, SC
Short Description: Woodland tract with poor access

County: Jasper
Sale Date: 28-May-15
Deed Ref: 897-727
Zoning:
Gross price/ac: $1,756
Land price/ac: $1,756

Timber Value: $0
Leases, contracts: $0
Est. Impr. Value: $0

Tract is located approximately 1/2 mile west of the New River and has difficult easement access only.



Sale 2 Detail

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$2,810	$0
	Open Land	8.5	100%	$2,810	$23,889
	Upland woodland	26.28	87%	$2,449	$64,357
	Lowland woodland	10	32%	$911	$9,113
	Marsh/swamp	15	18%	$509	$7,641
	Ponds		100%	$2,810	$0
	Total:	**59.78**			**$105,000**
	From Description:	59.78			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

Sale 3

Buyer: Pritchard Farm LLC
Seller: New Riverside LLC
Purchase Price: $3,730,000
Acres: 635.65
Tax Map: R610 044 000 0002
Location: 5.3 miles west of Bluffton
Short Description: Development land wst of Bluffton

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0

County: Beaufort
Sale Date: 16-Dec-16
Deed Ref: 3540-652
Zoning:
Gross price/ac: $5,868
Land price/ac: $5,868

Sale 3 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$8,692	$0
	Open Land		100%	$8,692	$0
	Upland woodland	407.65	87%	$7,574	$3,087,418
	Lowland woodland	228	32%	$2,818	$642,582
	Marsh/swamp		18%	$1,575	$0
	Ponds		100%	$8,692	$0
	Total:	**635.65**			**$3,730,000**
	From Description:	635.65			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

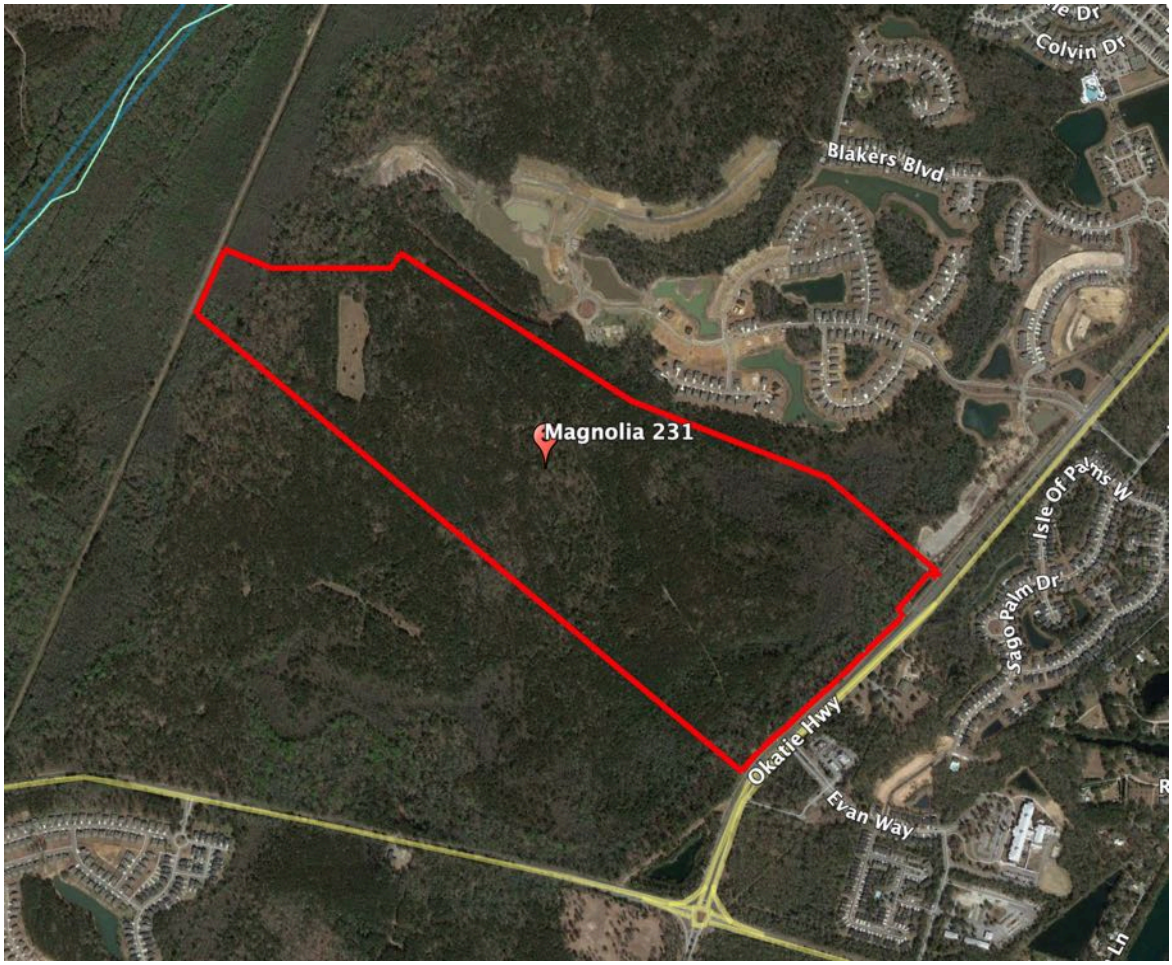
Sale 4

Buyer: Magnolia Residential Investors LLC
Seller: DR Horton Inc.
Purchase Price: $1,260,737
Acres: 230.7
Tax Map: R614 036 000 0596 0000
Location: West side of Bluffton area
Short Description: Woodland for development

County: Beaufort
Sale Date: 15-Mar-17
Deed Ref: 3559-3012
Zoning:
Gross price/ac: $5,465
Land price/ac: $5,465

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0

Sale included several older farm buildings with no contributory value.



Sale 4 Detail

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
none	
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$7,862	$0
	Open Land		100%	$7,862	$0
	Upland woodland	157.7	87%	$6,850	$1,080,274
	Lowland woodland	68	32%	$2,549	$173,339
	Marsh/swamp	5	18%	$1,425	$7,124
	Ponds		100%	$7,862	$0
	Total:	**230.7**			**$1,260,737**
	From Description:	230.7			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

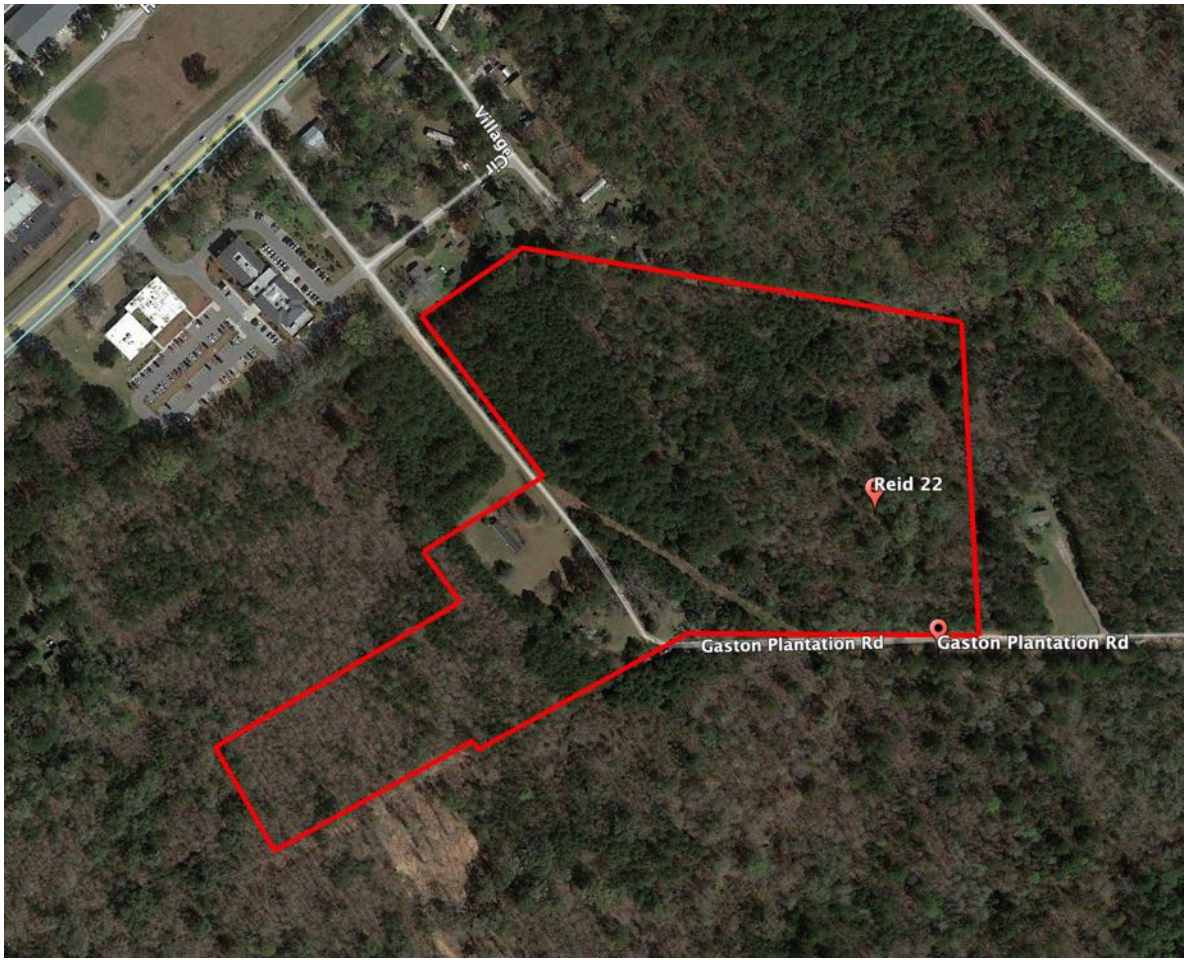
Sale 5

Buyer: Reid, James and Sarania
Seller: Cunningham Real Estate Mgmt Inc
Purchase Price: $182,500
Acres: 22.96
Tax Map: R600 010 000 0115 0000
Location: 6.5 miles north of Bluffton
Short Description: Land and singlewide mobile home

County: Beaufort
Sale Date: 5-Apr-16
Deed Ref: 3476-3028
Zoning:
Gross price/ac: $7,949
Land price/ac: $7,295

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $15,000

Sale included a SW mobile home and an old farmhouse with no value.



Sale 5 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
Singlewide MH							$15,000
							$0
							$15,000

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$8,266	$0
	Open Land	2	100%	$8,266	$16,532
	Upland woodland	20.96	87%	$7,203	$150,968
	Lowland woodland		32%	$2,680	$0
	Marsh/swamp		18%	$1,498	$0
	Ponds		100%	$8,266	$0
	Total:	**22.96**			**$167,500**
	From Description:	22.96			

Center Pivot Irrigation Calculations

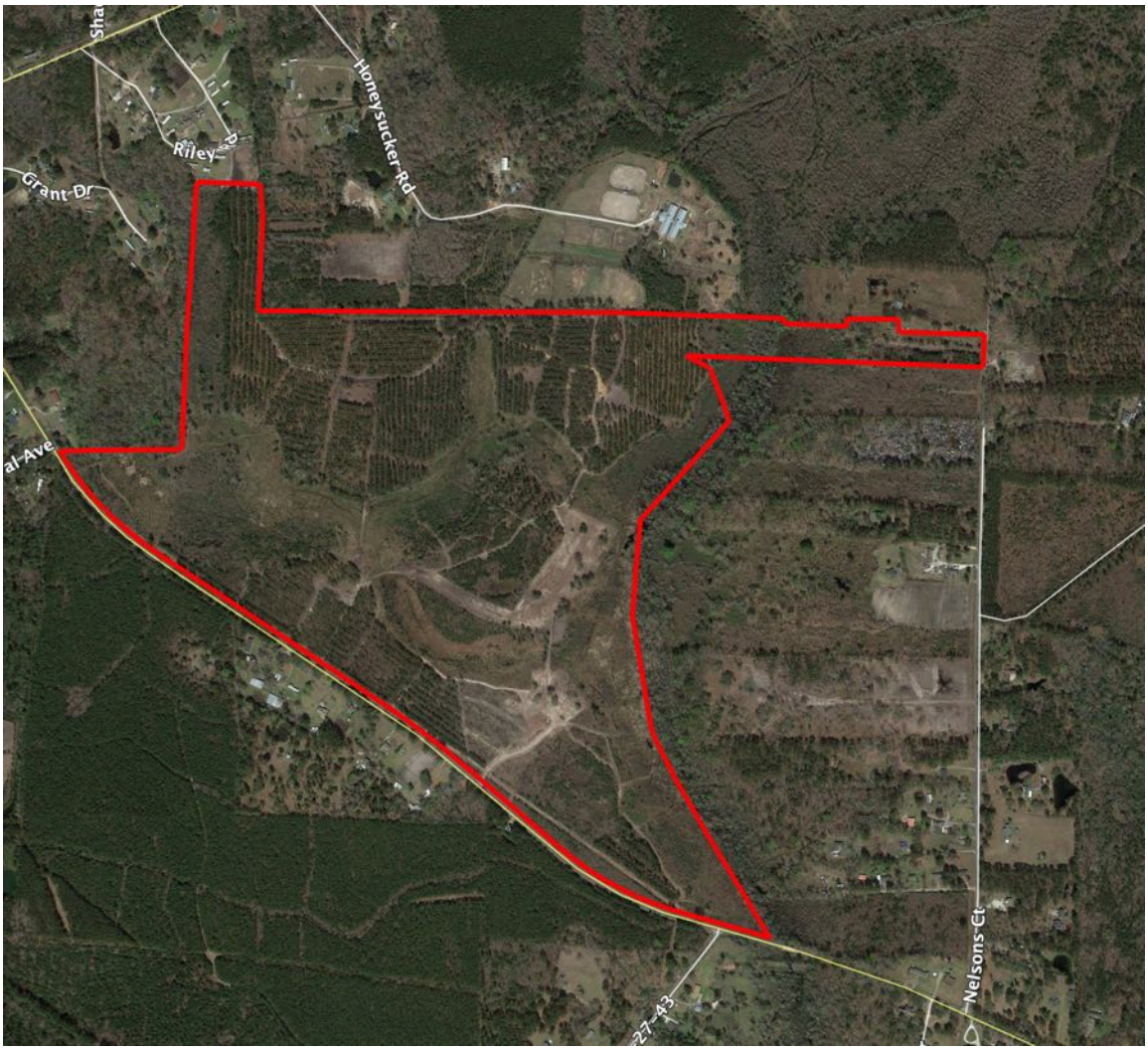
ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

Sale 6

Buyer: Pritchard Farm LLC
Seller: Monroe, William J. Jr.
Purchase Price: $1,200,000
Acres: 205.8
Tax Map: 039-00-08-174, -103
Location: 5 miles south of Hardeeville; 6 miles NE of Savannah
Short Description: Woodland tract with good frontage

County: Jasper
Sale Date: 23-Feb-17
Deed Ref: 942-988
Zoning: RA/R-1
Gross price/ac: $5,831
Land price/ac: $5,831

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0



Sale 6 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$8,852	$0
	Open Land		100%	$8,852	$0
	Upland woodland	125.8	87%	$7,714	$970,369
	Lowland woodland	80	32%	$2,870	$229,631
	Marsh/swamp		18%	$1,604	$0
	Ponds		100%	$8,852	$0
	Total:	**205.8**			**$1,200,000**
	From Description:	205.8			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value
					$0
			0		$0
			0		$0

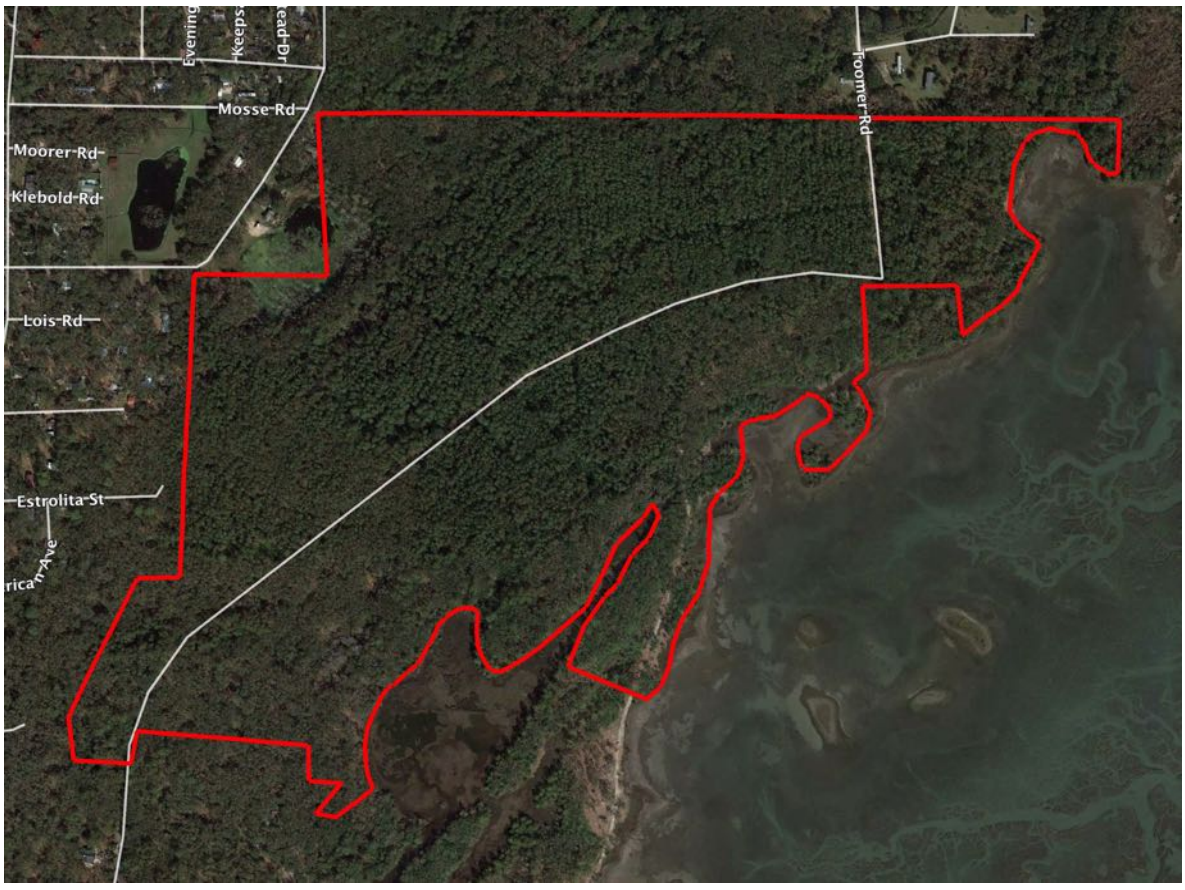
Sale 7

Buyer: Coosaw Land, LLC
Seller: Lands End Plantation Holding Corp.
Purchase Price: $867,000
Acres: 231
Tax Map: R300 041 000 0001
Location: St Helena Island, southwest corner
Short Description: Marshfront property with conservation easement

County: Beaufort
Sale Date: 10-Aug-16
Deed Ref: 3506-1569
Zoning:
Gross price/ac: $3,753
Land price/ac: $2,503

Timber Value: $288,750
Leases, contracts: None
Est. Impr. Value: $0

Tract sold with a Beaufort County Open Land Trust conservation easement in place that allows for 7 subdivisions between and 13 acres in a specified area. The owner was paid $471,500 for this easement. The property is marshfront but does not have navigable water access. The buyer cut over the timber soon after sale. Tract has private dirt road access only.



Sale 7 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Mixed pines and hardwoods, primarily planted pines	**$288,750**

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$7,720	$0
	Open Land		100%	$7,720	$0
	Upland woodland		87%	$6,727	$0
All land grouped here due to easement	Lowland woodland	231	32%	$2,503	$578,250
	Marsh/swamp		18%	$1,399	$0
	Ponds		100%	$7,720	$0
	Total:	**231**			**$578,250**
	From Description:	231			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

Sale 8

Buyer: Open Space Institute Land Trust
Seller: Springwood Timberlands LLC
Purchase Price: $2,000,000
Acres: 1046.29
Tax Map: 02-0409-021-00-00
Location: 3.1 miles NE of Andrews, SC
Short Description: Recreational tract with lowland river frontage

County: Georgetown
Sale Date: 15-Dec-15
Deed Ref: 2705/314
Zoning:
Gross price/ac: $1,912
Land price/ac: $1,912

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0

The subject was sold with a NAWCA easement on 600 of the lowland acres (with complete loss of timber rights) after recieving $951,000 for the easement ($1,585 per acre).

Sale 8 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$3,430	$0
	Open Land		100%	$3,430	$0
	Upland woodland	446	87%	$2,988	$1,332,789
	Lowland woodland	600	32%	$1,112	$667,211
	Marsh/swamp		18%	$622	$0
	Ponds		100%	$3,430	$0
	Total:	**1046**			**$2,000,000**
	From Description:	1046.3			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

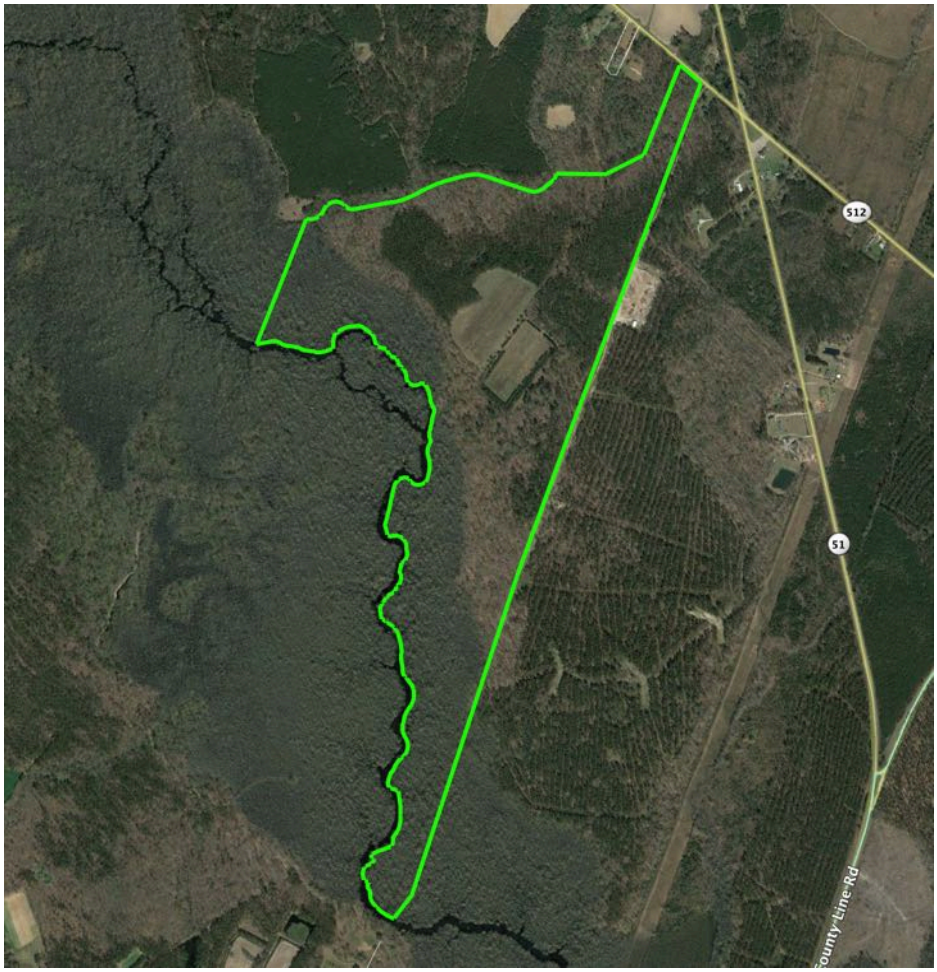
Sale 9

Buyer: Wiltown Crossing Farm LLC
Seller: Barker LLC
Sale Price: $750,000
Acres: 220.3
Tax Map: 45-472-007
Location: 8 miles south of Hemingway, SC
Short Description: Woodland tract with swamp frontage

County: Williamsburg
Sale Date: 26-Sep-18
Deed Ref: 522-236
Zoning:
Gross price/ac: $3,404
Land price/ac: $2,954

Timber Value: $99,135
Leases, contracts: None
Est. Impr. Value: $0

Tract conveyed with a Wetlands America Trust conservation easement which allows for two additional residential structures but no subdivisions.



Sale 9 Detail

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
					52	100%	$0
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

	$99,135

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$9,112	$0
	Open Land		100%	$9,112	$0
	Upland woodland		87%	$7,939	$0
All land grouped here for easement	Lowland woodland	220.3	32%	$2,954	$650,865
	Marsh/swamp		18%	$1,651	$0
	Ponds		100%	$9,112	$0
	Total:	**220.3**			**$650,865**
	From Description:	220.3			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

Sale 10

Buyer: JR Lex2 LLC
Seller: Thomas, Rita A
Sale Price: $260,000
Acres: 89.2
Tax Map: 038-00-09-010
Location: 6.9 miles SSE of Hardeeville
Short Description: Woodland tract with easement access only

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0

County: Jasper
Sale Date: 5-May-16
Deed Ref: 921-126
Zoning:
Gross price/ac: $2,915
Land price/ac: $2,915

Sale 10

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Mixed stands of planted pines and natural stands	

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$4,674	$0
	Open Land		100%	$4,674	$0
	Upland woodland	48.8	87%	$4,073	$198,766
	Lowland woodland	40.4	32%	$1,516	$61,234
	Marsh/swamp		18%	$847	$0
	Ponds		100%	$4,674	$0
	Total:	**89.2**			**$260,000**
	From Description:	89.2			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

TAX ASSESSOR INFORMATION

The Beaufort County property card follows.

Records

Overview

Aerial View

Parcel

Land

Improvements

Sales Disclosure

Pay Taxes

Value History

GIS / Mapping

Search by

Property ID (PIN)

Street Address

Alternate ID (AIN)

Legal Description

Sales

Owner Name

Functions

County Home

Welcome

Real Property

Personal Property

Vehicle Tax

Help

Overview

Property ID (PIN)
1 of 1

Property ID (PIN)	Alternate ID (AIN)	Parcel Address	Data refreshed as of	Assess Year	Pay Year
R610 043 000 0001 0000	13135316	,	1/24/2019	2019	2019

Current Parcel Information

Owner	BEAUFORT COUNTY	Property Class Code	AgVac Forest
Owner Address	PO DRAWER 1228 BEAUFORT SC 29901-1228	Acreage	294.9900

Legal Description PARCEL 6B PH 2 PB117 P167 SUBJ TO ROLL BACK TAX LIEN 129.37 AC WETLAND 165.62 AC UPLAND PB124 P65

Historic Information

Tax Year	Land	Building	Market	Taxes	Payment
2018	$3,162,000		$3,162,000	$1,550.31	$1,550.31
2017	$1,796,200		$1,796,200	$1,548.21	$1,548.21
2016	$1,796,200		$1,796,200	$1,548.21	$1,548.21
2015	$1,796,200		$1,796,200	$1,354.31	$1,394.94
2014	$1,796,200		$1,796,200	$1,142.88	$1,142.88
2013	$1,796,200		$1,796,200	$1,142.88	$1,142.88
2012	$3,377,085		$3,377,085	$1,142.88	$1,142.88
2011	$3,377,085		$3,377,085	$1,142.88	$1,142.88
2010	$3,377,085		$3,377,085	$1,142.88	$1,142.88
2009	$3,377,085		$3,377,085	$1,142.88	$1,142.88

Sales Disclosure

Grantor	Book & Page	Date	Deed	Vacant	Sale Price
TRUST FOR PUBLIC LAND INC(THE)	2702 1835	3/27/2008	Fu		$2,250,000
NEW RIVER SIDE LLC C/O CRESCENT RES	2702 1823	3/27/2008	10		$2,250,000
UNKNOWN OWNER 13135316		12/31/1776	Or		$0
		12/31/1776	Or		$0

Improvements

Building	Type	Use Code Description	Constructed Year	Stories	Rooms	Square Footage	Improvement Size

Print Print First First Previous Next Last

Beaufort County Parcel 6-B
2009 Aerial Image

Beaufort County, SC

N

Beaufort County
Parcel 6-B

Proposed Parcel 6-B
+/- 78.2 Acres

MF
BH
P
BH
PP
P
BH
PP
PP
BH

LEGEND

- Parcel 6-B - Proposed Property Line
- Forest Stand
- Beaufort County - Parcel 6-B Property Line

SCALE: 1 inch = 750 feet

Prepared by:
Morrison Forestry & Real Estate Company
September 25, 2013

ENGAGEMENT LETTER

Engagement was via email and phone.

APPRAISAL

of

PBMF Parcel A

Beaufort County

Prepared for Beaufort County

February 12, 2019
Beaufort County

Re: Appraisal of PBMF Parcel A, 146.5 acres west of Bluffton, located in Beaufort County, South Carolina

I have prepared an appraisal report for the subject real estate. The effective date of the appraisal is January 30, 2019, the date of the property inspection. The purpose of this appraisal is to estimate the market value as is of the property as described in this appraisal report, in unencumbered fee simple title of ownership. I estimate this value to be:

Three Hundred Fifty Thousand Dollars
($350,000**).**

This report is based on a physical analysis of the site, a locational analysis of the market area, and an economic analysis of the market for properties such as the subject. The following report will set forth those data, assumptions, and analyses that led to the market value estimate. This report is based on the complete appraisal process as defined by the Uniform Standards of Professional Appraisal Practice.

I appreciate your business. If you have any questions, please do not hesitate to call.

Sincerely,
HOLSTEIN APPRAISALS

Richard H. Holstein, IV, P.E.
Certified General Appraiser
SC #5509 | GA #345673
NC #A7477 | FL #RZ4049

APPRAISAL SUMMARY

Client:	Beaufort County
Land Owner:	Beaufort County
Subject Property:	PBMF Parcel A, 146.5 acres west of Bluffton
Objective of Report:	To estimate market value
Intended Use:	Support of land exchange transaction
Property Rights Appraised:	Fee Simple
Highest and Best Use:	Recreational
Value Estimate:	$350,000
Effective Date of Appraisal:	January 30, 2019
Date of Appraisal Report:	February 12, 2019
Appraiser:	Richard H. Holstein IV

Holstein APPRAISALS
521 W Railroad Avenue
Batesburg, SC 29006
803.532.3955
Www.Holsteinappraisals.Com

TABLE OF CONTENTS

PART 1: FACTUAL DATA

PROPERTY IDENTIFICATION

The subject consists of 146.5 +/- net acres of lowland woodland 7.6 miles west of Bluffton, SC on the New River. It is identified as a portion of Beaufort County Tax Parcel R610 043 000 001 (p), 146.5, acres.

SITE MAP

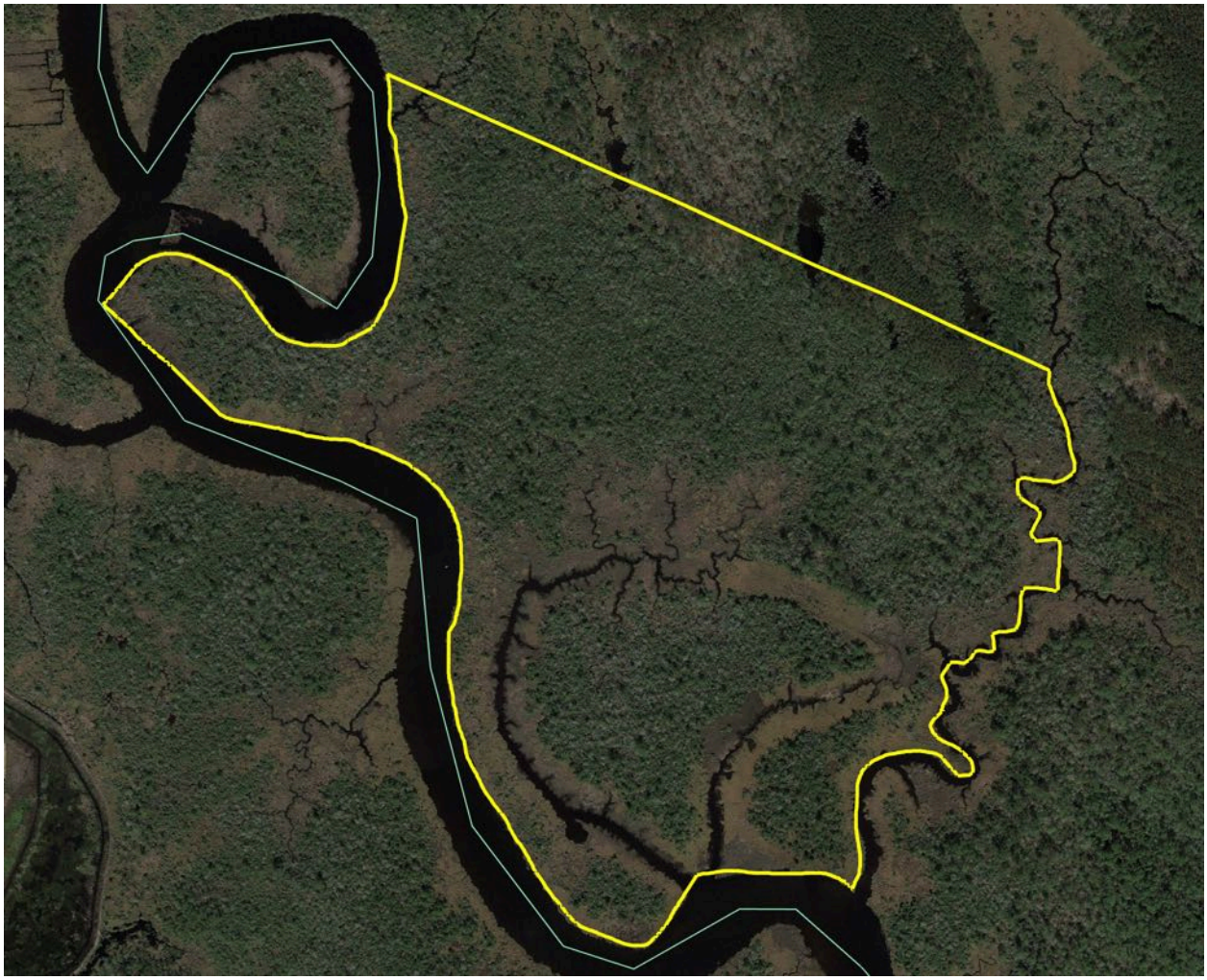


Figure 1. Based on the Beaufort County GIS and maps supplied by the owner.

LEGAL DESCRIPTION

As appraised, the property has no formal legal description. For the purposes of this appraisal, the property is defined as the 146.5-acre portion of Beaufort County Tax Parcel R610 043 000 001 shown in the previous drawing.

ADMINISTRATIVE INFORMATION

APPRAISAL OBJECTIVE

The purpose of this appraisal is to estimate the market value of the subject property.

INTENDED USE OF THE APPRAISAL

Support of land exchange transaction.

INTENDED USERS

The report is for the use of Beaufort County.

DEFINITION OF VALUE

The most probable price that a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their best interests;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in terms of cash in United States dollars or in terms of financial arrangements comparable thereto; and
5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

SCOPE OF WORK

The Uniform Standards of Professional Appraisal Practice (USPAP) suggests that appraisers define the scope of work when undertaking an appraisal assignment. Since the subject property is real estate, the USAPAP development standards for real property (Standard 1) are applicable. USPAP considers the scope of work in an appraisal to be acceptable when it is consistent with:

1. The expectations of participants in the market for the same or similar appraisal services; and
2. What the appraiser's peer's actions would be in performing the same or a similar assignment in compliance in USPAP

The scope of work may include written or oral instructions from the client. The analysis included in this re-port is an "appraisal assignment," whereby the appraiser is retained to act as a disinterested third party and to render an unbiased opinion.

The scope of the assignment includes:

- Preliminary analysis of the appraisal problem
- A physical visit to the subject property and a tour of the neighborhood

- Researching public sales information
- Analyzing the highest and best use of the land and improvements (if any)
- Developing the cost approach (where applicable), income approach (where applicable), and sales comparison approaches to value to determine the market value of the subject properties
- A final value conclusion

The appraiser researches the market to obtain the data necessary to the appraisal. This research may include contacting other appraisers, brokers, developers, lenders, title companies, national cost services and a thorough study of government records, particularly in the Assessors and Recorders offices. The appraiser verifies sales and lease data with parties directly involved with the transaction where possible and verifies all other data by the best means available. The appraiser uses the information most applicable to the particular appraisal assignment. I withheld nothing pertinent that could affect the opinion of value. There are no limitations in the scope of this report beyond those listed in the assumptions and limiting conditions and those dis-cussed specifically in the body of the report.

A REAL ESTATE APPRAISAL DEFINED

A real estate appraisal is an estimate of value of identified real estate. An appraiser develops a credible appraisal by a systematically researching the market, analyzing the market information, and applying that analysis to the subject property. An appraisal should be the logical conclusion and considered opinion of a skilled and unbiased practitioner.

In estimating the most probable price that a property will bring in the open market, the best evidence of what will happen in the market is usually what has happened most recently. Market data reflect not only economic anticipation but also emotion, bias, uninformed decisions, unique buyer and seller motivations, and other un-usual factors and situations that influence market transactions. The appraiser must analyze this “history” and also consider existing currents in the market that may affect value as of the date of the appraisal. The appraiser’s mission is to interpret the market, not to set the market by imposing his or her own biases and value judgments over prevalent market indications.

“Most probable price” connotes a statistical approach to estimating value; however, in most cases, the available market data samples are too few for statistically significant conclusions. Thus, the appraiser must rely on his or her training, experience, and judgment to correlate diverse information into value conclusions while maintaining strict impartiality. “Most probable” also connotes likelihood based on evidence that leads to a value judgment; it is not a certainty. Therefore, the appraisal report should contain documentation and explanation sufficient for the reader to judge the reasonableness of the appraiser's conclusions.

PROPERTY RIGHTS APPRAISED

I have appraised the marketable, fee simple title to the subject property, but I am not qualified to express a legal opinion as to the title of the subject property.

EFFECTIVE DATE OF THE APPRAISAL

The effective date of the appraisal is January 30, 2019, the date of the property inspection.

OWNERSHIP HISTORY OF THE PROPERTY

The present owner acquired the property as part of a larger transaction in March 2008 (Beaufort County Deed Book 2702 Page 1835). There have been no market transfers of the property in the previous five years.

SALES AGREEMENT OR CONTRACT

None. However, a land exchange agreement is pending.

HYPOTHETICAL CONDITIONS/EXTRAORDINARY ASSUMPTIONS

This appraisal assumes that the tract will have legal access. This appraisal also assumes that the tract has deed restrictions in place that prohibit development as discussed later in this report.

MARKET ANALYSIS

The key market factors affecting this property is the Lowcountry recreational land market.

BEAUFORT COUNTY MARKET CONDITIONS—RECREATIONAL PROPERTIES

I have spoken with representatives from the County Tax Assessor's Office, local realtors, foresters, farm credit representatives, and appraisers that are active in the subject area. The general consensus was, like I have found in other rural South Carolina communities, that after a minor "boom" driven by recreational buyers in the mid 2000s and a resulting market decline, general rural real estate prices have stabilized in the past 36 to 48 months. There appears to be some recovery in some areas of the county, as several larger Lowcountry estates have sold recently. However, as discussed in the appraisal, the subject is physically and legally constrained to recreational use only. I have used only the most recent, nearest sales and have adjusted them for time/market conditions as appropriate based on the sales analysis that follows.

PROPERTY DESCRIPTION

LOCATION AND ACCESS

The property is located on the Beaufort-Jasper County line approximately 8 miles west of Bluffton. The property has no road frontage or public access other than via the New River. Internal access is gained (assumed) by an easement through the adjacent property to the east. There are no internal access roads or tracks and internal access is via foot only. The extreme wet nature of the land makes even foot traffic difficult. I was unable to physically enter the property due to wetness and instead surveyed the property with an aerial drone.

LAND USE

The land has been in woodland use for over 20 years.

TIMBER

There are no merchantable stands on the tract. Foresters on site indicated that access would be extremely difficult for any type of cost effective timber harvest.

TERRAIN, DRAINAGE

The tract has an irregular shape that does not affect the utility of the land significantly. The topography is level and drainage is poor.

SOIL INFORMATION

The tract consists entirely of Santee fine sandy loam. Santee loam is a nearly level, very poorly drained soil found in low areas along drainageways occurring in irregular patterns of 25 to 1,200 acres in size. The most serious management problem is the seasonal high water table. Most of the Santee acreage is in woodland. Loblolly pine, sweetgum, water tupelo, and sycamore are among the trees suitable to plant.

WATER RIGHTS

Water rights are not an economic consideration in the subject market.

MINERAL RIGHTS

The value of mineral interests, the economic feasibility of extracting minerals from the subject property, or any anticipated future income from the production of minerals is unknown to the appraiser. This appraisal is not an exhaustive study of the actual or potential mineral production and is based on the best information available as of the effective date of the appraisal. The final opinion of value in the appraisal report includes miner-al rights of the subject property.

UTILITIES

Electricity and telephone are available along New Riverside Road approximately 1.2 miles to the northeast along the assumed easement access road.

TAXES AND ASSESSMENTS

A copy of the most recent Beaufort County property card is included in the Addendum; however, the subject is only a small portion of the overall tax parcel.

ZONING

The tract is in an unzoned area of Beaufort County; however, all land is subject to Beaufort County development regulations. Regardless, this appraisal is part of a land-swap transaction in which both parties assume that each tract is precluded from development by deed restrictions. I was unable to find any reference to these restrictions; however, this appraisal is being conducted under the assumption that development is legally precluded.

.

EASEMENTS, ENCROACHMENTS AND DEED RESTRICTIONS

Note: There are several restrictions noted on the deed of the last property transfer deed (Beaufort County Deed Book 2702 Page 1835, 3/27/2008) that could potentially affect development of the land:

2. The Jones Tract Development Agreement dated the 21st day of June, 2000, and the Palmetto Bluff Development Agreement dated the 23rd day of November, 1998.

3. The New Riverside Concept Plan adopted the 10th day of June, 2004.

4. The First Amendment to the New Riverside Concept Plan dated the 16th day of March, 2005.

5. The First Amendment to the Jones Development Agreement and the Palmetto Bluff Development Agreement dated the 25th day of August, 2004.

6. The Declaration of Restrictive Covenants imposed on the Property regarding Wetlands ("Wetlands Covenants") as recorded in the Office of the Register of Deeds for Beaufort County, South Carolina, in Deed Book 2076 at page 881.

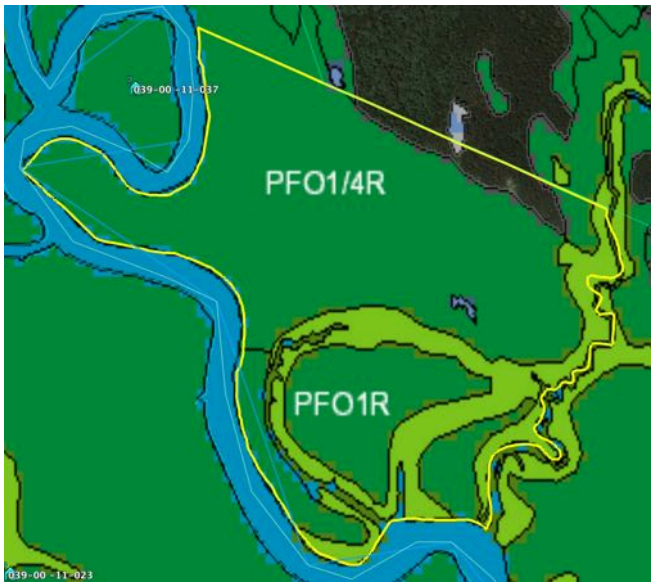
7. Those access points, easements, buffers, drainage ditches, archaeological sites, wetlands and other matters as more fully shown and described on that certain Plat of the Property entitled A Plat of Parcels 6B, SE, and NW, A Portion of New Riverside, Town of Bluffton, Beaufort County, South Carolina, prepared for New Riverside, LLC, dated August 24, 2004, last revised December 14, 2006, and recorded December 18, 2006, in Plat Book 117 at Page 167, Office of the Register of Deeds for Beaufort County, South Carolina.

8. That certain Memorandum of Agreement for New Riverside between the State Historic Preservation Office, OCRM and Seller dated August 23, 2004, including all buffer and preservation areas as shown on the Plats thereof recorded in the Office of the Register of Deeds for Beaufort County, South Carolina.

I did not read each of the referenced documents, but based on my discussion with other knowledgeable parties have assumed that development is legally restricted. Regardless, the ***physical*** limitations of the land discussed in the following sections would likely preclude any type of development.

WETLANDS

According to the National Wetlands Inventory (NWI) map, nearly all of the acreage is potential wetland.



FLOOD ZONE

The tract lies on FEMA FIRM map sheet 45017C0060B dated April 16, 2007. All of the subject appears in the 100-year flood zone.

HAZARDS

I am not an environmental consultant and do not have the expertise necessary to determine the existence of environmental hazards. While I observed nothing on the

subject that would lead me to suspect a hazardous condition, nondisclosure should not be taken as an indication that such a problem does not exist. An expert in the field should be consulted if any interested party has questions on environmental factors.

ADJACENT PROPERTY USES

All adjacent properties are in woodland usage.

LAND IMPROVEMENTS

None.

BUILDING IMPROVEMENTS

None.

PART II: DATA ANALYSIS AND CONCLUSIONS

HIGHEST AND BEST USE

Highest and best use (HBU) is the most probable use of land or improved property that is legally permissible, physically possible, financially feasible (and appropriately supportable) from the market, and which results in maximum profitability.

The highest and best use of a specific site is typically estimated based on market actions, which reflect prices paid for similar sites under certain uses and in certain locations. The more intense or profitable the use to which the land is put, the higher the price. These actions establish growth or expansion patterns within a geographic location. Surrounding land uses typically determine the most profitable use and the highest price expected for a site.

Highest and best use analysis takes the contribution of a specific use to the community into account as well as benefits to individual property owners. Also, the motivation of a particular purchaser or investor contributes to this determination. The concept of highest and best use represents the premise upon which value is based. If market value is defined as "most probable selling price," then highest and best use may be considered "most probable selling price." The highest and best use may be considered most probable use, or in the context of investment value, the "most profitable use."

When determining the highest and best use of a property, one must address the highest and best use of the site as vacant and the highest and best use of the site as improved. The existing use of the property may or may not be different from the highest and best use of the site. If a site is improved, the existing use will continue unless and until land value as if vacant exceeds the sum of the value of the entire property in its existing use and the cost to remove the improvements.

LEGALLY PERMISSIBLE

The property is in an unzoned portion of the county. The property is almost entirely potential wetland and all portions of the property are in the 100-year FEMA flood zone. There are ***assumed*** legal restrictions that preclude development of the land which would supplant most zoning restrictions if present.

PHYSICALLY POSSIBLE

There are severe physical limitations due to wetness and flooding.

FINANCIALLY FEASIBLE

The subject is in southwest Beaufort County with marsh frontage on the New River and is adjacent to areas of subdivision and development. If it were physically possible, subdivision and development would likely be feasible. The area is still too remote for most commercial uses.

HIGHEST AND BEST USE

The tract has physical and assumed legal restrictions that effectively limit the highest and best use to recreational/ woodland.

THE APPRAISAL OR VALUATION PROCESS

The appraisal process is a method of gathering and analyzing information that will assist in the valuation of property. There are three accepted approaches to estimating value. It is preferable to use all three approaches; however, in many cases the available data or the characteristics of the subject property may render a particular approach inappropriate.

THE THREE APPROACHES TO VALUE

The cost approach recognizes that a potential purchaser has the option to buy unimproved land and construct improvements instead of purchasing an existing improved property. The cost approach is most applicable when the improvements are relatively new and represent the highest and best use of the land. In this approach, the land is valued as if vacant based on market data. Then, the replacement or reproduction cost less accrued depreciation of the improvements is added to the land value. The cost approach is most reliable when (1) construction cost data is readily available; (2) depreciation can be checked in the market; and (3) the buildings satisfy the highest and best use of the land.

An appraiser uses the sales comparison approach to estimate market value by analyzing sales of properties similar to the subject. The appraiser typically uses six common elements of comparison: (1) property rights conveyed; (2) financing terms; (3) conditions of sale; (4) date of sale; (5) location; and (6) physical characteristics. This approach is adapted to the appraisal of property types which are frequently bought and sold, and is based on the premise that the subject will likely sell for the same price as the sale provided they are equal. The reliability of this approach is best when direct comparisons require few judgment adjustments.

The basic premise behind the income approach is that value is equal to the present worth of future benefits. This approach is most applicable to a property whose earning power is the critical element affecting its value. The purchase of an income-producing property represents the exchange of a present sum for the right to receive anticipated future income. The reliability of this approach is dependent upon the accuracy of the net income estimate, the duration of the net income, and the capitalization or discount rate.

THE APPRAISAL PROCESS AS APPLIED TO THIS REPORT

The income approach was not applicable, as it is unlikely that the subject would be purchased purely for its ability to produce income. As property is unimproved, the cost approach was not applicable, and I used only the sales comparison approach based on similar land sales.

SALES COMPARISON APPROACH

SALES COMPARISON

The land was valued using the sales comparison approach for vacant land sales.

UNITS OF COMPARISON

The unit of comparison for agricultural land is price per acre.

SELECTION OF COMPARABLE SALES

I searched for comparable sales in Beaufort County and adjacent areas of Jasper county to the west and found 10 comparable sales. As the property has legal and physical restrictions similar to easement-constrained land, I have included three sales of similar properties with conservation easements (Sales 7, 8, and 9). The summary of the sales appears below:

Sale	County	Sale Date	Sale Price	Acres	$/Acre (gross)	Est. Improv. Value	Est. Timber value	$/Bare Land Acre
1	Jasper	13-Sep-16	$450,100	148	$3,047	$0	$19,500	$2,915
2	Jasper	28-May-15	$105,000	60	$1,756	$0	$0	$1,756
3	Beaufort	16-Dec-16	$3,730,000	636	$5,868	$0	$0	$5,868
4	Beaufort	15-Mar-17	$1,260,737	231	$5,465	$0	$0	$5,465
5	Beaufort	5-Apr-16	$182,500	22	$8,372	$15,000	$0	$7,683
6	Jasper	23-Feb-17	$1,200,000	206	$5,831	$0	$0	$5,831
7	Beaufort	10-Aug-16	$867,000	231	$3,753	$0	$288,750	$2,503
8	Georgetown	15-Dec-15	$2,000,000	1046	$1,912	$0	$0	$1,912
9	Williamsburg	26-Sep-18	$750,000	220	$3,404	$0	$99,135	$2,954
10	Jasper	5-May-16	$260,000	89	$2,915	$0	$0	$2,915

COMPARABLE SALES DESCRIPTION AND ANALYSIS

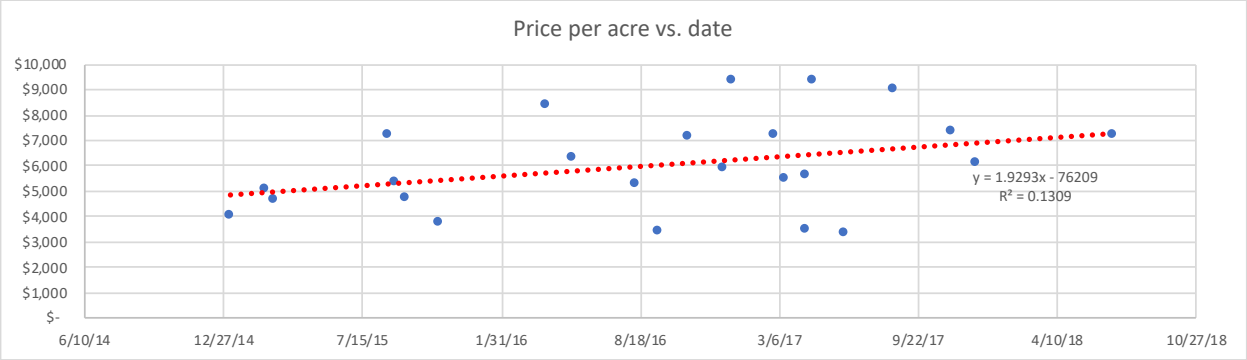
Individual comparable sales data sheets and detailed comparable sales analysis sheets are in the Addendum. A comparable sales map precedes the comparable sales sheets.

CONTRIBUTORY VALUE OF THE IMPROVEMENTS

None. (There are no improvements).

QUANTITATIVE ADJUSTMENTS TO THE SALES

Market Conditions (Time). To determine if a time adjustment was required, I analyzed 25 sales between 20 and 800 acres in Beaufort County between January 2015 and the present time. Plotting $/acre vs date indicates a moderate appreciation rate.



The slope of the linear trendline indicates that for every additional day of time, the $/acre increases by $1.93. This was the factor used to adjust the comparable sales in the sales grid. The low R^2 value indicates that only about 13% of the difference between the sales is due to date—the rest is attributable to other factors.

Improvements. I adjusted the sales for improvements, when applicable, based on tax assessor data and a cursory external inspection or from some-one with direct knowledge of the sale.

Timber. Sales were adjusted for timber value, when applicable, based on either data from someone with firsthand knowledge of the sale or a cursory physical inspection and analysis of aerial photography.

Land Quality and Use. Sales were adjusted for land use category based on a statistical analysis of the land component categories in the comparable sale properties. The subject and sales were broken down into land use categories, and the relative contributory value of each category was adjusted until the standard deviation was minimized. This becomes, in effect, a land quality adjustment based on a paired sales comparison technique. This analysis is shown in the following table.

Sale Information	Land Use Categories	Subject	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Sale 9	Sale 10	Sale Totals
	Cropland acres	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Open Land acres	0.0	0.0	8.5	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	10.5
	Upland woodland acres	0.0	30.0	26.3	407.7	157.7	21.0	125.8	0.0	446.0	0.0	48.8	1263.2
	Lowland woodland acres	110.5	16.0	10.0	228.0	68.0	0.0	80.0	231.0	600.0	220.3	40.4	1493.7
	Marsh/swamp acres	36.0	101.7	15.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	121.7
	Ponds acres	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Overall unadjusted bare land value per acre		$2,915	$1,756	$5,868	$5,465	$7,295	$5,831	$2,503	$1,912	$2,954	$2,915	

Average undadjusted bare land value per acre: $4,193
Standard deviation of AVG unadjusted values: 51.3%

Land Category Adjustment		Relative Values
	Cropland	100%
	Open Land	100%
	Upland woodland	87%
	Lowland woodland	32%
	Marsh/swamp	18%
	Ponds	100%

AFTER land category adjustment		Subject	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Sale 9	Sale 10	Average value of each land use category	STD DEV across each land use category
	Cropland (100%) indicated value/ac		$8,653	$2,810	$8,692	$7,862	$8,266	$8,852	$7,720	$3,430	$9,112	$4,674	$7,007	34.3%
	Open Land (100%) indicated value/ac		$8,653	$2,810	$8,692	$7,862	$8,266	$8,852	$7,720	$3,430	$9,112	$4,674	$7,007	34.3%
	Upland woodland (87%) indicated value/ac		$7,539	$2,449	$7,574	$6,850	$7,203	$7,714	$6,727	$2,988	$7,939	$4,073	$6,106	34.3%
	Lowland woodland (32%) indicated value/ac		$2,806	$911	$2,818	$2,549	$2,680	$2,870	$2,503	$1,112	$2,954	$1,516	$2,272	34.3%
	Marsh/swamp (18%) indicated value/ac		$1,568	$509	$1,575	$1,425	$1,498	$1,604	$1,399	$622	$1,651	$847	$1,270	34.3%
	Ponds (100%) indicated value/ac		$8,653	$2,810	$8,692	$7,862	$8,266	$8,852	$7,720	$3,430	$9,112	$4,674	$7,007	34.3%
	Total acres	146.5	147.7	59.8	635.7	230.7	23.0	205.8	231.0	1046.0	220.3	89.2		
	weighted (equivalent) acres	42.4	49.8	37.4	429.1	160.4	20.3	135.6	74.9	583.2	71.4	55.6		
	Equivalency ratio (weighted/actual)	0.289	0.337	0.625	0.675	0.695	0.883	0.659	0.324	0.558	0.324	0.624		
	weighted 100% value		$8,653	$2,810	$8,692	$7,862	$8,266	$8,852	$7,720	$3,430	$9,112	$4,674		

Summary of Land Use Category Analysis

	BEFORE single value all categores	AFTER Avg value by category	AFTER Tot acres in sample
Cropland value/acre	$4,193	$7,007	0.0
Open Land value/acre		$7,007	10.5
Upland woodland value/acre		$6,106	1263.2
Lowland woodland value/acre		$2,272	1493.7
Marsh/swamp value/acre		$1,270	121.7
Ponds value/acre		$7,007	0.0
Average:	$4,193	Weighted avereage:	$3,923
Std. Dev.:	51.3%	Std. Dev.:	34.3%

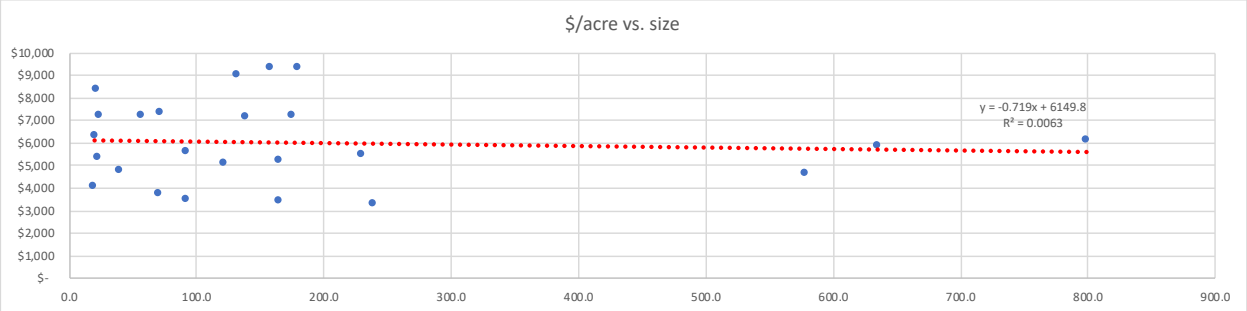
Reduction in STD DEV: 17.0%

Notes:
1. Values in tan shaded cells are populated by the non-adjusted comparable sales information.
2. Values in rose shaded cells are computed values based on the land use category analysis.
3. Values highlighted in yellow are variables used in the analysis.

The analysis shows that when the relative values of the land categories are adjusted as shown above, the standard deviation drops from 51.3% to 34.3%, indicating a statistical difference in the marketplace between these categories.

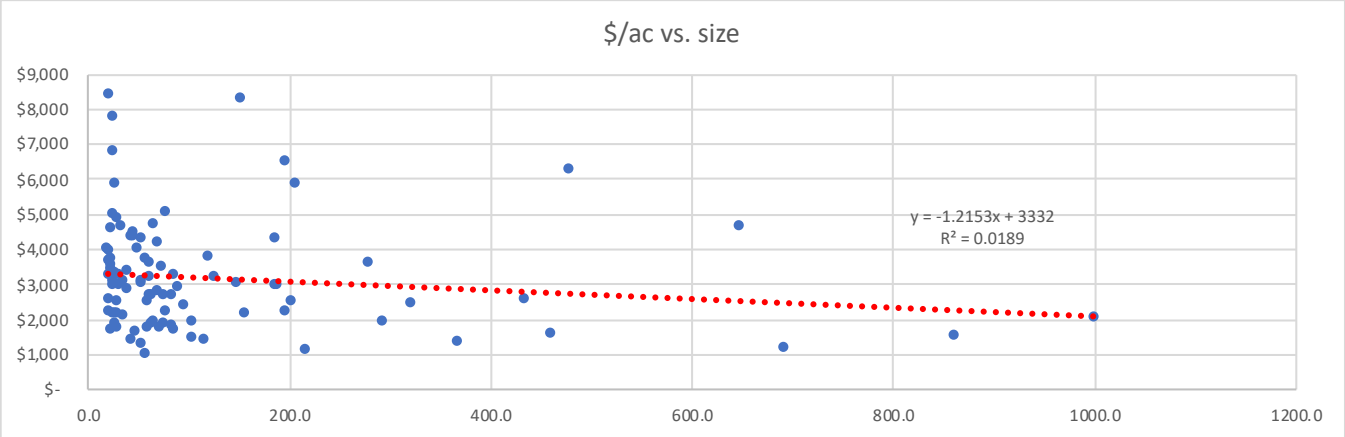
Adjustments to the sales grid based on this analysis were made in the "Land Quality and Use" section. This analysis allows the simultaneous use of sales containing a wide variety of land use categories that are adjusted for the market mathematically.

Size. In some agricultural markets, there is often little or no differences seen on a per-acre value due to size, as the "acre" is seen as a commodity. For the size adjustment, I considered the same 25 sales as used in the time adjustment (the comparable sales in the sales grid are included in the 25):



When the comparable sales are adjusted for all other quantitative factors, the linear trendline indicates that for each additional acre, the value per acre drops $0.72, which was the basis for the size adjustment in the sales grid. However, the R^2 value indicates very little of the difference is due to size. This is not uncommon in recreational and agricultural land markets.

A study of 95 sales in adjacent Jasper County indicates a similar trend:



SALES GRID

Analysis and Comparision of Sales

	Sale	SUBJECT	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5	Sale 6	Sale 7	Sale 8	Sale 9	Sale 10
Sales Information	Buyer		Christine and Qalil Ismail	Cowan Investments LLC	Pritchard Farm LLC	Magnolia Residential Investors LLC	Reid, James and Sarania	Pritchard Farm LLC	Coosaw Land, LLC	Open Space Institute Land Trust	Wiltown Crossing Farm LLC	JR Lex2 LLC
	Seller		Tobes Place LLC	Mungin Creek Partners LLC	New Riverside LLC	DR Horton Inc.	Cunningham Real Estate	Monroe, William J. Jr.	Lands End Plantation	Springwood Timberlands	Barker LLC	Thomas, Rita A
	County		Jasper	Jasper	Beaufort	Beaufort	Beaufort	Jasper	Beaufort	Georgetown	Williamsburg	Jasper
	Sale Date		9/13/16	5/28/15	12/16/16	3/15/17	4/19/16	2/23/17	8/10/16	12/15/15	9/26/18	5/5/16
	Price		$450,100	$105,000	$3,730,000	$1,260,737	$182,500	$1,200,000	$867,000	$2,000,000	$750,000	$260,000
	Land Acres	146.5	147.72	59.78	635.65	230.7	22.96	205.8	231	1046.29	220.3	89.2
	Est. Timber Contribution*	$0	$19,500	$0	$0	$0	$0	$0	$288,750	$0	$99,135	$0
	Est. Impr. Contribution	$0	$0	$0	$0	$0	$15,000	$0	$0	$0	$0	$0
	Est. Bare land value		$430,600	$105,000	$3,730,000	$1,260,737	$167,500	$1,200,000	$578,250	$2,000,000	$650,865	$260,000
	Est. Bare land value/acre		$2,915	$1,756	$5,868	$5,465	$7,295	$5,831	$2,503	$1,912	$2,954	$2,915
Land Use Information (acres)	Cropland											
	Open Land			8.5			2.0					
	Upland woodland		30.0	26.3	407.7	157.7	21.0	125.8		446.0		48.8
	Lowland woodland	110.5	16.0	10.0	228.0	68.0		80.0	231.0	600.0	220.3	40.4
	Marsh/swamp	36	101.7	15.0		5.0						
	Ponds											
Quantitative Adjustments ($/acre)	Gross price per acre		**$3,047**	**$1,756**	**$5,868**	**$5,465**	**$7,949**	**$5,831**	**$3,753**	**$1,912**	**$3,404**	**$2,915**
	Land Quality/use		-$413	-$944	-$3,355	-$3,192	-$4,905	-$3,272	-$271	-$921	-$320	-$1,563
	Timber		-$132	$0	$0	$0	$0	$0	-$1,250	$0	-$450	$0
	Improvements		$0	$0	$0	$0	-$653	$0	$0	$0	$0	$0
	Adj. total for time calculation		**$2,502**	**$813**	**$2,513**	**$2,273**	**$2,390**	**$2,559**	**$2,232**	**$991**	**$2,634**	**$1,351**
	Time adjustment		$739	$1,142	$659	$583	$864	$600	$768	$971	$107	$850
	Adj total for size calculation		**$3,240**	**$1,954**	**$3,172**	**$2,856**	**$3,253**	**$3,159**	**$3,000**	**$1,962**	**$2,741**	**$2,201**
	Size adjustment		$1	-$62	$352	$61	-$89	$43	$61	$648	$53	-$41
	Adjusted per-acre value:		**$3,241**	**$1,892**	**$3,524**	**$2,917**	**$3,164**	**$3,202**	**$3,060**	**$2,610**	**$2,794**	**$2,160**
Qualitative Adjustments (%)	Conditions of sale											
	Location, access, frontage		-20.0%	-10.0%	-15.0%	-20.0%	-20.0%	-20.0%	-15.0%	-15.0%	-15.0%	-10.0%
	Condition, Topography			10.0%								
	Other				-10.0%	-10.0%						
	Total % Adjustments:		-20.0%	0.0%	-25.0%	-30.0%	-20.0%	-20.0%	-15.0%	-15.0%	-15.0%	-10.0%
	Indicated value/acre		**$2,593**	**$1,892**	**$2,643**	**$2,042**	**$2,532**	**$2,562**	**$2,601**	**$2,218**	**$2,375**	**$1,944**

Final Analysis

Mean Value Indication:	$2,340	
Standard Deviation:	$293	13% of the mean
Median Value:	$2,453	
Selected per-acre value:	**$2,375**	
Indicated Value:	**$347,938**	

QUALITATIVE (SUBJECTIVE) ADJUSTMENTS

Sales were adjusted for conditions of sale, location, access, frontage, condition and topography on a percentage basis based on our experience in the subject market.

Location/access/frontage. The subject has an extended (assumed) dirt easement access only. This was inferior to most of the comparable sales which were adjusted downward accordingly.

Condition/topography. Sale 2 had a deep swamp splitting the land and was adjusted upward accordingly.

Other/amenity. Sale 3 was adjusted upward for its superior recreational amenity; Sale 4 was adjusted downward for its potential for subdivision.

SALES COMPARISON APPROACH SUMMARY

10 sales were used in the final analysis. The largest sale was 1046.3 acres; the smallest was 23.0 acres; the average size was 288.9 acres. The mean value indication was $2,340 per acre; the median was $2,453 per acre; and the

standard deviation was $293 per acre, or 12.5% of the mean. Based on these data, I selected a value of $2,375 per acre for an indicated value of $347,938.

INCOME APPROACH

The income approach was not used.

COST APPROACH

I did not use the cost approach based on the previous discussion.

RECONCILIATION AND FINAL OPINION OF VALUE

The sales comparison approach was the primary approach to value. Based on this analysis, my opinion of value is the sales comparison approach estimate rounded to:

Three Hundred Fifty Thousand Dollars
($350,000).

APPRAISAL CERTIFICATION

I, Richard H. Holstein IV, the undersigned appraiser, do hereby certify that:

1. The statements of fact contained in this report are true and correct.

2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

3. I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

4. I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

5. I have no bias with respect to the subject property that is the subject of this report or to the parties involved with this assignment.

6. My engagement in this assignment was not contingent upon developing or reporting predetermined results.

7. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

8. My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standard of Professional Appraisal Practice.

9. I have made a personal inspection of the property that is the subject of this report.

10. No one provided significant real property appraisal assistance to the person signing this certification.

Richard H. Holstein IV
SC License No. 5509, Exp. 6/30/2020
NC License No. A7477, Exp. 6/30/2019
GA License No. 345673, Exp. 9/30/2019
FL License No. RZ4049, Exp. 11/30/2020
Date Signed: February 12, 2019

EXPOSURE AND MARKETING TIME ESTIMATES

Marketing Period is defined as:

An estimate of the amount of time it might take to sell an interest in real property at its estimated market value during the period immediately after the effective date of the appraisal, the anticipated time required to expose the property to a pool of prospective purchasers with time for negotiation, the exercise of due diligence, and the consummation of a sale price supportable by concurrent market conditions. Marketing time differs from exposure time, which is always presumed to precede the effective date of the appraisal.

Estimating a marketing period is subjective due to the many forces operating in the market. The rise and fall in interest rates, general state of the economy, size of a property, changes in land uses and marketing expertise all impact a marketing period. All the above plus several additional factors would play a role in the time it would take to sell the subject property. Since many of these forces are unpredictable, we feel it is necessary to qualify any marketing estimate.

In estimating a marketing period, the appraiser may use statistical information of comparable sales to conclude the number of days on the market or obtain an estimate from active participants or brokers in the marketplace. Usually, the latter method is more reliable as there are many factors involved in any market example, the most important of which is pricing. Market value (see above definition) as estimated and the costs and other estimates used in arriving at the estimate of value is as of the date of the appraisal. Because markets upon which these estimates and conclusions are based upon are dynamic in nature, they are subject to change over time. Further, the report and value estimates are subject to change if future physical, financial, or other conditions differ from conditions as of the date of the appraisal.

In applying the market value definition to this appraisal, I estimate a reasonable exposure time of 12 months. Exposure time is the estimated length of time the property interest being appraised would have been offered in the market prior to the hypothetical consummation of a sale at market value on the effective date on the appraisal; exposure time is always presumed to precede the effective date of the appraisal.

Marketing time, however, is an estimate of the amount of time it takes to sell a property interest at the estimated market value during the period after the effective date of the appraisal. An estimate of market time is not intended to be a prediction of a date of sale. It is inappropriate to assume that the value as of the effective date of appraisal remains stable during a marketing period. Additionally, the appraiser(s) have considered market factors external to this report and have concluded that a reasonable marketing time for the property is 12 months.

ASSUMPTIONS AND LIMITING CONDITIONS

1. This appraisal report is for no purpose other than property valuation, and the appraisers are neither qualified nor attempting to go beyond that narrow scope. The reader should be aware that there are also inherent limitations to the accuracy of the information and analysis contained in this appraisal. Before making any decision based on the information and analysis contained in this report, it is critically important to read this entire section to understand these limitations.

2. The appraiser assumes that the utilization of the land and improvements is within the boundaries of the property lines of the property described and that there is no encroachment or trespass unless noted with the report.

3. The appraiser has made no survey of the property and no responsibility is assumed in connection with such matters. Any maps, plats, or drawings reproduced and included in this report are intended only for the purpose of showing spatial relationships. The reliability of the information contained on any such map or drawing is assumed by the appraiser and cannot be guaranteed to be correct. A surveyor should be consulted if there is any concern on boundaries, setbacks, encroachments, or other survey matters.

4. The appraiser assumes no responsibility for matters of a legal nature that affect title to the property nor is an opinion of title rendered. We assume that the title is good and marketable. The value estimate is given without regard to any questions of title, boundaries, encumbrances, or encroachments.

5. The appraiser assumes that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless noncompliance is stated, defined, and considered in the appraisal report. We did not perform a comprehensive examination of laws and regulations affecting the subject property.

6. The appraiser assumes compliance with all applicable zoning and use regulations and restrictions, unless nonconformity has been stated, defined, and considered in the appraisal report. Information and analysis shown in this report concerning these items is based only on a rudimentary investigation. Any significant question should be addressed to local zoning or land use officials and/or an attorney.

7. The appraiser assumes that all required licenses, consents, or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based. Appropriate government officials and/or an attorney should be consulted if an interested party has any questions or concerns on these items since we have not made a comprehensive examination of laws and regulations affecting the subject property.

8. This appraisal is not a report on the physical items that are a part of this property. Although the appraisal may contain information about the physical items being appraised (including their adequacy and/or condition), it should be clearly understood that this information is only to be used as a general guide for property valuation and not as a complete or detailed physical report. The appraisers are not construction, forestry, engineering, environmental, or legal experts, and any statement given on these matters in this report should be considered preliminary in nature.

9. The observed condition of the foundation, roof, exterior walls, interior walls, floors, heating system, plumbing, insulation, electrical service, and all mechanicals and construction is based on a casual inspection only and no detailed inspection was made. For instance, we are not experts on heating systems and no attempt was made to inspect the interior of the furnace. The structures were not checked for building code violations, and it is assumed that all buildings meet applicable building codes unless so stated in the report.

10. Some items, such as conditions behind walls, above ceilings, behind locked doors, or under the ground are not exposed to casual view and, therefore, were not inspected. The existence of insulation, if any is mentioned, was found by conversation with others and/or circumstantial evidence. Since it is not exposed to view, the accuracy of any statements about insulation cannot be guaranteed.

11. The appraiser assumes that there are no hidden or unapparent conditions of the property, sub-soil, or structures that would render it more or less valuable. We assume no responsibility for such conditions, or for the engineering that may be required to discover such factors. Since no engineering or percolation tests were made, no liability is assumed for soil conditions. Sub-surface rights (mineral and oil) were not considered in making this appraisal.

12. We assume that any wells and septic systems are in good working condition and of sufficient size and capacity for the stated highest and best use.

13. We are not environmental consultants and do not have the expertise necessary to determine the existence of environmental hazards. If we know of any problems of this nature that we believe would create a significant problem, they are disclosed in this report. However, nondisclosure should not be taken as an indication that such a problem does not exist. An expert in the field should be consulted if any interested party has questions on environmental factors.

14. We conducted no chemical or scientific tests on the subject property, and we assume that the air, water, ground and general environment associated with the property present no physical or health hazard of any kind unless otherwise noted in the report. We further assume that the lot does not contain any type of dump site and that there are no underground tanks (or any underground source) leaking toxic or hazardous chemicals into the groundwater or the environment unless otherwise noted in the report.

15. The age of any improvements to the subject property mentioned in this report should be considered a rough estimate. We are not sufficiently skilled in the construction trades to be able to reliably estimate the age of improvements by observation. We therefore rely on circumstantial evidence that may come into our possession (such as dates on architectural plans) or conversations with those who might be somewhat familiar with the history of the property such as property owners, onsite personnel, or others. Parties interested in knowing the exact age of improvements on the land should contact us to ascertain the source of our data and then make a decision as to whether they wish to pursue additional investigation.

16. Because we made no detailed inspection and because such knowledge goes beyond the scope of this appraisal, any observed condition or other comments given in this appraisal report should not be taken as a guarantee that a problem does not exist. Specifically, we make no guarantee of adequacy or condition of the foundation, roof, exterior walls, interior walls, floors, heating system, air conditioning system, plumbing, electrical service, insulation, or any other detailed construction matters. If any interested party is concerned about the existence, condition, or adequacy of any particular item, a construction expert should be hired for a detailed investigation.

17. This appraisal has been performed with a limited amount of data. Data limitations result from a lack or certain areas of expertise by the appraiser (that go beyond the scope of the ordinary knowledge of an appraiser), the inability of the appraiser to view certain portions of the property, the inherent limitations of relying upon information provided by others, etc.

18. There is also an economic constraint. The appraisal budget (and the fee for this appraisal) did not contain unlimited funds for investigation. We have spent our time and effort in the investigative stage of this appraisal in those areas where we think it will do the most good, but inevitably there is a significant possibility that we do not possess all information relevant to the subject property.

19. Before relying on any statement made in this appraisal report, interested parties should contact us for the exact extent of our data collection on any point that they believe to be important to their decision making. This will enable such interested parties to determine whether they think the extent of our data gathering process was adequate for their needs or whether they would like to pursue additional data gathering for a higher level of certainty.

20. Information (including projections of income and expenses) provided by local sources, such as government agencies, financial institutions, accountants, attorneys, and others is assumed to be true, correct, and reliable. The appraiser assumes no responsibility for the accuracy of such information.

21. The comparable sales data relied upon in the appraisal are believed to be from reliable sources. Though all the comparable sales were examined, it was not possible to inspect them all in detail. The value conclusions are subject to the accuracy of said data.

22. Engineering analyses of the subject property were neither provided for use nor made as a part of this appraisal contract. Any representation as to the suitability of the property for uses suggested in this analysis is, therefore, based only on a rudimentary investigation by the appraiser and the value conclusions are subject to said limitations.

23. All values shown in the appraisal report are projections based on our analysis as of the date of the appraisal. These values may not be valid in other time periods or as conditions change. We take no responsibility for events, conditions, or circumstances affecting the property's market value that take place subsequent to either the date of value contained in this report or the date of our field inspection, whichever occurs first.

24. Since projected mathematical models and other projections are based on estimates and assumptions that are inherently subject to uncertainty and variation depending upon evolving events, we do not represent them as results that will actually be achieved.

25. This appraisal is an estimate of value based on an analysis of information known to us at the time the appraisal was made. We do not assume any responsibility for incorrect analysis because of incorrect or incomplete information. If new information of significance comes to light, the value given in this report is subject to change without notice.

26. Opinions and estimates expressed herein represent our best judgment but should not be construed as advice or recommendation to act. Any actions taken by you, the client, or any others should be based on your own judgment, and the decision process should con-sider many factors other than just the value estimate and information given in this report.

27. Appraisal reports are technical documents addressed to the specific technical needs of clients. Casual readers should understand that this report does not contain all of the information we have concerning the subject property or the real estate market. While no factors we believe to be significant but unknown to the client have been knowingly withheld, it is always possible that we have information of significance which may be important to others but which does not seem to be important to us.

28. Appraisal reports made for lenders are technical documents specifically made to lender requirements. Casual readers are cautioned about their limitations and cautioned against possible misinterpretation of the information contained in these reports.

29. The appraiser should be contacted with any questions before this report is relied on for decision making.

30. This appraisal was prepared at the request of and for the exclusive use of the client to whom the appraisal is addressed. No third party shall have any right to use or rely upon this appraisal for any purpose.

31. There are no requirements, by reason of this appraisal, to give testimony or appear in court or any pretrial conference or appearance required by subpoena with reference to the property in question, unless sufficient notice is given to allow adequate preparation and additional fees are paid by the client at our regular rates for such appearances and the necessary preparation.

32. This report is made for the information and/or guidance of the client. Possession of this report or a copy thereof does not carry with it a right of publication. No part of this report shall be conveyed to the public through advertising, public relations, news, sales, or other media without the written consent and approval of the appraiser. Nor shall the appraiser, firm, or professional organization of which the appraiser is a member be identified without the written consent of the appraiser.

33. The intended users of this report should not give copies to others. Certainly, legal advice should be obtained on potential liability issues before this is done. Anyone who gives out an incomplete or altered copy of the appraisal report (including all attachments) does so at their own risk and assumes complete liability for any harm caused by giving out an incomplete or altered copy. Neither the appraiser nor this company assumes any liability for harm caused by reliance upon an incomplete or altered copy of the appraisal report given out by others. Anyone with a question on whether their copy of an appraisal report is incomplete or altered should contact our office.

34. Values and conclusions for various components of the subject parcel as contained within this report are valid only when making a summation; they are not to be used independently for any purpose and must be considered invalid if so used. The allocation of the total value in this report between land and improvements applies only under the reported highest and best use of the property. The separate valuations for land and buildings must not be used in conjunction with any other appraisal and are invalid if so used.

APPRAISER EXPERIENCE

RICHARD H. HOLSTEIN IV, P.E.

APPRAISAL EXPERIENCE:

I started in the appraisal business in 2005 after careers in the military and engineering. I moved back home to South Carolina and joined my father at Holstein Appraisals, where he had spent the previous 20 years developing a specialized appraisal business focusing on agricultural properties, agri-business, rural estates, conservation easements, and other non-standard rural properties across South Carolina, North Carolina, and Georgia. My appraisals range from broiler farms to feed mills to rural commercial properties. I have appraised some of the largest farming operations in South Carolina and Georgia, including the nation's largest peach farm and largest onion farm. I have appraised wildlife refuges in excess of 150,000 acres for the federal government; but I have also appraised plenty of small 5-acre rural tracts for individuals. ***I truly enjoy the variety and the challenge of the appraisal business.***

EDUCATION:

M.S. CIVIL ENGINEERING, North Carolina State University, 1994

B.S. MECHANICAL ENGINEERING, Clemson University, 1984

CAREER HIGHLIGHTS:

HOLSTEIN APPRAISALS. Certified General Real Estate Appraiser specializing in complex income-producing agricultural properties, conservation easements, rural estate properties, and general agri-business. **2005 – Present**

TETRA TECH. Louisville, KY Operations Manager in charge of a 30-person engineering office specializing in water/wastewater system design, structural engineering, and environmental engineering. **1997 – 2008.**

RADIAN INTERNATIONAL LLC. Staff Environmental Engineer, Raleigh, NC specializing in air quality, air pollution control technologies, and water quality projects. **1994 – 1997.**

U.S. ARMY. Military Intelligence Officer in the airborne forces, serving in a variety of command and staff positions in the 519th Military Intelligence Battalion, including command of a POW interrogation company and other operational intelligence units in a variety of theaters of operation in peacetime and combat. **1985 - 1994**

CLIENTS:

GOVERNMENT
USDA Farm Service Agency
USDA NRCS
US Department of the Interior
US Fish and Wildlife Service
Several counties in SC
South Carolina Forestry Commission

CORPORATE
BB&T
First Citizens Bank
AgSouth Farm Credit ACA
AgCarolina Farm Credit
AgAmerica Lending
Bank of America
BankMeridian
Enterprise Bank
TD Bank NA
Wells Fargo Bank
Rabo Agrifinance
South Carolina Rural Rehabilitation Corporation
Congaree State Bank
The Nature Conservancy

APPRAISAL HIGHLIGHTS:

EDUCATION BEYOND CERTIFICATION COURSES:
Valuation of Environmentally Damaged Properties, Chicago, IL, 2006
Conservation Easements Seminar, Columbia, SC, 2007
FHA Appraisal Certification, Charleston, SC, 2007
Timberland Valuation Seminar, Columbia, SC, 2008
Valuation of Historic Properties, Charleston, SC, 2009
Foreclosure and REO Properties, Columbia, SC, 2010
Environmental Considerations for Appraisers, Columbia, SC, 2010
40-hour UASFLA (Yellow Book) Certification, Denver, CO, 2011
Ground Lease analysis, Columbia, SC, 2016
Appraisal of Poultry Facilities, Greensboro, NC 2017
Appraisal of Dairy Facilities, Des Moines, IA 2018
Land Use Category Analysis, Des Moines, IA 2018

REGISTRATIONS, ETC.

Certified General Appraiser
SC 5509 | NC A7477 | GA 345673
SC Registered Professional Engineer
25438 (inactive status)
KY Registered Professional Engineer
21325 (inactive status)

STATE CERTIFICATIONS

South Carolina Department of Labor, Licensing and Regulation
Real Estate Appraisers Board
CERTIFIES THAT:
RICHARD H HOLSTEIN IV
IS AUTHORIZED TO PRACTICE
Certified General Appraiser

LICENSE NO.
AB .5509 CG

EXPIRATION DATE: 06/30/2020

To verify current license status, go to http://verify.llronline.com/LicLookup/LookupMain.aspx

STATE OF FLORIDA DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

RZ4049 ISSUED: 11/02/2018
CERTIFIED GENERAL APPRAISER
HOLSTEIN, RICHARD HENRY IV

Signature
LICENSED UNDER CHAPTER 475, FLORIDA STATUTES
EXPIRATION DATE: NOVEMBER 30, 2020

RICHARD HENRY HOLSTEIN

ORIGINALLY LICENSED
06/30/2011

345673
Status ACTIVE

END OF RENEWAL
09/30/2019

CERTIFIED GENERAL REAL PROPERTY APPRAISER

THIS LICENSE EXPIRES IF YOU FAIL TO PAY RENEWAL FEES OR IF YOU FAIL TO COMPLETE ANY REQUIRED EDUCATION IN A TIMELY MANNER.

State of Georgia
Real Estate Commission
Suite 1000 - International Tower
229 Peachtree Street, N.E.
Atlanta, GA 30303-1605

LYNN DEMPSEY
Real Estate Commissioner

47135733

NORTH CAROLINA APPRAISAL BOARD
APPRAISER QUALIFICATION CARD
Expires June 30, 2019

REGISTRATION / LICENSE / CERTIFICATE HOLDER
18 RICHARD H HOLSTEIN IV 19
A7477 (APPRAISER NUMBER) | G (TYPE) | Y (NATIONAL REGISTRY)

APPRAISER'S SIGNATURE
EXECUTIVE DIRECTOR

ADDENDUM

PHOTOGRAPHS

All photographs were taken on the inspection date of the appraisal, January 30, 2019. We were unable to physically enter the property due to flooding and wetness. The following are drone aerial photographs taken on the inspection date.

Figure 2. Eastern boundary of the tract, facing west. Western boundary (New River) is at the top of the photo.

Figure 3. Southern portion of the tract, facing south.

Figure 4. New River along the western boundary, facing west

Figure 5. Northwest portion of the tract, facing northwest. Property boundary marked in red

Figure 6. Interior of property

COMPARABLE SALES MAP

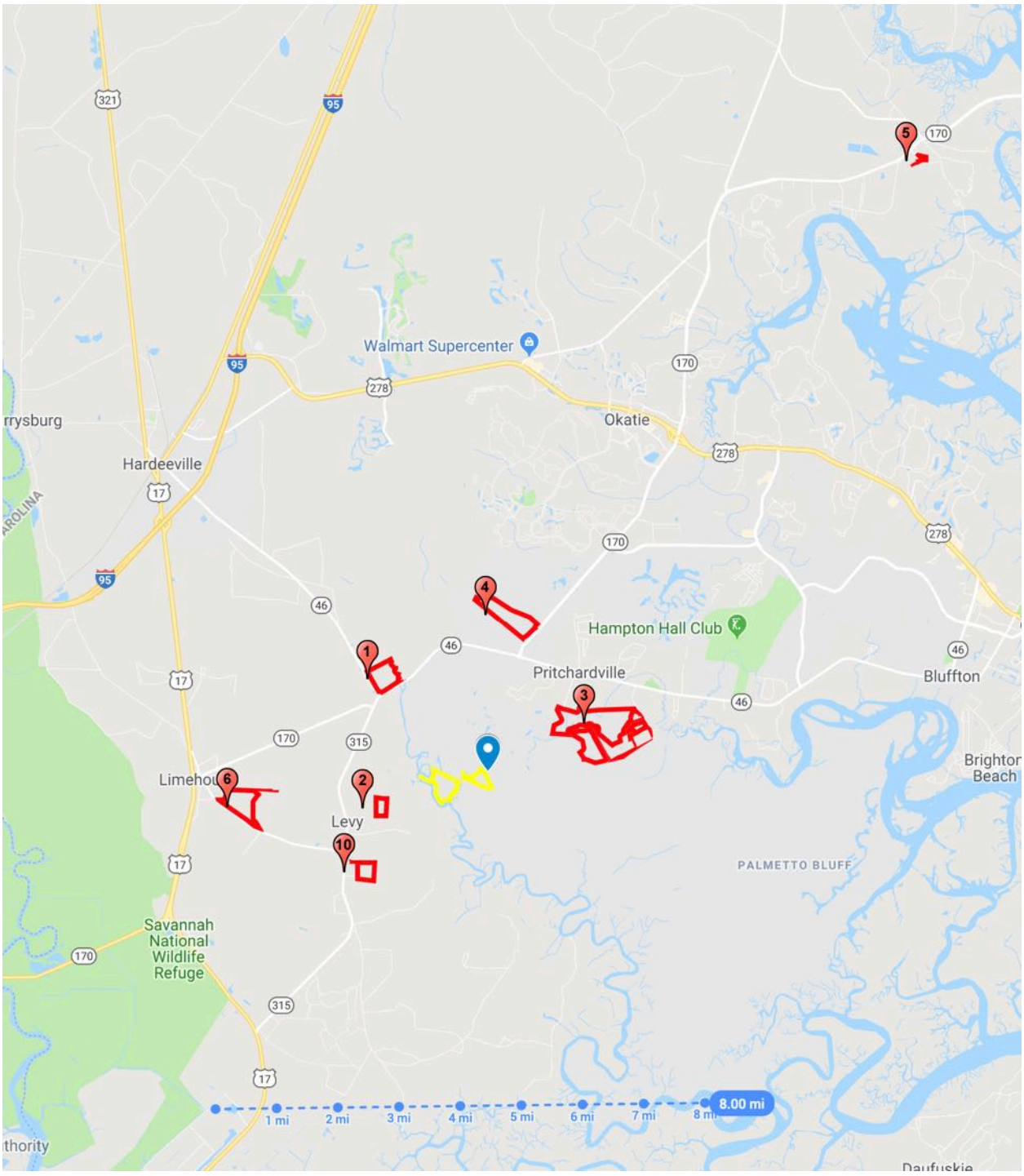


Figure 7. Subject indicated by the blue pin

COMPARABLE SALE INFORMATION SHEETS

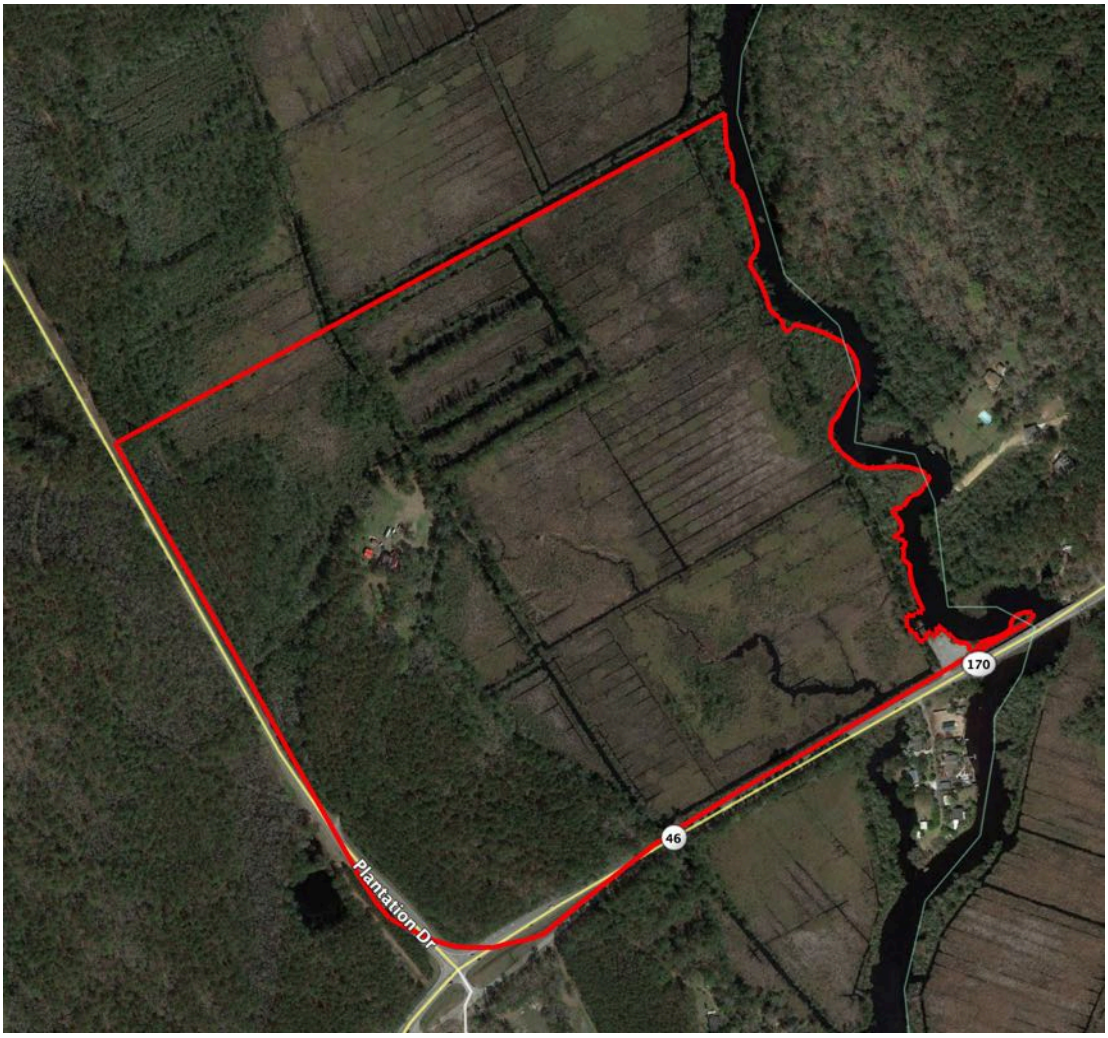
Sale 1

Buyer: Christine and Qalil Ismail
Seller: Tobes Place LLC
Purchase Price: $450,100
Acres: 147.72
Tax Map: 040-00-04-004
Location: 8.9 miles west of Bluffton
Short Description: Woodland Tract

County: Jasper
Sale Date: 13-Sep-16
Deed Ref:
Zoning:
Gross price/ac: $3,047
Land price/ac: $2,915

Timber Value: $19,500
Leases, contracts: None
Est. Impr. Value: $0

Tract included old rice fiels and low woodland with frontage on the New River. As rice fields are protected areas, they are treated as tidal marsh in the analysis. Sale included an old farmhouse with little value.



Sale 1 Detail

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Natural pines and hardwoods, mix of merchantable and pre-merchantable timber	**$19,500**

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$8,653	$0
	Open Land		100%	$8,653	$0
	Upland woodland	30	87%	$7,539	$226,185
	Lowland woodland	16	32%	$2,806	$44,890
	Marsh/swamp	101.72	18%	$1,568	$159,525
	Ponds		100%	$8,653	$0
	Total:	**147.72**			**$430,600**
	From Description:	147.72			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value
					$0
					$0
					$0
			0		$0

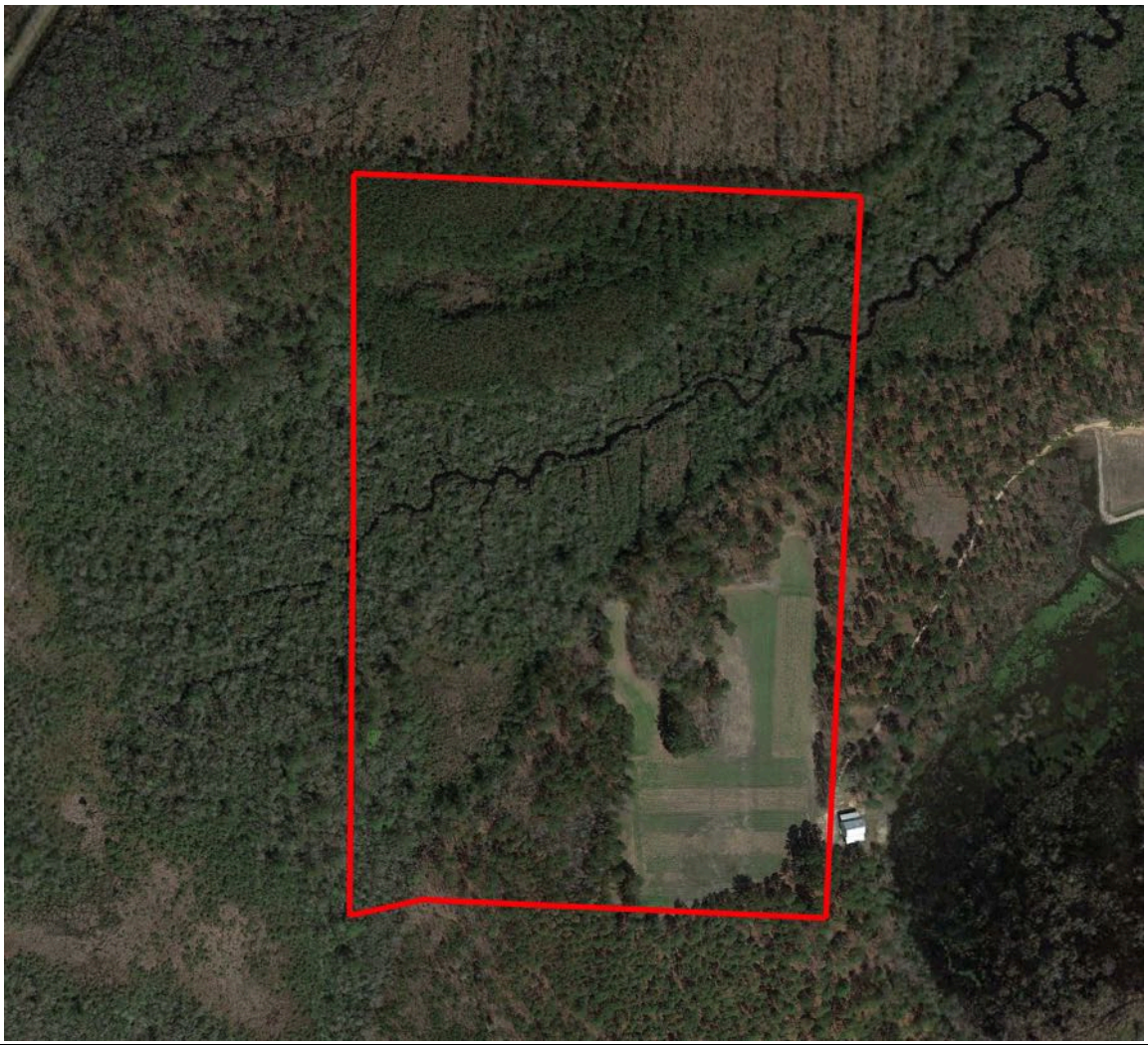
Sale 2

Buyer: Cowan Investments LLC
Seller: Mungin Creek Partners LLC
Purchase Price: $105,000
Acres: 59.78
Tax Map: 039-00-11-015
Location: 6.4 miles SE of Hardeeville, SC
Short Description: Woodland tract with poor access

County: Jasper
Sale Date: 28-May-15
Deed Ref: 897-727
Zoning:
Gross price/ac: $1,756
Land price/ac: $1,756

Timber Value: $0
Leases, contracts: $0
Est. Impr. Value: $0

Tract is located approximately 1/2 mile west of the New River and has difficult easement access only.



Sale 2 Detail

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$2,810	$0
	Open Land	8.5	100%	$2,810	$23,889
	Upland woodland	26.28	87%	$2,449	$64,357
	Lowland woodland	10	32%	$911	$9,113
	Marsh/swamp	15	18%	$509	$7,641
	Ponds		100%	$2,810	$0
	Total:	**59.78**			**$105,000**
	From Description:	59.78			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

Sale 3

Buyer: Pritchard Farm LLC
Seller: New Riverside LLC
Purchase Price: $3,730,000
Acres: 635.65
Tax Map: R610 044 000 0002
Location: 5.3 miles west of Bluffton
Short Description: Development land wst of Bluffton

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0

County: Beaufort
Sale Date: 16-Dec-16
Deed Ref: 3540-652
Zoning:
Gross price/ac: $5,868
Land price/ac: $5,868

Sale 3 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$8,692	$0
	Open Land		100%	$8,692	$0
	Upland woodland	407.65	87%	$7,574	$3,087,418
	Lowland woodland	228	32%	$2,818	$642,582
	Marsh/swamp		18%	$1,575	$0
	Ponds		100%	$8,692	$0
	Total:	**635.65**			**$3,730,000**
	From Description:	635.65			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

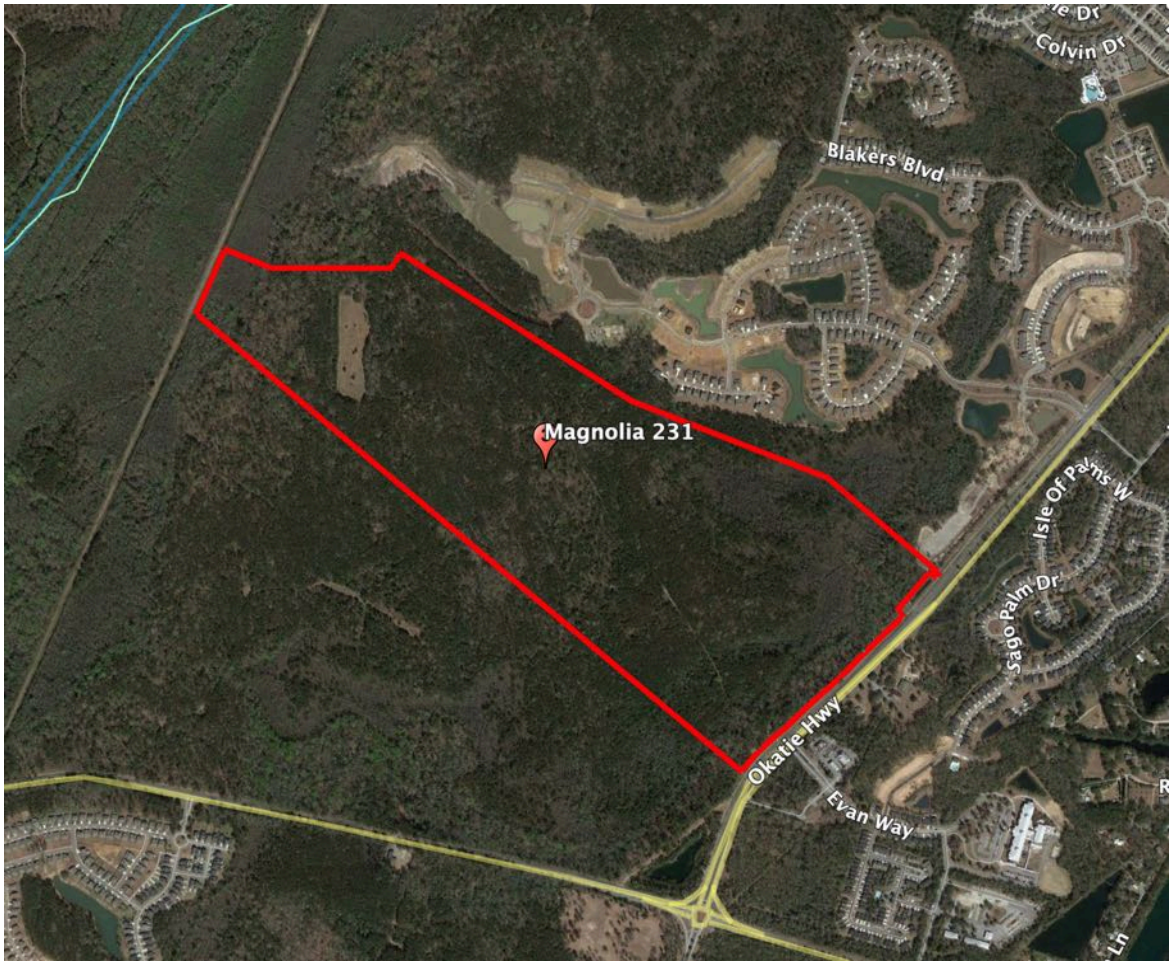
Sale 4

Buyer: Magnolia Residential Investors LLC
Seller: DR Horton Inc.
Purchase Price: $1,260,737
Acres: 230.7
Tax Map: R614 036 000 0596 0000
Location: West side of Bluffton area
Short Description: Woodland for development

County: Beaufort
Sale Date: 15-Mar-17
Deed Ref: 3559-3012
Zoning:
Gross price/ac: $5,465
Land price/ac: $5,465

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0

Sale included several older farm buildings with no contributory value.



Sale 4 Detail

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
none	
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$7,862	$0
	Open Land		100%	$7,862	$0
	Upland woodland	157.7	87%	$6,850	$1,080,274
	Lowland woodland	68	32%	$2,549	$173,339
	Marsh/swamp	5	18%	$1,425	$7,124
	Ponds		100%	$7,862	$0
	Total:	**230.7**			**$1,260,737**
	From Description:	230.7			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

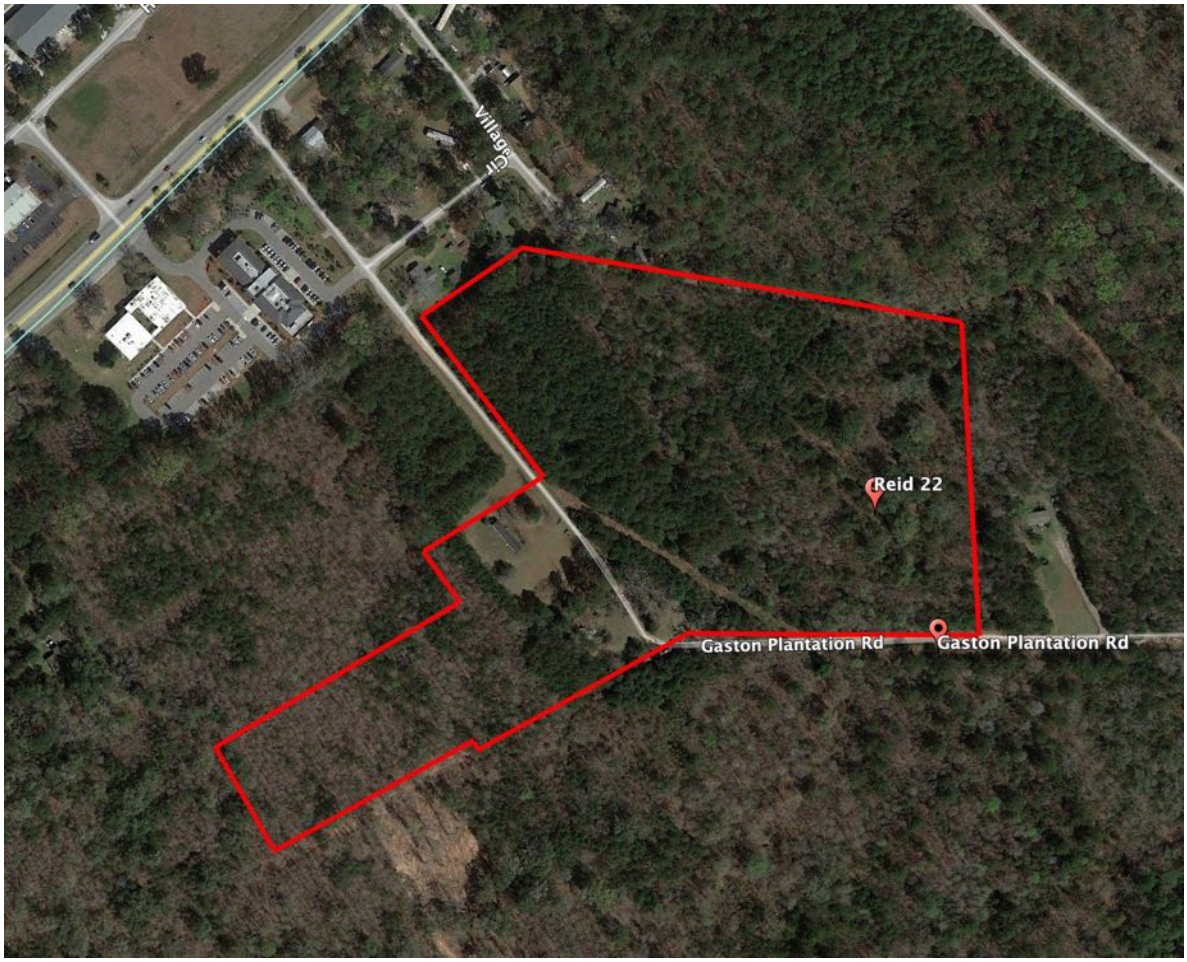
Sale 5

Buyer: Reid, James and Sarania
Seller: Cunningham Real Estate Mgmt Inc
Purchase Price: $182,500
Acres: 22.96
Tax Map: R600 010 000 0115 0000
Location: 6.5 miles north of Bluffton
Short Description: Land and singlewide mobile home

County: Beaufort
Sale Date: 5-Apr-16
Deed Ref: 3476-3028
Zoning:
Gross price/ac: $7,949
Land price/ac: $7,295

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $15,000

Sale included a SW mobile home and an old farmhouse with no value.



Sale 5 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
Singlewide MH							$15,000
							$0
							$15,000

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$8,266	$0
	Open Land	2	100%	$8,266	$16,532
	Upland woodland	20.96	87%	$7,203	$150,968
	Lowland woodland		32%	$2,680	$0
	Marsh/swamp		18%	$1,498	$0
	Ponds		100%	$8,266	$0
	Total:	**22.96**			**$167,500**
	From Description:	22.96			

Center Pivot Irrigation Calculations

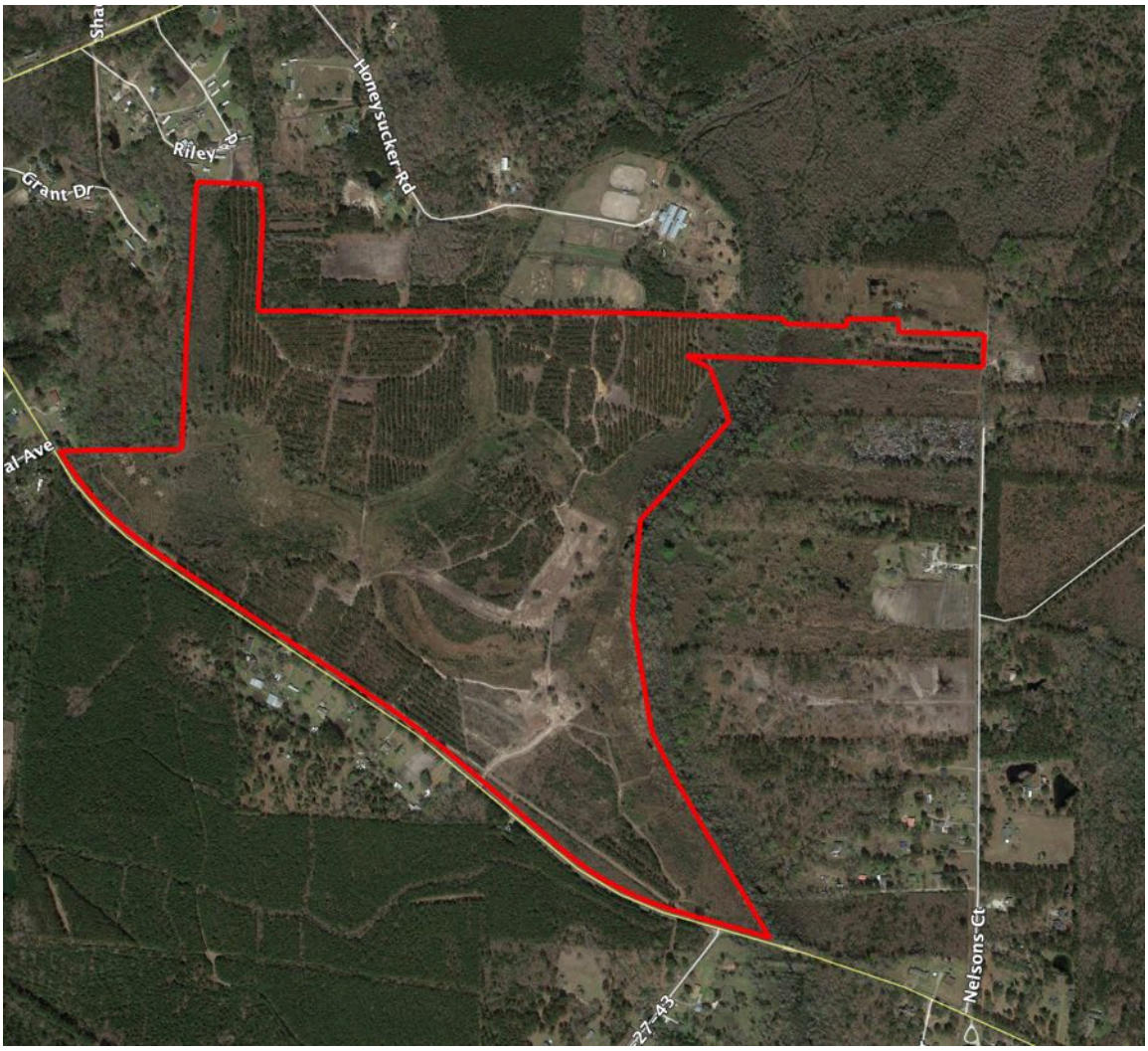
ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

Sale 6

Buyer: Pritchard Farm LLC
Seller: Monroe, William J. Jr.
Purchase Price: $1,200,000
Acres: 205.8
Tax Map: 039-00-08-174, -103
Location: 5 miles south of Hardeeville; 6 miles NE of Savannah
Short Description: Woodland tract with good frontage

County: Jasper
Sale Date: 23-Feb-17
Deed Ref: 942-988
Zoning: RA/R-1
Gross price/ac: $5,831
Land price/ac: $5,831

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0



Sale 6 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$8,852	$0
	Open Land		100%	$8,852	$0
	Upland woodland	125.8	87%	$7,714	$970,369
	Lowland woodland	80	32%	$2,870	$229,631
	Marsh/swamp		18%	$1,604	$0
	Ponds		100%	$8,852	$0
	Total:	**205.8**			**$1,200,000**
	From Description:	205.8			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value
					$0
			0		$0
			0		$0

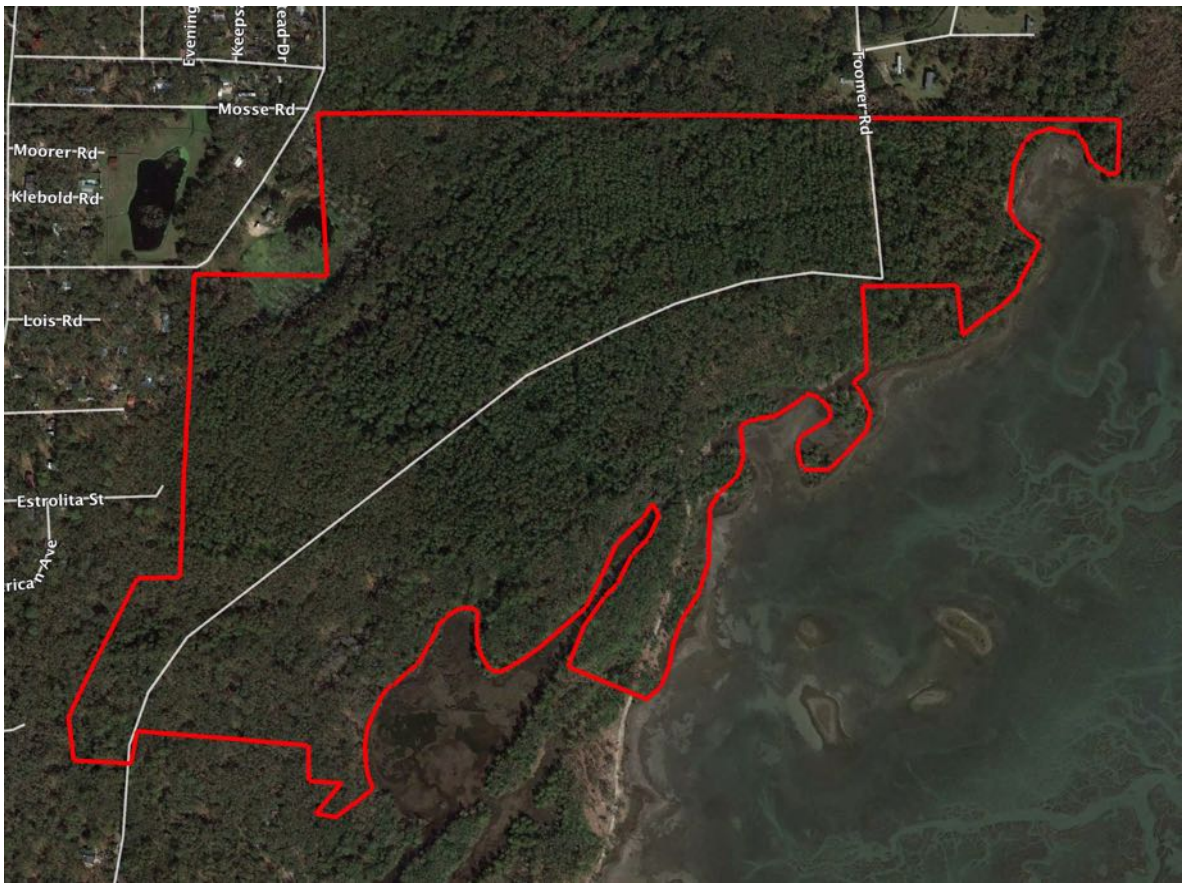
Sale 7

Buyer: Coosaw Land, LLC
Seller: Lands End Plantation Holding Corp.
Purchase Price: $867,000
Acres: 231
Tax Map: R300 041 000 0001
Location: St Helena Island, southwest corner
Short Description: Marshfront property with conservation easement

County: Beaufort
Sale Date: 10-Aug-16
Deed Ref: 3506-1569
Zoning:
Gross price/ac: $3,753
Land price/ac: $2,503

Timber Value: $288,750
Leases, contracts: None
Est. Impr. Value: $0

Tract sold with a Beaufort County Open Land Trust conservation easement in place that allows for 7 subdivisions between and 13 acres in a specified area. The owner was paid $471,500 for this easement. The property is marshfront but does not have navigable water access. The buyer cut over the timber soon after sale. Tract has private dirt road access only.



Sale 7 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Mixed pines and hardwoods, primarily planted pines	**$288,750**

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$7,720	$0
	Open Land		100%	$7,720	$0
	Upland woodland		87%	$6,727	$0
All land grouped here due to easement	Lowland woodland	231	32%	$2,503	$578,250
	Marsh/swamp		18%	$1,399	$0
	Ponds		100%	$7,720	$0
	Total:	**231**			**$578,250**
	From Description:	231			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

Sale 8

Buyer: Open Space Institute Land Trust
Seller: Springwood Timberlands LLC
Purchase Price: $2,000,000
Acres: 1046.29
Tax Map: 02-0409-021-00-00
Location: 3.1 miles NE of Andrews, SC
Short Description: Recreational tract with lowland river frontage

County: Georgetown
Sale Date: 15-Dec-15
Deed Ref: 2705/314
Zoning:
Gross price/ac: $1,912
Land price/ac: $1,912

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0

The subject was sold with a NAWCA easement on 600 of the lowland acres (with complete loss of timber rights) after recieving $951,000 for the easement ($1,585 per acre).

Sale 8 (cont.)

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$3,430	$0
	Open Land		100%	$3,430	$0
	Upland woodland	446	87%	$2,988	$1,332,789
	Lowland woodland	600	32%	$1,112	$667,211
	Marsh/swamp		18%	$622	$0
	Ponds		100%	$3,430	$0
	Total:	**1046**			**$2,000,000**
	From Description:	1046.3			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

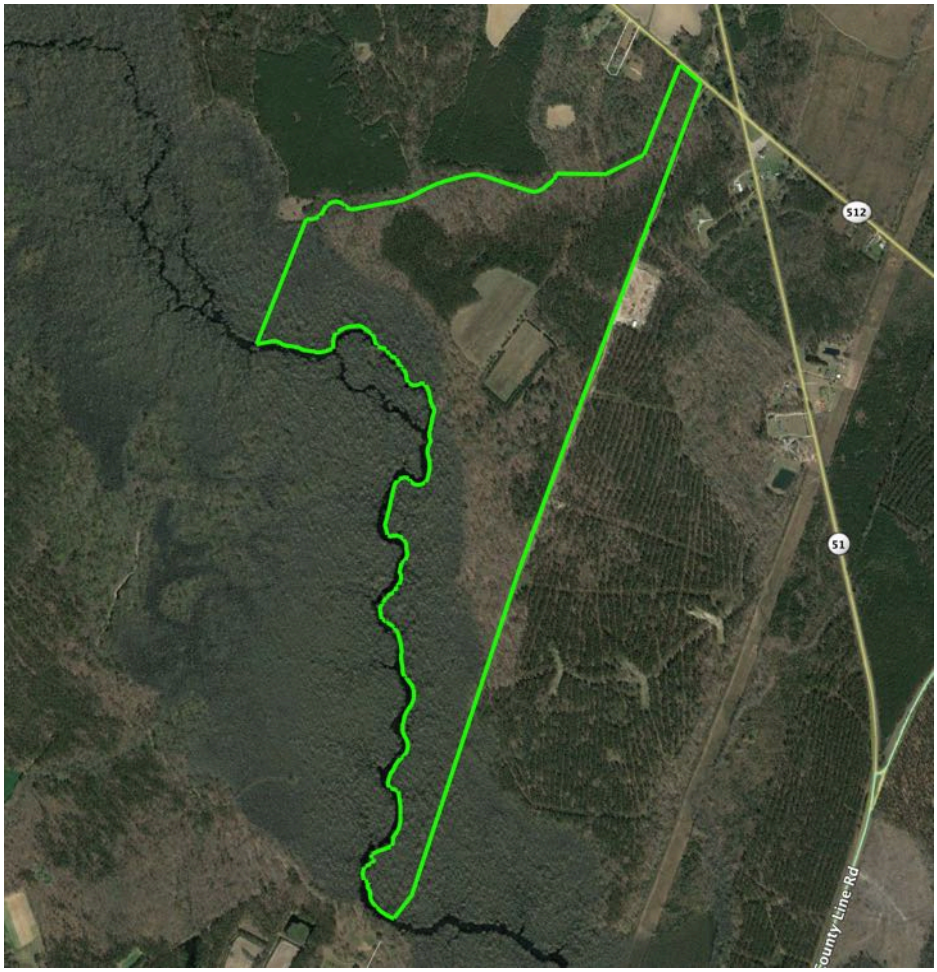
Sale 9

Buyer: Wiltown Crossing Farm LLC
Seller: Barker LLC
Sale Price: $750,000
Acres: 220.3
Tax Map: 45-472-007
Location: 8 miles south of Hemingway, SC
Short Description: Woodland tract with swamp frontage

County: Williamsburg
Sale Date: 26-Sep-18
Deed Ref: 522-236
Zoning:
Gross price/ac: $3,404
Land price/ac: $2,954

Timber Value: $99,135
Leases, contracts: None
Est. Impr. Value: $0

Tract conveyed with a Wetlands America Trust conservation easement which allows for two additional residential structures but no subdivisions.



Sale 9 Detail

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
					52	100%	$0
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

	$99,135

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$9,112	$0
	Open Land		100%	$9,112	$0
	Upland woodland		87%	$7,939	$0
All land grouped here for easement	Lowland woodland	220.3	32%	$2,954	$650,865
	Marsh/swamp		18%	$1,651	$0
	Ponds		100%	$9,112	$0
	Total:	**220.3**			**$650,865**
	From Description:	220.3			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

Sale 10

Buyer: JR Lex2 LLC
Seller: Thomas, Rita A
Sale Price: $260,000
Acres: 89.2
Tax Map: 038-00-09-010
Location: 6.9 miles SSE of Hardeeville
Short Description: Woodland tract with easement access only

Timber Value: $0
Leases, contracts: None
Est. Impr. Value: $0

County: Jasper
Sale Date: 5-May-16
Deed Ref: 921-126
Zoning:
Gross price/ac: $2,915
Land price/ac: $2,915

Sale 10

Building Improvements Detail

Description	Area	Cond.	RCN	Eff. Age	Rem. Eco. Life	% good	DRCN
							$0
							$0

Land Improvements Detail

Description of Land Improvements	Est. Value
	$0

Timber Detail

Mixed stands of planted pines and natural stands	

Land Component Detail

Land Type	Component	Acres	Rel. Value	Value per acre	Tot. land component
	Cropland		100%	$4,674	$0
	Open Land		100%	$4,674	$0
	Upland woodland	48.8	87%	$4,073	$198,766
	Lowland woodland	40.4	32%	$1,516	$61,234
	Marsh/swamp		18%	$847	$0
	Ponds		100%	$4,674	$0
	Total:	**89.2**			**$260,000**
	From Description:	89.2			

Center Pivot Irrigation Calculations

ID	Radius (ft)	Arc (deg.)	Acres	$/ac	Total contrib. value

TAX ASSESSOR INFORMATION

The Beaufort County property card follows. The subject property is only a portion of the tract identified in this property card.

Records

Overview

Aerial View

Parcel

Land

Improvements

Sales Disclosure

Pay Taxes

Value History

GIS / Mapping

Search by

Property ID (PIN)

Street Address

Alternate ID (AIN)

Legal Description

Sales

Owner Name

Functions

County Home

Welcome

Real Property

Personal Property

Vehicle Tax

Help

Overview

Property ID (PIN)
1 of 1

Property ID (PIN)	Alternate ID (AIN)	Parcel Address	Data refreshed as of	Assess Year	Pay Year
R610 043 000 0001 0000	13135316	,	1/24/2019	2019	2019

Current Parcel Information

Owner	BEAUFORT COUNTY	Property Class Code	AgVac Forest
Owner Address	PO DRAWER 1228 BEAUFORT SC 29901-1228	Acreage	294.9900

Legal Description PARCEL 6B PH 2 PB117 P167 SUBJ TO ROLL BACK TAX LIEN 129.37 AC WETLAND 165.62 AC UPLAND PB124 P65

Historic Information

Tax Year	Land	Building	Market	Taxes	Payment
2018	$3,162,000		$3,162,000	$1,550.31	$1,550.31
2017	$1,796,200		$1,796,200	$1,548.21	$1,548.21
2016	$1,796,200		$1,796,200	$1,548.21	$1,548.21
2015	$1,796,200		$1,796,200	$1,354.31	$1,394.94
2014	$1,796,200		$1,796,200	$1,142.88	$1,142.88
2013	$1,796,200		$1,796,200	$1,142.88	$1,142.88
2012	$3,377,085		$3,377,085	$1,142.88	$1,142.88
2011	$3,377,085		$3,377,085	$1,142.88	$1,142.88
2010	$3,377,085		$3,377,085	$1,142.88	$1,142.88
2009	$3,377,085		$3,377,085	$1,142.88	$1,142.88

Sales Disclosure

Grantor	Book & Page	Date	Deed	Vacant	Sale Price
TRUST FOR PUBLIC LAND INC(THE)	2702 1835	3/27/2008	Fu		$2,250,000
NEW RIVER SIDE LLC C/O CRESCENT RES	2702 1823	3/27/2008	10		$2,250,000
UNKNOWN OWNER 13135316		12/31/1776	Or		$0
		12/31/1776	Or		$0

Improvements

Building	Type	Use Code Description	Constructed Year	Stories	Rooms	Square Footage	Improvement Size

Print Print First First Previous Next Last

ENGAGEMENT LETTER

Engagement was via email and phone.

Harry S. Morrison, Jr
1927-2002

H. Stro Morrison, III - ACF
Forester
SC Reg. No 791
GA Reg. No. 2636
NC Reg. No. 1709
SAF Certified No. 1252
Real Estate Salesmen - SC
943-6601 Mobile

H. Stroh Morrison, IV - ACF
Forester
SC Reg. No. 1705
GA Reg. No. 2914
NC Reg. No. 1710
SAF Certified No. 3997
Broker In Charge - SC, GA, NC
942-0479 Mobile

F. Williams Morrison
Forester/Wildlife Biologist
943-6577 Mobile

Morrison Forestry & Real Estate Company, Inc.
"Timber & Land - Sales, Management & Appraisals"

1469 Browning Gate Road
Post Office Box 725
Estill, South Carolina 29918
Office: 803-625-2757
Fax: 803-625-3911
www.morrisonforestry.com

Michael T. Greene
Forest Technician
943-8139 Mobile

Greg Moore
Forest Technician
842-8474 Mobile

Karen C. Mixon
Administrative Assistant

MEMORANDUM

TO: Mr. Michael Rahn

FROM: H. Stroh Morrison IV
Morrison Forestry & Real Estate Company, Inc.

DATE: October 8, 2018

SUBJECT: Beaufort County Parcel 6-B – Estimated Forest Product Harvest Revenue

I am writing to provide you with an estimate of potential forest product harvest revenues from Beaufort County Parcel 6-B. Proposed Parcel 6-B (shown on the attached map) contains +/- 78.2 acres. Included within this parcel is a forest stand of Pine Plantations (+/- 43.1 acres).

As we previously discussed, I suggest that an improvement timber harvest (selective thinning) be performed within this pine plantation, in order to improve forest health and stocking levels. The recommended target residual basal area for this improvement harvest is +/- 80 Square Feet of Basal Area per Acre. Following is an estimate of timber harvest revenues and volumes for the proposed harvest:

Pine Chip & Saw = 14 Tons per acre x $20/Ton = $280 per acre
Pine Pulpwood = 41 Tons per acre x $14/Ton = $574 per acre
Total = 55 Tons per acre = $854 per acre

Total Estimated Harvest Revenue = $854 per acre x 43.1 acres = $36,807

Please note that these estimates of revenue are based upon prior observations and knowledge of the pine plantations within the subject property. Morrison Forestry has not

performed a formal forest inventory of the subject property. Also, these estimates are based upon current regional forest product market conditions, which are subject to change.

Please feel free to contact Morrison Forestry with any questions about these harvest revenue estimates.

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

Land Acquisition Procedures

Council Committee:

Natural Resource

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

Eric Greenway, CDD Director

Issues for Consideration:

On February 1, 2019, due to recent issues arising from the latest RCLP land acquisition, the Interim County Administrator provided the County RCLP Contractor with instructions on new procedures to be followed. Based on that February 1, 2019 letter, CDD staff created detailed procedural steps that will ensure compliance with the provided instructions.

Points to Consider:

Clear direction and steps are needed to ensure adequate review and discussion of each acquisition. Expenditures of RCLP funding, as a special fund source, need Council approval prior to the expense taking place.

Funding & Liability Factors:

None

Council Options:

Hear presentation and discuss as needed.

Recommendation:

Hear presentation and discuss as needed.

COUNTY COUNCIL OF BEAUFORT COUNTY
OFFICE OF THE INTERIM COUNTY ADMINISTRATOR
ADMINISTRATION BUILDING
BEAUFORT COUNTY GOVERNMENT ROBERT SMALLS COMPLEX
100 RIBAUT ROAD
POST OFFICE DRAWER 1228
BEAUFORT, SOUTH CAROLINA 29901-1228
TELEPHONE: (843) 255-2027
FAX: (843) 255-9403
www.bcgov.net

CHERYL H. HARRIS
EXECUTIVE ASSISTANT

JOHN L. WEAVER
INTERIM COUNTY ADMINISTRATOR

February 1, 2019

Mr. Colden Battey
Harvey & Battey, P.A.
Post Office Box 1107
Beaufort, South Carolina 29901

Re: Beaufort County Open Land Trust, Inc. (BCOLT)

Dear Mr. Battey:

I am certain that your recent trip to Australia and New Zealand was a pleasurable time. During your absence, the county's negotiations with Mr. Levin have not gone well and the County's position generally has been voiced by Paul Sommerville. The situation with the improperly recorded easement has been corrected by its removal from the public records; but, nonetheless, a stalemate has developed that has stymied a resolution to the situation.

My purpose in writing is not to involve you with the ongoing disagreement but, rather, to update you on the plan that Beaufort County tentatively has formulated involving Barbara Holmes in hopes that we will not again have a repeat of the problems experienced with Whitehall Park. This plan has been agreed upon between Tom Keaveny, Eric Greenway and myself, with a verbal approval by our Chairman, Stu Rodman, and Vice Chairman, Paul Sommerville. We have made every effort to keep Barbara below the public and political radar for all the reasons that you referenced earlier. However, it is likely that the Council will be made aware of this letter on February 11, 2019 when the overall Whitehall Park issue is discussed.

As you know, Beaufort County has an annual contract with BCOLT that expires on June 30, 2019. I am assuming that Barbara is the primary agent of the Trust and receives her guidance from the Board. The responsibility of the BCLOT and Barbara particularly is to provide Beaufort County staff support and assistance with the acquisition of land and conservation easements pursuant to the Rural and Critical Land Preservation Ordinance (#s 99/19 and 2006/2). From the contract, **"...The consultant shall communicate, through a designated contact with the County, any land acquisition strategies before commencing on any land acquisitions and shall notify the County as negotiations begin and when they are complete."** Additionally, the County Planning department's evaluation system remains an integral part of the county's initial evaluation. Without the necessity of addressing what went wrong and why with the Whitehall Park transaction, I believe that the County has developed a fix to the situation that I would appreciate you outlining to your Board and its staff. It is the county staff's intention through my directive to implement this fix immediately. Further, there is the expectation that should the contract with

BCOLT be renewed this summer that the new contract will contain these provisions.

1. Prior to any meaningful discussions by Barbara with any potential Seller of one or more parcels that might be considered as a potential asset of Beaufort County, she is to discuss the possibilities with our Community Development Department and the Natural Resources Planner and Passive Parks Manager. This informal presentation shall include any known facts about the parcel(s) and any terms and conditions that have been mentioned in a proposed offer to sell.
2. Upon receipt of all relevant information, the Community Development Department staff members will evaluate the project utilizing not only the Rural and Critical Land Preservation Board's ranking sheet, but also other known relevant factors. During this phase, Barbara is to offer no opinion or make no comment to any committee or council member regarding the project.
3. Upon staff's recommendation being finalized, Barbara and county staff will present their respective findings and recommendations to the Natural Resources Committee. It is essential for transparency purposes that the committee be told by BCOLT's agent all relevant facts known by her, including presenting any and all relevant documentation. Copies of all documents shall be retained by the Clerk to Council.
4. Following the presentations, the Natural Resources Committee shall vote either to favorably recommend or to disapprove the proposed project. If recommended, the seller is expected to retain independent counsel for the purpose of preparing a written Contract of Sale, transmitting the same to the County Attorney for review/approval. Simultaneously with the preparation of the Contract of Sale, the county shall select a MAI appraiser at its expense to determine a fair market value for the parcel(s). The contract must specify, not only all terms and conditions of the transaction, but also that **the final acceptance of the negotiated terms and conditions of the sale is contingent upon approval by full Council via a written Resolution.**
5. Upon completion of an agreed upon Contract of Sale and an appraisal, the project shall be returned to the Natural Resources Committee for a final recommendation that the project be moved forward to full Council. Simultaneously, or earlier if possible, the same documentation shall be reviewed by the RCLPB for its written recommendation.
6. If the Contract of Sale is rejected by the Natural resources Committee, a decision will be made to either cease further negotiations or, alternatively, counteroffer. Only if requested by the Committee Chairman or the County Attorney is Barbara to participate in any counteroffer.
7. All contractual discussions by the Committee or Council may be in Executive Session as permitted by the South Carolina Freedom of Information laws. However, the discussions can remain public in the Council's discretion.

8. It is understood that following the initial presentation regarding the proposed project being considered by the Natural Resources Committee, all coordination, negotiations and communications with the seller, its counsel and the committee and/or full Council shall be the responsibility of the County Attorney and those, if any, chosen by him to participate further.

I believe this new process, first, will insure that there no longer will be any miscommunications or misunderstandings between the respective parties and, second, that Beaufort County will have a full understanding of all aspects of the transaction prior to making a final decision.

Sincerely,

John L. Weaver
Interim County Administrator

Beaufort County Land Acquisition Procedures

1. Contractor will discuss potential land acquisition with Community Development Department (CDD) Staff (Director, Natural Resource Planner, and Passive Parks Manager). Contractor will provide informal presentation of any known facts about the parcel(s) and any terms and conditions that have been mentioned in a proposed offer to sell.
2. Staff will present the findings and recommendations to the Natural Resources Committee (NRC). Contractor will be present at this meeting for questions. Copies of all documents will be provided to Clerk to Council by Staff as per standard county agenda item procedures. Following the presentation to NRC, the Committee shall vote either to favorably recommend or to disapprove moving the proposed project forward through due diligence and to the RCLP Board for consideration.
3. If NRC recommends to approve the proposed project, the Seller is expected to retain independent counsel for the purpose of preparing a written Letter of Intent and transmitting the same to the County Attorney for review/approval. The Letter of Intent must specify all terms and conditions of the transaction and also state that "**the final acceptance of the negotiated terms and conditions of the sale is contingent upon approval by full Council via a written Resolution**". County Staff will draft the Resolution and follow subsequent standard agenda item procedures.
4. Simultaneously with the Seller's preparation of the Letter of Intent, the County shall select an MAI appraiser, at its expense, to determine a fair market value for the parcel(s), following standard purchasing procedures. Additionally, Contractor shall collect all necessary due diligence documentation including a title search, any appropriate surveys (boundary, topographic, tree, archaeological), and a Phase I Environmental Assessment, as per Resolution 2006-3 and at the County's expense. The Natural Resource Planner and Passive Parks Manager will conduct a site visit.
5. Upon completion of an agreed upon Letter of Intent, an appraisal and due diligence documentation, the Natural Resource Planner and Passive Parks Manager will score the project as per the applicable ranking sheet and provide such to Contractor. Contractor will present the project to the Rural and Critical Lands Preservation Board (Board) for its written recommendation. Staff will be present at this meeting for questions.
6. Upon the written recommendation of the Board, the County Attorney will present the project to the NRC, with all appropriate due diligence documents and as per standard agenda item procedures, for a final recommendation that the project be moved forward to full Council.
7. Upon final recommendation by the NRC, the County Attorney will present the project to full Council.
8. Upon final approval by full Council, Contractor will coordinate with the County's closing attorney to complete the transaction. Simultaneously, the CDD Director will complete the County's Real Property Action Form. The County's closing attorney will provide all closing documents to the County Attorney three (3) days prior to closing for review and approval.
9. If the Letter of Intent is rejected by the NRC at either the first or second presentation, a decision will be made to either cease further negotiations or, alternatively, counteroffer. The Committee Chairman or County Attorney will decide and direct if the Contractor may participate in any counteroffer.

10. All contractual discussions by the Board, Committee, or Council may be in Executive Session as permitted by the South Carolina Freedom of Information laws. However, the discussion can remain public at the Chairman's discretion.
11. It shall be the County Attorney's responsibility to coordinate all negotiations and communications with the Seller, its counsel, and the Committee and/or full County Council after the initial presentation to NRC.

Nagid, Stefanie

From: Greenway, Eric
Sent: Thursday, February 28, 2019 9:31 AM
To: Weaver, John; sturodman@gmail.com; Sommerville, Paul; Howard, Alice G.
Cc: Flake, Amanda; Nagid, Stefanie; Larson, Eric; Keaveny, Thomas
Subject: RE: Revised Rural & Critical procedures

From: Nagid, Stefanie
Sent: Thursday, February 28, 2019 9:02 AM
To: Greenway, Eric <egreenway@bcgov.net>
Subject: RE: Revised Rural & Critical procedures

Eric,

As per our conversation this morning, the Procedures document was created directly from Mr. Weaver's letter to Mr. Battey dated February 1, 2019. The Procedures document breaks down the internal process steps and adds clarifying details to the steps in Mr. Weaver's letter. Below are the following ways this occurs:

Letter	Procedures
Item #1	Same as step #1
Item #2	Same as step #2, but clarifies which CDD staff
Item #3	Same as step #3
Item #4	Divided into steps #4 and #5 to account for internal processes and to incorporate the requirements of the RCLP Policies and Guidelines Resolution; changed "Contract of Sale" to "Letter of Intent" to be consistent with the document we have approved by the County Attorney
Item #5	Divided into steps #6 through #9 to account for internal processes and clarify approval steps from RCLP Board, to NRC, to Council, and then to closing attorney
Item #6	Same as step #10
Item #7	Same as step #11
Item #8	Same as step #12

Please let me know if you have any questions or if you need me to provide this as an agenda item for the March 18th NRC meeting.

Cheers,
Stefanie

Stefanie M. Nagid
Passive Parks Manager
Community Development Department
Beaufort County
(843) 255-2152
snagid@bcgov.net

"Everybody needs beauty as well as bread, places to play in, where nature may heal and give strength to body and soul alike." – John Muir

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

Land Acquisition Proposal - Cleland Property (aka Okatie Connector)

Council Committee:

Natural Resources

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

Eric Greenway, Community Development Department Director

Issues for Consideration:

The fee-simple acquisition of ~40 acres in Bluffton (Davis Road).

Points to Consider:

RCLP Board heard proposal in May 2018. NRC heard proposal in May 2018 and requested an updated appraisal. NRC heard proposal again in August 2018 and recommended to Council. Council heard and approved proposal in August 2018. Upon completion of due diligence in anticipation of closing, several issues have surfaced that require further discussion and direction from Council. Issues that may affect the decision include the miscommunication of acreage to purchase, an active cemetery, and environmental hazards identified in the Phase I Assessment.

Funding & Liability Factors:

In August 2018, Council approved $785,000 from the Rural and Critical Lands Preservation Program fund to acquire the property. This decision may need reconsideration based on recently discovered issues involving the adjustment of acreage and other liabilities.

Council Options:

1) Honor the original acquisition proposal, 2) Rescind the original acquisition proposal.

Recommendation:

Rescind the original acquisition approval and direct staff to obtain an updated Letter of Intent and associated documents for reconsideration.

Cleland Acquisition Update

Background

- May 2018 – RCLP Board heard proposal and recommended to NRC
  - Proposal included 42.8 acres (main property (40ac) and access strip (2.8ac)) and $40,000 cash donation for park improvements
  - LOA presented was not signed by land owner
- May 2018 – NRC heard proposal and requested an updated appraisal
- August 2018 – NRC heard proposal and recommended to Council
  - George R. Owen appraised the main 40 acre property at $925,000 (does not include the 2.8 acre access strip)
- August 2018 – Council heard proposal and approved acquisition in the amount of $785,000
  - No written approval or agreement from the landowner was provided

Background

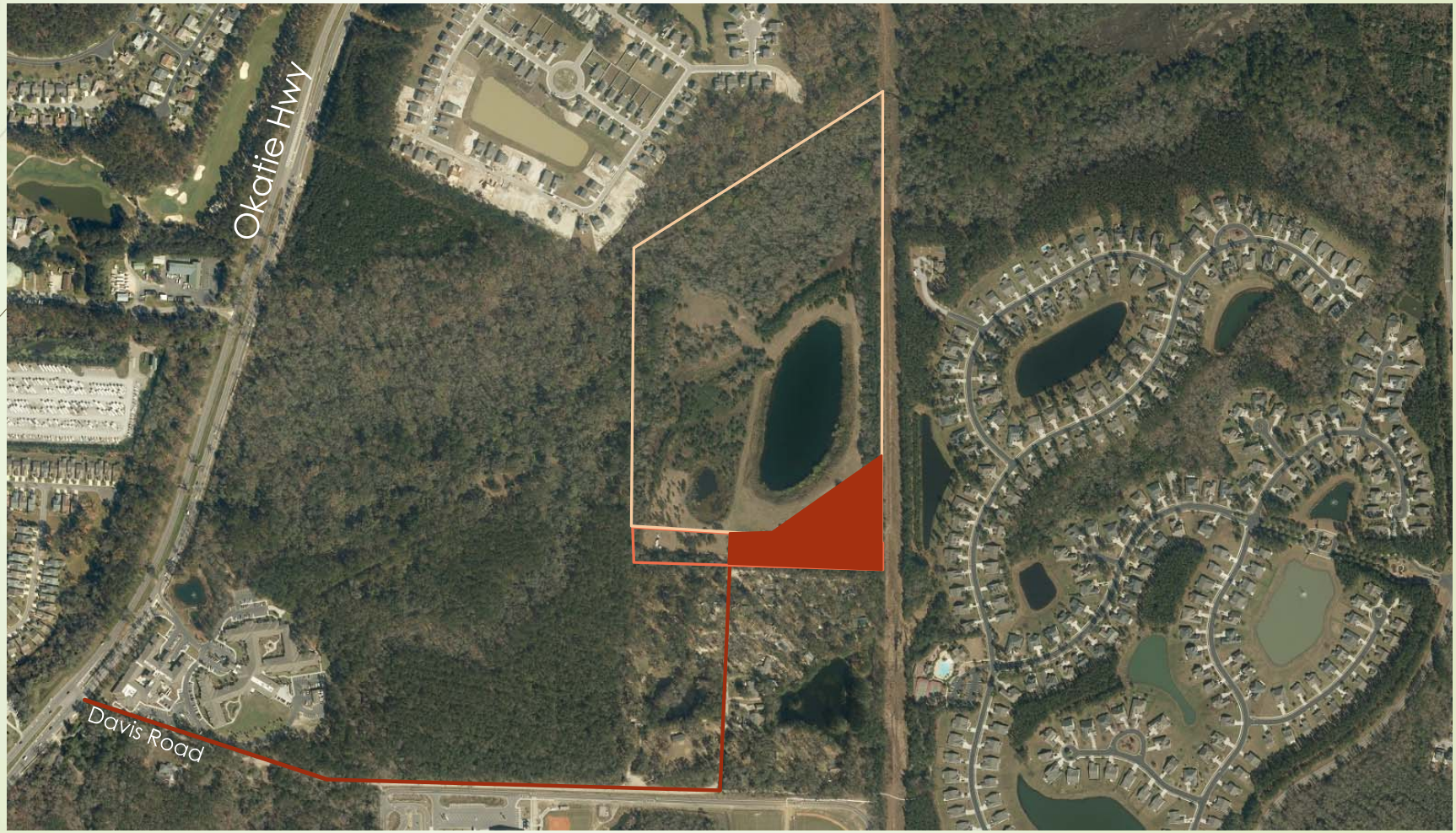
- November 2018 – Plat draft created
  - Cemetery located in southeast corner of property (activity as recent as 2016)
  - 2.8 acre access strip not included
  - Legal access to property is unclear

- February 2019 – Phase I Environmental Assessment completed
  - Completed on the main 40 acre parcel (does not include the 2.8 acre access strip)
  - Recommends further assessment of the property based on SCDHEC compliance violations data gaps and likely presence/storage of potentially hazardous materials during past property use

Considerations

- No written and signed agreement from the landowner
- Active, not historic, cemetery
- 2.8 acre access strip not included during due diligence
- Phase I EA recommends a Phase II EA

Recommendation



Staff Recommendation:

Rescind the original acquisition approval and direct staff to obtain a new letter of intent and associated documentation.

Ranking: 6.64

Beaufort County Rural & Critical LAND PRESERVATION PROGRAM

May 2018

OKATIE CONNECTOR - CLELAND
Beaufort County, SC
PROPOSAL FOR: FEE ACQUISITION

SELLER:	Cleland Site Prep, Inc and JLJ Holding, LLC
ACREAGE:	42.8
PRICE:	$860,000
PRICE/ACRE:	$20,094
ZONING:	Rural (T2R)

COUNCIL DISTRICT: 7 (Covert)

LOCATION: 110 Davis Road, Bluffton, SC

Project Background:

- This rectangular-shaped property is located in southern Beaufort County and is bounded by the floodplain of the Okatie River on the north.
- The property is an unimproved vacant parcel, partly open and partly wooded with two existing borrow pits/ponds.
- The northern portion of the property contains 11 acres of wetlands/Okatie headwaters. A powerline/gas easement runs along the eastern border of the property. Residential use adjacent to the southern border.
- Access is from Davis Road.
- A small (.41-acre) historic family cemetery is located on the property.
- The property adds to the mosaic of other properties in the Rural Critical Land Program inventory, including New Leaf (21 acres), Evergreen (86 acres), Okatie Preserve (82 acres), Pepperhall Plantation (14 acres) and Graves (18 acres), and would complete 2.2 contiguous miles of Okatie River headwater protection.
- In close proximity to River Ridge Academy

Purchase and Cost Structure:

- Appraised Value: $1,000,000 (2016 appraisal)
- Purchase Price: $860,000

P. O. Box 75
Beaufort, SC 29901
O: (843) 521-2175 F: (843) 521-1946

- Landowner Contributions towards project: $100,000 donation of property rights (charitable donation), plus $40,000 cash donation (restricted funds) for park development

R&C Program Attributes:

- Consistent with the County Comprehensive Future Land Use Plan
- Identified as land protection opportunity in the 2014 Greenprint
- Connectivity with other protected property.
- Would complete a significant regional preserve in the Bluffton area in an area with fairly dense single-family home developments (Baynard Park).
- Protects water quality on an impaired waterway.

P. O. Box 75
Beaufort, SC 29901
O: (843) 521-2175 F: (843) 521-1946

Beaufort County Rural & Critical LAND PRESERVATION PROGRAM

LETTER OF AGREEMENT
among
BEAUFORT COUNTY OPEN LAND TRUST
and
BEAUFORT COUNTY RURAL AND CRITICAL
LAND PRESERVATION BOARD
and
CLELAND SITE PREP, INC. and JLJ HOLDINGS, LLC (LANDOWNER)

CONCERNING ACQUISITION OF DAVIS ROAD TRACT
Beaufort County PID#s R600 029 000 0054 0000 and R600 029 000 0055 0000

Statement of Purpose

THIS Letter of Agreement (LOA) is made and entered into, by, and between Beaufort County Open Land Trust (hereinafter referred to as Trust), Beaufort County Rural and Critical Land Preservation Board (hereinafter referred to as Board) and Landowner (hereinafter referred to as Owner).

WHEREAS, Trust is authorized by Beaufort County Council to negotiate to acquire title to and/or easement on lands that exemplify the natural, historic, and cultural characteristics of Beaufort County.

WHEREAS, Trust, the Board, and Owner acknowledge the historic and natural significance of the approximately 42.8 acres (hereinafter referred to as the Davis Road Tract) to the people of Beaufort County, as evidenced by a Beaufort County Rural and Critical Land Preservation Board vote authorizing negotiations.

WHEREAS, it is the mutual desire of Trust, Board, and Owner to enter into an agreement to jointly cooperate to protect the natural, historic and cultural values of the Davis Road Tract.

NOW THEREFORE, in consideration of the above, the parties hereto mutually agree as follows:

The purpose of this LOA is to set out in general terms the agreed upon cooperative relationships among Trust, the Board, and Owner regarding the Davis Road Tract.

P. O. Box 75
Beaufort, SC 29901
O: (843) 521-2175 F: (843) 521-1946

Beaufort County Rural & Critical LAND PRESERVATION PROGRAM

This LOA will establish a framework that the parties may negotiate for the protection of the natural, historic, and cultural values of the Davis Road Tract and shall become effective as of the date of the last signature.

Terms and Conditions

The parties agree to negotiate for a purchase of the Davis Road Tract in fee simple.

The purchase of the Davis Road Tract is contingent upon a letter stating the property is free from environmental contamination.

The goal of the purchase of the Davis Road Tract is to obtain the highest conservation value possible in a financially equitable manner.

The final purchase of the Davis Road Tract is subject to ratification by Beaufort County Council.

The final purchase of the Davis Road Tract is contingent on the ability of Council to take the property free of any mortgage or any other lien or encumbrance on the property.

For as long as the LOA is under effect, Owner agrees to cease negotiations with any other potential purchasers.

Owner agrees that all real estate fees are the responsibility of Owner.

This LOA shall continue in effect for six months from the date of the last signature below.

This LOA may only be amended by mutual written agreement of all parties.

The above conditions and provisions are signed and agreed to by:

_____	_____
Landowner	Date
Barbara G. Holmes	April 28, 2018
Beaufort County Open Land Trust	Date

P. O. Box 75
Beaufort, SC 29901
O: (843) 521-2175 F: (843) 521-1946

Beaufort County Rural and Critical Land Preservation Board
Critical Lands Criteria

Name: **Okatie Connector** Owner: **Cleland Site Prep**
Location: **East of Hwy 170, N of Davis Road** Ranker: **Flake**
Parcel Desc: **Mixed pines/hardwoods with wetlands and two borrow pits**
Approx. Acreage: **40**

Criteria Description	Proposed Ranking (0 - 10)	% Weight	Segment Composite Ranking	Segment Weighting	Property Ranking
I. Property Characteristics					
Level of Threat	6	25%	1.50		
Uniqueness of Property	5	25%	1.25		
Cultural/Historic Value	4	15%	0.60		
Proximity to Protected Areas	10	20%	2.00		
Consistency with Comp. Plan	5	15%	0.75		
		100%	6.10	35%	**2.14**
II. Financial Considerations (addressed after initial list approved on substantive merits)					
Bargain Sale Aspects	4	30%	1.20		
Favorable Post Sale Costs	5	35%	1.75		
(could include owner stewardship plan)					
Leverage of Other Funding	2	35%	0.07		
		100%	3.02	20%	**0.60**
III. Public Benefits					
Potential Public Recreational Benefits	10	20%	2.00		
Potential Educational Benefits/Public Acces	10	15%	1.50		
Vista Protection	4	45%	1.80		
Reduction in Traffic Congestion	7	20%	1.40		
		100%	6.70	20%	**1.34**
IV. Environmental Issues					
Protection of Wildlife/Habitat Buffer	8	45%	3.60		
Water Quality/Ground Water Recharge	9	45%	4.05		
Species/Soil	8	10%	0.80		
		100%	8.45	25%	**2.11**
Total Ranking					**6.19**

Beaufort County Rural and Critical Land Preservation Board
Critical Lands Criteria

Name: Okatie Connector
Owner: Cleland Site Prep
Location: E of 170, N of Davis Road
Ranker: **Nagid**
Parcel Desc: Mixed pines and hardwoods with wetlands and 2 ponds
Approx. Acreage: 40.00

Criteria Description	Proposed Ranking (0 - 10)	% Weight	Segment Composite Ranking	Segment Weighting	Property Ranking
I. Property Characteristics					
Level of Threat	8	25%	2.00		
Uniqueness of Property	8	25%	2.00		
Cultural/Historic Value	1	15%	0.15		
Proximity to Protected Areas	10	20%	2.00		
Consistency with Comp. Plan	10	15%	1.50		
		100%	7.65	35%	**2.68**
II. Financial Considerations (addressed after initial list approved on substantive merits)					
Bargain Sale Aspects	4	30%	1.20		
Favorable Post Sale Costs	4	35%	1.40		
(could include owner stewardship plan)					
Leverage of Other Funding	7	35%	2.45		
		100%	5.05	20%	**1.01**
III. Public Benefits					
Potential Public Recreational Benefits	10	20%	2.00		
Potential Educational Benefits/Public Access	10	15%	1.50		
Vista Protection	5	45%	2.25		
Reduction in Traffic Congestion	1	20%	0.20		
		100%	5.95	20%	**1.19**
IV. Environmental Issues					
Protection of Wildlife/Habitat Buffer	8	45%	3.60		
Water Quality/Ground Water Recharge	8	45%	3.60		
Species/Soil	8	10%	0.80		
		100%	8.00	25%	**2.00**
Total Ranking					**6.88**

Beaufort County Rural and Critical Land Preservation Board
Critical Lands Criteria

Name:	Okatie Connector	Owner:	Cleland Site Prep
Location	E of 170, N of Davis Road	Ranker:	Barbara Holmes
Parcel Desc.	Mixed pines and hardwoods with wetlands and 2 ponds		
Approx. Acreage	40		

Criteria Description	Proposed Ranking (0 - 10)	% Weight	Segment Composite Ranking	Segment Weighting	Property Ranking
I. Property Characteristics					
Level of Threat	7	25%	1.75		
Uniqueness of Property	9	25%	2.25		
Cultural/Historic Value	8	15%	1.2		
Proximity to Protected Areas	10	20%	2		
Consistency with Comp. Plan	10	15%	1.5		
		100%	8.7	35%	3.045
II. Financial Considerations (addressed after initial list approved on substantive merits)					
Bargain Sale Aspects	7	30%	2.1		
Favorable Post Sale Costs	0	35%	0		
(could include owner stewardship plan)			0		
Leverage of Other Funding	0	35%	0		
		100%	2.1	20%	0.42
III. Public Benefits					
Potential Public Recreational Benefits	9	20%	1.8		
Potential Educational Benefits/Public Access	9	15%	1.35		
Vista Protection	10	45%	4.5		
Reduction in Traffic Congestion	3	20%	0.6		
		100%	8.3	20%	1.65
IV. Environmental Issues					
Protection of Wildlife/Habitat Buffer	9	45%	4.05		
Water Quality/Ground Water Recharge	10	45%	4.5		
Species/Soil	10	10%	1		
		100%	9.6	25%	2.3875
Total Ranking					**7.5025**

1806-04

UPDATED APPRAISAL
SUMMARY REPORT

OF

AVERY CLELAND TRACT – 40+- ACRES OF LAND
DAVIS ROAD, OFF OKATIE HWY
BLUFFTON, SC

FOR

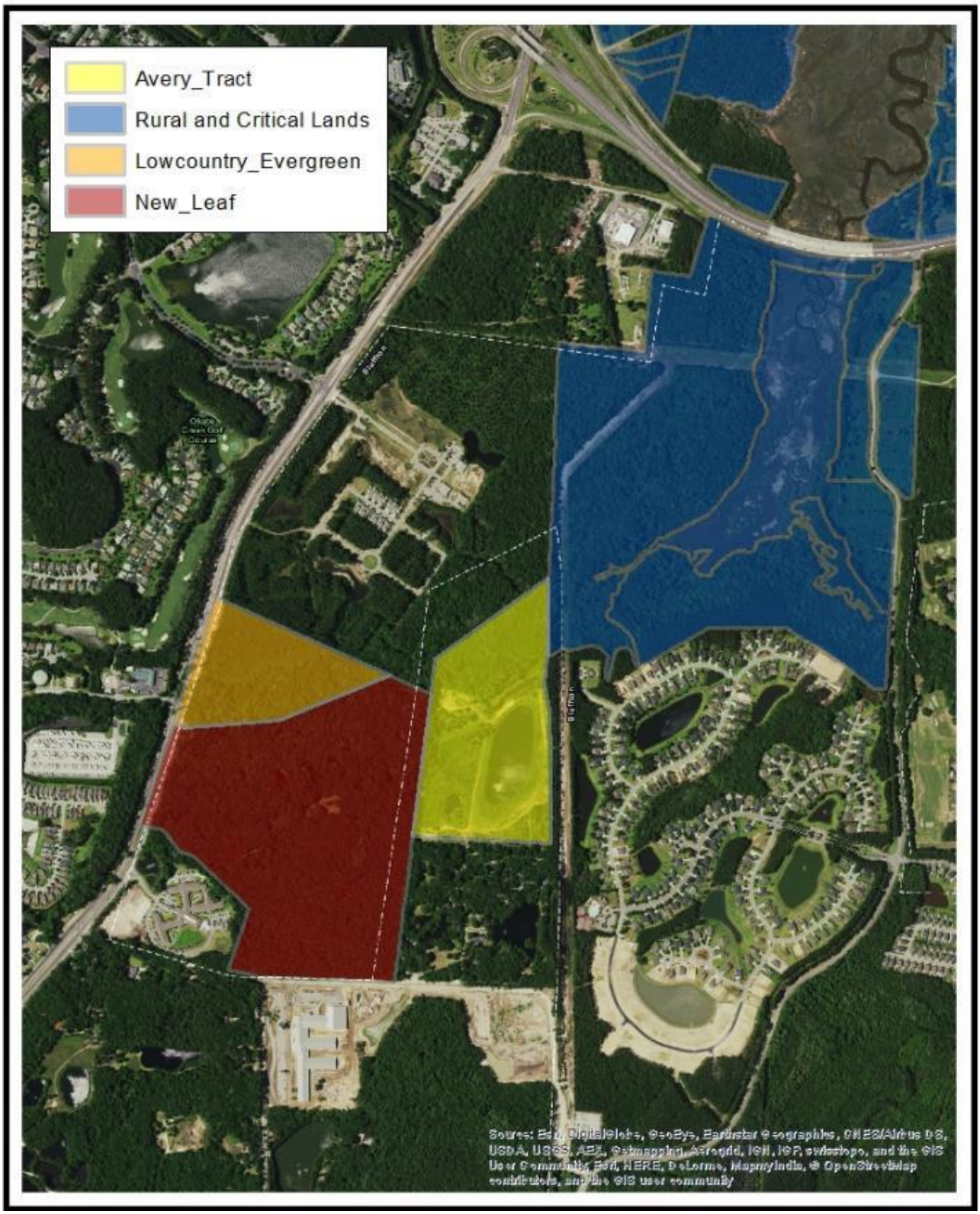
RURAL AND CRITICAL LANDS PRESERVATION PROGRAM
c/o BARBARA HOLMES
BEAUFORT COUNTY OPEN LAND TRUST
P.O. BOX 75
BEAUFORT, SC

EFFECTIVE DATE OF APPRAISAL
AS OF: JULY 6, 2018

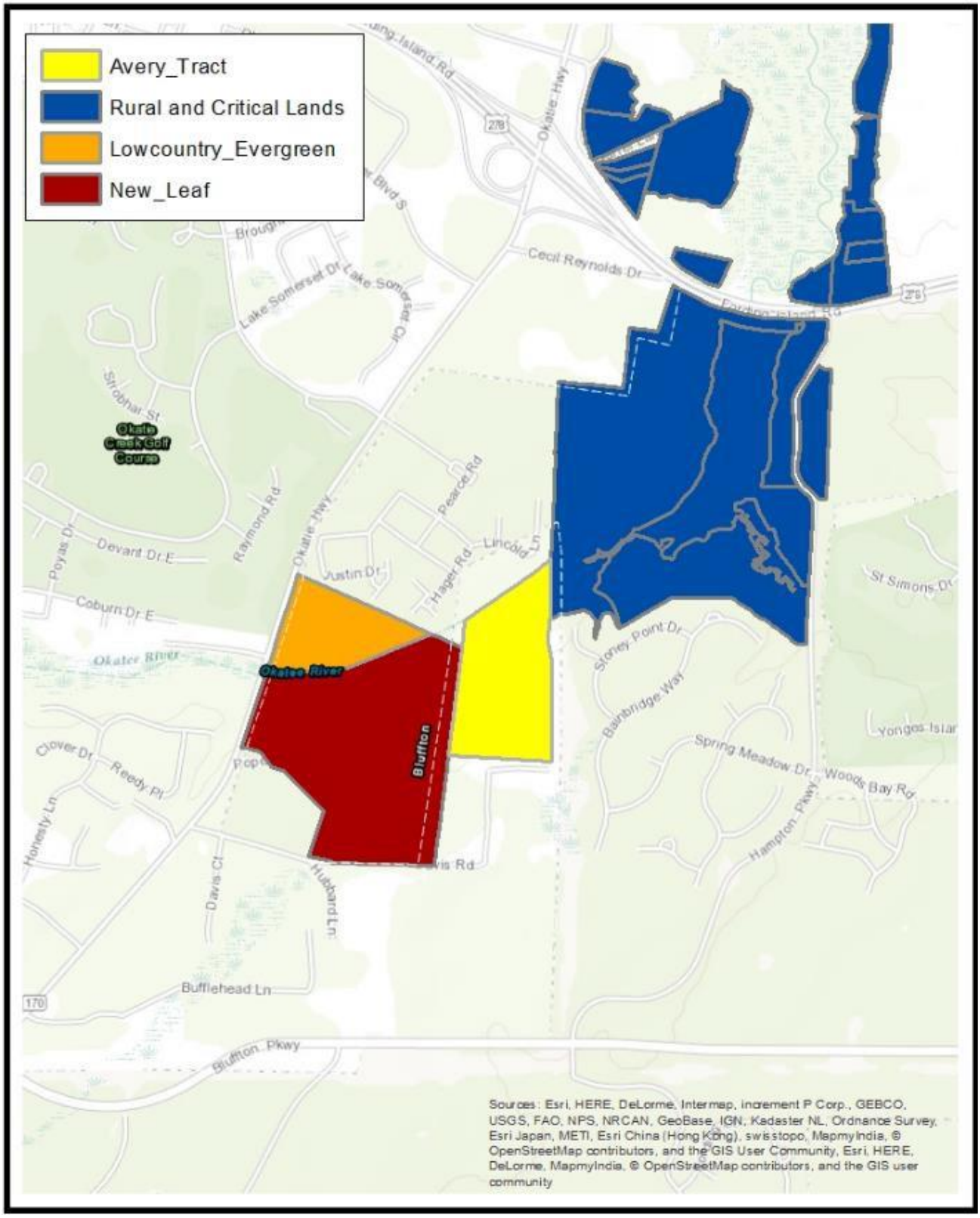
BY

GEORGE R. OWEN, MAI
CERTIFIED GENERAL APPRAISER
7 CLAIRE'S POINT RD.
BEAUFORT, SC 29907

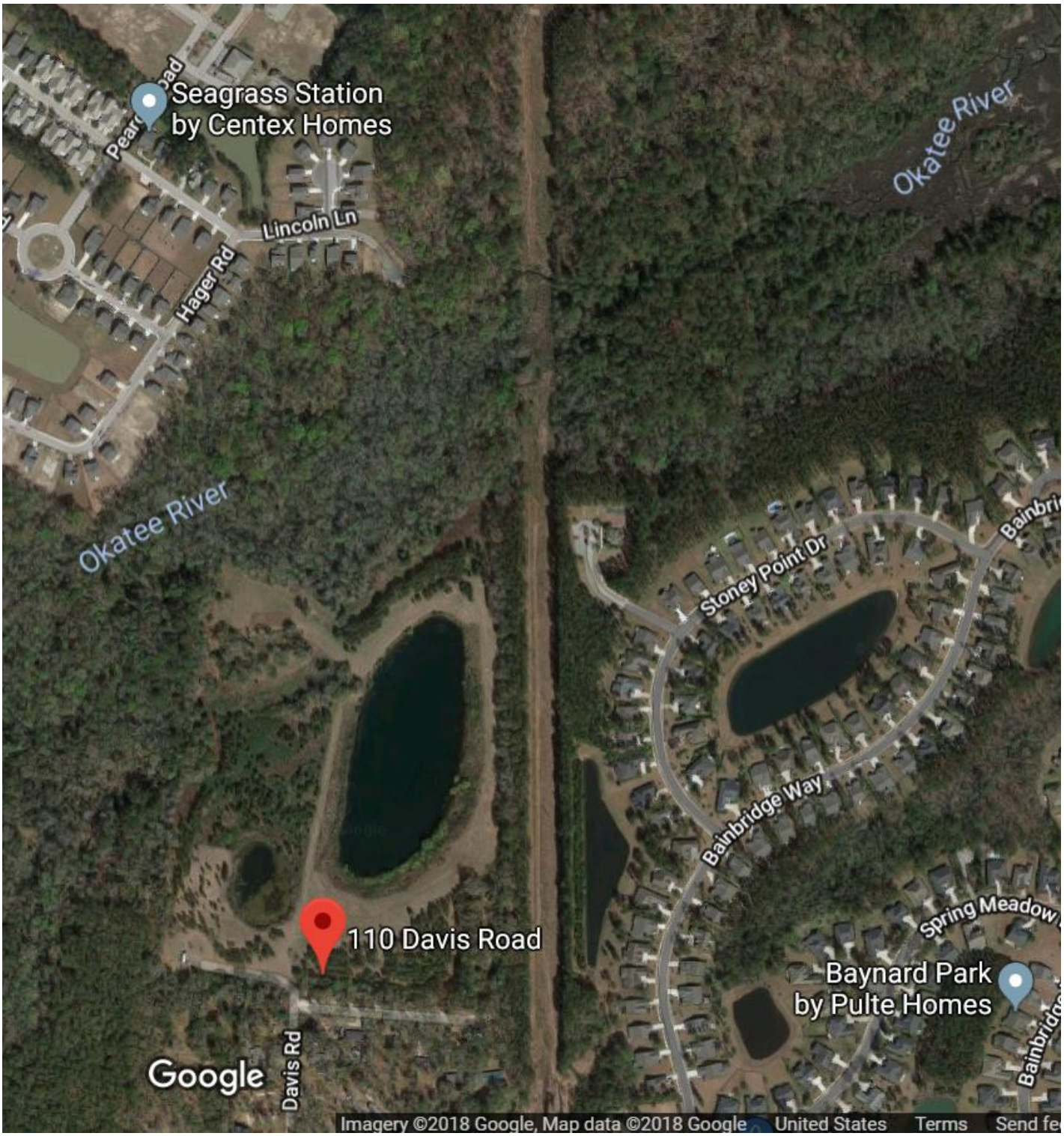
DATE REPORT ISSUED: JULY 10, 2018



Subject shown in yellow



Area Map - Subject shown in yellow



Aerial view from Google maps (110 Davis Rd. is not included in acreage appraised)

July 10, 2018

Ms. Barbara Holmes
Beaufort County Open Land Trust
Rural and Critical Lands Preservation Program
P.O. Box 75
Beaufort, SC

RE: Vacant Land, 40 acres, more or less
Avery Cleland, owner
Davis Road off Okatie Highway
Bluffton, Beaufort County, SC

Dear Ms. Holmes,

In accordance with your request, I have completed an appraisal of market value of the referenced property as of the date of latest field inspection, namely July 6, 2018. To the best of my knowledge, this appraisal conforms to the current requirements prescribed by the Uniform Standards of Professional Appraisal Practice adapted by the Appraisal Standards Board of the Appraisal Foundation (as required by the Financial Institution Reform, Recovery and Enforcement Act - FIRREA). Market value is defined in the attached report.

I have utilized the sales comparison approach in estimating the value of the subject land as it exists today. The results produced by the analysis of the sales and the market in general resulted in a final estimate of as-is market value of the fee simple interest as follows:

Estimated value of whole property: $925,000
(Survey total 40.07 acres incl. low lying ground)

Final Estimate of Value $925,000
(Nine Hundred Twenty Five Thousand Dollars).

The market exposure time necessary to produce the estimated value would not be judged to exceed 12 months. Therefore, no further discounting of the estimated value is necessary. It is understood that this appraisal is to be used for possible fee acquisition purposes.

The property included in the appraised value comprises land plus infrastructure currently in place. No improvements, equipment or personal property are included.

Inspection of the subject property did not reveal any apparent or suspected environmental hazards. However, it must be recognized that the appraiser is not an expert in environmental matters; a qualified expert should be retained in the event that an environmental analysis is required. The subject property is not located within a flood hazard zone.

There is additional information regarding the subject property and the market, which is retained in the appraiser's work file, which is incorporated herein by reference. This report is made subject to the assumptions and limiting conditions summarized on the pages following the main text of the report.

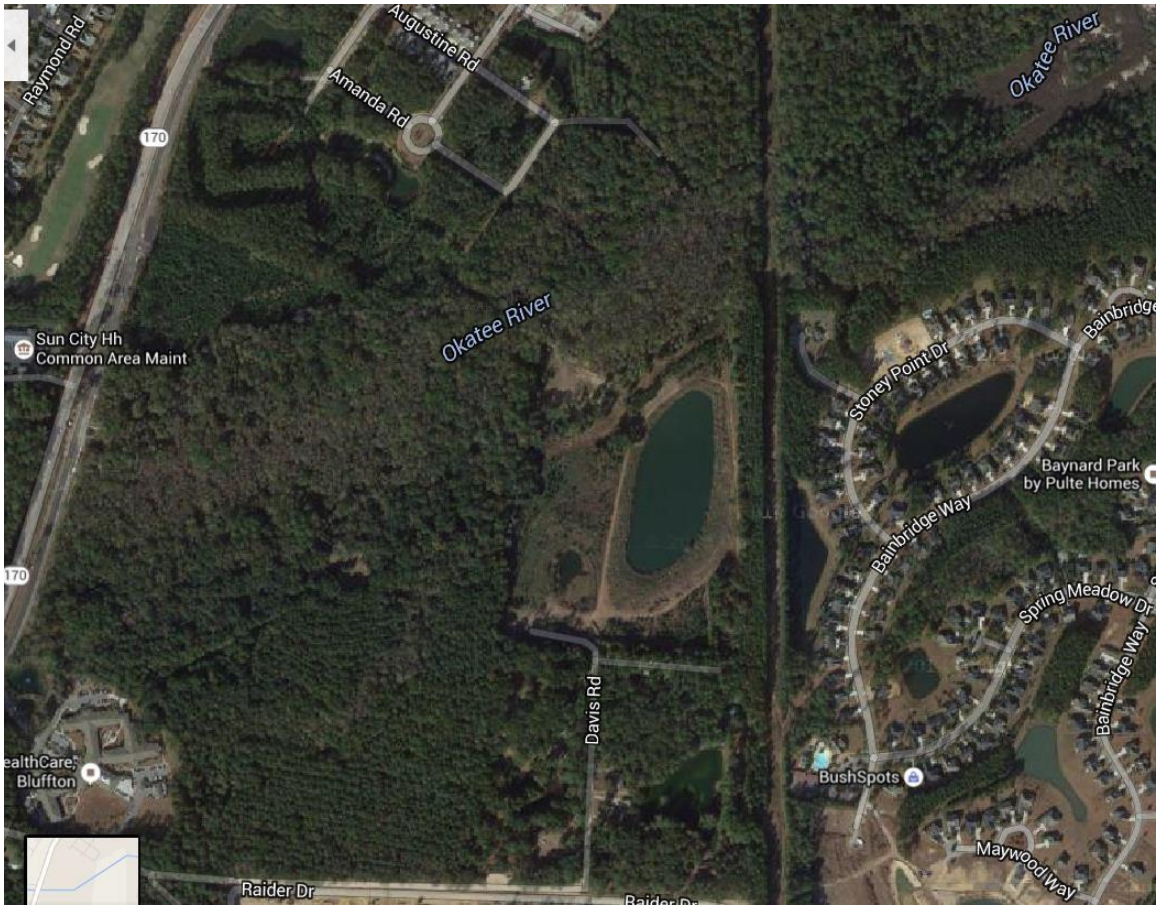
I urge a careful reading of the appraisal report. My invoice for services rendered is attached. I appreciate this opportunity to be of service.

Sincerely,

*George R. Owen**

George R. Owen, MAI
Certified General Appraiser
South Carolina License #5064

*Electronically signed for e-mail transmission



Aerial view from Google Earth

IDENTIFICATION OF PROPERTY

The property being appraised, hereinafter known as the subject property of this report, comprises a 40.07 acre parcel of undeveloped partially wooded land accessed by Davis Road, as shown above, in greater Bluffton, Beaufort County, South Carolina. The subject's parcel ID is

R600 029 000 0054 0000.

Subject photographs, legal description, and other pertinent information are included in the body or Appendix of this report.

PRIOR TRANSFER INFORMATION/HISTORY

The subject property was purchased on 3/13/1996 from the Elkins family by Avery E. Cleland for a price of $225,000 as recorded in Deed 846/2419. It has subsequently been transferred into a corporation, Cleland Site Prep, Inc..

INTENDED USE /INTENDED USER OF THIS APPRAISAL

This appraisal is reportedly to be used by the client in connection with a possible fee acquisition. The client and intended user is the Beaufort County Open Land Trust, attention of the Beaufort County Rural and Critical Lands Program.

PURPOSE OF APPRAISAL

The purpose of this appraisal is to estimate market value, as defined, as of July 6, 2018, the date of latest field inspection. Market value is defined as the most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their own best interests;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in terms of cash in U.S. dollars, or in terms of financial arrangements comparable thereto; and
5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

OWNERSHIP INTEREST APPRAISED

The property rights being appraised are fee simple. Fee simple is defined as "an absolute fee without limitations to any particular class of heirs or restrictions, but subject to the limitations of eminent domain, escheat, police power and taxation. An inheritable estate."

The above definition is from the Sixth Edition of The Dictionary of Real Estate Appraisal, published by the Appraisal Institute, Chicago.

SCOPE OF THE APPRAISAL

The scope of this appraisal focused upon the collection, confirmation and analysis of data to estimate market value for the subject property. The appraiser made an overview of the land market in the immediate and general neighborhood of the subject property. Public records and the appraiser's private data sources were researched to identify neighborhood trends, land sales, listings, new developments, as appropriate. The appraiser also took into account the market situation affecting the wider area, including the city/county and the region in general.

TAX INFORMATION

The Beaufort County Assessor’s information sheet is shown below. The subject property’s Parcel ID, appraisal breakdown, assessment and limited physical information are shown. The information is presented for reference, but assessor data is not utilized as the basis for property valuation. The tax appraisal value is $1.79 million, but the property is minimally taxed as timberland.

Beaufort County, South Carolina

generated on 6/26/2018 1:55:26 PM EDT

Property ID (PIN)	Alternate ID (AIN)	Parcel Address	Data refreshed as of	Assess Year	Pay Year
R600 029 000 0054 0000	07085094	,	6/23/2018	2016	2017

Current Parcel Information

Owner	CLELAND SITE PREP INC	Property Class Code	AgVac Forest
Owner Address	PO BOX 3822 BLUFFTON SC 29910	Acreage	40.0700
Legal Description	SUBJ TO ROLL BACK TAX LIEN POR OF URSULA K ELKINS PROP DB846 PG2419 PB61 PG114*TOT AC INCL 0.41 AC CEMETARY MGFM:KEY#7085101 5-21-98 SPLIT 6/99 0.40 AC 29/85 ACERAGED ADJUSTED PB61 P114 6/08 2.80 AC 29/55 RESTORED BY DB2656 PG193 10-26-07		

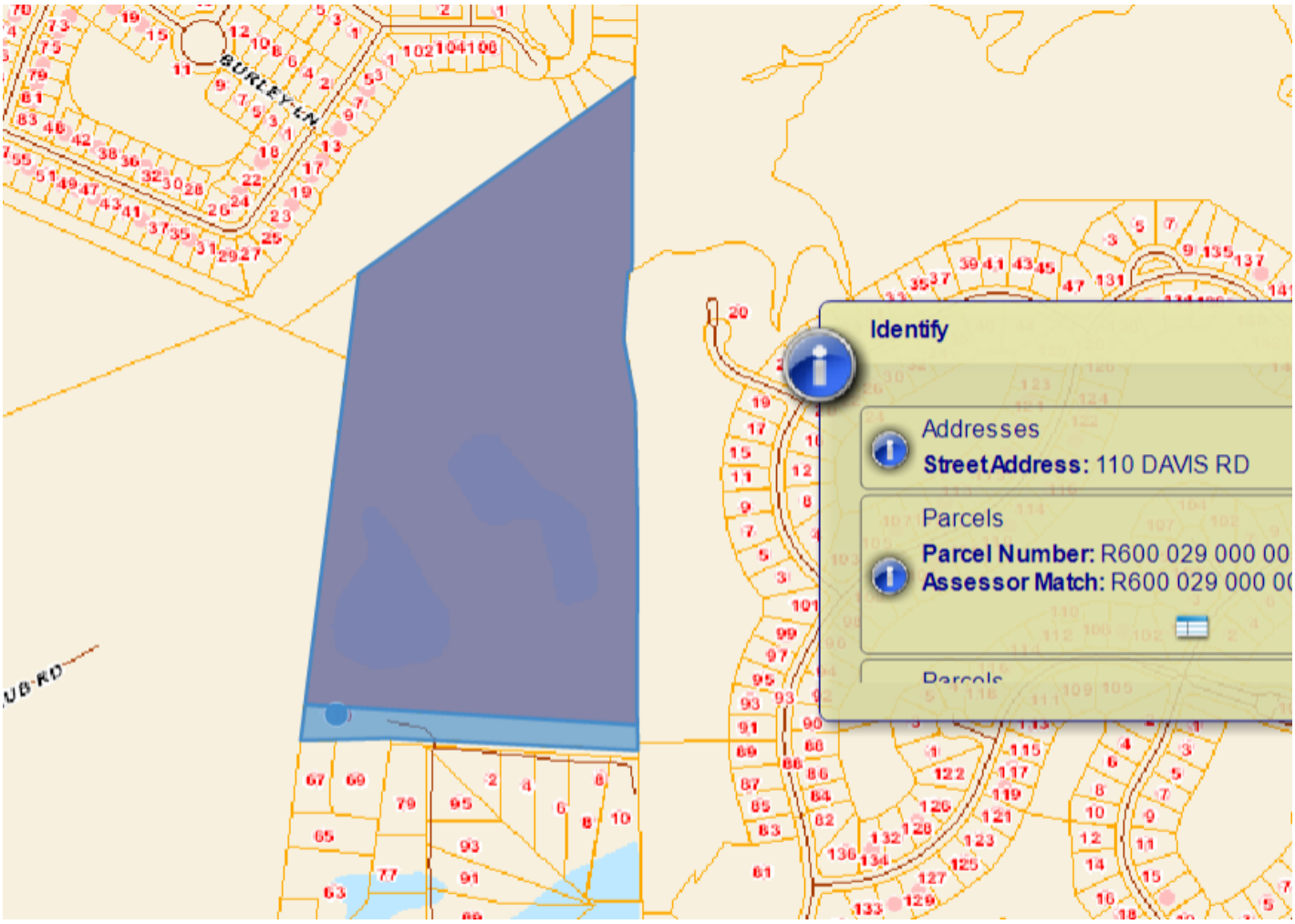
Historic Information

Tax Year	Land	Building	Market	Taxes	Payment
2017	$1,790,100		$1,790,100	$161.59	$161.59
2016	$1,790,100		$1,790,100	$160.32	$160.32
2015	$1,790,100		$1,790,100	$155.44	$155.44
2014	$1,790,100		$1,790,100	$154.35	$154.35
2013	$1,790,100		$1,790,100	$152.30	$152.30
2012	$2,753,973		$2,753,973	$145.72	$145.72
2011	$2,753,973		$2,753,973	$144.98	$931.16
2010	$2,753,973		$2,753,973	$109.30	$109.30
2009	$2,753,973		$2,753,973	$14,362.04	$14,362.04
2008	$1,081,900		$1,081,900	$14,193.88	$14,193.88
2007	$822,700		$822,700	$10,291.54	$10,291.54

Sales Disclosure

Grantor	Book & Page	Date	Deed	Vacant	Sale Price
JLJ HOLDINGS LLC	3046 2186	12/21/2010	Ge		$10
CLELAND AVERY E	2656 193	10/26/2007	Fu		$10
ELKINS URSULA K ST RTE 6	846 2419	3/13/1996	Fu		$225,000
		12/31/1776	Or		$0

Improvements



Assessor's Tax Plat (subject in dark blue)

Appraisal excludes 110 Davis Rd. shown in light blue

NEIGHBORHOOD DESCRIPTION

The subject is located in the Okatie Highway area of greater Bluffton. Since Bluffton Parkway was extended to intersect Okatie Highway (Highway 170) a few years ago, the area has experienced a boom in development. However there are still large tracts of developable land in the area, as several would-be developers of proposed residential developments suffered financial disaster as a result of the recession. Several tracts are still bank-owned, even though the recession ended "officially" in 2008. It will still require a number of years of steady growth to absorb all the land in greater Bluffton.

The town limits of Bluffton now encompass over 50 square miles of land. A map is shown on the next page. The subject is actually in Beaufort County.

The area is anchored residentially by Del Webb's Sun City located to the west of Highway 170, and to the east by residential communities oriented toward Hampton Parkway. Sun City is in effect a booming small town with a population of over 14,000 persons, now extending into neighboring Jasper County on the north. Sun City, an age 55+ community, creates demand for all types of neighborhood services. An important factor is that as the population ages, there evolves an "inevitable" need for elderly or senior housing, special care facilities, and nursing homes. The market has responded, and developers have created several such facilities in the immediate neighborhood of the subject, such as NHC Healthcare.

Town limits of greater Bluffton outlined in red
(subject is still in unincorporated Beaufort County)

A positive neighborhood factor is the new Beaufort County school known as River Ridge Academy, which opened in summer 2015. The school's 50+ acre campus lies just south of the subject site, and would be considered within walking/bicycling distance.

PROPERTY DESCRIPTION

It is appropriate to summarize the subject's salient physical and legal characteristics, as these are pertinent to the valuation, and to the overall utility of the property. The following comments apply to the subject being appraised.

Land Area

The newer survey indicates 40.145 acres as shown on the next page. The north-south dimension measures 1,550 ft. to 2,000 ft. and the east-west dimension ranges from about 1,400 ft. to 1,000 ft. A small portion of 0.41 acre comprises an old historic family cemetery near the southeast corner.

Topography

The land area is partially open and partially wooded. In the open area two sizable borrow pits have been created, and these are now filled with fresh water providing a possible "scenic" amenity. The northernmost area of the tract drops off into the floodplain of the Okatie River, which in turn drains into the Port Royal Sound. The appraiser was reliably informed that approximately 11 acres are considered unbuildable. A 2009 topo survey was available, to which reference is made.

The flood zone map information is shown below

1. THIS PARCEL APPEARS TO LIE IN FLOOD ZONE C & AE (MINIMUM ELEVATION 14'), FIRM PANEL 0055–D COMMUNITY 450025.

2. CONTOURS ARE IN ONE FOOT INTERVALS. TREES SIZES SHOWN ARE IN INCHES OF DIAMETER.

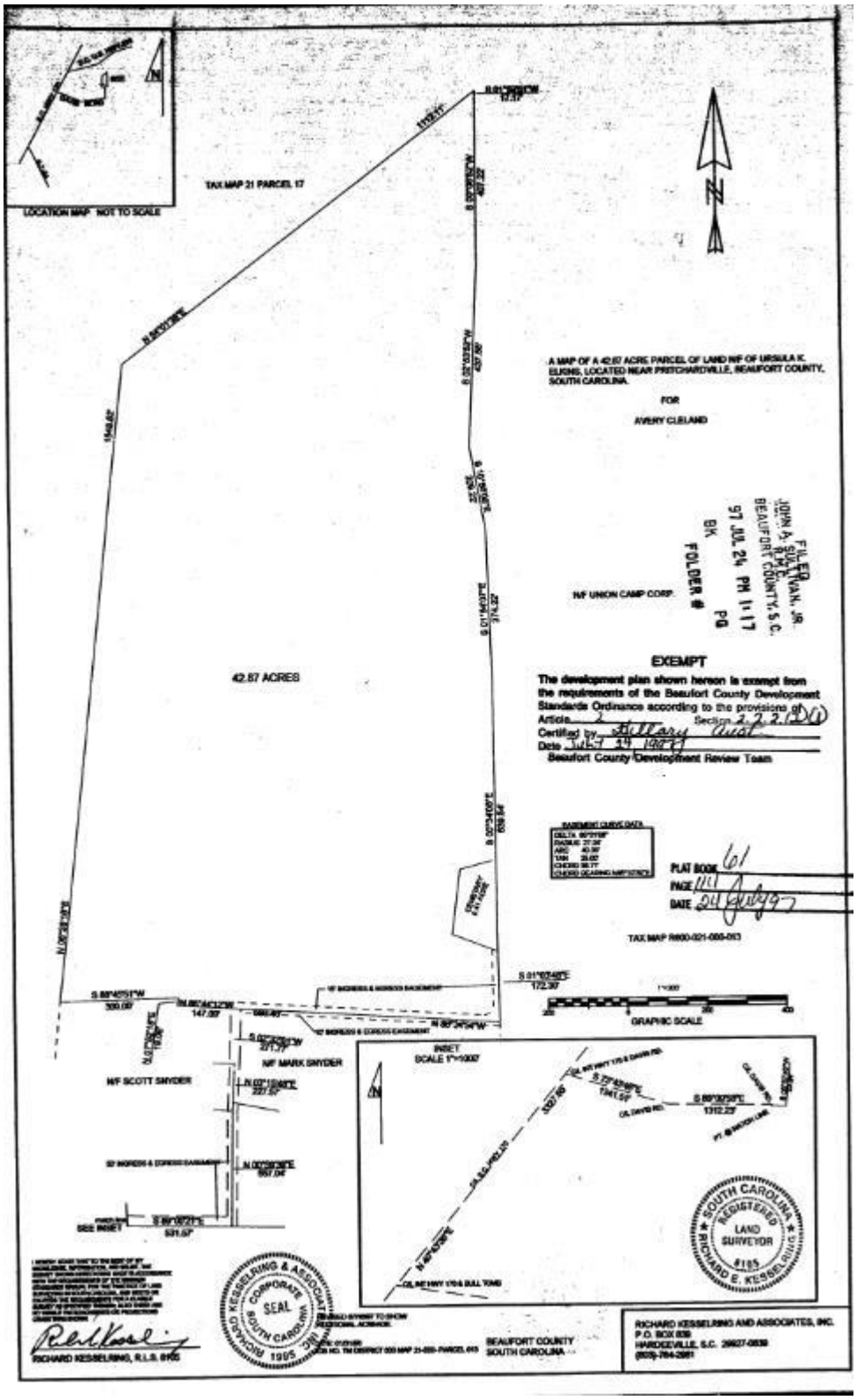
3. ELEVATIONS ARE BASED ON NGVD 29 DATUM.

REFERENCE

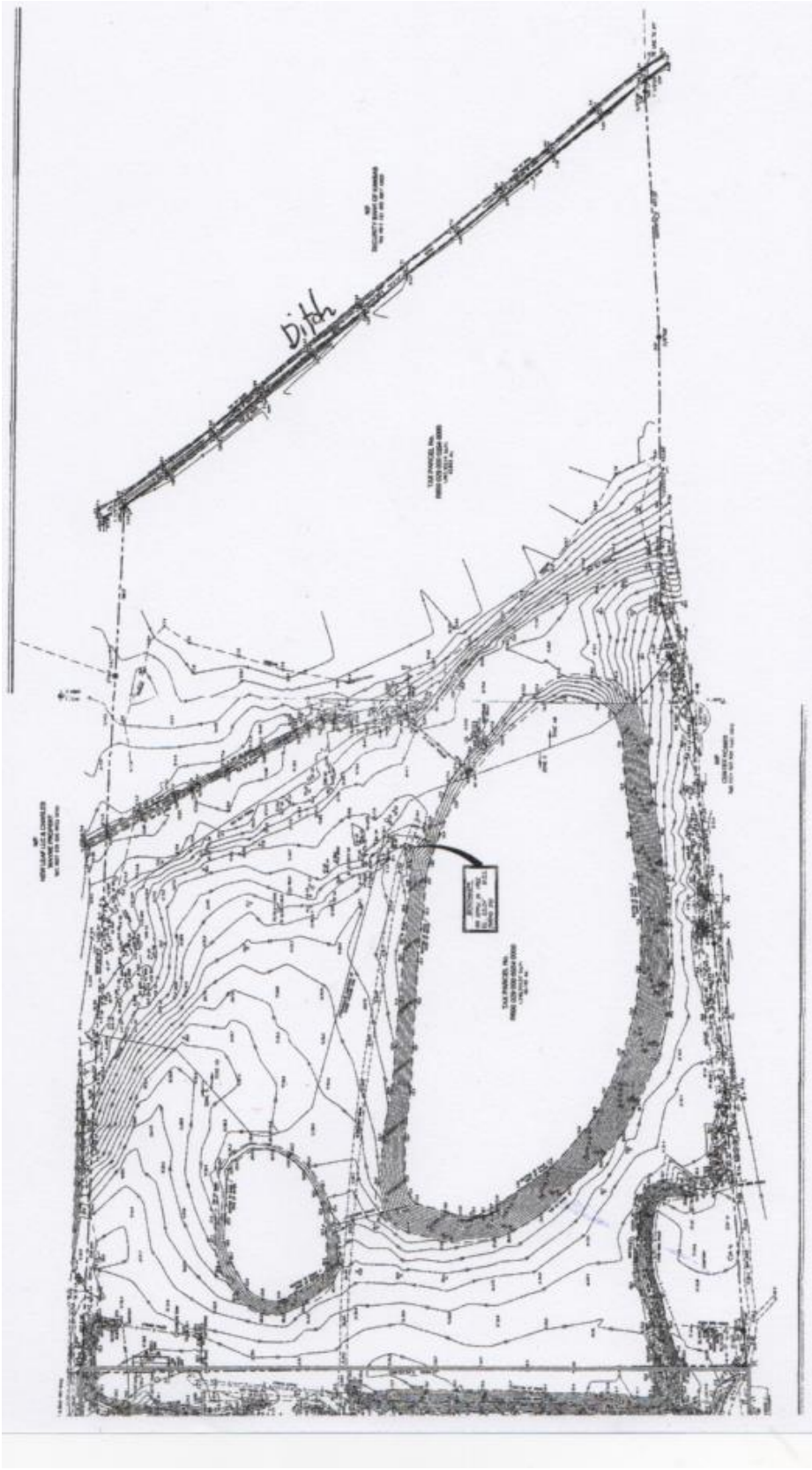
1. A MAP OF A 2.80 ACRE PARCEL OF LAND N/F OF URSULA K. ELKINS, LOCATED NEAR PRITCHARDVILLE, SC. DATE: 06–03–96 BY: RICHARD KESSELRING, S.C.R.L.S. No. 8105

2. A MAP OF A 42.87 ACRE PARCEL OF LAND N/F OF URSULA K. ELKINS, LOCATED NEAR PRITCHARDVILLE, SC. DATE: 01–31–96, LAST REV.: 07–16–97 BY: RICHARD KESSELRING, S.C.R.L.S. No. 8105

Topography/Drainage The site is partially wooded with a variety of second-growth pine, oak, palmetto, and scrub vegetation typical of the lowcountry. A few "specimen" trees were observed. Topography is slightly rolling but the north portion is low-lying. There are no observed areas of problem drainage on the high ground. Soil conditions are judged favorable to support future improvements.



Old Plat of subject, recorded at 61/114, called 42.87 acres
(But a 2.8 acre parcel at the south end is excluded)



2009 Topo Survey (Reduced) call 40.145 acres

Zoning

The property is zoned Beaufort County T2R rural. The property is classified as Ag-Vac Forest land by the Assessor, and is taxed minimally.

Municipal Services The site is potentially served by public utilities (electricity) by Palmetto Electric. Fire and police protection are provided by the City of Bluffton or Beaufort County. Water and sewer service are or will be available from Beaufort-Jasper Water and Sewer Authority (BJWSA).

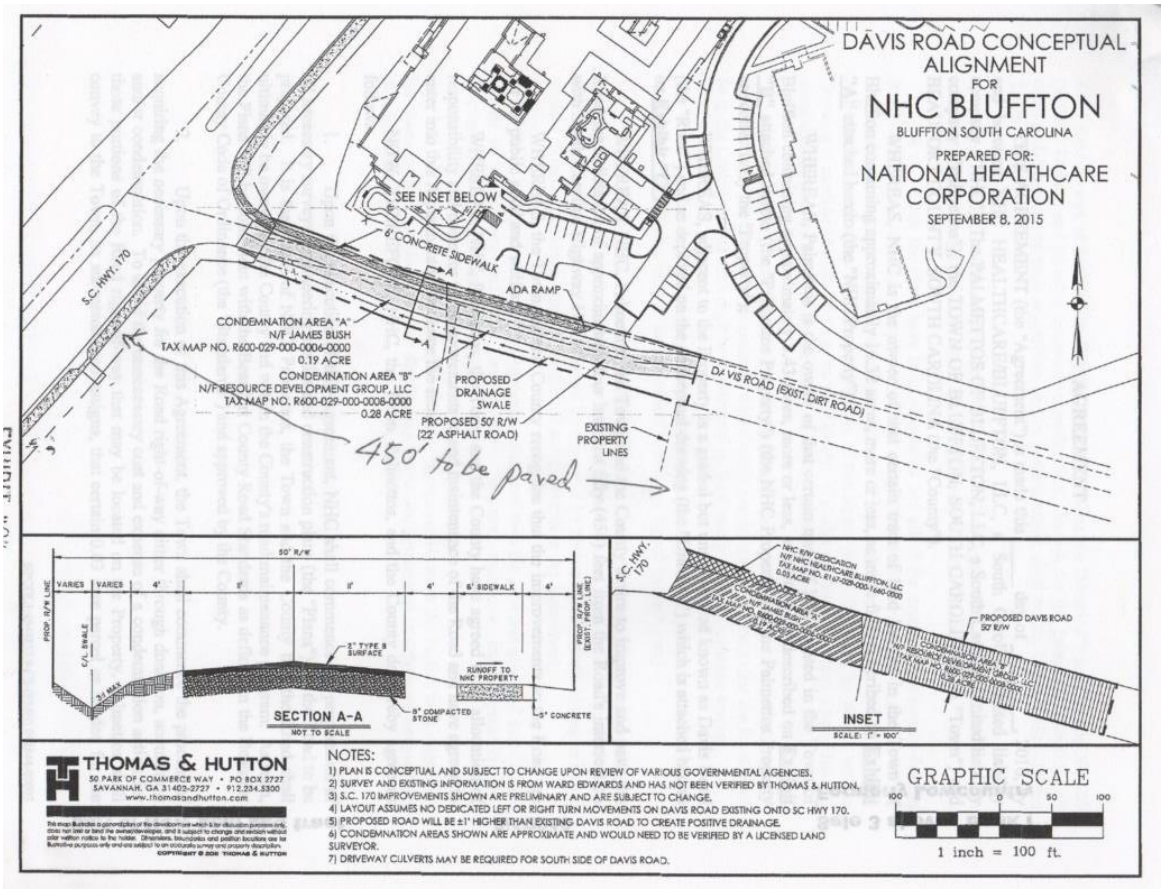
Flood Considerations It it is reliably reported that the northernmost 11 acres is in the floodplain of the Okatie River headwaters. The property drains toward the low area, to the north. The Okatie River drains into the Port Royal Sound.

Wetlands

There are at least two sizable nondesignated freshwater wetland areas (freshwater ponds) shown on the survey, and observed by the appraiser. These were former borrow pits. The ponds could be considered an esthetic amenity, as they attract wildlife.

Access

The main parcel can be accessed indirectly from Highway 170, via Davis Road, an unpaved county road; the entrance to the property is 0.75 miles from the highway. Fortunately, left turns are permitted into Davis Road from southbound Highway 170. An agreement has been executed between The Town of Bluffton, Beaufort County, and the adjoining landowners NHC Healthcare and The Palmettos of Bluffton, to pave and widen approximately 450 of the roadway going east from the highway intersection (this has not yet been done). This is seen as a positive factor which would marginally improve access to the subject.



Easements

There are obviously easements for the purposes of installing and maintaining electric service. The electric service, on overhead lines, serves nearby subdivisions, and also various properties which adjoin the subject. There is a 100' wide easement for gas lines and powerlines running along the entire eastern boundary of the subject site. There are also recorded access easements as shown on the survey.

Zoning Zoning of the site is Beaufort County T2R (Rural) which permits only lower density residential uses. This information was obtained from the Zoning Department. As a practical matter, it is reported that the County is encouraging "infill" development on interior parcels such as the subject; and it is possible that they would approve a developed density of 3 lots per acre, similar to existing subdivisions in the immediate neighborhood.

General Remarks

The subject appears to be an average parcel of potential development ground in a good and growing location. The proximity of Highway 170 and Bluffton Parkway, as well as the new school, are considered as positives, in that these enhance the subject's development potential. The location will inevitably be annexed into Bluffton in the future. With the possibility that the County would permit as many as 90 residential lots, a wide variety of options for future development would likely be possible. The property is valued as undeveloped land, but with utility services available.

HIGHEST AND BEST USE

A fundamental premise on which value estimates are based is that market value reflects the most profitable use to which a property is likely to be put. Therefore, it is good appraisal practice to value and analyze a site in terms of its highest and best use. The best use of land may be defined as "that use which will tend to produce the highest net return over a given period of time, or (alternatively) that use which will produce the highest present value". It is generally the analyst's goal to analyze which program of future utilization will develop the highest net return to the land over a period of time.

The generally accepted definition of highest and best use, as given by The Dictionary of Real Estate Appraisal, Fifth Edition (Chicago: The Appraisal Institute), is as follows:

"The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible and that results in the highest value."

In analyzing the highest and best use of the site, it is necessary to consider four factors. These include:

1. Legality of Use: What uses are permissible considering zoning, deed restrictions, etc. on the site in question?
2. Physical adaptability: To what uses can the site physically be put? A parcel's size, shape and topography affect the uses to

which it can be put. Also, adequacy of public utilities may impose a restriction on site utilization.

3. Feasibility of use: Which of the permissible and physically possible uses will produce a positive net return to the owner? That is, sufficient income to meet operating expenses and debt service, plus yield a reasonable return on equity.

4. Highest and best use: Among the feasible uses, which will likely represent the most profitable use (i.e., the highest net return or highest present value)?

Legality of use is not a limiting factor in this analysis. The property is zoned for low density residential use, as discussed above. Conceivably a higher residential density could be approved. A number of alternate uses would be permitted, within the zoning regulations. Any use which would be feasible would likely be a permissible use, with the exception of identified non-permitted uses.

Neither is physical adaptability a limiting factor. The site has adequate ingress and egress, and the size and shape of the site are physically adequate for numerous alternatives. The public utilities will be adequate to support any proposed improvements. BJWSA and Palmetto Electric potentially serve the site. The floodplain areas are not considered developable. Therefore, there are certain unique physical factors which are considered in the valuation.

Feasibility of use was considered. The subject property is being valued with its as-is configuration, topography and zoning, presuming that the neighborhood will be subject to continuing orderly but gradual development.

The highest and best use of this site, under normal circumstances, would emerge when a proposed specific development plan is approved and implemented. However, from the standpoint of the Beaufort County Open Land Trust, the highest use would be to acquire the property and thereby link the Okatie Regional Preserve tract and other property which has been acquired by the County, forming a rather massive regional public park, and preventing development of over 240 contiguous acres including the school campus. This would also limit undesirable runoff into the Okatie River.

VALUATION METHODOLOGY

In estimating the value of real property, consideration is usually given to the three traditionally accepted methods of evaluating real estate. In this case involving vacant land, however, only the market approach was judged applicable.

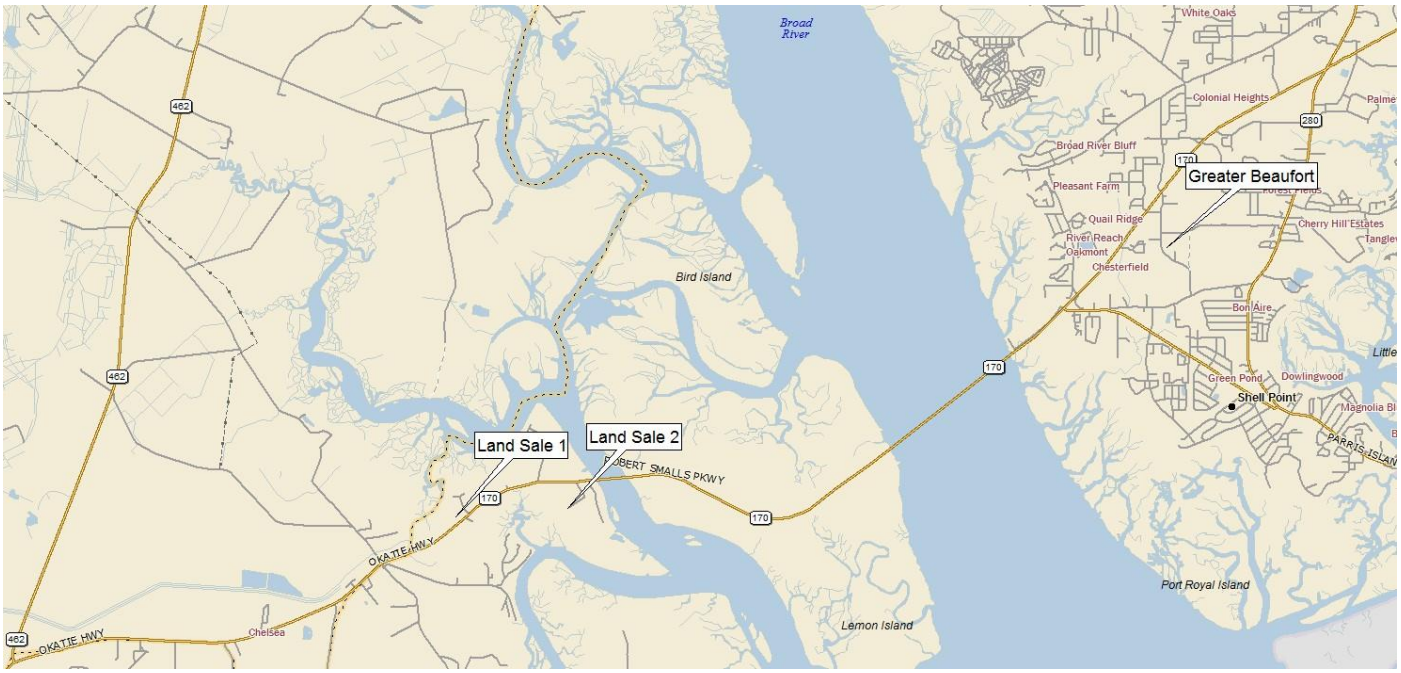
The appraiser made a comprehensive search of sales records within the recent past, focusing on properties having similar use to the subject. Some sales were rejected due to noncomparability, or other factors which caused the sale to sell for a price outside of the representative range for this type of property. The following sales of properties deemed comparable to the subject have been identified and presented for analysis. The sales are presented in spreadsheet format, and the deeds are retained in the Appraiser's files.

Land Sales pertinent to the Valuation of the Avery Cleland Tract

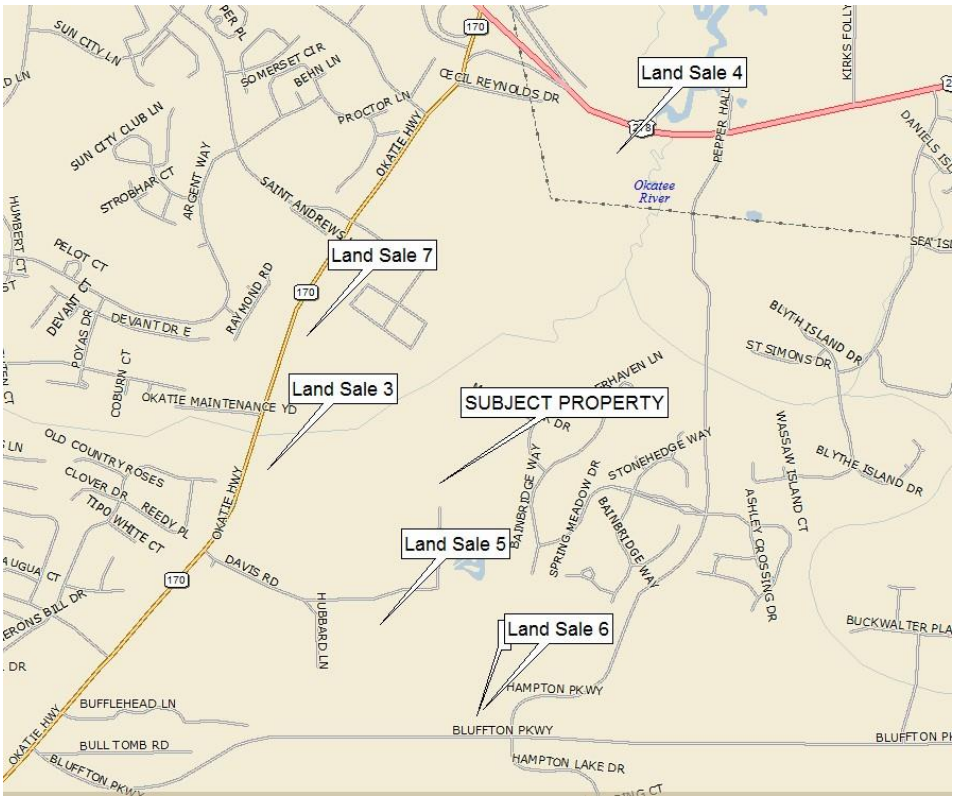
Location	Deed Ref.	Sold Price	Acres	Price/acre	Remarks
1. Heffalump Lane off Okatie Highway	3537/2869	$4,800,000 12/15/2016	104.2	$46,065	Conservation purchase by County, County paid full fair price, Olsen tract
2. Okatie Highway west of Chechessee Cr bridge	3534/98	$3,300,000 12/1/2016	95.833	$34,435	Conservation purchase by County, seller gave favorable price
3. Okatie Highway Jeter property	3494/1480	$350,000 6/29/2016	25.081	$13,955	Price verified with purchaser Beaufort County - preservation purchase
4. Okatie Highway adjoining subject	3466/1715	$2,000,000 3/4/2016	86.24	$23,191	Kent Estates Tract - defunct development site, recorded PUD, purchased by County
5. River Ridge Drive R.R. Academy school	2767/2254	$2,877,360 9/24/2008	52.913	$54,379	School site purch by Beau. County Education district, dated sale. Adjoins subject
6. N/side Bluffton Parkway just west of Hampton Pkwy	3421/2938	$535,000 8/13/2015	16.83	$31,788	Two tracts, forming good rectangular parcel future dev't., adjoins River Ridge Academy
7. Old Salem Road Beaufort, on Battery Creek	N/A	$5,100,000 pending	131	$38,931	Reported pending sale of nice wooded waterfront land for possible development

Discussion

The appraiser is personally familiar with most of the sold properties above, and believes the information to be reliable. Prices were verified insofar as possible. In each situation, the appraiser attempted to analyze whether an informed buyer would pay the same, more, or less than the subject. Any change in value with respect to time was taken into consideration, as deemed appropriate for this specific neighborhood. Relative supply vs. demand for available developable land was also taken into account.



Land Sales 1 and 2



Land Sales 3 through 7

The sales indicate a range of values on a per acre basis from about $14K per acre to $54K per acre, and were acquired in differing circumstances, as indicated. Sale 1 was a conservation purchase by the County, of a prime waterfront parcel on the Okatie River. There had been much interest by developers. The County already owned the adjacent 100 acre parcel. They paid a full fair price based on more than one appraisal. Sale 2 was another conservation purchase, in which the ownership agreed on a bargain price to the County; this pivotal purchase removed the possibility of over 100 lots being developed in this area. The Port Royal Sound Foundation was a direct beneficiary of this purchase.

Sale No. 3, the Jeter property, was purchased for about half of its appraised value; thus this bargain sale is given little emphasis. One of the recent sales actually adjoining the subject, Sale 4, was the purchase of a defunct PUD by the County at a reduced price per acre, especially considering its Highway 170 frontage location.

The remaining 3 sales are in the $32K to $54K per acre range; these are all judged superior to the subject for the reasons mentioned.

Jack Maloney, a prominent Realtor who is consulting with the property owner, reports that developers would be interested in the subject (despite its interior location) if priced at $30K per developable acre. The appraiser concurs with this valuation, concluding that the acreage parameter can be applied to the estimated 29 acres of high ground. It is judged that the low ground acreage has a contributory value of $5,000 per acre due to its esthetic contribution to the tract.

The estimated value parameters take into account the subject's secluded location on a dirt road some ¾ mile off the highway.

After due examination of the current and historic market sales, the appraiser estimates that the subject tract can fairly be valued as outlined below. The following conclusion was reached.

29 usable acres	times $30,000 per acre	$870,000
11 acres low ground	times $5,000 per acre	$55,000
Total		$925,000
Composite per acre		$23,125

FINAL ESTIMATE OF VALUE

As of July 6, 2018: **$925,000**

ASSUMPTIONS AND LIMITING CONDITIONS

1. This appraisal is made under the assumption that title to the property is merchantable. Easements, restrictions, encroachments or other limitations upon value not mentioned in the report have not been considered.

2. Information regarding sales of comparable properties was obtained from reliable sources and is believed by the appraiser to be accurate. Reliability of such information cannot, however, be guaranteed.

3. Plats and other drawings, if included, are to assist the reader in visualizing the property, and while they are believed to be accurate, their correctness cannot be guaranteed.

4. Information concerning taxes and other financial data was supplied to the appraiser by others. It is believed to be reliable and accurate but cannot be guaranteed by the appraiser.

5. Disclosure of the contents of this appraisal report is governed by the By-Laws and Regulations of the Appraisal Institute.

6. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser or the firm with which he is connected, or any reference to the Appraisal Institute or to the MAI designation) shall be disseminated to the public through advertising media, public relations media, news media, sales media or any other public means of communication without the prior written consent and approval of the undersigned.

7. Inherent in the approaches to value is the assumption that the property will enjoy prudent management, with appropriate financial strength and skills, and that information provided to the appraiser by the owners concerning financial projections are reasonably accurate. The appraiser assumes that existing tax legislation will remain the same as it is on the date of the appraisal unless changes are specifically discussed in the body of the report.

8. The value estimate includes land plus infrastructure in place.

9. The appraisal assumes, for purposes of valuation, that the land is held in fee simple ownership, unencumbered. No leases or bond-financing arrangements were considered in value.

10. The appraiser is not required to testify or appear in court on matters discussed herein, unless subsequent agreement is made for such services.

11. The Americans with Disabilities Act ("ADA") became effective January 26, 1992. We have not made a specific compliance survey and analysis of this property to determine whether or not it is in conformity with the various detailed requirements of the ADA. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect upon the value of the property. Since we have no direct evidence relating to this issue, we did not consider possible noncompliance with the requirements of ADA in estimating the value of the property.

CERTIFICATION OF APPRAISER

I certify that, to the best of my knowledge and belief:

1. That statements of fact contained in this report are true and correct.
2. The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial and unbiased professional analyses, opinions and conclusions.
3. I have no present or prospective interest in the property that is the subject of this report, and no personal interest with respect to the parties involved.
4. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
5. My engagement in this assignment was not contingent upon developing or reporting predetermined results.
6. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
7. The reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Appraisal Ethics & Standards of Professional Practice of the Appraisal Institute, which include the Uniform Standards of Professional Practice.
8. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
9. I have made a personal inspection of the property that is the subject of this report.
10. No one provided significant real property appraisal assistance to the person signing this report.
11. As of the date of this report, I have completed the continuing education program of the Appraisal Institute.
12. My license status is active in the State in which the subject property is located.

George R. Owen, MAI

Date: July 10, 2016

QUALIFICATIONS OF GEORGE R. OWEN, MAI
REAL ESTATE APPRAISER AND CONSULTANT
LICENSED/CERTIFIED GENERAL APPRAISER

Experience

Principal, George R. Owen, Certified General Appraiser, 7 Claire's Point Road, Beaufort, SC 29907. Practicing in Beaufort since 2004. Previously 32 years experience in Memphis, Tennessee. Assignments have included appraisals for mortgage loan purposes, court testimony, condemnation, and appraisals for a large variety of institutional, individual and corporate clients. My practice excludes single family residential. I am currently licensed in South Carolina (CG #5064).

Types of properties appraised include:

- Shopping Centers
- Commercial Fast-food Operations
- Service Stations/Convenience Stores
- Warehouses/Industrials
- Service/Showroom
- Office Buildings
- Large & Small Apartment Projects
- Downtown Rehab Projects
- Truck Terminals
- Carwashes
- Nursing Homes/Congregate Care
- Subsidized Housing
- Vacant Land
- Subdivisions
- Heavy and Light Industrials
- Savings & Loan Institutions
- Bank Properties
- Mobile Home Parks
- Condemnations, partial takings, etc.
- Church Properties

Appraisal clients served include:

Corporate

- Anheuser-Busch
- AutoZone, Inc.
- Bemis Corporation
- Burger King
- Care Inns, Inc
- Cargill, Inc
- Clopay Corporation
- Digital Equipment Company
- Exxon Corporation
- Graceland/Elvis Presley Enterprises
- Holiday Inns
- JiffyLube Corporation
- Krispy Kreme Division,
- Beatrice Foods Corporation
- Kemmons Wilson, Inc
- Loeb Properties
- McDonald's Corporation
- Railroad
- Ralston-Purina Corporation
- Sanyo Corporation
- SPL Corporation
- Sprint Petroleum
- Taco Bell
- Hargray Telephone Company
- Graybar Electric

Banks

- Bank of America
- South Carolina Bank & Trust
- Lowcountry National Bank
- Wachovia Bank
- First Commercial Bank
- First Tennessee Bank
- Financial Federal Savings Bank
- Bank of America (Atlanta)
- Regionsbank
- National Bank of Commerce
- NationsBank
- Nat. City Bank, St. Louis, MO
- Woodlands Bank
- Palmetto Federal Bank
- Ameris Bank
- Sunburst Bank
- SunTrust Bank (Nashville)
- Third National Bank (Nashville)
- Islands Community Bank
- Union Planters National Bank
- Huntington Bank, Cleveland, OH
- BankOne (New Orleans)
- BB&T
- Horry County (SC) State Bank
- Harbor Nat'l Bank (Charleston, SC)
- Colony Bank (Savannah, GA)
- Surrey Bank (North Carolina)

Developers/Entrepreneurs
Alco Properties
Aldrich Investment Company
Ampco, Inc.
Belz Enterprises
Boyle Investment Company
Culp & Assoc., Knoxville, TN
Fogelman Companies
H. Lance Forsdick Properties
Henry Turley Company
Jetero Properties
Joyner, Heard & Jones
Kemmons Wilson Companies
Loeb Enterprises
McCullar Realty
McNeil Investment Co
Patterson Construction
Patton & Taylor
Peck Industries
Syncorp
Tesco Development
Trammell Crow Companies
Trezevant Properties
Gibson Builders
303 Associates
Trask Family

Institutional
West TN Business College
Rhodes College
Grace - St. Luke's Episcopal Church
The Trust for Public Land
Beaufort Open Land Trust

Law Firms
Burch, Porter & Johnson
Hardison, McCarroll, Cook & Cannon
Heiskell, Donelson, Bearman, Adams
Williams & Kirsch
Lawler, Humphreys, Dunlap & Wellford
Stokes, Kimbrough, Grusin & Kiser
Blanchard Tual, Attorney
Waring Cox Attorneys
Harvey & Battey, Attorneys
Julian S. Levin, Attorney
Fred Kuhn, Attorney

Governmental
City of Beaufort, SC
City of Germantown, TN
City of Memphis/ R.O.W .Dept
Federal Deposit Ins. Corp .
Federal Sav. & Loan Ins. Corp
Resolution Trust Corporation
Memphis Light, Gas & Water
Shelby County R.O.W . Dept
State of TN R.O.W . Dept
U. S. Postal Service
Veterans Administration
Tennessee Valley Authority
U.S. Department of the Navy
U.S. Federal Receiver
Beaufort County

Loan Underwriting
Connecticut General Life Ins
Federal National Mtg. Association
F.M. Crump & Co.
Holliday, Fenoglio & Tyler
The Latham Company

Lexington Properties
Mortgage Guaranty Ins. Corp
Ward & Company
Washington National Ins.
Fogelman-Beaty Mortgage Co.
The Money Store

Insurance Companies
Capital Holding Company
Connecticut General Life Insurance
Delta Life & Annuity
Mutual of New York - Real Estate
Ohio National Life Insurance Co
Jefferson Pilot Life Insurance Co
Southern Farm Bureau Insurance
Washington National Insurance
Safeco Life Insurance Company

Protective Life Corporation
Pacific Mutual Life Insurance Co.
Farm Bureau Life Insurance Co.

Organizations
MAI, Member of Appraisal Institute *Currently Certified (Certif. No. 6189)
Past President, Memphis Chapter #51, Appraisal Institute
Current member of South Carolina Chapter of Appraisal Institute

Licenses
SC: Certified General Appraiser (No. 5064) Certified through 7/31/2020

Education
Master of Business Administration, 1971, University of Virginia
Master of Science, 1966, Rice University
Bachelor of Science, 1964, Vanderbilt University
Recertification Program of Appraisal Institute – Recertified through 12/31/2022
Lifetime commitment to continuing education at local universities

Additional Assignments (partial list)
Residence Inn, Spartanburg, SC; Ramada Inn, Rock Hill, SC
Holiday Inns, Grenada, MS; Frankfort, KY; Franklin, TN
Lagniappe Inns, Cincinnati, O H; Columbus, OH; Nashville, TN
La Quinta Inns, Nashville, TN; Lexington, KY; other locations in GA, TX, and OK
Potential development property, Back Bay, Biloxi, MS
Automobile Dealerships, Vicksburg, MS; Jackson, TN
Condominium feasibility study, Indianapolis, IN
Limited condominium feasibility study, Birmingham, AL
Apartment Project, Birmingham, AL
Old English Inn; W est Tennessee Business College; Jackson, TN
Industrial Plants, various towns in west Tennessee, north Mississippi, Arkansas, South Carolina
Louisville Freezer/American Cold Storage, Louisville, KY
Haygood Truck & Trailer Parts, Chattanooga TN & Birmingham, AL

Contact Information

Cell 843 271 2481
E-mail: georgeowen84@gmail.com

Last Updated 6/15/2018

EXHIBITS - SUBJECT PHOTOGRAPHS

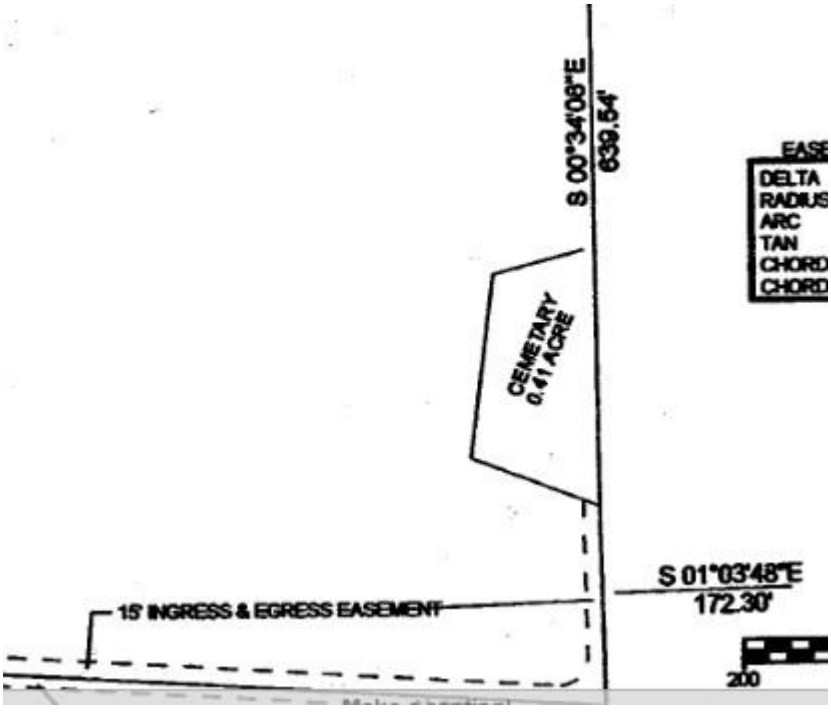
Access gate at dead-end of Davis Road

View of open area with one of two borrow pits

Interior view, typical wooded acreage

View looking north along powerline/gas line easement which borders property on its east side

Old cemetery, called 0.41 acre on survey



Note legal access easement

Smart. Pitts 96-201

TITLE TO REAL ESTATE

STATE OF SOUTH CAROLINA
DOCUMENTARY STAMP TAX 586.30

Form 11

2419

12352

State of South Carolina,

County of Beaufort

PLEASE CONTACT THE COUNTY ASSESSORS OFFICE FOR FURTHER INFORMATION.

Know All Men by These Presents, That Ursula K. Elkins

(hereinafter whether singular or plural the "Grantor")

BEAUFORT COUNTY, SC
REVENUE STAMPS COLLECTED
STATE 586.30 COUNTY 248.05
Real Estate Transfer Fee Collected
$ 563.75

in the State aforesaid, for and in consideration of the sum of Two Hundred Twenty-Five Thousand Five Hundred and no/100 ($225,500.00) Dollars to the Grantor paid by Avery E. Cleland P.O. Box 21348, Hilton Head Island, SC 29924 (hereinafter whether singular or plural the "Grantee") has granted, bargained, sold and released, and by these presents does grant, bargain, sell and release unto the said Avery E. Cleland, His Heirs and Assigns, Forever, the following described property, to-wit:

SEE EXHIBIT A ATTACHED

Map	Parcel	Block
29	54	

All that certain piece parcel or tract of land located in Beaufort County, South Carolina containing 40.07 acres more or less as reflected on a plat thereof prepared by Richard Kesselring, RLS and entitled "A Map of 40.07 Acres Cut From Lands N/F Ursula K. Elkins, Located Near Pritchardville, Beaufort County, South Carolina for Avery Cleland". According to said plat said property is bounded in part by the lands now or formerly of *Union Camp Corp.* and has the following metes and bounds, to wit: To find the point of beginning commence at the intersection at the center line of Bull Tomb Road and SC Highway 170; thence N°40 45'42"E for a distance of 3,327.65 feet to the intersection of the center line of Davis Road; thence S73°43'48"E for a distance of 1341.51'; thence S89°09'58"E for a distance of 1,312.23'; thence S89° 00'21"E for a distance of 531.57'; thence N00°59'39"E for a distance of 557.04'; thence N03°15'48"E for a distance of 227.57'; thence N02°32'00"E for a distance of 383.70'; thence N86°34'54"W for a distance of 436.62' to the point of beginning; thence N06°28'16"E for a distance of 1430.71'; thence N54°01'38"E for a distance of 1112.11'; thence S01° 59'52"W for a distance of 17.17'; thence S00°08'52" W for a distance of 407.22'; thence S02°53'52"W for a distance of 437.58'; thence S10°56'08"E for a distance of 209.22'; thence S01°54'06"E for a distance of 374.22'; thence S00°34'08"E for a distance of 639.54'; thence S01 41'12"E for a distance of 60.10'; thence N86°34'54"W for a distance of 1099.69' to the point of beginning.

Together with a 50' easement for ingress and egress from the subject property through the lands of grantor as follows, to wit: To find the point of commencement of the easement, begin at the point of beginning of the property described above; thence S86°34'54"E for a distance of 436.62' to the point of commencement; thence the 50' eastward of the following courses and distances: S02°32'00"W for a distance of 383.70'; thence S03°15'48"W for a distance of 227.57'; thence S00°59'39"W for a distance of 557.04'; thence the 50' immediately to the north of the following course and distance; N89°00'21"W for a distance of 531.57'; thence along Davis Road to its intersection with SC Highway 170.

Reserving a 15' foot easement for ingress and egress along the southern boundary of said property being conveyed and shown on the aforementioned plat.

This being a portion of that property conveyed to Grantor by that certain General Warranty Deed from Harper & Bowers, Inc. dated June 7, 1967 and recorded in the office of the Register of

Legal Description

Appraisal Engagement Memo

From: Barbara G. Holmes
Sent: Wednesday, June 27, 2018 6:14 PM
To: 'George Owen'
Subject: RE: Update on appraisal for Davis Road property, Bluffton

Thank you!

Barbara

From: George Owen <georgeowen84@gmail.com>
Sent: Wednesday, June 27, 2018 7:23 AM
To: Barbara G. Holmes <barbara@openlandtrust.com>
Subject: Re: Update on appraisal for Davis Road property, Bluffton

Job logged in. Will start next week

Sent from my iPhone

On Jun 26, 2018, at 5:35 PM, Barbara G. Holmes <barbara@openlandtrust.com> wrote:

> Hi George,
>
> I have been in negotiations on the purchase of Beaufort County parcel R600 029 000 0054 0000 owned by Cleland Site Prep on behalf of the Rural & Critical Land Preservation Program. You completed an appraisal of the property in September 2016 but a contract was not finalized at that time. Can you update the appraisal on the parcel?
>
> The owner's agent, Jack Maloney, has offered to assist in providing some recent comparable sales data in the area. His phone number is (843) 384-7752.
>
> The only parcel that the owner is offering for sale is the 40.07-acre R600 029 000 0054 0000 parcel.
>
> I understand you can begin work on this update later next week. Thank you!
>
> **Barbara G. Holmes**
> Director of Land Protection
> Beaufort County Open Land Trust
> Mailing Address: P.O. Box 75
> Office Address: 124 Lady's Island Drive
> Beaufort, SC 29901
> Office: (843) 521-2175
> Cell: (843) 367-3780
> Fax: (843) 521-1946
> barbara@openlandtrust.com

Beaufort County
Rural & Critical
LAND
PRESERVATION
PROGRAM

July 16, 2018

Cleland Site Prep, Inc. and
JLJ Holding, LLC
P. O. Box 3822
Bluffton, SC 29901

c/o Mr. Jack Maloney

Re: Davis Road Tract
Beaufort County PID#s R600 029 000 0054 0000

Dear Mrs. Niemiec,

We have received an updated appraisal on the Davis Road tract that I have been negotiating to purchase on behalf of the Beaufort County Rural & Critical Land Preservation Program. The Natural Resources Committee of Beaufort County Council required a current survey before they could consider approval of the project.

The updated appraisal by George Owen states that the current fair market value of the property is $925,000, which is $75,000 lower than the value shown in our 2016 appraisal. Accordingly, I need to lower my purchase offer to $785,000. After discussing the improvements/infrastructure that would be needed to make the property accessible for public use, I am also lowering my request for a cash donation back to the program to be used on the property to $25,000. This offer is contingent upon the approval of Beaufort County Council and will expire on August 7, 2018.

With every property considered for purchase by the RCLPP, we try to balance the conservation value of the property with available funding to protect properties in the most financially equitable way. Funds available for Rural & Critical Land purchases are running relatively low and the RCLPP Board looks carefully at every tract proposed for purchase to ensure it will add value to the program at a reasonable price.

If the purchase price is agreeable, the next step will be to bring the terms forward to the Natural Resources Committee and County Council. All consideration of this project will occur in Executive Session (in other words, discussion will not be open to the public). If the purchase is approved, the County will complete due diligence including title investigation prior to closing.

P. O. Box 75
Beaufort, SC 29901
O: (843) 521-2175 F: (843) 521-1946

OPEN LAND TRUST
Beaufort County, SC

Beaufort County
Rural & Critical
LAND
PRESERVATION
PROGRAM

Thank you for considering this offer and please do not hesitate to contact me with any questions you may have at barbara@openlandtrust.com or (843) 367-3780.

Most sincerely yours,

Barbara G. Holmes

Barbara G. Holmes
Director of Land Protection

P. O. Box 75
Beaufort, SC 29901
O: (843) 521-2175 F: (843) 521-1946

OPEN LAND TRUST
Beaufort County, SC

barbara@openlandtrust.com

From: Jack Maloney <jmaloney@mskcommercial.com>
Sent: Saturday, August 11, 2018 11:53 AM
To: barbara@openlandtrust.com
Subject: RE: Davis Road Tract

Thanks for update.

Thank You,

Jack Maloney

MSK
Commercial Services

P.O. Box 24038
Hilton Head Island, SC 29925
1000 William Hilton Parkway
Suite F14 (29928)
Office Direct: (843) 681-9681
Fax: (843) 341-6660
Mobile: (843) 384-7752
E-mail: jmaloney@mskcommercial.com

From: barbara@openlandtrust.com [mailto:barbara@openlandtrust.com]
Sent: Friday, August 10, 2018 1:01 PM
To: Jack Maloney; LAUREN NIEMIEC
Subject: Davis Road Tract

Good afternoon Jack and Lauren,

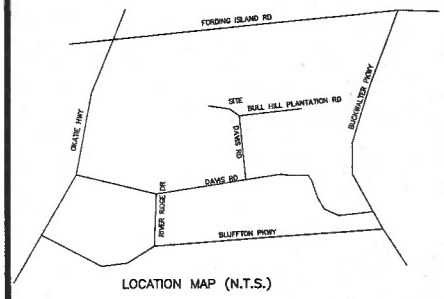
My deepest apologies fCircumstances out of my control!or not being available these last 3 weeks.

Lauren, we are so pleased that you have accepted the offer to purchase the Davis Road Tract. The next step will be that the project will be presented at County natural resources committee meeting on August 20 in executive session. Natural resources committee approves the project , which I expect it to, then it will be presented to me for county council on August 27 in executive session.

Once we have County Council approval, our closing attorney will contact your attorney. Our closing attorney is Tab Bendle from Howell Gibson and Hughes. Due diligence will be paid by County.So just a few more weeks, then we can move toward closing! Thank you so much and let me know if you have any questions.

Barbara G. Holmes
Director of Land Protection
Beaufort County Open Land Trust
P.O. Box 75
Beaufort, SC 29901
Office: (843) 521-2175
Cell: (843) 367-3780

barbara@openlandtrust.com



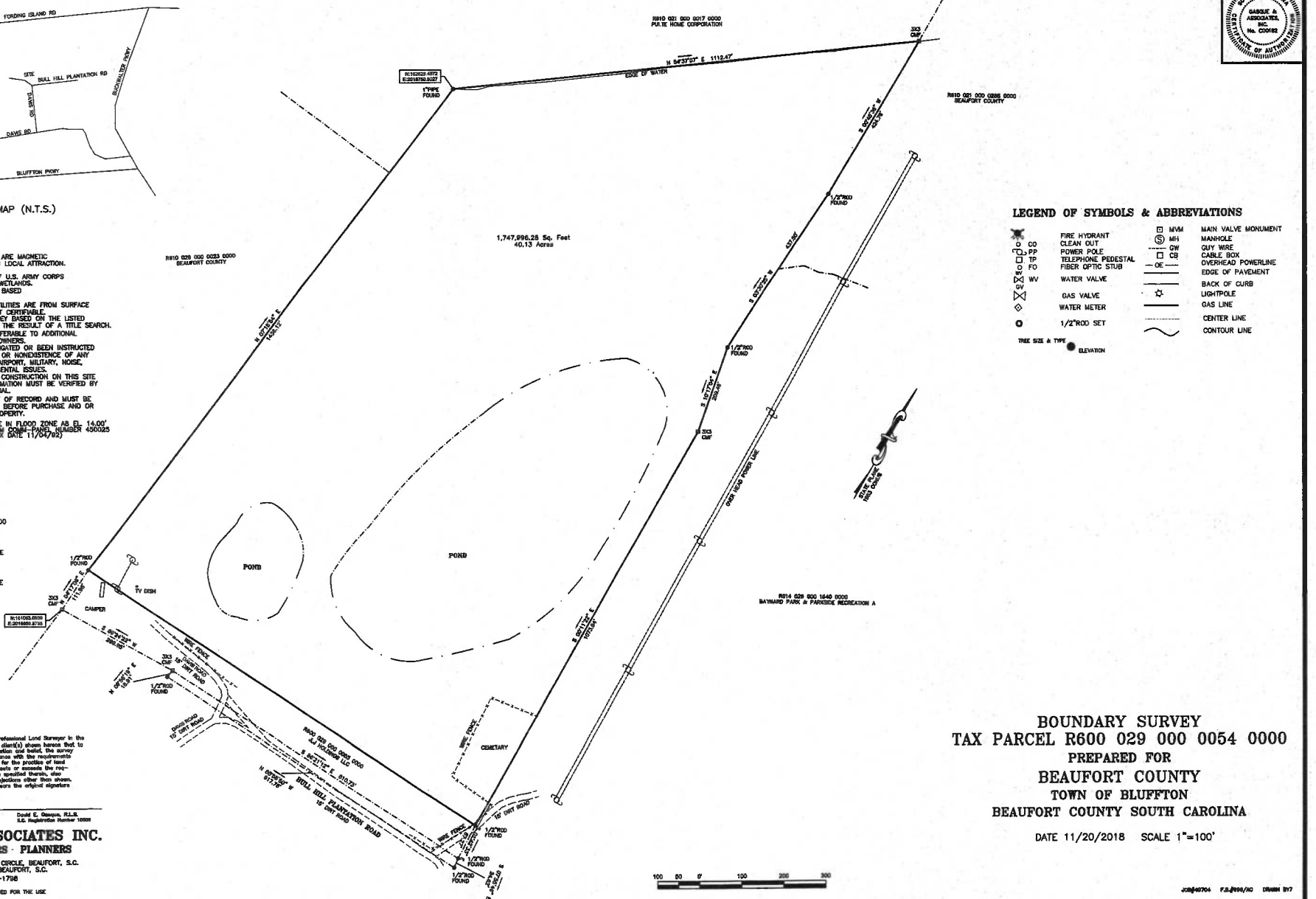
LOCATION MAP (N.T.S.)

NOTES:

1.) THE BEARINGS SHOWN HEREON ARE MAGNETIC AND AS SUCH ARE SUBJECT TO LOCAL ATTRACTION.
2.) THIS PLAT DOES NOT CERTIFY THE PRESENCE OR ABSENCE OF U.S. ARMY CORPS OF ENGINEERS JURISDICTIONAL WETLANDS.
3.) METHOD OF AREA CALCULATION BASED ON COORDINATE METHOD.
4.) LOCATION OF UNDERGROUND UTILITIES ARE FROM SURFACE INDICATIONS ONLY AND ARE NOT CERTIFIABLE.
5.) THIS PLAT REPRESENTS A SURVEY BASED ON THE LISTED REFERENCES ONLY AND IS NOT THE RESULT OF A TITLE SEARCH.
6.) CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
7.) THE CERTIFIER HAS NOT INVESTIGATED OR BEEN INSTRUCTED TO INVESTIGATE THE EXISTENCE OR NONEXISTENCE OF ANY OVERLAY DISTRICTS, SUCH AS; AIRPORT, MILITARY, NOISE, CRASH POTENTIAL OR ENVIRONMENTAL ISSUES.
8.) BEFORE ANY DESIGN WORK OR CONSTRUCTION ON THIS SITE IS STARTED FLOOD ZONE INFORMATION MUST BE VERIFIED BY PROPER BUILDING CODES OFFICIAL.
9.) SETBACKS SHOWN AS PER PLAT OF RECORD AND MUST BE VERIFIED WITH OFFICIAL AGENCY BEFORE PURCHASE AND OR CONSTRUCTION ON SUBJECT PROPERTY.
10.) THIS PROPERTY APPEARS TO LIE IN FLOOD ZONE AS EL 14.00' AS DETERMINED BY F.E.M.A. FIRM COMM-PANEL NUMBER 450025 0053 D. DATED 9/29/88 (INDEX DATE 11/04/92)

REFERENCES:

1.) T.M.S. R600 029 000 0054 0000
2.) PLAT BY RICHARD KESSELRING DATED JULY 24, 1967 PLAT BOOK 61, PAGE 114 BEAUFORT COUNTY R.M.C. OFFICE
3.) PLAT BY RICHARD KESSELRING DATED 6/3/95 PLAT BOOK 57, PAGE 138 BEAUFORT COUNTY R.M.C. OFFICE



LEGEND OF SYMBOLS & ABBREVIATIONS

	FIRE HYDRANT	MVM	MAIN VALVE MONUMENT
CO	CLEAN OUT	MH	MANHOLE
PP	POWER POLE	GW	GUY WIRE
TP	TELEPHONE PEDESTAL	CB	CABLE BOX
FO	FIBER OPTIC STUB	OE	OVERHEAD POWERLINE
WV	WATER VALVE		EDGE OF PAVEMENT
GV			BACK OF CURB
	GAS VALVE		LIGHTPOLE
	WATER METER		GAS LINE
	1/2"ROD SET		CENTER LINE
			CONTOUR LINE

TREE SIZE & TYPE ELEVATION

I, David E. Gasque, a Registered Professional Land Surveyor in the State of South Carolina, certify to client(s) shown hereon that to the best of my knowledge, information and belief, the survey shown hereon was made in accordance with the requirements of the minimum standards manual for the practice of land surveying in South Carolina, and meets or exceeds the requirements for a CLASS survey as specified therein, also there are no encroachments or projections other than shown. This survey is not valid unless it bears the original signature and has an embossed seal.

David E. Gasque, R.L.S.
S.C. Registration Number 10500

GASQUE & ASSOCIATES INC.
LAND SURVEYORS · PLANNERS
25 PROFESSIONAL VILLAGE CIRCLE, BEAUFORT, S.C.
P.O. BOX 1363, BEAUFORT, S.C.
(843) 522-1798

BOUNDARY SURVEY
TAX PARCEL R600 029 000 0054 0000
PREPARED FOR
BEAUFORT COUNTY
TOWN OF BLUFFTON
BEAUFORT COUNTY SOUTH CAROLINA

DATE 11/20/2018 SCALE 1"=100'

Job#40704 F.B.#696/40 DRAWN BY?

REPORT OF

PHASE I ENVIRONMENTAL SITE ASSESSMENT

CLELAND TRACT (TMS #R600 029 000 0054 0000)
DAVIS ROAD
BLUFFTON, BEUAFORT COUNTY, SOUTH CAROLINA

Prepared For:

BEAUFORT COUNTY OPEN LAND TRUST
POST OFFICE BOX 75
BEAUFORT, SOUTH CAROLINA 29901

Prepared By:

J. N. PEASE ENVIRONMENTAL GROUP, LLC
1514 MATHIS FERRY ROAD, SUITE 215
MOUNT PLEASANT, SOUTH CAROLINA 29464
(843) 345-4765

FEBRUARY 27, 2019

JPEG PROJECT #2422-19

February 27, 2019

Additional Intended Users:
Beaufort County

Mrs. Barbara Holmes, Director of Land Protection
Beaufort County Open Land Trust
Post Office Box 75
Beaufort, South Carolina 29901

Subject: **Report of Phase I Environmental Site Assessment**
Cleland Tract (TMS #R600 029 000 0054 0000)
Davis Road
Bluffton, Beaufort County, South Carolina
JPEG Project #2422-19

Dear Mrs. Holmes:

J. N. Pease Environmental Group, LLC (JPEG) appreciates the opportunity to submit this Report of Phase I Environmental Site Assessment (ESA) for the above referenced site. The Phase I ESA was completed in accordance with the American Society for Testing and Materials (ASTM) *Standard Guide for Environmental Site Assessments: Phase I Environmental Site Assessment Process E 1527-13* (most recent ASTM standard effective as of November 2013). The report and associated inquiry procedures meet the objectives and performance factors established by the Standards and Practices for All Appropriate Inquires (AAI), Final Rule published in 40 CFR Part 312.

This report presents project information, which includes survey procedures and limitations, along with our findings, conclusions and recommendations. I appreciate your selection of JPEG for this project and would value the opportunity to be of continued service when a future need arises. If you have any questions, please do not hesitate to contact me. My direct number is (843) 345-4765.

Sincerely,
J. N. PEASE ENVIRONMENTAL GROUP, LLC

Elizabeth L. Miller
Staff Environmental Scientist

James N. "Jay" Pease, IV, REM #10923
President/Registered Environmental Manager

1514 Mathis Ferry Road, Suite 215, Mount Pleasant, South Carolina 29464
Tel: (843) 345-4765 Fax: (843) 278-9228 E-mail: jpegllc@comcast.net

TABLE OF CONTENTS

LIST OF APPENDICES

EXECUTIVE SUMMARY

PROPERTY NAME: Cleland Tract (TMS #R600 029 000 0054 0000)

LOCATION: Davis Road, Bluffton, Beaufort County, South Carolina

This executive summary is provided for convenience and should not substitute for review of the complete report, including all attachments. Based on the data collected during the assessment, our findings and conclusions are summarized as follows:

Environmental Category/Condition	Acceptable	Further Research	Environmental Recommendation/Conclusion
Present Site Use	Yes	Not Recommended	Not Recommended
Site Regulatory Status/ History	**No (Data Gap)**	**Completed (SCHDEC FOI)**	**Further Assessment Recommended For Client Consideration**
Site Use History	**No**	**Not Recommended**	
Off-Site Facilities	Yes	Not Recommended	Not Recommended
Surrounding Land Use	Yes	Not Recommended	Not Recommended

Present Site Use: The project site includes a single parcel of land located at the termination of Davis Road in Bluffton, Beaufort County, South Carolina. The project site comprises approximately 40 acres of land and is defined by Beaufort County tax map number R600 029 000 0054 0000. The majority of the project site is characterized by a combination of wooded land and swampland. Two ponds which formerly served as sand borrow pits are located on the eastern and southern portions of the project site. The ponds occupy approximately 6- acres and one-half acre, respectively, and are surrounded by areas of dense vegetative and grass cover. No permanent building structures are located on the project site; however, a small cemetery is located within a wooded area on the southeast corner of the property. Details regarding property-specific observations from the site reconnaissance are provided in Sections 4.1.1 through 4.1.15 of this report.

Site Regulatory Status/History: The project site was referenced on the regulatory databases reviewed as part of this assessment under several facility names, to include Cleland Construction, Cleland Construction/DR Mine, and Cleland Construction Davis Road Wood Chipping Facility. The Cleland businesses were referenced on multiple environmental databases, to include, but not limited to, Air Facility Systems (Title V Permit), National Pollutant Discharge Elimination System (NPDES), Enforcement and Compliance History (ECHO), Integrated Compliance Information System (ICIS) and the State Solid Waste Facility database.

As part of this assessment available regulatory files were reviewed for these facilities through the South Carolina Department of Health and Environmental Control (SCDHEC) Freedom of Information Office (FOI) located in Columbia, South Carolina. Regulatory information indicates the Cleland businesses operated at the project site in varying capacities from approximately 1994 through 2005-2006. Please note SCDHEC commonly discards or archives files for facilities where regulatory activity/oversight has not been required for over ten (10) years. Consequently, only limited file documentation was available through the FOI Office. A basic summary of information obtained from the regulatory file review is as follows:

- The following permits are associated with the Cleland businesses: Bureau of Air Quality Permit #0360-0019, Solid Waste Facility Permit #021000 and Mining Facility Permit #I-001108.
- Available regulatory information confirms Cleland Construction Company had a history of repeated compliance violations, enforcement actions and monetary penalties from approximately 1994 through 2004. Based on available information, the majority of these violation appear to be associated with open burning and air permit violations.
- Four (4) separate administrative consent orders were issued by the SCDHEC Bureau of Air Quality for permit violations cited in 1997, 1998, 2000 and 2002, respectively. The 1997 consent order indicated piles of burning debris "contained materials other than plant growth". No additional information was provided about the types of materials observed. Copies of the administrative orders are provided in Appendix C of this report.
- A Title V Operating Permit (#0360-0019) was issued by the Bureau of Air Quality in February 1999 for the operation of an air curtain incinerator and associated heavy equipment. A request to suspend this permit was filed by Cleland Construction in July 2001, which was prior to the permit expiration date of January 2002.
- The mining permit (#I-001108) was reportedly issued in 1997 and was closed approximately during 2004 to 2005. No file information was available with regards to the mining permit and associated operations.
- A Solid Waste permit (#021000) was issued for the wood chipping operation in September 2004. Several inspection reports specific to the wood chipping operation and dated from 2004 and 2005 were available in the file documents. The inspection reports indicated the facility was in satisfactory condition. The wood chipping operation permit was terminated in August 2005 and SCDHEC confirmed facility closure requirements were satisfied.

The available file documentation, some of which was retrieved from archived records, was generally limited to permit applications, issued permits, copies of consent orders and miscellaneous correspondence associated with delivery of consent orders (i.e., certified mail receipts). Detailed inspection reports, photographs, facility maps/diagrams, sampling data and other facility-specific records related to reporting and waste management procedures were *generally* not available in the regulatory files. The absence of file documentation represents a data gap. This data gap is considered significant because the potential content of file documents which are no longer available could provide information relevant to the environmental condition of the property. Additionally, the local regulatory official who historically inspected the facility has retired. **In summary, the regulatory history of the project site represents an recognized environmental condition (REC) to the project site.** It is noted JPEG found no documentation of unresolved compliance violations during the file review. Details regarding the regulatory database search are provided in Section 3.0 of this report as well as Appendix C.

Site Use History: Our review of historical data indicates the majority of the project site served as densely, wooded land from at least the early 1940s through the middle 1990s. Evidence of limited borrow pit activity is depicted on the southwest and central portions of the project site in aerial photography dated 1983, 1989 and 1994. Extensive borrow pit/sand mine activity is depicted across the southern two-thirds of the property in aerial photographs dated 1999 through 2006. Multiple buildings, structures and equipment appear concentrated on the southern portion of the project site in aerial photographs dated 1999, 2002, and 2004. Exact building use cannot be determined from aerial photographs, but a property representative stated a maintenance facility formerly operated on the property, thus confirming the likely presence, use and storage of potentially hazardous and/or petroleum products (i.e., fuel, oils, lubricants, parts cleaners, etc...) on the property. The trend of regulatory non-compliance documented above suggests adherence to proper chemical and waste management practices was not a priority for facility personnel. **Past use of the project site represents an REC due to the reported nature of historical operations coupled with the facility's history of repeated compliance violations.** Aerial photographs indicate vegetation has been gradually re-established around the borrow pits/ponds from 2009 through 2018. Additional information obtained from historical references is provided in Section 4.2 of this report.

Off-Site Listed Facilities: A query of Federal and State environmental databases was provided by Geosearch. No off-site facilities were identified on the applicable regulatory lists and within the established search radii from the project site.

Surrounding Land Use: Properties surrounding the project site are generally characterized by a combination of additional wooded land and residential development located along Davis Road to the south and within recently established residential subdivisions to the north and east. No environmental concerns are associated with surrounding land uses. Additional details describing surrounding land use are provided in Section 4.3 of this report.

Conclusions: This assessment has revealed the following conclusions:

- *On-Site Conclusions:* This assessment has revealed evidence of recognized environmental conditions (RECs) originating from past property use and influenced by a history of regulatory non-compliance associated with former on-site operations. **Further environmental assessment with respect to Phase I scope considerations would be necessary to evaluate whether past on-site operations resulted in an adverse environmental impact to the project site.** JPEG acknowledges that there is no current regulatory obligation for the client (i.e., prospective purchaser) to perform environmental sampling; however, it is emphasized that the most comprehensive approach for evaluating current site conditions is through environmental sampling and analysis.

- *Off-Site Conclusions:* This assessment has revealed no evidence of RECs originating from off-site sources.

1. INTRODUCTION

JPEG was retained by Beaufort County Open Land Trust to conduct a Phase I Environmental Site Assessment (ESA) for the subject property as documentation required for a potential real estate/financial transaction. The Phase I ESA was performed using procedures specified by the American Society for Testing and Materials (ASTM) Standard E 1527-13 and by Standards and Practices for All Appropriate Inquiries (AAI). Final Rule published in 40 CFR Part 312. In addition to satisfying provisions associated with a proposed conservation easement and/or potential lending requirements, completion of the Phase I ESA report is also intended to assist the client in qualifying for one of several CERCLA liability protection clauses by making "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined by 42 U.S.C § 9601 (35). The primary CERCLA liability protections are termed a) the bona fide prospective purchaser exception, b) the contiguous property exception, and/or c) the innocent landowner defense.

1.1 BACKGROUND

The project site comprises approximately 40 acres of land located along Davis Road in Bluffton, Beaufort County, South Carolina. This assessment was performed as outlined in JPEG's proposal #2573-19 dated January 28, 2019.

1.2 PROCEDURES

The purpose of our services was to identify recognized environmental conditions and obvious potential recognized environmental conditions in connection with the property, based on readily available information and site observations. ASTM E 1527-13 defines a "recognized environmental condition" as "*-the presence or likely presence of any hazardous substances or petroleum products in on or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment"*. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Similarly, the objective of an environmental investigation under the AAI Rule is to "*identify conditions indicative of releases and threatened releases of hazardous substances on, at, in, or to the subject property.* The following services were provided for the assessment:

- A qualitative hydrogeologic evaluation of the site and vicinity using both published topographic and geologic maps and area observations to characterize the area drainage.

- A review of selected available documents, maps, aerial photographs and interviews with knowledgeable persons to evaluate present and past land uses.

- A review of selected environmental lists published by federal agencies, state agencies, recognized tribal groups, and/or local organizations to determine if the site or nearby properties are regulated by state or federal environmental regulatory agencies.

- A site reconnaissance for the purpose of indentifying obvious indications of present or past activities/land uses of potential environmental concern.

- Visual observations of adjacent properties in order to evaluate operations, land uses, or other conditions of potential environmental concern.

- Preparation of this report that presents our findings and conclusions.

1.3 QUALIFICATIONS

The assessment was designed to provide an objective, independent, and professional opinion of the potential environmental risks, if any, associated with the project site. The report and associated inquiry procedures meet the objectives and performance factors of the Standards and Practices for All Appropriate Inquires (AAI), Final Rule published in 40 CFR Part 312. The findings and opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at substantially later dates. If additional information becomes available which might impact our environmental conclusions, we request the opportunity to review the information, reassess the potential concerns, and modify our opinions, if warranted. Although this assessment has attempted to identify the potential for environmental impacts to the subject property, potential sources of contamination may have escaped detection due to: (1) the limited scope of this assessment, (2) the inaccuracy of public records, (3) the presence of undetected or unreported environmental incidents, (4) inaccessible areas, and/or (5) deliberate concealment of detrimental information. It was not the purpose of this study to determine the actual presence, degree or extent of contamination, if any, at the site. This could require additional exploratory work, including environmental sampling and laboratory analysis.

2. SITE SETTING

Understanding of a site's physical setting is important to the recognition of environmental impacts to the property.

2.1 GENERAL DESCRIPTION

The project site includes a single parcel of land located at the termination of Davis Road in Bluffton, Beaufort County, South Carolina (Figure 1, Appendix A). The project site comprises approximately 40 acres of land and is defined by Beaufort County tax map number R600 029 000 0054 0000. The majority of the project site is characterized by a combination of wooded land and swampland. Two ponds which formerly served as sand borrow pits are located on the eastern and southern portions of the project site. The ponds occupy approximately 6- acres and one-half acre, respectively, and are surrounded by areas of dense vegetative and grass cover. No permanent building structures are located on the project site; however, a small cemetery is located within a wooded area on the southeast corner of the property. Representative photographs of the property grounds are provided in Appendix B (see Photographs 1 to 10). Properties surrounding the project site are generally characterized by a combination of additional wooded land and residential development located along Davis Road to the south and within recently developed residential subdivisions to the north and east.

2.2 HYDROGEOLOGY

A consideration of surface and subsurface drainage and geology are of interest since they provide an indication of the direction that contamination, if present on or off the site, could be transported. It was not the purpose of this study to evaluate the geotechnical conditions of the site or to assess engineering/geological concerns such as foundation conditions, faulting, or subsidence. JPEG reviewed the following information with regard to the development of the presumed local and regional geology and hydrogeology of the site and surrounding area:

- United States Geological Survey (USGS) Topographic Map, 7.5-minute series, Jasper, South Carolina Quadrangle, dated 1958, (Figure 2, Appendix A);
- Geologic Map of South Carolina Coastal Plain, dated 1983, University of South Carolina, Department of Geology;
- Groundwater Atlas of the United States, Hydrologic Investigations Atlas 730-G, Segment 6, Alabama, Florida, Georgia, and South Carolina, dated 1990, published by the USGS;

- United States Department of Agriculture (USDA) Soil Conservation Service On-Line Web Soil Survey for Beaufort County, South Carolina.

2.2.1 Geologic Setting

The site is situated in the Atlantic Coastal Plain Physiographic Province. The Atlantic Coastal Plain Physiographic Province generally extends seaward from the Fall Line, where it lies in contact with the Piedmont physiographic province, to the Atlantic Ocean. Sands, silts, and clays of recent geologic age immediately underlie the site. Surface soils are underlain at depth by much older marine sediments consisting of the Cooper Formation, a relatively impervious marine silt or marl. Extensive deposits of very weakly consolidated silts and clays, often of great depth, border rivers and harbors along the coast.

The USDA on-line Web Soil Survey for Beaufort County, South Carolina classifies the majority of soils across the project site as Wando fine sand (0 to 6% slopes). Several additional soil series are mapped to lesser extents across the northern third of the project site which is characterized by swampland.

2.2.2 Surface Drainage

Surface drainage patterns within the Atlantic Coastal Plain typically mimic the surface topography and indicate the direction contaminants would be transported by surface water or ground water. Based on a review of the USGS topographic map for Jasper, South Carolina (refer to Figure 2), and our site reconnaissance, surface drainage on the site presumably flows north towards the upper reaches of the Okatie River. The average topographic elevation at the project site ranges from approximately 30 feet above mean sea level (MSL) on the southern portion of the property to 10 feet above MSL on the northern portion of the property.

2.2.3 Groundwater

In the Atlantic Coastal Plain Physiographic Province, ground water in the shallow aquifer generally occurs under water table conditions and is stored in the overlying mantle of alluvial and fluvial soils. Recharge to the water table is primarily by precipitation infiltrating the upper soils and percolating downward, under the influence of gravity, to the ground-water table. Typically, the water table is not a level surface, but a subdued reflection of the land surface. Also, the depth to the water table is variable, being dependent on many factors that include: the amount of rainfall,

the permeability of the in place soils, tidal fluctuations, and the amount of the ground water being pumped in the area.

Ground water generally flows in directions subparallel to the ground surface slopes and under the influence of gravity towards points of discharge such as creeks, swamps, drainage swales, or pumped ground water wells. Based on our review of the topographic maps and our site reconnaissance, we interpret the overall natural ground-water flow direction on the site to be generally north towards the upper reaches of the Okatie River. Subsurface drainage from this site would be expected to flow generally north. For the purposes of this report, areas to the general south are considered potentially up-gradient, areas to the general north are considered down-gradient, and areas to the general east and west are considered cross-gradient relative to the project site. The direction and rate of ground-water flow cannot be accurately determined without on-site measurements, a task which is beyond the scope of this assessment.

3. REGULATORY INFORMATION

A search of Federal and State environmental databases was provided by Geosearch. The databases reviewed and minimum search distances applied are consistent with those required by the current ASTM Standard. The regulatory records search is based on information published by Federal and State regulatory agencies and is used to evaluate if the site or nearby properties are listed as having a past or present record of actual or potential environmental impact. Please note that regulatory listings include only those sites, which are known to the regulatory agencies at the time of publication to be 1) contaminated, 2) in the process of evaluation for potential contamination, or 3) regulated.

The Geosearch radius search identified one (1) facility located within the applicable search radii on the environmental databases prescribed by the ASTM Standard. A tabular summary of the database search results and the Geosearch radius search maps are provided in Appendix C. The complete Geosearch report is 68 pages and can be provided upon request. The sections below summarize the database results for Federal, State and Tribal/Indian databases, respectively.

3.1 FEDERAL DATABASES

The table below summarizes the Federal databases reviewed for this assessment:

REGULATORY LIST	NUMBER IDENTIFIED	DATE PUBLISHED	SEARCH DISTANCE
NPL	0	November 2018	One mile
DELISTED NPL	0	November 2018	One-half mile
CERCLIS/SEMS	0	December 2018	One-half mile
SEMS-ARCHIVE (NFRAP)	0	December 2018	One-half mile
RCRIS CORRACTS	0	December 2018	One mile
RCRIS GENERATORS	0	December 2018	Site and adjacent
RCRIS NON-COR TSD	0	December 2018	One-half mile
ERNS	0	October 2018	Site only
EC/IC REGISTRIES	0	August 2015	Site only

No facilities were identified on the Federal environmental databases.

3.2 STATE DATABASES

The table below summarizes the State databases reviewed for this assessment:

REGULATORY LIST	NUMBER IDENTIFIED	DATE PUBLISHED	SEARCH DISTANCE
HAZARDOUS WASTE SITES	0	May 2017	One mile
DRYCLEANERS	0	January 2018	One-half mile
SOILID WASTE/LANDFILL	1 (SWF-Inactive-Project Site)	January 2019	One-half mile
LUST (Leaking Tanks)	0	January 2019	One-half mile
UST (Registered)	0	November 2018	Site and adjacent
AULs (Land Use Controls)	0	November 2018	Site only
VCP/BROWNFIELDS	0	November 2018	One-half mile

The project site was the only facility identified on the State environmental databases reviewed for this assessment. The project site was referenced under several names at Davis Road to include Cleland Construction, Cleland Construction/DR Mine, and Cleland Construction Davis Road Wood Chipping Facility. The Cleland businesses were referenced on multiple environmental databases, to include, but not limited to, Air Facility Systems (Title V Permit), National Pollutant Discharge Elimination System (NPDES), Enforcement and Compliance History (ECHO), Integrated Compliance Information System (ICIS) and the State Solid Waste Facility database.

As part of this assessment available regulatory files were reviewed for these facilities through the SCDHEC FOI located in Columbia, South Carolina. Regulatory information indicates the Cleland businesses operated at the project site in varying capacities from approximately 1994 through 2005-2006. Please note SCDHEC commonly discards or archives files for facilities where regulatory activity/oversight has not been required for over ten (10) years. Consequently, only limited file documentation was available through the FOI Office. A basic summary of the information obtained from the regulatory file review is as follows:

- The following permits are associated with the Cleland businesses: Bureau of Air Quality Permit #0360-0019, Solid Waste Facility Permit #021000 and Mining Facility Permit #I-001108.
- Available regulatory information confirms Cleland Construction Company had a history of repeated compliance violations, enforcement actions and monetary penalties from approximately 1994 through 2004.
- Four (4) separate administrative consent orders were issued by the SCDHEC Bureau of Air Quality for permit violations cited in 1997, 1998, 2000 and 2002, respectively. The 1997 consent order indicated piles of burning debris "contained materials other than plant

growth". No additional information was provided about the types of materials observed. Copies of the administrative orders are provided in Appendix C of this report.

- A Title V Operating Permit (#0360-0019) was issued by the Bureau of Air Quality in February 1999 for the operation of an air curtain incinerator and associated heavy equipment. A request to suspend this permit was file by Cleland Construction in July 2001, which was prior to the operating permit expiration date of January 2002.
- The mining permit (#I-001108) was reportedly issued in 1997 and was closed approximately during 2004 to 2005. No file information was available with regards to the mining permit.
- A Solid Waste permit (#021000) was issued for the wood chipping operation in September 2004. Several inspection reports specific to the wood chipping operation from 2004 and 2005 were available in the file documents. The inspection reports indicated the facility was in satisfactory condition. The wood chipping operation permit was terminated in August 2005 and SCDHEC confirmed facility closure requirements were satisfied.
- Telephone interviews were also performed with the following SCDHEC personnel:
    - Mr. Matthew Brewer with SCDHEC Bureau of Air Quality; main office in Columbia, SC;
    - Mr. Joe Koon with SCDHEC Mining and Reclamation Section; main office in Columbia, SC;
    - Ms. Kelsey Timmerman with SCDHEC Environmental Quality Control Lowcountry District Office in Beaufort, SC. Ms. Timmerman confirmed the EQC official who formerly managed the Cleland facility, Mr. Leland McCormack, retired number of years ago and has since passed.

The available file documentation, some of which was retrieved from archived records, was generally limited to permit applications, issued permits, copies of consent orders and miscellaneous correspondence associated with delivery of consent orders (i.e., certified mail receipts. Detailed inspection reports, photographs, facility maps/diagram, sampling data and other facility-specific records related to reporting and waste management procedures were *generally* not available in the regulatory files. The absence of file documentation represents a data gap. This data gap is considered significant because the potential content of file documents which are no longer available could provide information relevant to the environmental condition of the property. **In**

summary, the regulatory history of the project site represents an REC to the project site. It is noted JPEG found no documentation of unresolved compliance violations during the file review.

3.3 TRIBAL/INDIAN DATABASES

The table below summarizes the Tribal/Indian databases reviewed for this assessment:

REGULATORY LIST	NUMBER IDENTIFIED	DATE PUBLISHED	SEARCH DISTANCE
Indian Reservations	0	January 2000	One-mile
Indian LUST Region 4	0	May 2018	One-half mile

No facilities were identified on the Tribal/Indian environmental databases.

3.4 OTHER LOCAL RECORDS

Based on the consistency of findings, no on-site or off-site conditions were encountered to suggest further inquiry of local records would reveal information of environmental concern to the project site.

4. SITE INFORMATION AND USE

JPEG performed a site and vicinity reconnaissance, conducted interviews, and reviewed selected historical information in order to evaluate the current and historical uses of the site and surrounding properties and to evaluate past or present activities of potential environmental conditions. The ASTM E 1527-13 standard lists the mandatory physical setting sources and specifies that the historical review should be conducted using as many sources as are practically reviewable from the initial development of the subject property or back to 1940, whichever is earlier. To comply with the ASTM standard, a reasonable attempt was made to obtain historical data from as many physical setting sources and to review historical records as far in the past as practical. The reference materials listed below are the physical setting and historical sources that were publicly available, obtainable within reasonable time and cost restraints, and practically reviewable as defined in the ASTM standard.

- Bluffton, South Carolina, 7.5-Minute Quadrangle Topographic Map, dated 1956, photo-revised 1972, published by the USGS.
- Aerial Photographs dated *1941, 1951, 1961, 1971, 1977, 1983, 1989, 1994, 2005, 2006, 2011, 2013, and 2015* provided by Geosearch.
- Aerial Photographs dated *1994, 2005, 2006, 2008, 2011, 2012 and annually from 2014 to 2018* obtained from Google Earth.
- Tax Property Records and aerial photographs dated *1994, 1999, 2002, 2004, 2006, 2009 and annually from 2011 to 2018*, obtained from the Beaufort County GIS website.
- Written correspondence received from Mrs. Lauren Niemiec, the designated representative and counsel for the current ownership entity.
- City Directories dated *1961 (first available), 1965, 1971, 1976, 1981, 1986, 1991, 1996, 2001, 2006, 2011 and 2016* reviewed and the Beaufort County Public Library located in Beaufort, South Carolina.
- Sanborn Fire Insurance Maps were not available for the area in which the site is located.

Mr. James Pease conducted site and area visits on February 6, 2019. The site reconnaissance consisted of a walk-through of the property grounds, and the area reconnaissance was a driving

tour conducted on public access roads surrounding the project parcel. Qualifications for JPEG personnel are provided in Appendix E.

4.1 CURRENT SITE USE

The project site includes a single parcel of land located at the termination of Davis Road in Bluffton, Beaufort County, South Carolina. The project site comprises approximately 40 acres of land and is defined by Beaufort County tax map number R600 029 000 0054 0000. The majority of the project site is characterized by a combination of wooded land, and swampland. Two ponds which formerly served as sand borrow pits are located on the eastern and southern portions of the project site. The ponds occupy approximately 6- acres and one-half acre, respectively, and are surrounded by areas of dense vegetative and grass cover. No permanent building structures are located on the project site; however, a small cemetery is located within a wooded area on the southeast corner of the property.

As part of the Phase I ESA process, interviews are commonly performed with the current property owner(s) in an effort to obtain or confirm information about the ownership's knowledge of current and historical uses of the project site. An environmental questionnaire was completed by Mrs. Lauren Niemiec, the designated representative and counsel for the current ownership entity. Mrs. Niemiec indicated she was not aware of (1) any pending, threatened, or past litigation relevant to hazardous substances, or petroleum products in, on, or from the subject property, (2) any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in or on or from the subject property, or (3) any notices from any governmental entity regarding any possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products. A copy of the questionnaire completed by Mrs. Niemiec is provided in Appendix D.

Additionally, user information addressing the client's (i.e., prospective purchaser) knowledge of the potential presence of environmental concerns at the project site was documented by the completion of the ASTM user questionnaire. The client’s responses did not reveal any specialized knowledge of environmental concerns at the project site or provide information to suggest that the land value of the project site deviates from reasonable market values because of the presence of environmental contamination. A copy of the questionnaire completed by the client is provided in Appendix D.

The following conditions were specifically assessed for their potential to create recognized environmental conditions.

4.1.1 Storage Tanks

Underground Storage Tanks (USTs): No visible indications of existing or former underground storage tanks (USTs) were observed on the subject property. Mrs. Niemiec indicated no USTs are used at the project site as part of current land uses, and to the best of her of knowledge, there are no records to suggest USTs have historically been used at the project site.

Aboveground Storage Tanks (ASTs): No visible indications of existing or former aboveground storage tanks (ASTs) were observed on the subject property. Mrs. Niemiec indicated no ASTs are used at the project site as part of current land uses, and to the best of her of knowledge, there are no records to suggest ASTs have historically been used at the project site.

4.1.2 Hazardous and Petroleum Products Containers/Drums/Storage

Bulk quantities of hazardous and/or petroleum products were not observed to be used, abandoned, or discarded on the project site.

4.1.3 Heating and Cooling

The project site is undeveloped; no heating and/or cooling systems were observed on the property.

4.1.4 Solid Waste

Minimal quantities of abandoned/discarded solid waste debris were observed at the project site. The small amount of solid waste debris was observed on the southeastern portion of the project site and was generally limited to plastic fencing (Photograph 11, Appendix B). No pooled liquids, stained soils, stressed vegetation, or chemical odors were observed in the vicinity of the solid waste materials. It is JPEG's opinion the observed solid waste debris can be disposed of or salvaged without specialized sampling and handling requirements, and does not represent an environmental concern to the project site.

4.1.5 Sewage Disposal/Septic Tanks

The project site is undeveloped and is not presently connected to a public sewer utility.

4.1.6 Hydraulic Equipment

No hydraulically-operated equipment was observed at the project site.

4.1.7 Contracted Maintenance Services

No contracted/third party maintenance services are currently performed at the project site.

4.1.8 Electrical Transformers

Electrical transformers are a potential source of recognized environmental conditions due to the possible presence of polychlorinated biphenyls (PCBs) contained in dielectric fluids used in some units. PCBs used in electrical equipment are controlled by the USEPA regulations 40 CFR, Part 761. Under the regulations there are three general categories into which electrical equipment can be classified:

- Less than 50 parts per million (ppm) of PCBs – "*Non-PCB*" transformer;
- 50 ppm to 500 ppm – "*PCB-Contaminated*" transformer;
- Greater than 500 ppm – "*PCB*" transformer.

In 1976, the Toxic Substances Control Act was passed to ban the manufacturing of PCBs, limit their distribution, and control their disposal. In 1979 additional regulations were passed that limited PCB content to 50 ppm. One, exterior, pole-mounted transformer (Pole #66312013; no company label) was observed along the southern portion of the project site. No indications of spills or leaks were observed in the vicinity of the transformer. The transformer is presumed to be owned and operated by Santee Electric Cooperative (SEC). It is our understanding that major electric companies/cooperatives maintain responsibility for their equipment to include repairs and clean up resulting from any damage, spills, leaks, or other transformer problems. Although the transformer unit was not labeled for PCB content, based on the compliance policies adhered to by electrical cooperatives, the unit is believed to be "Non-PCB" containing. The transformer is not considered to be a recognized environmental condition to the site.

4.1.9 Water Supply and Wells

The project site is undeveloped and is not presently connected to a public water supply. No private water wells or irrigation wells were observed on the project site.

4.1.10 Drains and Sumps

No designated chemical drains or sumps were observed at the project site.

4.1.11 Pits, Ponds, Lagoons, and Surface Waters

Two ponds are located on the southern portion of the project and are a result of past sand mine/borrow pit activities (Photographs 5 and 6, Appendix B). The largest pond comprises approximately 6 acres and the smaller pond comprises approximately one-half acre. No chemical sheens or signs of improper waste disposal were observed along the pond embankments or protruding from the pond surfaces. The presence of the ponds does not represent an environmental concern to the project site.

4.1.12 Stressed Vegetation

Visible indications of stressed vegetation were not observed on the project site.

4.1.13 Odors

There were no obvious strong, pungent, or noxious odors noted during the site reconnaissance.

4.1.14 Dry Cleaning

Dry cleaning operations are frequently sources of recognized environmental conditions due to the chlorinated solvents used in the cleaning process. No active dry cleaning operations were observed at the site.

4.1.15 Other Observations and Additional On-Site Services

A mobile home trailer and miscellaneous household items adjoin the southwest corner of the project site (Photograph 12, Appendix B). The mobile home is located on a separate parcel of land as confirmed by the presence of surveys flags/stakes, and indicated by the client.

No other areas or conditions of concern were observed during this assessment. No additional services/non-scope considerations as defined by ASTM E1527-13 in Section 13.1.5 were requested as part of this assessment.

4.2 PAST SITE USE

JPEG personnel reviewed aerial photographs, topographic maps, tax records, city directories and conducted interviews to gather historical information about the site and surrounding area. Information obtained from each of these sources is summarized below:

Aerial Photographs: The majority of the project site is depicted as densely wooded land in aerial photographs dated 1941 through 1994. Exceptions include evidence of limited borrow pit activity on the southwest and central portions of the project site in aerial photography dated 1983, 1989 and 1994. Extensive borrow pit/sand mine activity is depicted across the southern two-thirds of the property in aerial photographs dated 1999 through 2006. Multiple buildings, structures and equipment appear concentrated on the southern portion of the project site in aerial photographs dated 1999, 2002, and 2004. Exact building use cannot be determined from aerial photographs; however, a maintenance shop reportedly operated at the property. **Past use of the project site represents an REC to the project site, specifically when combined with the historical regulatory compliance concerns associated with the Cleland Construction operations.** Aerial photographs indicate vegetation has been gradually re-established around the borrow pit ponds from 2009 through 2018.

The project site and approximate parcel boundaries are depicted on a 2018 aerial photograph provided in Appendix A (see Figure 3). A 2002 aerial photograph is provided as Figure 4 which depicts the location of former property structures and provides an indication of the extent of mining activity previously associated with the project site. Historical aerial photographs provided by Geosearch are provided in Appendix F.

USGS Topographic Map: No structures are depicted at the project site location on the area topographic map dated 1958. The project site location is shaded green suggesting the area is characterized by wooded land (see Figure 2, Appendix A). No indications of environmental concerns were inferred from the area topographic map.

Tax Records: The project site is defined by Beaufort County tax map number R600 029 000 0054 0000. County tax records indicate the project parcel comprises 40.07 acres of land and is currently owned by Cleland Site Prep, Inc. approximately since December 2010. Additional property owners referenced in the available on-line county property records include JLJ Holdings, LLC

(October 2007 to December 2010), Avery E. Cleland (March 1996 to October 2007) and Ursula Elkins (prior to March 1996). No building structures or other improvements are referenced in the on-line tax records. The tax records confirm ownership by Mr. Cleland during the period of time associated with regulatory permits and mining/wood chipping activity. A copy of the on-line property record is provided in Appendix D. Please note this review of on-line tax records does not represent a formal title search.

Interviews: Interviews are summarized as follows:

- Bluffton Fire Department: JPEG personnel contacted the Bluffton Township Fire Department regarding environmental incidents at the site or in the immediate surrounding area. Chief Boulware stated to the best his knowledge, no emergency responses to incidents of environmental significance have been made to the site or the immediate surrounding area. Chief Boulware has been with the department for over 27 years.

- Property Owner Representative: An environmental questionnaire was completed by Mrs. Niemiec, the current property ownership representative and counsel. Mrs. Niemiec indicated the property was acquired for investment purposes (date not provided) and maintenance facility for a construction company operated on-site for approximately 2 years (dates not provided). Additional information provided by Ms. Niemiec is provided in other sections of this report. A copy of the completed questionnaire is provided in Appendix D.

- SCDHEC Personnel (see Section 3.2 of this report).

City Directories: City directories were reviewed at the Beaufort County Public Library located in Beaufort, South Carolina. Available city directories covered the years 1961 (first available) through 2016. The project site is not defined by a physical street address. Davis Road was not referenced in the city directories dated 1961 through 1986. Listing along Davis Road were limited to residential occupancy in city directories dated 1991 to 2016. No references to Cleland Construction were encountered in the city directories reviewed for this assessment. A tabular of the city directory findings is provided in Appendix D.

Sanborn Maps: Sanborn Fire Insurance Maps were not available for the area in which the project site is located.

Previous Environmental Reports: No previous environmental reports were provided.

It is JPEG's opinion that the historical resources reviewed for this assessment provided consistent conclusions with regards to general historical site use and timeframes.

4.3 CURRENT AND PAST SURROUNDING LAND USE

Nearby property usage could potentially impact the surface and subsurface conditions of a property. Developing a history of past to present uses or occupancies can provide an indication of the likelihood of recognized environmental conditions. Information regarding surrounding land use is noted in the following sections (Photographs 13 and 14, Appendix B):

4.3.1 North

Present: Property to the north is generally considered to be topographically down-gradient in relation to the project site. The project site is bordered to the general north by swampland associated with the upper reaches of the Okatie River followed by residential development located within a subdivision called Seagrass Station.

Past: Property located north of the project site generally consisted of densely wooded land in the 1941 through 2004 aerial photographs. Evidence of limited timber harvesting is depicted north o f the project site in the 1983 aerial photograph. The initial signs of residential development to the north/northwest are depicted in aerial photography dated 2004 through 2018 with a gradual increase in density over time.

4.3.2 South

Present: Property to the south is generally considered to be topographically up-gradient in relation to the project site. The project site is bordered to the general south by limited, residential development located along Davis Road followed by athletic fields associated with an area school called River Ridge Academy.

Past: Property located south of the project site generally consisted of densely wooded land in the 1941 through 1999 aerial photographs. Evidence of limited borrow pit activity is depicted south of the project site in aerial photographs dated 1968 through 1989. The initial signs of residential

development are depicted south of the project site in aerial photography dated 1999 through 2002 with a gradual increase in density over time. Property located south of the project site is generally depicted similar to present day conditions in the aerial photographs dated 2004 through 2018. River Ridge Academy is first depicted in the 2014 aerial photograph.

4.3.3 East

Present: Property to the east is generally considered to be topographically cross-gradient in relation to the project site. The project site is currently bordered to the general east by a power line easement followed by residential development located within a subdivision called Baynard Park.

Past: Property located east of the project site generally consisted of densely wooded land in the 1941 through 2006 aerial photographs. Evidence of timber harvesting is depicted east of the project site in aerial photography dated 1983 and 1989 and the power line easement was first depicted in the 1994 aerial photograph. The initial signs of residential development within the Baynard Park subdivision is depicted in the 2009 aerial photograph with a gradual increase in the density of homes trough 2012. The extent of development located east of the project site is generally depicted similar to present day conditions in the aerial photographs dated 2013 through 2018.

4.3.4 West

Present: Property to the west is generally considered to be topographically cross-gradient in relation to the project site. The project site is bordered to the general west by densely wooded land.

Past: Property located west of the project site generally depicted similar to present day conditions in the aerial photographs dated 1941 through 2018.

5. RESULTS/OPINIONS AND DATA GAP COMMENTS

Based on the findings of our Phase I Environmental Site Assessment at the subject property, we offer the following comments relative to recognized environmental conditions (RECs).

Present Site Use: No RECs were identified in association with the current use of the project site.

Site Regulatory Status/History: The project site was listed on multiple environmental regulatory databases reviewed for this assessment. Available regulatory information reviewed through the SCDHEC FOI Office confirms Cleland Construction Company had a history of repeated compliance violations, enforcement actions and monetary penalties from approximately 1994 through 2004. Although no information was encountered to suggest historical compliance violations remain unresolved, the site's regulatory history represents an REC.

Site Use History: Past property use as a maintenance facility represents an REC to the project site, a conclusion which is influenced by the history of non-compliance associated with former on-site operations.

Off-Site Listed Facilities: No RECs are associated with off-site facilities identified through the environmental regulatory database search.

Surrounding Land Use: No RECs were identified with regards to surrounding land uses.

Data Gap/Data Failure Comments: Based on SCDHEC's file retention policies, coupled with the operational dates of former on-site facilities, only limited regulatory file documentation was available through FOI. The absence of potential file documentation represents a data gap. This data gap is considered significant because the potential content of file documents which are no longer available could provide information relevant to the environmental condition of the property. Data failure was encountered during the review of historical references because the available materials did not date back to the ASTM target date of 1940. The oldest available historical resource is a 1941 aerial photograph in which the project site is depicted as wooded land. This data failure is not significant because the review of additional historical references, if available, would not be expected to provide information that would alter the conclusions of this report.

6. FINDINGS AND CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in accordance with the scope and limitations of ASTM E 1527-13 and 40 CFR Part 312 (AAI Rule) for an approximate 40-acre parcel of undeveloped land located at the termination of Davis Road and defined by Beaufort County tax map number R600 029 000 0054 0000. The property reconnaissance was performed on February 6, 2019.

This assessment has revealed the following conclusions:

- *On-Site Conclusions:* This assessment has revealed evidence of recognized environmental conditions (RECs) originating from past property use and influenced by a history of regulatory non-compliance associated with former on-site operations. **Further environmental assessment with respect to Phase I scope considerations would be necessary to evaluate whether past on-site operations resulted in an adverse environmental impact to the project site.** JPEG acknowledges that there is no current regulatory obligation for the client (i.e., prospective purchaser) to perform environmental sampling; however, it is emphasized that the most comprehensive approach for evaluating current site conditions is through environmental sampling and analysis.

- *Off-Site Conclusions:* This assessment has revealed no evidence of RECs originating from off-site sources.

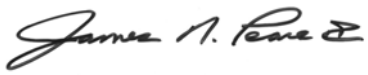
7. PROFESSIONAL STATEMENT

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental Professional* as defined in §312.10.10 of 40CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property.

We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40CFR Part 312.

Signed:

James N. "Jay" Pease, IV REM #10923
President/Registered Environmental Manager



February 27, 2019

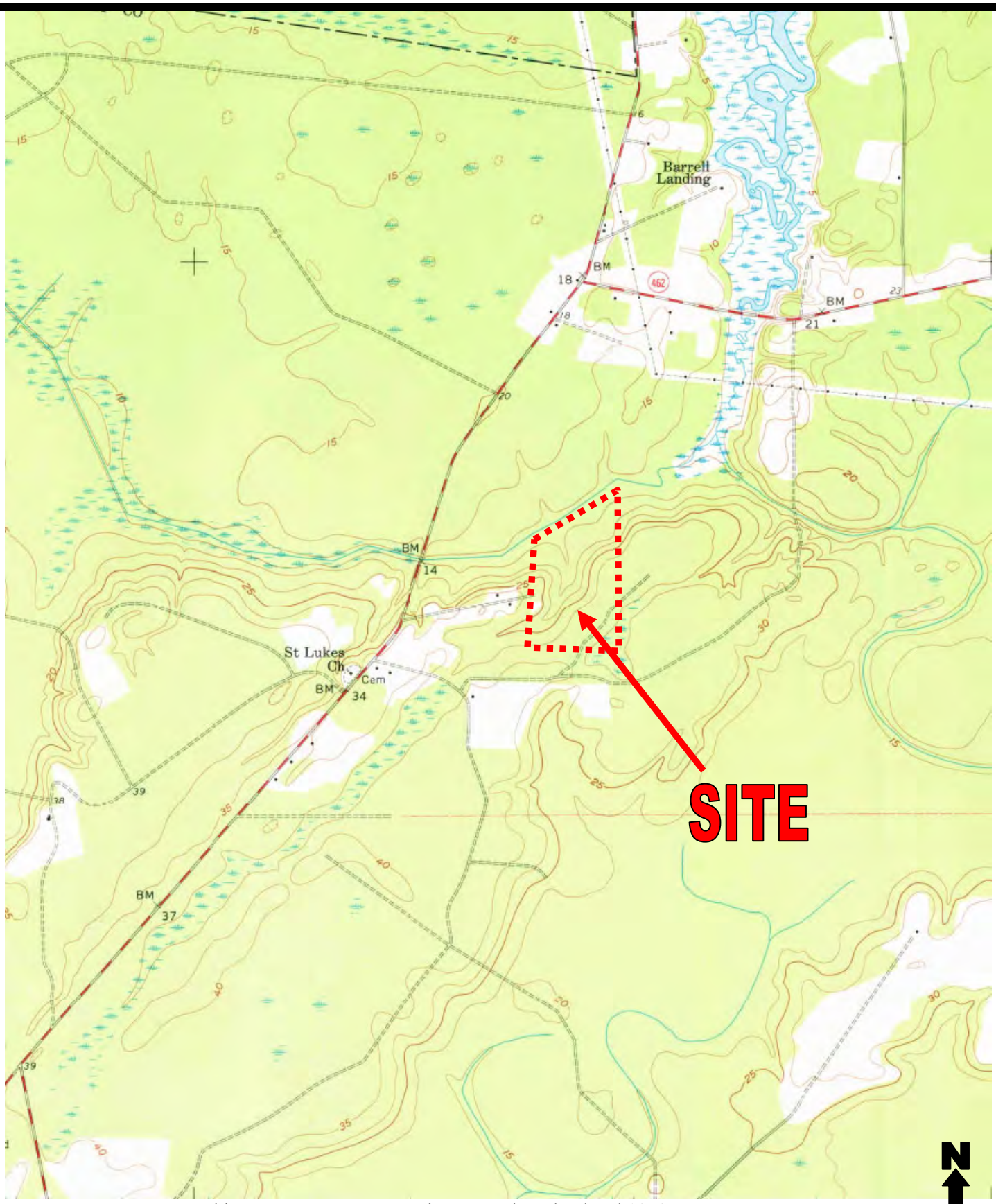
Signature: **Date:**

APPENDIX A

FIGURES

Not To Scale
Source: Bing
***Site Location Approximate**

CLELAND TRACT **Davis Road** **Bluffton, South Carolina**	jpeg J.N. PEASE ENVIRONMENTAL GROUP	**FIGURE 1** **SITE LOCATION MAP**
Prepared by: EM Date: 02/2019		Project No. 2422-19



Source: USGS Topographic Map Jasper, SC 7.5-Minute Quadrangle, dated 1958
Site Location Approximate /Not To Scale

CLELAND TRACT **Davis Road** **Bluffton, South Carolina**	jpeg J.N. PEASE ENVIRONMENTAL GROUP	**FIGURE 2** **TOPOGRAPHIC/SITE LOCATION MAP**
Prepared by: EM Date: 02/2019		Project No. 2422-19

***Not To Scale/Site Boundaries Approximate**
Source: Beaufort County GIS (downloaded January 2019)

CLELAND TRACT **Davis Road** **Bluffton, South Carolina**	jpeg J.N. PEASE ENVIRONMENTAL GROUP	**FIGURE 3** **2018 AERIAL PHOTOGRAPH**
Prepared by: EM Date: 02/2019		Project No. 2422-19

***Not To Scale/Site Boundaries Approximate**
Source: Beaufort County GIS (downloaded February 2019)

CLELAND TRACT **Davis Road** **Bluffton, South Carolina**	jpeg J.N. PEASE ENVIRONMENTAL GROUP	**FIGURE 4** **2002 AERIAL PHOTOGRAPH**
Prepared by: EM Date: 02/2019		Project No. 2422-19

APPENDIX B

PHOTOGRAPHS

Photo No. 1: View depicts property access from Davis Road.

Photo No. 2: View depicts southwest portion of project site.

Photo No. 3: View depicts southeast portion of project site.

Photo No. 4: View depicts southern portion of project site (larger pond in background).

Photo No. 5: View depicts larger on-site pond.

Photo No. 6: View depicts the smaller on-site pond.

Photo No. 7: View of site conditions on northwest portion of the project site.

Photo No. 8: View of example conditions (swampland) across northern portion of site.

Photo No. 9: View of northern property boundary along upper reaches of Okatie River.

Photo No. 10: View depicts cemetery area on southeast corner of project site.

Photo No. 11: View of minimal solid waste debris observed at project site.

Photo No. 12: View of off-site mobile positioned on adjoining parcel.

Photo No. 13: View south of the project site along Davis Road.

Photo 14: View of adjoining utility/power line easement to the east

APPENDIX C

REGULATORY SEARCH INFORMATION

APPENDIX C

Table 1. LISTED FACILITIES

SITE NAME (MAP ID)	DISTANCE	DATABASE	REC (Yes/No) REASON
Cleland Construction - Closed & Cleland Construction/D R Mine & Cleland Construction Davis Road Wood Chipping Facility Davis Road (1)	Project Site	Air Facility Systems (BAQ #0360-0019); ECHO (Enforcement and Compliance History); ICIS (Integrated Compliance Information System); NPDES FINDS SWF (Solid Waste Facility Permit #021000)	YES (History of consistent compliance violations from 1994 through 2004; operations also included former maintenance facility)

Note: The Geosearch radius search maps are attached. The complete Geosearch report is 68 pages and can be provided upon request.

Table 2. ASTM Database Search Criteria

Regulatory List	Dated	Search Criteria Applied
FEDERAL DATABASES		
NPL	November 2018	One mile
DELISTED NPL	November 2018	One-half mile
SEMS (formerly CERCLIS)	December 2018	One-half mile
SEMS-ARCHIVE	December 2018	One-half mile
RCRIS CORRACTS	December 2018	One mile
RCRIS GENERATORS	December 2018	Site and adjacent
RCRIS NON-COR TSD	December 2018	One-half mile
ERNS	October 2018	Site only
EC/IC REGISTRIES	August 2015	Site only
STATE DATABASES		
SHWS	May 2017	One mile
SOLID WASTE/LANDFILL	January 2019	One-half mile
LUST	January 2019	One-half mile
UST (Registered)	November 2018	Site and adjacent
Drycleaners (DCRTF)	January 2018	One-half mile
RCR/AULs (Land Use Controls)	November 2018	Site only
VCP	November 2018	One-half mile
BROWNFIELDS	November 2018	One-half mile
TRIBAL DATABASES		
Indian Reservations	January 2000	One-mile
Indian LUST Region 4	May 2018	One-half mile

GeoSearch
On time. On target. In touch.™

Radius Report

GeoLens by GeoSearch

Target Property:

Cleland Tract
Davis Rd
Bluffton, Beaufort County, South Carolina 29910

Prepared For:

JPEG

Order #: 120981
Job #: 276274
Date: 01/31/2019

Radius Map 1

Target Property (TP)
NPDES

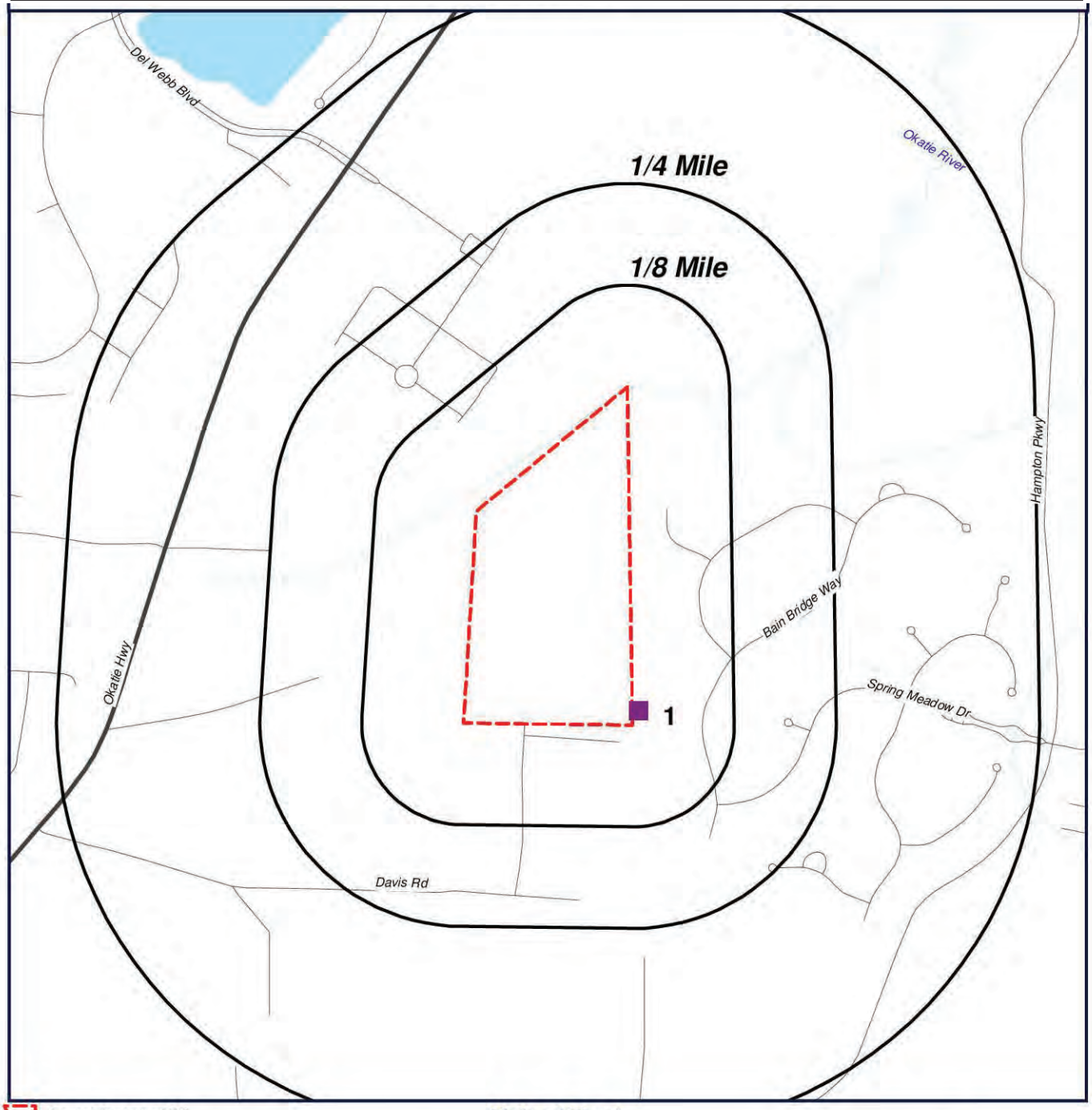
Cleland Tract
Davis Rd
Bluffton, South Carolina
29910

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

Click here to access Satellite view

Radius Map 2



Target Property (TP)
NPDES

Cleland Tract
Davis Rd
Bluffton, South Carolina
29910

N
W E
S

0' 500' 1000' 1500'
SCALE: 1" = 1000'

[Click here to access Satellite view]

CLELAND CONSTRUCTION COMPANY

(Bureau of Air Quality Permit #0360-0019)

STATE OF SOUTH CAROLINA	)	**BEFORE THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL**
	)	
COUNTY OF RICHLAND	)	
IN RE: Cleland Construction Company P.O. Box 21348 Hilton Head, SC 29925	)	**CONSENT ORDER** 97-67-A

The Department of Health and Environmental Control, Bureau of Air Quality ("Department") and Cleland Construction Company, Hilton Head, South Carolina, ("Cleland Construction Company") without the adjudication of any issues of fact or law and upon the consent of the parties concerned hereto, hereby agree to the terms of this Consent Order as follows:

FINDINGS OF FACT

WHEREAS subsequent to a review of available information, Cleland Construction Company agrees to the following findings of the Department:

1. Cleland Construction Company is a general contractor located on Hilton Head Island, South Carolina.

2. On August 1, 1994, and April 18, 1995, Cleland Construction Company was issued Notices of Violation by the Department for Open Burning violations.

3. On May 9, 1995, Cleland Construction Company attended an Enforcement Conference at the Department to discuss the Notice of Violation issued on April 18, 1995. The Department determined that no further enforcement action would be taken in the previous Notices of Violation issued to Cleland Construction Company.

4. Cleland Construction Company purchased an air curtain incinerator

(Operating Permit Number 0360-0019) in May 1996. The incinerator is being installed at a site in Beaufort County. When operational, the incinerator will be used to burn land clearing debris.

5. On April 17, 1997, the Department conducted an investigation of open burning being conducted by Cleland Construction Company on Davis Road, off Highway 170 in Pritchardville, South Carolina.

6. Two piles of land clearing debris were burning at the time of the investigation. The piles of debris also contained materials other than plant growth.

7. On June 20, 1997, Cleland Construction Company was issued a Notice of Violation and a Notice of Enforcement Conference for the violation occurring on April 17, 1997.

8. Cleland Construction Company elected to forego the enforcement conference and proceed with a resolution of this violation through a Consent Order.

CONCLUSIONS OF LAW

WHEREAS the Department concludes that Cleland Construction Company has violated the following regulation:

South Carolina Air Pollution Control Regulation 61-62.2, Prohibition of Open Burning, in that Cleland Construction Company conducted open burning of land clearing debris containing material other than plant growth.

IT IS THEREFORE ORDERED with the consent of Cleland Construction Company and under authority of S.C. Code Ann. §§ 48-1-10 *et seq.* (1976, as amended),

that Cleland Construction Company shall:

1. Immediately and henceforth cease all open burning unless conducted in accordance with Department regulations.

2. Complete installation and start-up of the air curtain incinerator (Operating Permit Number 0360-0019) purchased in May 1996 within sixty (60) days of the execution date of this Order. The incinerator shall be fully operational within ninety (90) days of the execution date of this Order.

3. Pay to the Department a civil penalty in the amount of one thousand five hundred dollars ($1,500.00) within thirty (30) days of the execution date of this Order.

AND IT IS SO ORDERED.

FOR THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Date: 8/20/97
Columbia, South Carolina

By: Douglas E. Bryant
Douglas E. Bryant,
Commissioner

FOR THE DEPARTMENT

James A. Joy, III, Chief
Bureau of Air Quality

Date: 8/19/97

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality

Date: 8/14/97

DHEC Legal Counsel

Date: 8-20-97

FOR CLELAND CONSTRUCTION COMPANY

Date: 8-8-97

Date:

BKB

STATE OF SOUTH CAROLINA	)	BEFORE THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
	)	
COUNTY OF BEAUFORT	)	
IN RE: Cleland Construction Company P.O. Box 21348 Hilton Head, SC 29925	)	CONSENT ORDER 98-035-A

The Department of Health and Environmental Control, Bureau of Air Quality ("Department") and Cleland Construction Company, Hilton Head, South Carolina, ("Cleland") without the adjudication of any issues of fact or law and upon the consent of the parties concerned hereto, hereby agree to the terms of this Consent Order as follows:

FINDINGS OF FACT

WHEREAS subsequent to a review of available information, Cleland agrees to the following findings of the Department:

1. Cleland is a general contractor located on Hilton Head Island, South Carolina.

2. On August 28, 1997, a complaint investigation conducted by Department personnel indicated that Cleland was conducting open burning within one thousand feet of Highway 278 at a land-clearing site in Bluffton, South Carolina.

3. Cleland operates an air curtain incinerator (Operating Permit #0360-0019) for burning land-clearing debris. The incinerator is located at a site on Davis Road in Prichardville, South Carolina. The permit limits the amount of material which may be stored on site and requires proper operating and maintenance practices.

4. On September 17, 1997, in response to Cleland's reporting a fire at the Davis Road facility, Department personnel conducted an inspection of the incinerator. Department personnel discovered the incinerator was unattended when the fire started and there was more land-clearing debris present before the fire than could have been incinerated in one week.

5. On January 13, 1998, in response to a complaint of open burning, Department personnel observed a pit that had been used for open burning at the Davis Road site. Cleland personnel were using a combustion enhancement device for conducting open burning of debris from various land-clearing operations.

6. On March 16, 1998, Cleland was issued a Notice of Violation and a Notice of Enforcement Conference for the violations occurring on August 29, 1997, September 17, 1997, and January 13, 1998.

7. On March 31, 1998, an enforcement conference was held with Cleland personnel to discuss the cited violations.

8. Cleland was issued a Notice of Violation from the Department on August 1, 1994, for open burning violations observed during an inspection conducted on that day.

9. Cleland was issued a Notice of Violation and a Notice of Enforcement Conference from the Department April 18, 1995, for open burning violations observed during an inspection conducted on March 6, 1995.

10. On May 9, 1995, Cleland attended an enforcement conference at the Department to discuss the Notice of Violation issued on April 18, 1995.

11. The Department elected to take no further enforcement action in each of the previous Notices of Violation issued to Cleland.

12. Cleland was issued a Notice of Violation and a Notice of Enforcement Conference from the Department June 20, 1997, for open burning violations observed during an inspection conducted on April 17, 1997.

13. As a result of the June 20, 1997, Notice of Violation, Cleland entered into Consent Order Number 97-067-A, on August 20, 1997. The order required Cleland to "Immediately and henceforth cease all open burning unless conducted in accordance with Department regulations."

CONCLUSIONS OF LAW

WHEREAS the Department concludes that Cleland has violated the following Law and regulations:

1. The South Carolina Pollution Control Act §§ 48-1-10 *et seq.*(supp. 1997), in that Cleland failed to comply with Consent Order Number 97-067-A.

2. South Carolina Air Pollution Control Regulation 61-62.2, Prohibition of Open Burning, in that Cleland conducted open burning of land-clearing debris less than one thousand feet from a public roadway and conducted open burning of land-clearing debris generated on property other than the property where it was burned.

3. South Carolina Air Pollution Control Regulation Number 61-62.1, Section II, Permit Requirements, in that Cleland stored more land-clearing debris than could be incinerated in one week and left the incinerator unattended while it was in operation.

IT IS THEREFORE ORDERED with the consent of Cleland and under authority of S.C. Code Ann. §§ 48-1-10 *et seq.* (1976, as amended), that Cleland shall:

1. Immediately and henceforth cease all open burning unless conducted in accordance with Department regulations.

2. Immediately and henceforth comply with all permit conditions and Department regulations for operation of the air curtain incinerator located at the Davis Road facility.

3. Pay to the Department a civil penalty in the amount of seven thousand five hundred dollars ($7,500.00) within thirty (30) days of the execution date of this Order.

AND IT IS SO ORDERED.

FOR THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Date: 6/2/98
Columbia, South Carolina

By: Douglas E. Bryant
Douglas E. Bryant,
Commissioner

FOR THE DEPARTMENT

James A. Joy, III, Chief
Bureau of Air Quality

Date: 5/22/98

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality

Date: 5/22/98

DHEC Legal Counsel

Date: 5-28-98

FOR CLELAND CONSTRUCTION COMPANY

Date: 5-17-98

Date:

BKB

STATE OF SOUTH CAROLINA	)	**BEFORE THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL**
COUNTY OF BEAUFORT	)	
IN RE: Cleland Construction Company, Inc. P.O. Box 21348 Hilton Head, SC 29925	)	**CONSENT ORDER** 00-011-A

The Department of Health and Environmental Control, Bureau of Air Quality ("Department") and Cleland Construction Company, Inc., Hilton Head, South Carolina, ("Cleland Construction") agree to the entry of this Consent Order without adjudication of law or fact and in the interest of resolving this matter without delay and expense of litigation. Cleland Construction agrees to the entry of this Consent Order but does not agree with the Findings of Fact or Conclusions of Law, and therefore agrees that this Order shall be deemed an admission of fact and law only as necessary for enforcement of this Order by the Department or subsequent actions relating to Cleland Construction by the Department:

FINDINGS OF FACT

WHEREAS subsequent to a review of available information, Cleland Construction agrees to the following findings of the Department:

1. Cleland Construction is a general contractor located on Hilton Head Island, South Carolina, which operates an air curtain incinerator at a site on Davis Road in Prichardville, South Carolina.

2. Cleland Construction was issued Operating Permit #0360-0019 on May 29, 1996, for the air curtain incinerator. The Operating Permit required Cleland Construction to maintain records of the amount of material incinerated on a daily basis.

3. An inspection conducted by Department personnel on January 15, 1999,

indicated the records of the amount of material incinerated were not available at the site of the air curtain incinerator when requested. Such records were being maintained by Cleland Construction at its Hilton Head Island office. The requested records were subsequently submitted to the Department on January 19, 1999.

4. Cleland Construction was issued Part 70 Air Quality (Title V Operating) Permit #0360-0019 on February 9, 1999, for the air curtain incinerator. The Title V operating permit requires Cleland Construction to maintain records of fuel usage and tons of material incinerated per day and to submit these records to the Department quarterly. The facility is required to install and maintain a hydraulic strain gauge on the front end loader used to charge the air curtain incinerator for the monitoring of daily charge rates. The Operating Permit also limits the opacity of emissions from the air curtain incinerator to a maximum of 20% using U.S. Environmental Protection Agency (EPA) Method 9.

5. An inspection conducted by Department personnel on May 26, 1999, indicated the facility had not installed and maintained a hydraulic strain gauge on the front end loader.

6. A Method 9 visible emission observation conducted on May 26, 1999, by Department personnel indicated the highest six minute average opacity of emissions from the air curtain incinerator was 86%. The excess emissions were possibly the result of damaged or missing refractory bricks in the burn pit.

7. Department records indicate Cleland Construction did not submit quarterly reports on a timely basis as required by the Title V operating permit. After notification of this omission, Cleland Construction submitted the records.

8. Cleland Construction entered into Consent Order #98-035-A on June 2, 1998. The Consent Order required Cleland Construction *inter alia* to "[i]mmediately and henceforth comply with all permit conditions and Department regulations for operation of the air curtain incinerator."

9. On October 6, 1999, Cleland Construction was issued a Notice of Violation and a Notice of Enforcement Conference for the violations occurring on January 15, 1999, and May 26, 1999.

10. An enforcement conference was held at the Department with Cleland Construction on October 21, 1999, to discuss the cited violations.

11. During the enforcement conference Cleland Construction indicated the material being burned was now being weighed as required in the permit, required records were now being kept on site, quarterly reports were being submitted, and the damaged or missing refractory which led to opacity exceedences had been replaced.

CONCLUSIONS OF LAW

WHEREAS the Department concludes that Cleland Construction has violated the following:

1. The South Carolina Pollution Control Act §§ 48-1-10 *et seq.*(supp. 1997), in that Cleland Construction failed to comply with the permit conditions of the operating permit as required by Consent Order Number 98-035-A.

2. South Carolina Air Pollution Control Regulation 61-62.1, Section II, Permit Conditions, in that Cleland Construction failed to maintain the required records specified in the operating permit.

3. South Carolina Air Pollution Control Regulation 61-62.1, Section II, Permit

Conditions, in that Cleland Construction exceeded the maximum allowable opacity limit for emissions from the air curtain incinerator specified in the Title V operating permit.

4. South Carolina Air Pollution Control Regulation 61-62.1, Section II, Permit Conditions, in that Cleland Construction failed to install and maintain a hydraulic strain gauge as specified in the Title V operating permit.

5. South Carolina Air Pollution Control Regulation 61-62.1, Section II, Permit Conditions, in that Cleland Construction failed to submit quarterly reports as required by the Title V operating permit.

IT IS THEREFORE ORDERED with the consent of Cleland Construction and under authority of S.C. Code Ann. §§ 48-1-10 *et seq.* (1976, as amended), that Cleland Construction shall:

1. Henceforth ensure that all burning conducted at the facility is done in accordance with permit requirements and regulations.

2. Maintain required records on site and submit quarterly reports in a timely manner.

3. Maintain the refractory lining of the pit for the air curtain incinerator.

4. Pay to the Department a civil penalty in the amount of twenty-two thousand five hundred dollars ($22,500.00) within thirty (30) days of the execution date of this Order.

STATE OF SOUTH CAROLINA	)	**BEFORE THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL**
COUNTY OF BEAUFORT	)	
IN RE: Cleland Construction Company, Inc. Davis Road Bluffton, SC 29910	)	**CONSENT ORDER 02-15-A**

The Department of Health and Environmental Control, Bureau of Air Quality ("Department") and Cleland Construction Company, Inc., Hilton Head, South Carolina, ("Cleland Construction") without the adjudication of any issues of fact or law and upon the consent of the parties concerned hereto, hereby agree to the terms of this Consent Order as follows:

FINDINGS OF FACT

WHEREAS subsequent to a review of available information, Cleland Construction agrees to the following findings of the Department:

1. Cleland Construction, located on Hilton Head Island, South Carolina, conducts land clearing at various sites and operates an air curtain incinerator in Prichardville, South Carolina.

2. Cleland Construction was issued Part 70 (Title V) Air Quality Operating Permit TV-0360-0019 effective on February 24, 1999, for the operation of an air curtain incinerator.

3. The Title V permit requires Cleland Construction, *inter alia*, to maintain daily records of fuel usage and tons of material incinerated, operate the air curtain at all times that the pit contains burning wood debris, and incinerate material within one week of arrival on site. The fuel usage and incineration records are required to be

submitted to the Department quarterly. The Title V permit and State air quality regulations also require the facility to submit a Title V Annual Compliance Certification indicating the facility's compliance with the terms and conditions of its permit.

4. An inspection conducted by Department personnel on July 17, 2000, indicated smoldering material was observed in the pit without the air curtain operating, and the facility had more material than could be burned in one week stored on site.

5. Department records indicate Cleland Construction failed to submit quarterly reports for the third and fourth quarters of 2000 and the first quarter of 2001 as required in its Title V permit.

6. Department records indicate that Cleland Construction failed to submit its Title V Annual Compliance Certification for the February 24, 2000, to February 23, 2001, reporting period as required by its permit. The certification was due to the Department by April 9, 2001.

7. Cleland Construction entered into Consent Order Number 98-035-A, on June 2, 1998, for unattended operation of the air curtain incinerator and other violations. The Consent Order required Cleland Construction, *inter alia*, to "Immediately and henceforth comply with all permit conditions and Department regulations for operation of the air curtain incinerator."

8. Cleland Construction entered into Consent Order Number 00-011-A, on March 6, 2000, for failure to keep incineration records for the air curtain incinerator, failure to submit quarterly reports to the Department, and other violations. The

Consent Order required Cleland Construction, *inter alia*, to "Maintain required records on site and submit quarterly reports in a timely manner."

9. A complaint investigation conducted by Department personnel on November 30, 2000, at John Smith Road in Jasper County indicated Cleland Construction was burning land clearing debris within 1,000 feet of the roadway.

10. Cleland Construction entered into Consent Order Number 97-067-A, on August 20, 1997, for violations of State open burning regulations. The Consent Order required Cleland Construction to *inter alia* "Immediately and henceforth cease all open burning unless conducted in accordance with Department regulations."

11. Consent Order Number 98-035-A also addressed violations of State open burning regulations. The consent order required Cleland Construction, *inter alia*, to "Immediately and henceforth cease all open burning unless conducted in accordance with Department regulations."

12. On June 26, 2001, Cleland Construction was issued a Notice of Violation and a Notice of Enforcement Conference for the violations noted on July 17, 2000, and November 30, 2000, and from a review of Department records.

13. An enforcement conference was held at the Department with Cleland Construction on July 23, 2001, to discuss the cited violations.

14. During the enforcement conference Cleland Construction indicated the incinerator had not been operated since July 2000.

CONCLUSIONS OF LAW

WHEREAS the Department concludes that Cleland Construction has violated the following:

1. Consent Orders 98-035-A and 00-011-A, in that Cleland Construction failed to comply with the permit conditions of the operating permit as required by Consent Orders 98-035-A and 00-011-A.

2. The South Carolina Pollution Control Act § 48-1-110 (d), in that Cleland Construction failed to operate the air curtain at all times the pit contained burning wood debris.

3. The South Carolina Pollution Control Act § 48-1-110 (d), in that Cleland Construction failed to incinerate material within one week of storage at the site.

4. The South Carolina Pollution Control Act § 48-1-110 (d), in that Cleland Construction failed to submit quarterly reports of material incinerated and fuel used for the third and forth quarters of 2000 and the first quarter of 2001, as specified in the Title V permit.

5. The South Carolina Pollution Control Act § 48-1-110(d) and South Carolina Air Pollution Control Regulation 61-62.70 Title V Operating Permit Program, in that Cleland Construction failed to submit its Title V Annual Compliance Certification for the February 24, 2000, to February 23, 2001, reporting period to the Department in accordance with the schedule and conditions established in Part 3.0 (R) of the Title V permit.

6. South Carolina Air Pollution Control Regulation 61-62.2, Prohibition of Open Burning, in that Cleland Construction burned land clearing debris within 1,000 feet of a roadway.

7. Consent Orders 97-067-A and 98-035-A, in that Cleland Construction failed to comply with the Department's Open Burning regulations as required by Consent

Order Number 97-067-A and 98-035-A.

IT IS THEREFORE ORDERED with the consent of Cleland Construction and under authority of S.C. Code Ann. §§ 48-1-10 *et seq.* (1976, as amended), that Cleland Construction shall:

1. Henceforth ensure that all burning of land clearing debris is conducted in accordance with the State Prohibition of Open Burning regulations.

2. Immediately establish and henceforth maintain required records of material incinerated and fuel used on site, and submit required reports in a timely manner.

3. Submit to the Department within 10 days the Annual Compliance Certification for the February 24, 2000, through February 23, 2001, monitoring period.

4. Pay to the Department a civil penalty in the amount of thirty-three thousand dollars ($33,000.00) within thirty (30) days of the execution date of this Order.

AND IT IS SO ORDERED.

FOR THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Date: 2/12/02
Columbia, South Carolina

By: C. Earl Hunter
C. Earl Hunter
Commissioner

FOR THE DEPARTMENT

James A. Joy, III, Chief
Bureau of Air Quality

Date: 2/4/02

Richard D. Sharpe

Date: 2/1/02

Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality

Date: 2/11/02

DHEC Legal Counsel

FOR CLELAND CONSTRUCTION COMPANY

Date: 24 JAN 2002

Date:

BKB

AND IT IS SO ORDERED.

FOR THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Date: 3/6/2000
Columbia, South Carolina

By: Douglas E Bryant
Douglas E. Bryant,
Commissioner

FOR THE DEPARTMENT

James A. Joy III
James A. Joy, III, Chief
Bureau of Air Quality

Date: 3/3/00

Richard D. Sharpe
Richard D. Sharpe, Director
Air Compliance Management Division
Bureau of Air Quality

Date: 2/28/2000

DHEC Legal Counsel

Date: 3/6/2000

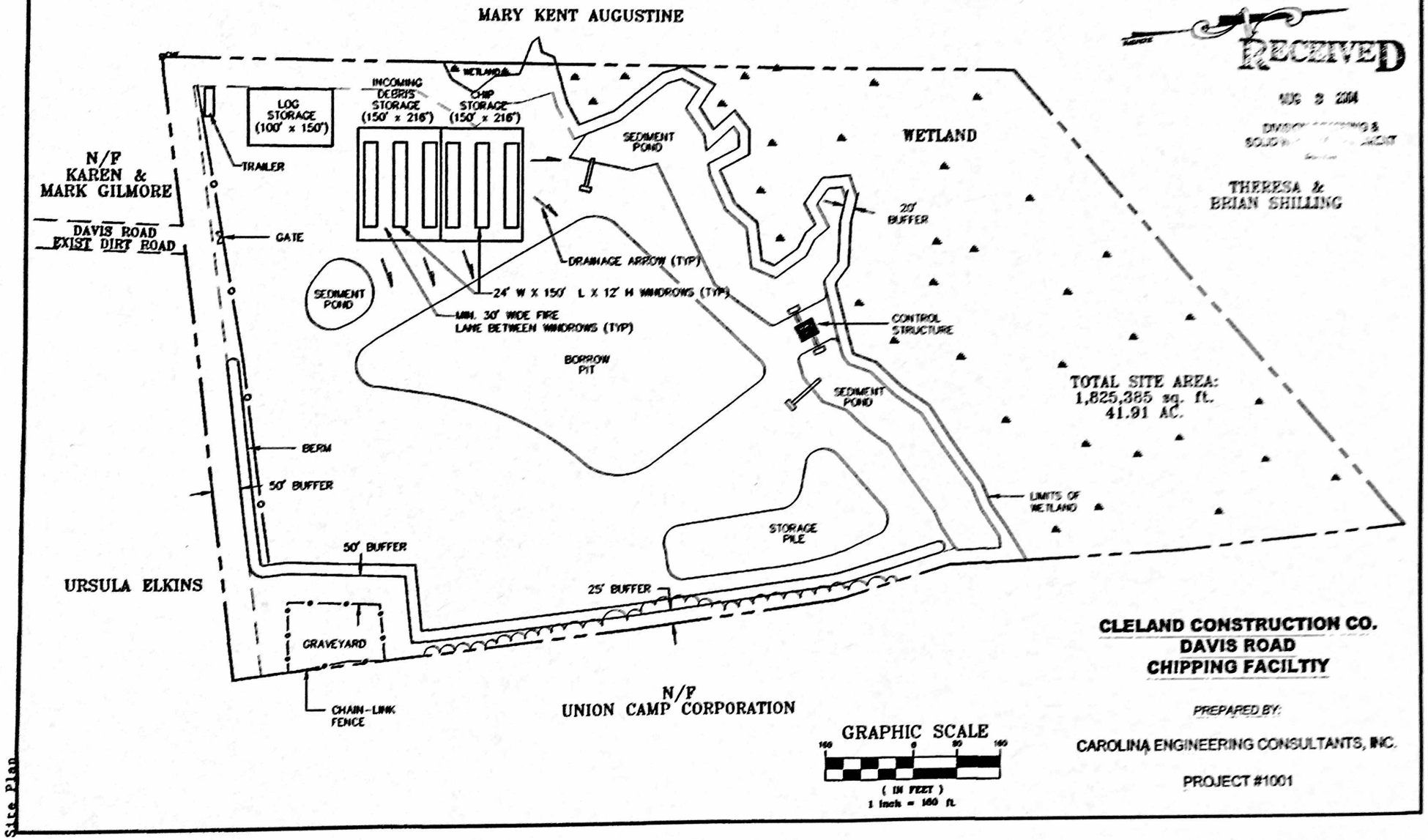
FOR CLELAND CONSTRUCTION COMPANY

C E Cleland President

Date: 2-22-00

Date:

BKB


MARY KENT AUGUSTINE
RECEIVED
N/F
KAREN &
MARK GILMORE
DAVIS ROAD
EXIST DIRT ROAD
LOG
STORAGE
(100' x 150')
INCOMING
DEBRIS
STORAGE
(150' x 216')
CHIP
STORAGE
(150' x 216')
WETLAND
SEDIMENT
POND
WETLAND
TRAILER
GATE
20'
BUFFER
THERESA &
BRIAN SHILLING
DRAINAGE ARROW (TYP)
SEDIMENT
POND
24' W X 150' L X 12' H WINDROWS (TYP)
MIN. 30' WIDE FIRE
LANE BETWEEN WINDROWS (TYP)
CONTROL
STRUCTURE
BORROW
PIT
TOTAL SITE AREA:
1,825,385 sq. ft.
41.91 AC.
SEDIMENT
POND
BERM
50' BUFFER
LIMITS OF
WETLAND
STORAGE
PILE
50' BUFFER
URSULA ELKINS
25' BUFFER
GRAVEYARD
CHAIN-LINK
FENCE
N/F
UNION CAMP CORPORATION
GRAPHIC SCALE
160 0 80 160
(IN FEET)
1 inch = 160 ft.
CLELAND CONSTRUCTION CO.
DAVIS ROAD
CHIPPING FACILTIY
PREPARED BY:
CAROLINA ENGINEERING CONSULTANTS, INC.
PROJECT #1001

Site Plan

APPENDIX D

SITE RECORDS AND USER INFORMATION

jpeg
J.N. PEASE
ENVIRONMENTAL GROUP

Cleland Tract

PROPERTY OWNER QUESTIONNAIRE
(Page 1 of 2)

Answer all questions or check the appropriate box
(Do not leave blanks, write "NA" if not applicable)

PROJECT NAME/NUMBER **2422-19**		OWNER CONTACT NAME Lauren Niemiec
PHONE 843 321 1118	TITLE Counsel	COMPANY Cleland Site Prep

ARE YOU AWARE OF THE FOLLOWING WITH REGARDS TO THE PROJECT SITE?

1. Any pending, threatened, or past **litigation** relevant to hazardous substances or petroleum products in, on, or from the subject property? (YES or (NO))

2. Any pending, threatened, or past **administrative proceedings** relevant to hazardous substances or petroleum products in, on, or from the subject property? (YES or (NO))

3. Any notices from governmental agencies regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products originating from the subject property? (YES or (NO))

4. Any underground or aboveground storage tanks (UST or AST), including heating oil tanks, located at the property or an adjacent property? (YES [list numbers of tanks, size and contents] or (NO))

5. How long have you owned property? (enter purchase date if known)

5a. What was property used for at time of purchase? Investment

5b. Is property currently LEASED or previously been LEASED? (list tenants with corresponding use) No

To the best of my knowledge, the information presented is true and correct. This questionnaire was completed by:

Name:(Print) Lauren Niemiec Title: Counsel

Signature: [signature] Date: 1/31/2019

J.N. PEASE ENVIRONMENTAL GROUP

PROPERTY OWNER QUESTIONNAIRE
(Page 2 of 2)

Answer all questions or check the appropriate box
(Do not leave blanks, write "NA" if not applicable)

PREVIOUS INVESTIGATIONS

1. Has a Phase I Environmental Assessment, asbestos/lead paint survey, tank closure/removal report or other environmental study of the subject property ever been performed? ☐ - Yes ☒ - No

2. If yes, what concerns were noted or recommendations made?_____
Please provide report dates and if possible, a copy of any previous report(s).

PAST & PRESENT USAGE

1. To the best of your knowledge, is the subject property or any adjoining property currently used, or have they ever been used for industrial purposes? ☐ - Yes ☒ - No

2. Is the property or any adjoining property currently used, or have they ever been used, as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, landfill, waste treatment/storage/disposal (TSD) facility, or recycling facility? Construction company had a maintenance facility on-site for approx 2 years ☒ - Yes ☐ - No

SITE CONDITIONS

1. Has fill dirt been brought onto the property that originated from a contaminated site or from an unknown origin? ☐ - Yes ☒ - No

2. Are there currently, or to the best of your knowledge have there historically been, any pits, ponds, or lagoons located on the property in connection with waste treatment or disposal activities? ☐ - Yes ☒ - No

3. Are there currently any private drinking water or irrigation wells located on the property? ☐ - Yes ☒ - No

4. Are there currently any septic tanks and/or drain fields located on the property? ☐ - Yes ☒ - No

5. To the best of your knowledge, have any hazardous substances, petroleum products, or unidentified waste materials been dumped above grade, buried and/or burned, on the property? ☐ - Yes ☒ - No

6. Are any structures located on the property? ☐ - Yes ☒ - No
   If yes, list building use?
   Date of construction?
   Size (square footage)?
   Past/present occupancy?

7. If building is vacant, how long has it been vacant?

8. Please list any contract maintenance services with company name performed at property (i.e., janitorial, pest control, HVAC)

IF APPLICABLE, PLEASE COMMENT ON ANY YES ANSWERS:

Initials: JCN

To be completed by the buyer; not the property owner

ASTM PHASE I ESA USER QUESTIONNAIRE

**Answer all questions; do not leave blank.* *Return To: jpegllc@comcast.net*

USER PROVIDED INFORMATION

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the *"Brownfields Amendments"),* the *user* must provide the following information (if available) to the *environmental professional.* Failure to provide this information could result in a determination that *"all appropriate inquiry"* is not complete. [Reference: ASTM International Designation: E1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process"]

(1.) Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).

Are you aware of any environmental cleanup liens against the *property* that are filed or recorded under federal, tribal, state or local law? No.

(2.) Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry (40 CFR 312.26).

Are you aware of any Activity and Use Limitations (AULs) for the *property*, such as *engineering controls,* land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? No.

(3.) Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).

As the *user* of this *ESA* do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or an adjoining *property* so that you would have specialized knowledge of the chemicals and processes used by this type of business? No.

(4.) Relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.29).

Does the purchase price being paid for this *property* reasonably reflect the fair market value of the *property?* If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property?*

Purchase price is consistent with real estate appraisal value.

(5.) Commonly known or *reasonably ascertainable* information about the *property* (40 CFR 312.30).

Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases? For example, as *user,*

(a.) Do you know the past uses of the *property?* Several borrow pits were dug, according to landowner.
(b.) Do you know of specific chemicals that are present or once were present at the *property?* No.
(c.) Do you know of spills or other chemical releases that have taken place at the *property?* No.
(d.) Do you know of any environmental cleanups that have taken place at the *property?* No.

(6.) The degree of obviousness of the presence of likely presence of contamination at the *property,* and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).

As the *user* of this *ESA,* based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of contamination at the *property?*

COMMENTS *(If you answered yes to any of the above, please provide details below or attach appropriate documentation.)*

To the best of my knowledge, the information presented is true and correct. This questionnaire was completed by:

Print Name/Signature: Barbara G. Holmes, Beaufort County Open Land Trust Barbara G. Holmes Date: 1/31/2019

Beaufort County, South Carolina

generated on 2/21/2019 5:35:32 PM EST

Property ID (PIN)	Alternate ID (AIN)	Parcel Address	Data refreshed as of	Assess Year	Pay Year
R600 029 000 0054 0000	07085094	,	2/14/2019	2019	2019

Current Parcel Information

Owner	CLELAND SITE PREP INC	Property Class Code	AgVac Forest
Owner Address	PO BOX 3822 BLUFFTON SC 29910	Acreage	40.0700
Legal Description	SUBJ TO ROLL BACK TAX LIEN POR OF URSULA K ELKINS PROP DB846 PG2419 PB61 PG114*TOT AC INCL 0.41 AC CEMETARY MGFM:KEY#7085101 5-21-98 SPLIT 6/99 0.40 AC 29/85 ACERAGED ADJUSTED PB61 P114 6/08 2.80 AC 29/55 RESTORED BY DB2656 PG193 10-26-07		

Historic Information

Tax Year	Land	Building	Market	Taxes	Payment
2018	$3,304,800		$3,304,800	$158.58	$158.58
2017	$1,790,100		$1,790,100	$161.59	$161.59
2016	$1,790,100		$1,790,100	$160.32	$160.32
2015	$1,790,100		$1,790,100	$155.44	$155.44
2014	$1,790,100		$1,790,100	$154.35	$154.35
2013	$1,790,100		$1,790,100	$152.30	$152.30
2012	$2,753,973		$2,753,973	$145.72	$145.72
2011	$2,753,973		$2,753,973	$144.98	$931.16
2010	$2,753,973		$2,753,973	$109.30	$109.30
2009	$2,753,973		$2,753,973	$14,362.04	$14,362.04

Sales Disclosure

Grantor	Book & Page	Date	Deed	Vacant	Sale Price
JLJ HOLDINGS LLC	3046 2186	12/21/2010	Ge		$10
CLELAND AVERY E	2656 193	10/26/2007	Fu		$10
ELKINS URSULA K ST RTE 6	846 2419	3/13/1996	Fu		$225,000
		12/31/1776	Or		$0

Improvements

Building	Type	Use Code Description	Constructed Year	Stories	Rooms	Square Footage	Improvement Size

APPENDIX E

PERSONNEL QUALIFICATIONS

Elizabeth Miller

Staff Professional

EDUCATION

Master of Science, Environmental Engineering and Science, Clemson University, 2015
Bachelor of Arts, Biological Sciences, Clemson University, 2014

CAREER SUMMARY

Ms. Miller is a staff professional for J. N. Pease Environmental Group, LLC (JPEG), a South Carolina-based consulting firm that offers specialized expertise in the following types of environmental projects: Phase I and Phase II site assessments, lead-based paint inspections and risk assessments, HUD Form 4128 Environmental Reviews, underground storage tank assessments, surveys for asbestos and mold, and brownfields assessment and redevelopment. Ms. Miller has worked on the following aspects of environmental projects: site investigation, regulatory records review, sample collection and data analysis, historical records review, and report preparation.

PROJECT EXPERIENCE

Since joining JPEG in 2016, Ms. Miller has been actively involved with the execution of all aspects of Phase I & II ESA projects. Phase I assessment methodologies include ASTM protocols and non-mandatory client protocols.

YEARS WITH JPEG: 2
YEARS IN PROFESSION: 2

514 Mill Street, Suite D, Mount Pleasant, South Carolina 29464
Tel: (843) 345-4765 Fax: (843) 278-9228 E-mail: jpegllc@comcast.net

JAMES N."JAY" PEASE, IV, R.E.M.

Registered Environmental Manager

WORK EXPERIENCE & BUSINESS OWNERSHIP

2003 to Present	**President/Owner: J.N. Pease Environmental Group, LLC**
2000 - 2003	Law Engineering and Environmental Services, Inc., Charleston, SC
1997 - 2000	Exxon/Integrated Science & Technology, Inc. Charleston, South SC
1993 - 1996	Georgia Environmental Protection Division/USEPA, Atlanta, GA

EDUCATION

Masters of Science, Environmental Science/Risk Assessment, 1997 (Medical University of South Carolina)
Bachelors of Science, Biology, 1993 (Davidson College)

PROFESSIONAL CERTIFICATIONS

NREP Registered Environmental Manager (REM) - #10923 **(Member Since 2001)**
Certified Lead Based Paint Risk Assessor and Inspector #SC-R-7570-4
SCDHEC Licensed Asbestos Inspector #BI-01136

CAREER SUMMARY

Mr. Pease is the President of J. N. Pease Environmental Group, LLC (JPEG), a South Carolina-based consulting firm that offers specialized expertise in the following types of environmental projects: Phase I and Phase II site assessments, HUD Form 4128 Environmental Reviews, HOME Environmental Assessments, lead-based paint inspections/risk assessments, asbestos surveys, mold inspections, underground storage tank assessments, brownfields assessments, and stormwater sampling. During his tenure as an environmental consultant, *Mr. Pease has personally completed over 1,500 Phase I projects* and worked extensively on the following aspects of environmental investigations: site investigation, data collection and analysis, computer modeling, corrective action plan preparation, receptor surveys, project management, budget control, conceptual exposure model development, regulatory interface, third party access negotiations, records review, permitting, chain-of-title searches and report preparation. His previous project management experience included the direction of approximately 160 petroleum-contaminated sites located in the Carolinas, Georgia and Tennessee for two major domestic oil companies and a build out of over 400 cellular phone towers. Mr. Pease also formerly worked for Georgia EPD and US EPA Region IV (under contract) and for Law Engineering where he served as a senior level project manager and environmental department head in the Charleston, SC office.

PROJECT EXPERIENCE

Phase I and II Environmental Site Assessments: JPEG's primary area of expertise is in conducting Phase I and Phase II environmental site assessments. JPEG has executed *over one thousand* Phase I projects across the southeast United States. JPEG has contracted with regional developers, commercial lenders, commercial attorneys, municipalities, non-profit groups, and area engineering firms to execute Phase I assessments prior to sales, purchases, and/or refinancing of real estate. Properties assessed include industrial facilities, commercial facilities, roadway corridors, brownfields, large acreage tracts (largest site assessed is 12,460 acres) , beachfront hotels, restaurants, gasoline stations, dry cleaners, retail developments and wireless telecommunications towers. Assessment methodologies include AAI and ASTM protocols and non-mandatory client protocols. Phase I scopes are routinely expanded to address client concerns such as mold, lead-based paint, asbestos and wetlands.

APPENDIX F

AERIAL PHOTOGRAPHS

Historical Aerial Photographs

NEW: *GeoLens by Geosearch*

Target Property:

Cleland Tract
Davis Rd
Bluffton, Beaufort, South Carolina 29910

Prepared For:

JPEG

Order #: 120981
Job #: 276275
Project #:
Date: 2/1/2019

Target Property Summary

Cleland Tract
Davis Rd
Bluffton, Beaufort, South Carolina 29910

USGS Quadrangle: ***Jasper***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-80.936355377, 32.282154405), (-80.939531112, 32.279941186), (-80.939810062, 32.276167703), (-80.936248088, 32.276131419)

Aerial Research Summary

Date	Source	Scale	Frame
2015	USDA	1" = 500'	N/A
2013	USDA	1" = 500'	N/A
2011	USDA	1" = 500'	N/A
2006	USDA	1" = 500'	N/A
2005	USDA	1" = 500'	N/A
01/22/1994	USGS	1" = 500'	N/A
03/10/1989	USGS	1" = 700'	1363-136
01/18/1983	USGS	1" = 500'	1-169
02/20/1977	USGS	1" = 500'	1-64
03/24/1972	USDA	1" = 500'	172-24
04/16/1968	USAF	1" = 500'	6-1105
10/10/1961	USNAVY	1" = 500'	4-382
01/21/1960	ASCS	1" = 500'	6-32
03/23/1951	USGS	1" = 500'	2-35
11/10/1941	ASCS	1" = 500'	1-95

N
W E
S

Cleland Tract
USDA
2015

GeoSearch

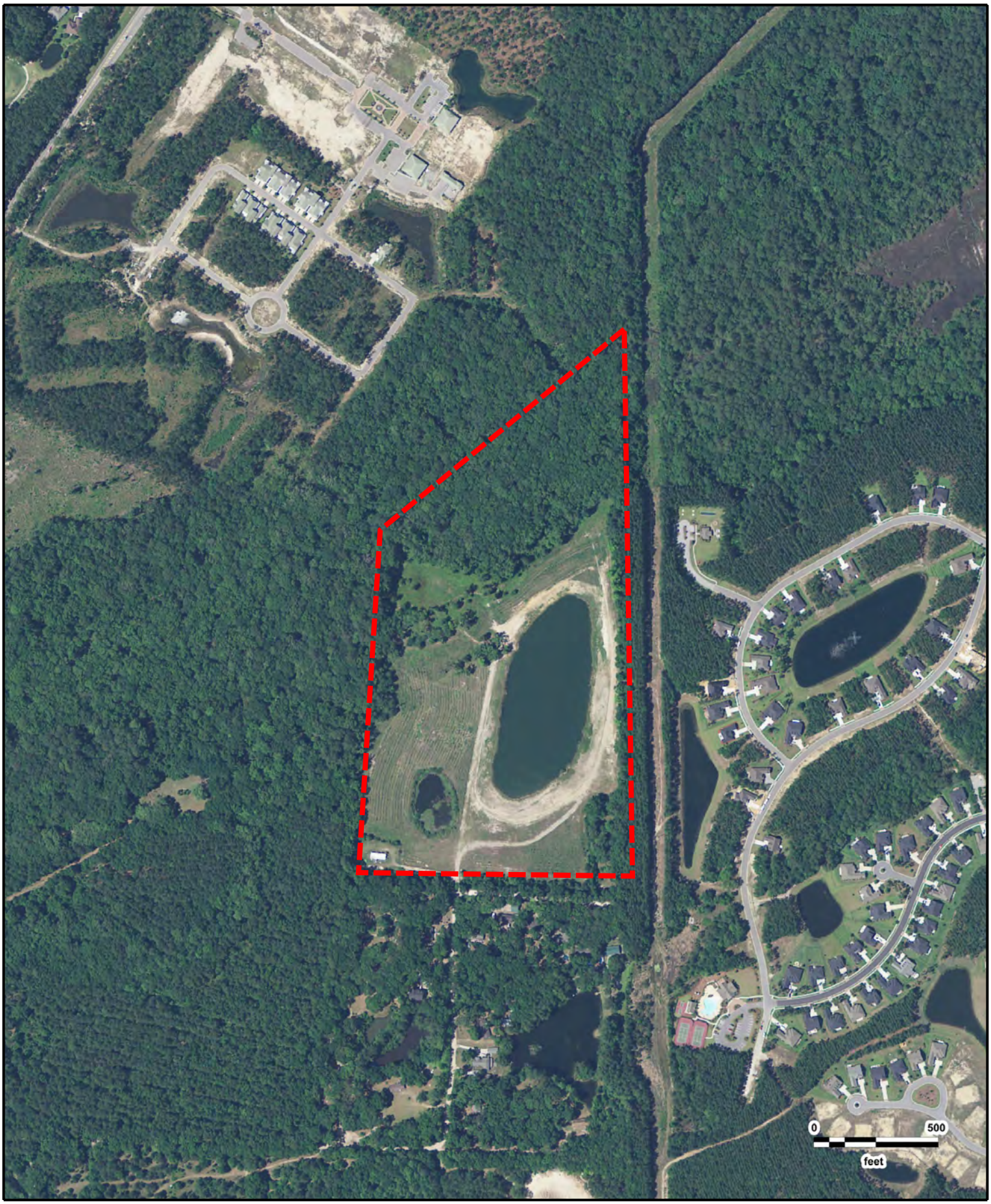
JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
USDA
2013

GeoSearch

JOB #: 276275 - 02/01/2019



N
W E
S

Cleland Tract
USDA
2011

GeoSearch

JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
USDA
2006

GeoSearch

JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
USDA
2005

GeoSearch

JOB #: 276275 - 02/01/2019

CLELAND TRACT
2002 Aerial Photograph
Source: Beaufort County GIS (downloaded 2-21-19)
JPEG Project #2422-19

*Site Boundaries Approximate/Scale Not Provided

(Note: Additional aerial photographs depicting extent of sand mine activity in late 1990s are available through Beaufort County GIS website.)

N
W E
S

Cleland Tract
USGS
01/22/1994

GeoSearch

JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
USGS
03/10/1989

GeoSearch

JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
USGS
01/18/1983

GeoSearch

JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
USGS
02/20/1977

GeoSearch

JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
USDA
03/24/1972

GeoSearch

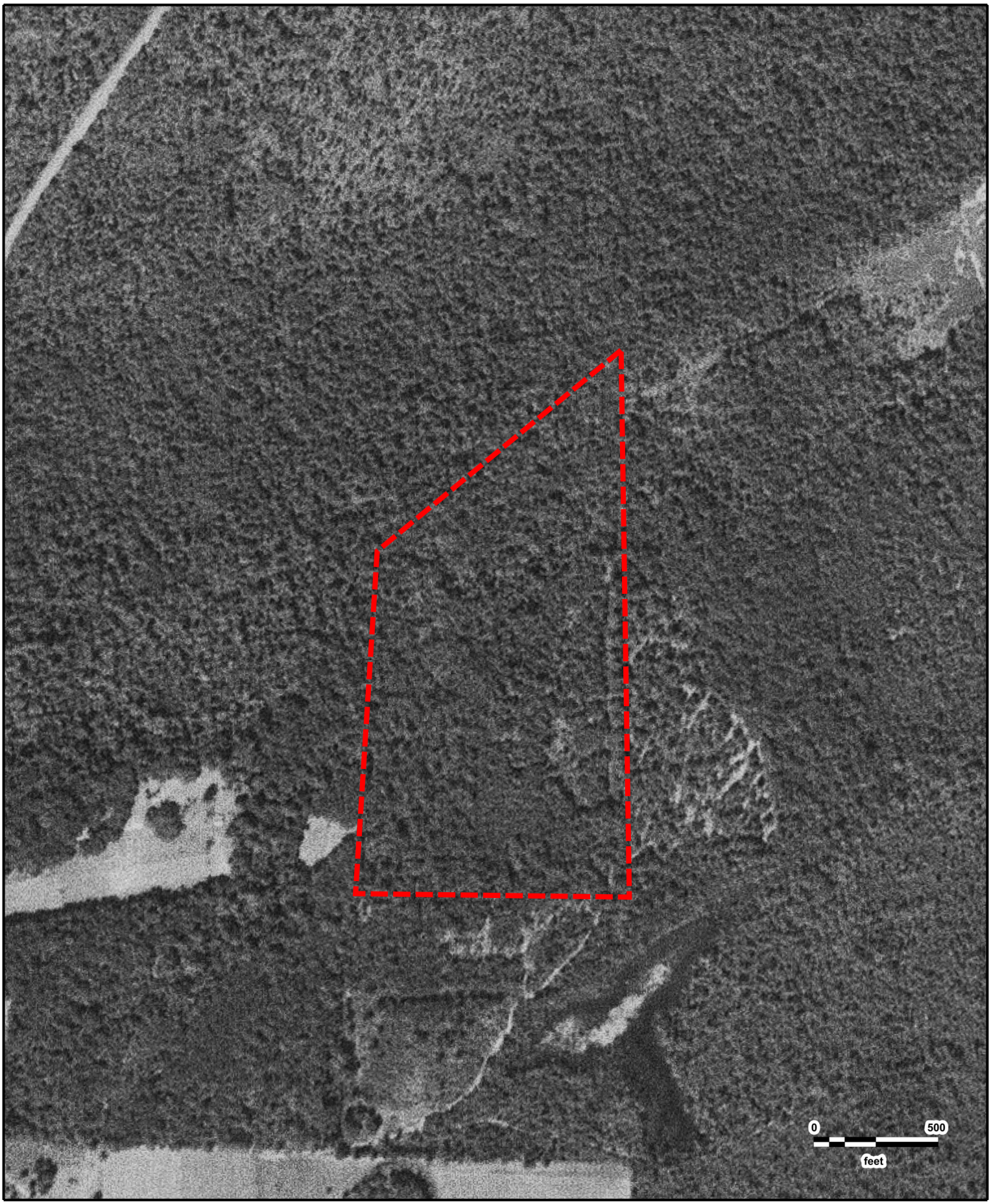
JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
USAF
04/16/1968

GeoSearch

JOB #: 276275 - 02/01/2019

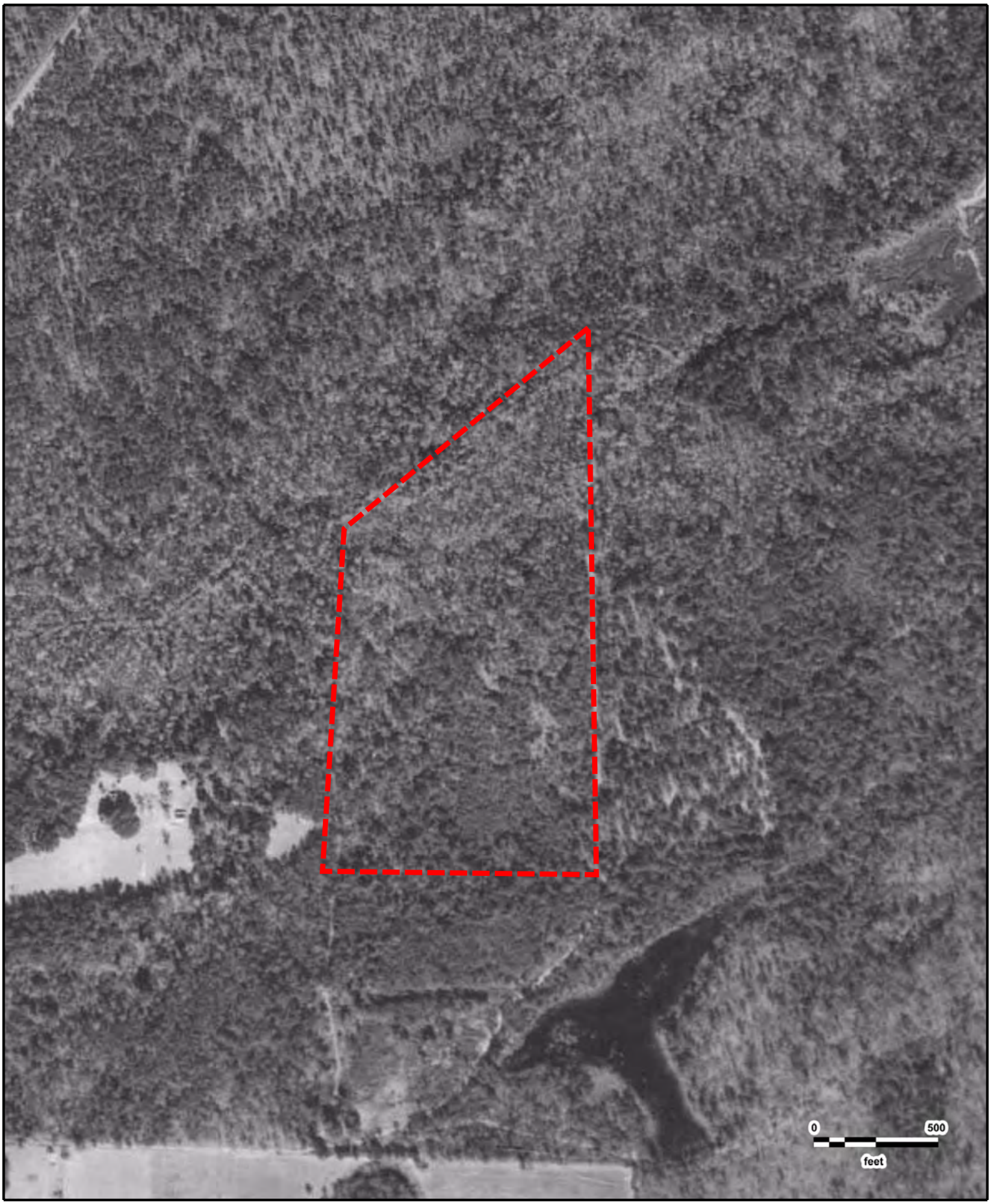


N
W E
S

Cleland Tract
USNAVY
10/10/1961

GeoSearch

JOB #: 276275 - 02/01/2019



N
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S

Cleland Tract
ASCS
01/21/1960

GeoSearch

JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
USGS
03/23/1951

GeoSearch

JOB #: 276275 - 02/01/2019

N
W E
S

Cleland Tract
ASCS
11/10/1941

GeoSearch

JOB #: 276275 - 02/01/2019

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

Land Acquisition Proposal - Pineview (Lady's Island)

Council Committee:

Natural Resources

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

Stefanie M. Nagid, Passive Parks Manager

Issues for Consideration:

Hear a presentation regarding the potential purchase of 108 acres on Lady's Island.

Points to Consider:

108 acres of upland forested habitat on Lady's Island; isolated sand bottom depression wetlands; $3.4M appraised value; LICP zoning; existing earthen roads on property; property is currently hunted and has existing stands and feeders; some mechanical vegetation management has been conducted; development threat is high; passive recreation potential is high

Funding & Liability Factors:

None to consider at this time.

Council Options:

1) Approve to move forward with due diligence, or 2) Do not approve to move forward with due diligence

Recommendation:

Approve to move forward with due diligence and present to RCLP Board for consideration.

Pineview Acquisition Proposal


JOHN CANNON ST
WADE HAMPTON DR
THOMAS SUMTER ST
TURTLE LN
GATOR LN
MIDDLE RD
SAMS POINT RD
REID CT
ST JAMES CIR
CEDAR CREST CIR
SHEPPARD RD
SHEPPARD RD W
DOCK BUILDERS DR
CAUSEY WAY

Considerations

- 108 acres of mostly upland forested habitats with some isolated depression wetlands
- George R. Owen appraised property in December 2018 for $3.4M ($31,482/acre)
- Existing Sam's Point Road access and interior earthen roads
- Surrounded by residential homes
- LICP Zoning
  - 2 homes/ac = 216 homes

Considerations

- Active hunting currently on property evidenced by various stands and feeders
- Areas of property have been bush-hogged to open up game feeding areas and hunting lanes
- High potential for passive recreation
  - Kayak launch at creek
  - Hiking/Horseback riding trails
  - Wildlife viewing
- Land Management Possibilities
  - Prescribed Burning
  - Sandhill Restoration
  - Gopher Tortoise Mitigation Recipient Site

Staff Recommendation:

Approve the Contractor to move forward with due diligence and presentation to the RCLP Board for consideration.

Next Steps

- If initially approved by NRC:
  - Contractor obtains all due diligence documentation and Seller prepares letter of intent
  - Project presentation to RCLP Board
  - RCLP Board recommendation to NRC
  - NRC recommendation to Council

Ranking:

Beaufort County Rural & Critical LAND PRESERVATION PROGRAM

Date, 2019

PROJECT 2019X

PINEVIEW
Beaufort County, SC
PROPOSAL FOR: FEE ACQUISITION

PROPERTY ID:	**R200 010 000 0170 0000**
SELLER:	**Pineview Farms, LLC**
ACREAGE:	**108 acres**
TOTAL PRICE:	**$**
RCLPP FUNDS:	**$**
SELLER CONTRIBUTION:	
APPRAISED VALUE:	**$3,400,000 ($31,481 per acre; Dec. 2018 County appraisal)**
PRICE Negotiated/ACRE:	**$**
ZONING:	**T2R (County)**
COUNCIL DISTRICT:	**2 (Sommerville)**

LOCATION: 484 Sams Point Road, Lady's Island, SC, 29907

Project Background:

- The property is an unimproved vacant parcel, primarily wooded with natural regeneration timber, water frontage on Rock Springs Creek and scenic road frontage on Sam's Point Road. There are no structures on the property.
- The property was timbered approximately 15 years ago, naturally regenerated vegetation consists primarily of upland successional scrub-shrub, Atlantic coastal plain dry and dry-oak mesic forest and Atlantic coastal plain southern maritime forest.
- Vehicular access is from gated entrance off Sams Point Road on Lady's Island. The road provides vehicular access from the western property boundary to the eastern property boundary then veers south and parallels the creek frontage. A number of walking trails exist on the property.
- The property is surrounded by dense residential use. Lady's Island is undergoing strong development pressure.
- Property currently used for recreational uses.

P. O. Box 75
Beaufort, SC 29901
O: (843) 521-2175 F: (843) 521-1946

- Electricity and water available to site.
- Parcel's entire northern property boundary is adjacent to 10-acre Open Land Trust-protected Miller Tract. Property's waterfront is situated less than 1/8-mile across Rock Springs Creek from Holly Hall Plantation, 517 acres protected by The Nature Conservancy.

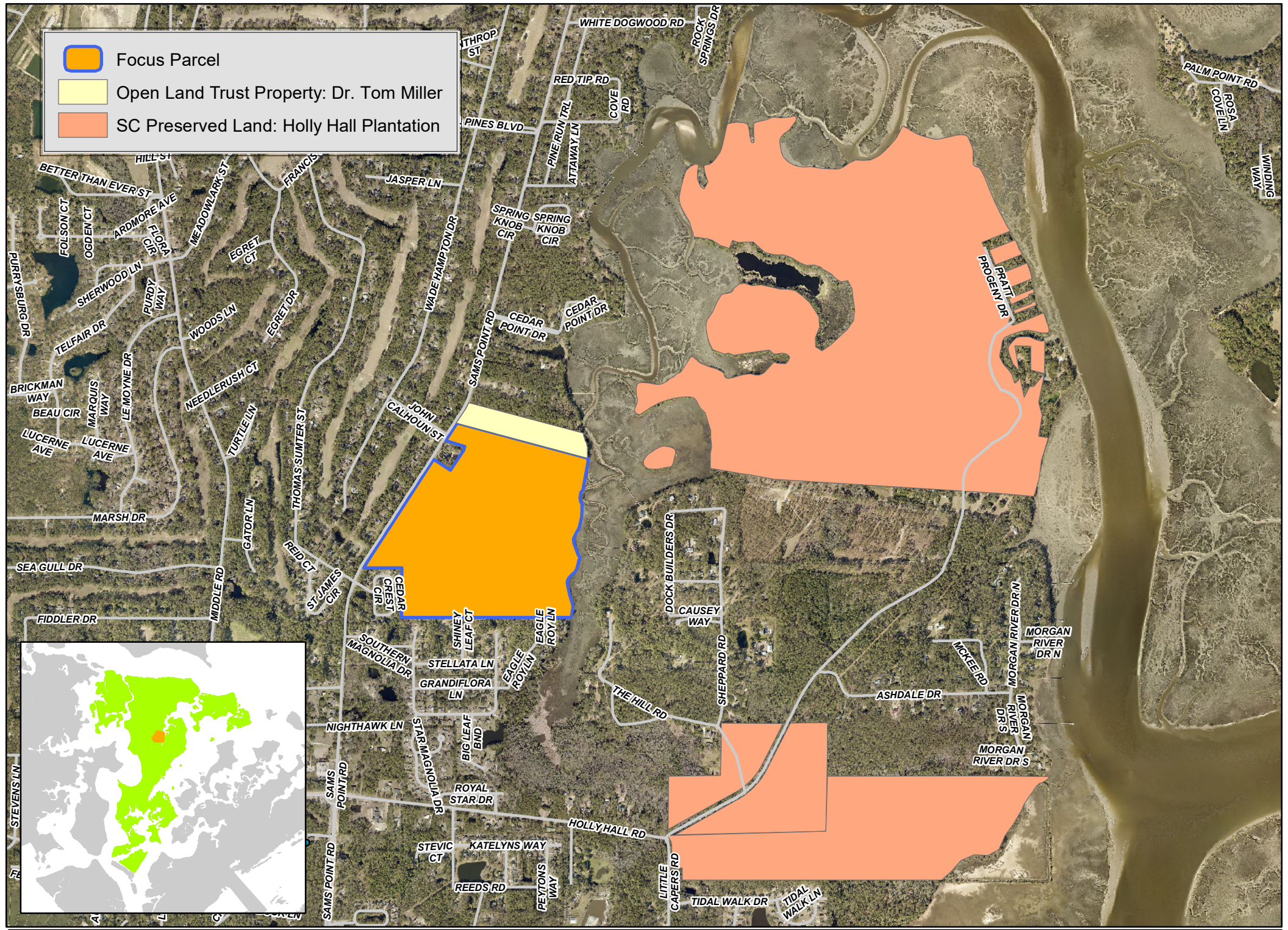
R&C Program Attributes:

- Identified as land protection opportunity on Greenprint maps since 2006
- One of the last undeveloped large-acreage parcels on Lady's Island that is not entitled with a Planned Unit Development
- Significant development pressure
- Close proximity to other protected properties: OLT-protected Miller Tract (10 acres), TNC-protected Holly Hall Plantation (517 acres) within 1/8-mile across Rock Springs Creek.
- High public access and recreation potential, includes potential water access and existing walking trails
- Water quality protection – creek frontage on Rock Springs Creek which drains into Lucy Creek, the Coosaw River and ultimately into St. Helena Sound.
- Reduction/deterrence of traffic congestion on Sams Point Road – 2017 SCDOT traffic data shows 4,800 vehicles per day north of the subject tract increasing to 21,700/ day south of the tract toward Sea Island Parkway.

Purchase and Cost Structure:

- Appraised Value: $3,400,000; $31,481 acre (December 2018 appraisal)
- Contributions toward project:
    - Landowner donation of value $
    - Landowner Cash Donation for Park Infrastructure $

P. O. Box 75
Beaufort, SC 29901
O: (843) 521-2175 F: (843) 521-1946



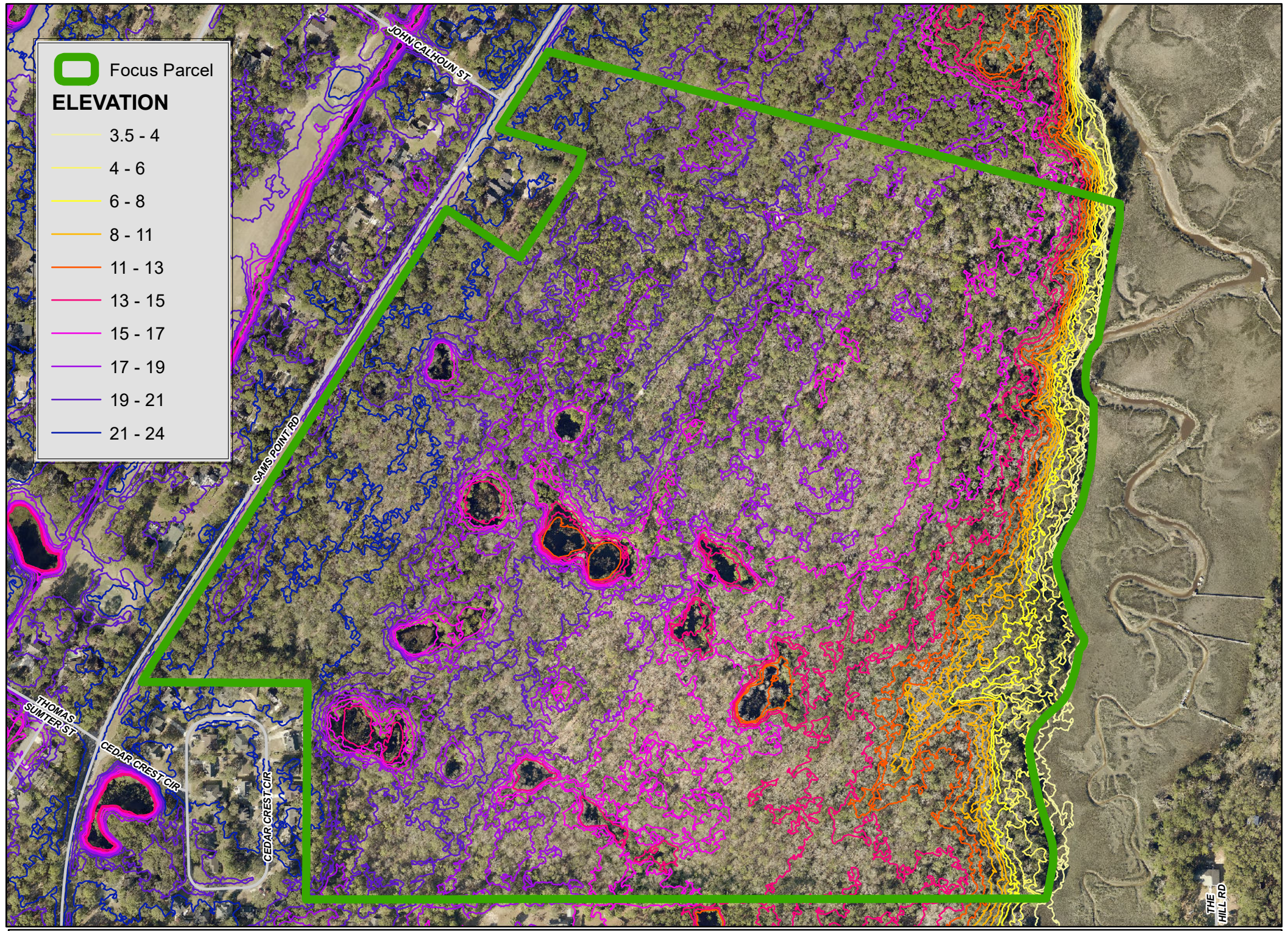
R200 010 000 0170 0000
In Contextual Overview

*Map Generated February 10, 2018; **2017 Aerial View***

0 1,000 2,000 3,000 Feet

N

OPEN LAND TRUST
Beaufort County, SC



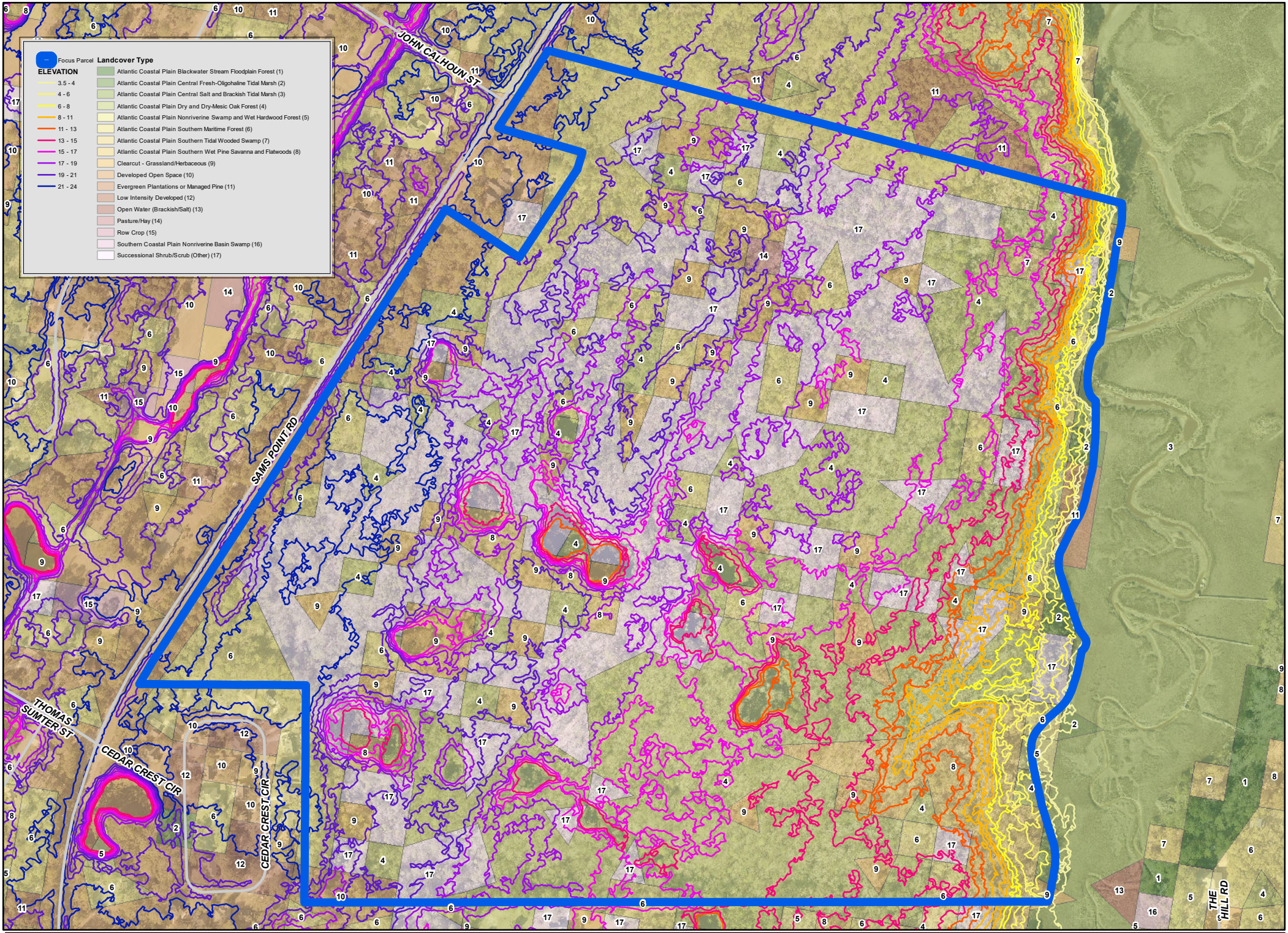
R200 010 000 0170 0000
Showing Contours

*Map Generated February 10, 2018; **2017 Aerial View***

0 250 500 750 1,000 Feet

N

OPEN LAND TRUST
Beaufort County, SC



R200 010 000 0170 0000
With Contours & Landcover

*Map Generated March 9, 2018; **2017 Aerial View***

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OPEN LAND TRUST
Beaufort County, SC


JOHN CALHOUN ST
WADE HAMPTON DR
THOMAS SUMTER ST
TURKEY LN
GATOR LN
MIDDLE RD
SAMS POINT RD
REID CT
ST JAMES CIR
CEDAR CREST CIR
SHEPPARD RD
SHEPPARD RD W
DOCK BUILDERS DR
CAUSEY WAY

1812-01

COMPLETE APPRAISAL
SUMMARY REPORT

OF

PINEVIEW FARMS TRACT - 107.92 ACRES
484 SAMS POINT ROAD
LADY'S ISLAND
BEAUFORT, SC 29907

FOR

RURAL AND CRITICAL LANDS PRESERVATION PROGRAM
c/o BARBARA HOLMES, CONSERVATION DIRECTOR
BEAUFORT COUNTY OPEN LAND TRUST
barbara@openlandtrust.com

EFFECTIVE DATE OF APPRAISAL
AS OF: DECEMBER 5, 2018

BY

GEORGE R. OWEN, MAI
CERTIFIED GENERAL APPRAISER
7 CLAIRE'S POINT RD.
BEAUFORT, SC 29907

DATE REPORT ISSUED: DECEMBER 12, 2018

December 12, 2018

Ms. Barbara Holmes
Conservation Director
Beaufort County Open Land Trust
Beaufort, SC
barbara@openlandtrust.com

RE: Vacant Land - Sams Point Road, Lady's Island, Beaufort, SC 29907

Dear Madame:

In accordance with your request, I have completed an appraisal of market value of the referenced property as of the date of latest field inspection, December 5 2018. It is my intent that this appraisal conform to the Appraisal Standards for Federally Related Transactions as set out in the regulations of the Office of the Comptroller of the Currency. To the best of my knowledge, this appraisal also conforms to the current requirements prescribed by the Uniform Standards of Professional Appraisal Practice adapted by the Appraisal Standards Board of the Appraisal Foundation. Market value is defined in the attached report.

I have utilized the sales comparison approach in estimating the value of the subject land as it exists today. The results produced by the analysis of the sales, listings for sale, and the market in general resulted in a final estimate (range) of as-is market value of the fee simple interest of :

$3,400,000 (THREE MILLION FOUR HUNDRED THOUSAND DOLLARS).

The market exposure time necessary to produce the estimated value would not be judged to exceed 12 months. Therefore, no further discounting of the estimated value is necessary. The property included in the appraised value comprises land only. No improvements, equipment or personal property are included.

Inspection of the subject property did not reveal any apparent or suspected environmental hazards. However, it must be recognized that the appraiser is not an expert in environmental matters; a qualified expert should be retained in the event that an environmental analysis is required. The subject property is believed to be located within a moderate risk flood hazard zone (C and A-10).

Ms. Barbara Holmes December 12, 2018
BCOLT Page 2

There is additional information regarding the subject property and the market, which is retained in the appraiser's work file, which is incorporated herein by reference. This report is made subject to the assumptions and limiting conditions summarized on the pages following the main text of the report.

I urge a careful reading of the appraisal report. My invoice for services rendered is sent separately. I appreciate this opportunity to be of service.

Sincerely,

*George R. Owen**

George R. Owen, MAI
Certified General Appraiser
South Carolina License #5064

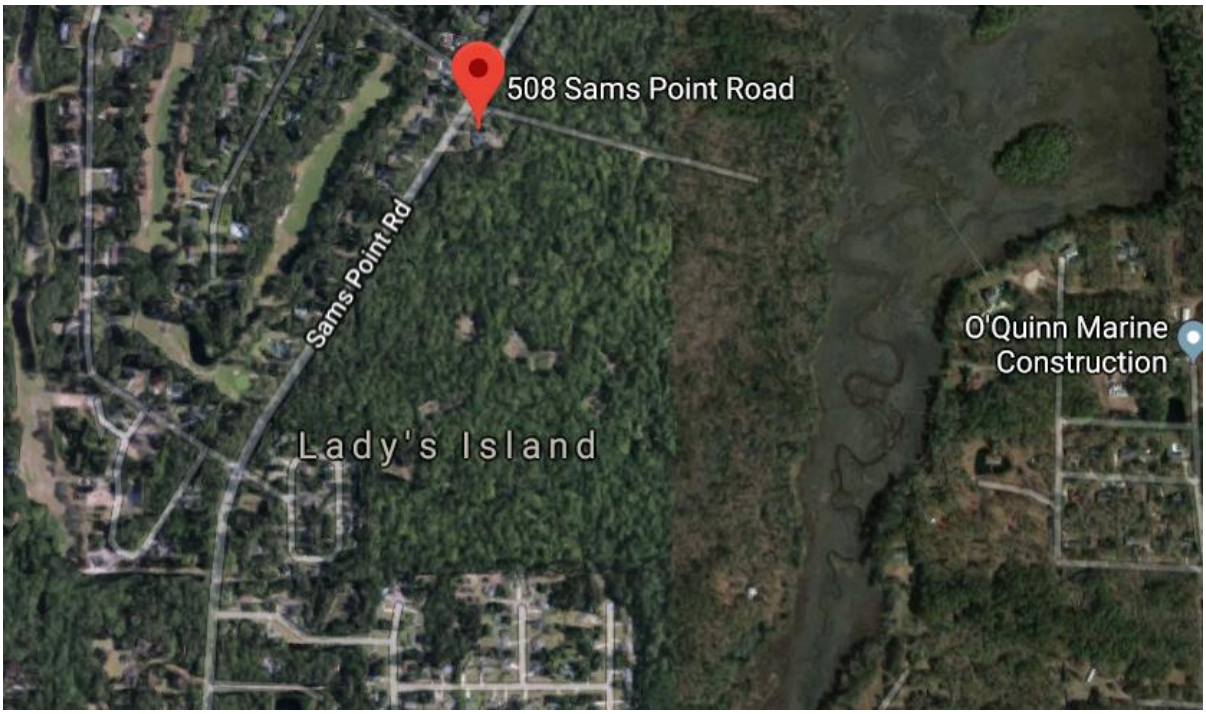
*Electronically signed for e-mail transmittal

IDENTIFICATION OF PROPERTY

The property being appraised, hereinafter known as the subject property of this report, comprises a 107.92 acre vacant wooded tract of land located on Sams Point Road, Lady's Island, Beaufort County, South Carolina. The property runs back to the east to Rock Springs Creek. The subject's parcel ID is the following:

R200 010 000 0170 0000

Subject photographs, legal descriptions, site survey and other pertinent information are included in the body or Appendix of this report.



The subject wooded tract wraps around a residence at 508 Sams Point Rd.

PRIOR TRANSFER INFORMATION/HISTORY

This property has been in the Trask family since at least 1993. The property was conveyed into an LLC on 8/6/2014 as recorded in Deed 3339/2556.

INTENDED USE /INTENDED USER OF THIS APPRAISAL

This appraisal is reportedly to be used by the client for the purposes of a possible fee acquisition. The client/intended user is the Beaufort County Open Land Trust, acting upon behalf of the Rural and Critical Lands Program of Beaufort County.

OWNER OF RECORD

The owner of record is Pineview Farms, LLC.

PURPOSE OF APPRAISAL

The purpose of this appraisal is to estimate market value, as defined, as of December 5, 2018, the date of latest field inspection. Market value is defined as the most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their own best interests;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in terms of cash in U.S. dollars, or in terms of financial arrangements comparable thereto; and
5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

OWNERSHIP INTEREST APPRAISED

The property rights being appraised are fee simple. Fee simple is defined as "an absolute fee without limitations to any particular class of heirs or restrictions, but subject to the limitations of eminent domain, escheat, police power and taxation. An inheritable estate."

The above definition is from the Sixth Edition of The Dictionary of Real Estate Appraisal, published by the Appraisal Institute, Chicago.

TAX ANALYSIS

In the Appendix, the appraiser has presented the most recent information available from the Beaufort County Property Assessor, obtained through our on-line information service. The subject property's Parcel ID's, appraisal breakdown, assessment and physical information are all shown. Other data is included, which may or may not be entirely accurate. The information is presented for reference, but assessor data is not utilized as the basis for property valuation.

SCOPE OF THE APPRAISAL

The scope of this appraisal focused upon the collection, confirmation and analysis of data to estimate market value for the subject property. The appraiser made an overview of the competitive market in the immediate and general neighborhood of the subject property. Public records and the appraiser's private data sources were researched to identify neighborhood trends, land sales, listings, new developments, as appropriate. The appraiser also took into account the market situation affecting the

wider area, including the city/county and the region in general.

NEIGHBORHOOD DESCRIPTION

The subject site is located on Sams Point Road on Lady's Island, about 1 mile north of the traffic circle at Brickyard Point Rd. This residential area is still sparsely developed, with several larger landholdings.

Portions of Lady's Island are in the City of Beaufort, but the majority of the land area is in Beaufort County. There is a great amount of undeveloped land area available for future development, especially in the more outlying areas. The main business district is centered around the intersection of Sea Island Parkway and Lady's Island Drive/Sams Point Road, about 3 miles south of the subject.

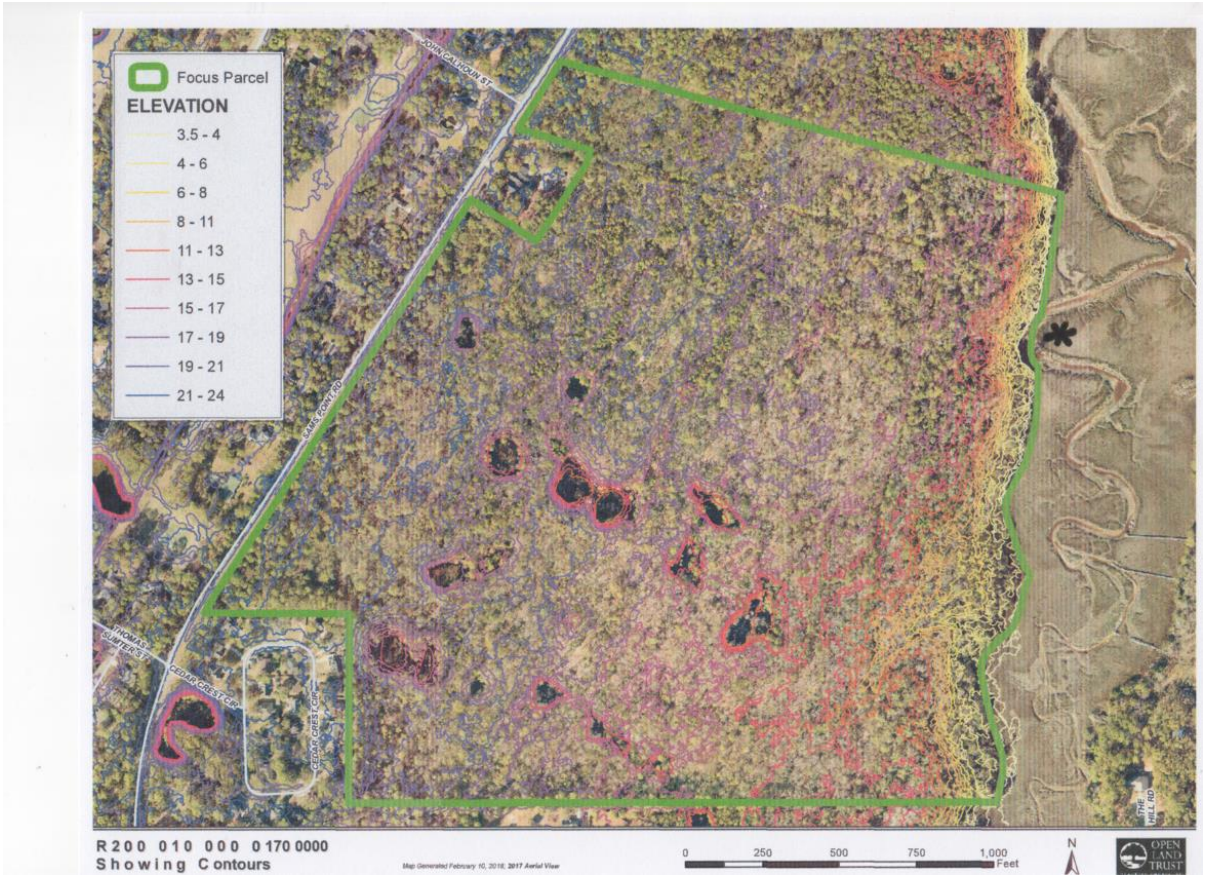
A new node of commercial development has also emerged about ½ mile east of the main business district. With the development of the Wal-Mart tract at the intersection of Airport Circle, the immediate neighborhood just east of the Beaufort County Airport has undergone a rather significant change. The future prospects for Lady's Island are bright. Some residents of Lady's Island are concerned about the increased traffic. Studies are underway to determine how impact of traffic and development can be mitigated.

General Location Map

PROPERTY DESCRIPTION

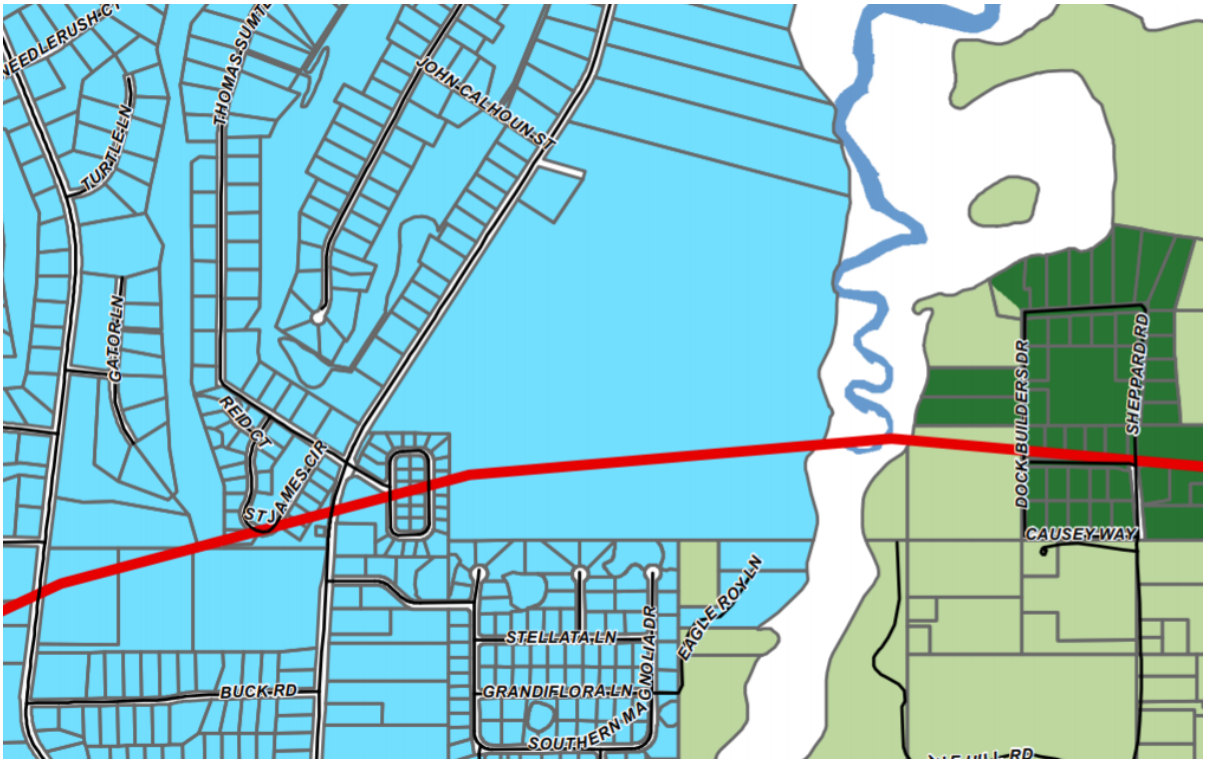
It is appropriate to summarize the subject's salient physical characteristics, as these are pertinent to the valuation, and to the overall utility of the property. The site is irregular, with the east line following the meanders of Rock Springs Creek. The surveyed total land area is called 107.92 acres. An aerial photo plat is shown below. The north part of the tract has a high bluff directly on the creek, making the property potentially dockable. Rock Springs Creek (a tidal creek) connects to Lucy Creek which in turn connects to the Coosaw River and St. Helena Sound.

The aerial views clearly show the creek abutting the north bluff of the subject property



Zoning

Zoning of the site is **LICPD** on the updated Beaufort County Zoning Map, shown below. LICPD permits a variety of residential uses including single family, apartment, other multi-family, mixed-use, row houses and freestanding residences. A more complete description is found in the purpose statement of the Beaufort Department of Planning dated January 31, 2018, to which reference is made.



The subject is in the blue zone – Lady's Island Community Preservation District

The description and purpose of the Lady's Island Community Preservation District is shown below. The fundamental intent for single family residential is to limit the density to 2 dwelling units per acre of land.

Division A.2: Lady's Island Community Preservation District (LICP)

Sections:

A.2.10 Purpose

The purpose of the Lady's Island Community Preservation District (LICP) is to maintain or improve the livability and character of existing residential neighborhoods; to encourage infill of available lands; to provide a choice of housing types and to accommodate housing types which will relate well with existing neighborhood character, scale and density. The intent of the LICP is to guide residential development in such a manner as to encourage and plan for the availability of public services and infrastructure. Certain structures and uses serving governmental, religious or recreational needs of such areas are permitted by special use subject to restrictions and requirements intended to preserve and protect residential neighborhood. It is the express purpose of this district to exclude all commercial buildings and structures, whether operated for profit or otherwise, except home uses specifically provided for, if they conform to the provisions of this section. Multifamily and higher density development shall be located so that the provision of appropriate urban services will be physically and economically facilitated.

Table A.2.60.A Open Space and Density Standards

Residential Type	Minimum open space requirement (% of site area)	Density (per acre)		Wastewater Treatment	Minimum Site Area (acres)
		Max. Gross	Max. Net		
Single-family	20%	2.0	3.0	OS	1
Single-family Cluster	35%	2.2	3.2	OS	5
Duplex	35%	3.0	3.7	OS	5
Multifamily (mansion apartments and apartment houses)	45%	4.0	3.8	P	15
Traditional Community Plan	See Article 2, Section 2.3.80	3.5	n/a	P	See Article 2, Table 2.3.40
Other Permitted Uses	35%	n/a	n/a	OS	10,000 SF

Municipal Services

The property is not in the City limits. The site is potentially served by City of Beaufort utilities including electricity (SCE&G) and water (BJWSA). Cable and telephone service are available. Fire and police protection are provided by the City or County.

Topography/Drainage

Topography of the high ground on site is essentially level and at or slightly above road grade. The entire site is moderately wooded, second-growth, with small areas of wetlands which hold water. The high ground on the site is considered high and dry.

Easements

The site has an overhead electric utility easement along the street frontage of the property. The easements are not judged to have an adverse effect on value.

Flood Considerations

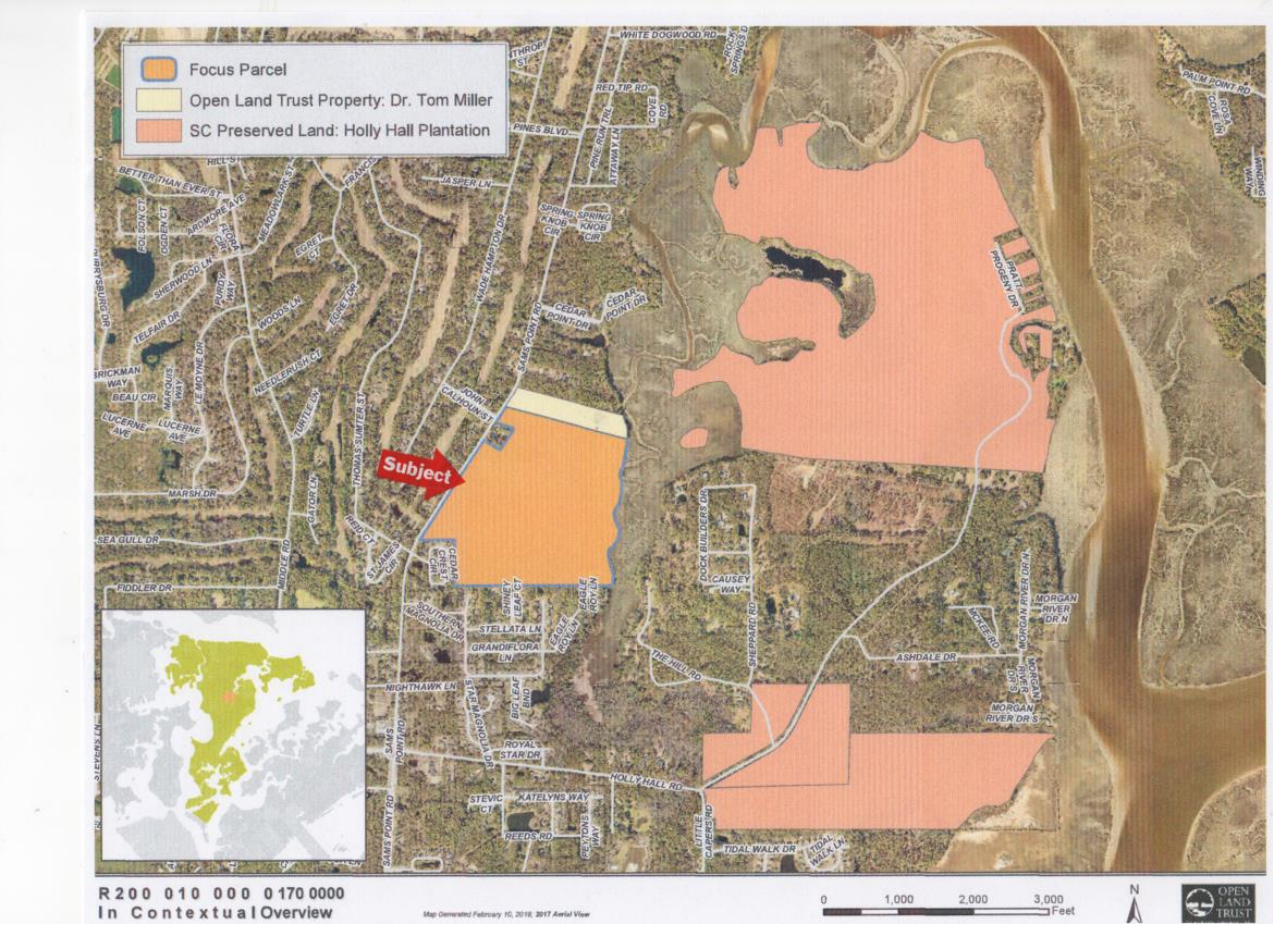
The site is shown on the survey to be in a special flood hazard area (zones C and A10) as indicated on the FEMA Map #450025 panel 100D.

Remarks

The subject site is one of the few remaining undeveloped large landholdings on Lady's Island. It is located in proximity to other recent residential developments. For this reason, it would be considered to have strategic value for a residential developer

Land Preservation Tracts in Immediate Neighborhood

The map below shows other large landholdings already preserved.



HIGHEST AND BEST USE

A fundamental premise on which value estimates are based is that market value reflects the most profitable use to which a property is likely to be put. Therefore, it is good appraisal practice to value and analyze a site in terms of its highest and best use. The best use of land may be defined as "that use which will tend to produce the highest net return over a given period of time, or (alternatively) that use which will produce the highest present value". It is generally the analyst's goal to analyze which

program of future utilization will develop the highest net return to the land over a period of time.

The property is zoned LICPD for residential uses, as discussed above. Residential subdivision development would be permitted by right. Legality of use is not a limiting factor in this analysis.

Neither is physical adaptability a limiting factor. The site has adequate ingress and egress, and the size and shape of the site are physically adequate for numerous alternatives. The public utilities will be adequate to support any proposed improvements.

Feasibility of use was considered. The subject property is being valued with its as-is configuration and zoning, presuming that the neighborhood will continue its slow but orderly pattern of development. Residential development is certainly a feasible use.

The highest and best use of this site will only emerge when a specific, final proposed development is approved and implemented. The zoning would preclude any high-intensity retail use such as a shopping center. Most likely the use as a residential mixed use site will emerge as the highest and best use.

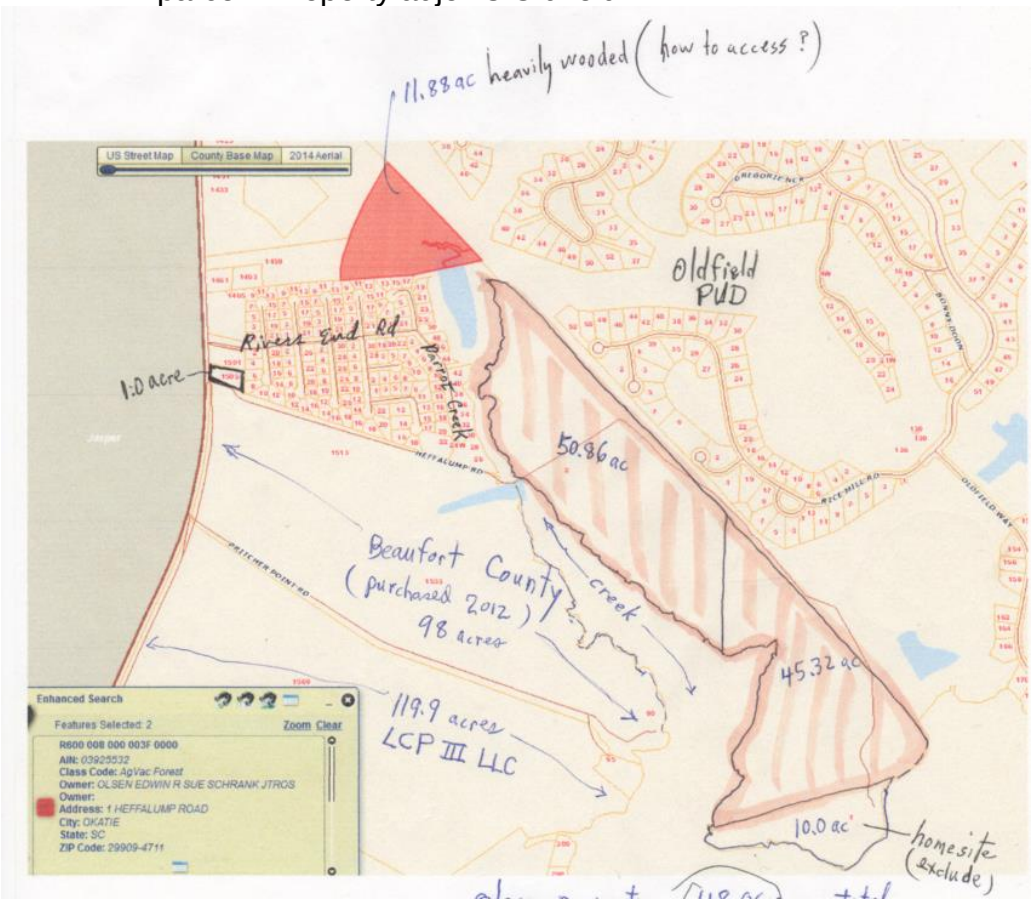
VALUATION METHODOLOGY

In estimating the value of real property, consideration is usually given to the three traditionally accepted methods of evaluating real estate. In this case involving vacant land, however, only the market approach was judged applicable. The appraiser made a comprehensive search of sales records within the recent past, focusing on properties having similar use to the subject. Some sales were rejected due to noncomparability, or other factors which caused the sale to sell for a price outside of the representative range for this type of property.

The following sales of tracts of land deemed comparable to the subject have been identified and presented for analysis.

Land Sale 1

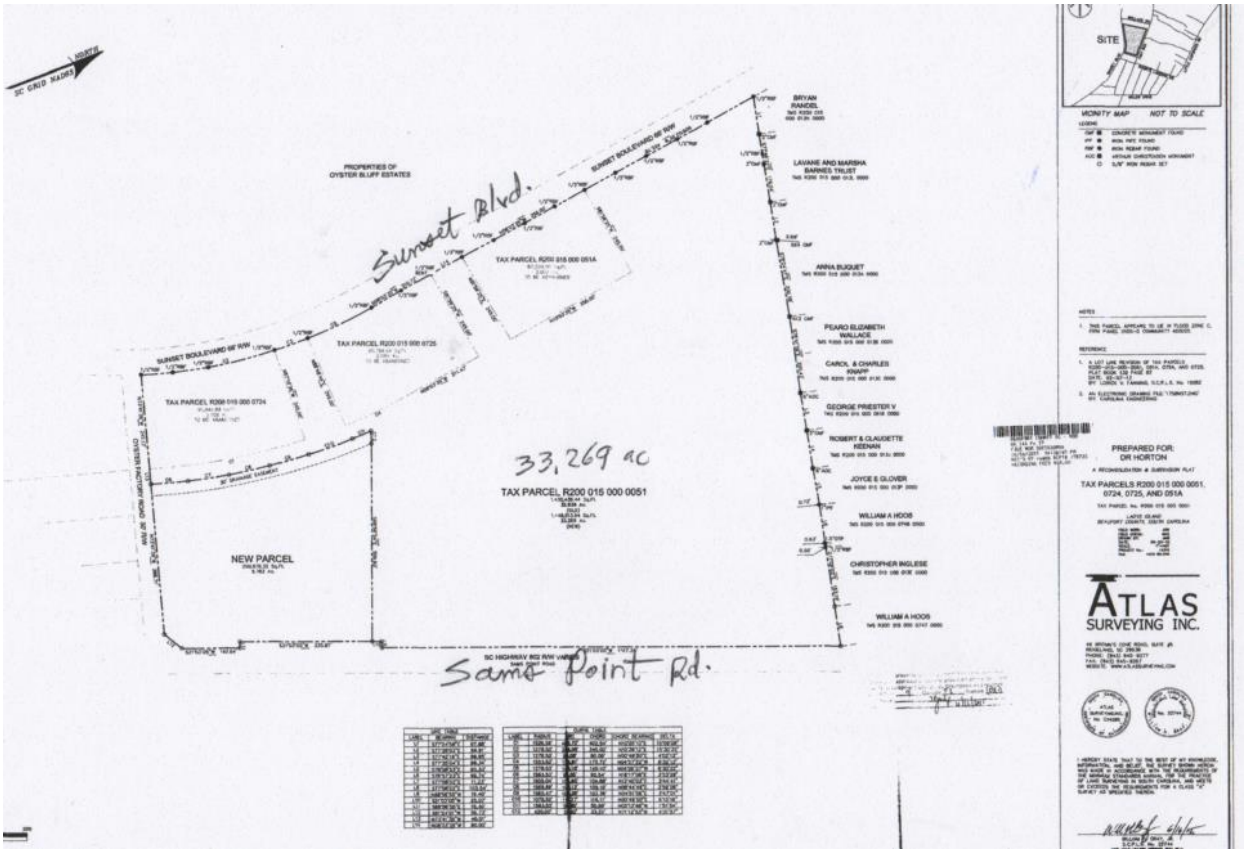
Location	Heffalump Lane, off Highway 170, Okatie area
Parcel ID	R600 013 000 005 0000 plus others (3 parcels)
Date Sold	12/16/2016
Parties	Edwin Olsen and wife Sue to Beaufort County
Deed	3537/2869
Land Area	108 acres
Zoning	Rural
Price	$4,800,000 (verified with seller)
Unit Price	$44,444 per acre
Remarks	Arms-length sale to buyer Beaufort County. This was a conservation purchase to prevent development on this environmentally sensitive tract on a creek draining into the Okatie River. The County already owns an adjacent 98 acre parcel. Property adjoins Oldfield.



Land Sale 2

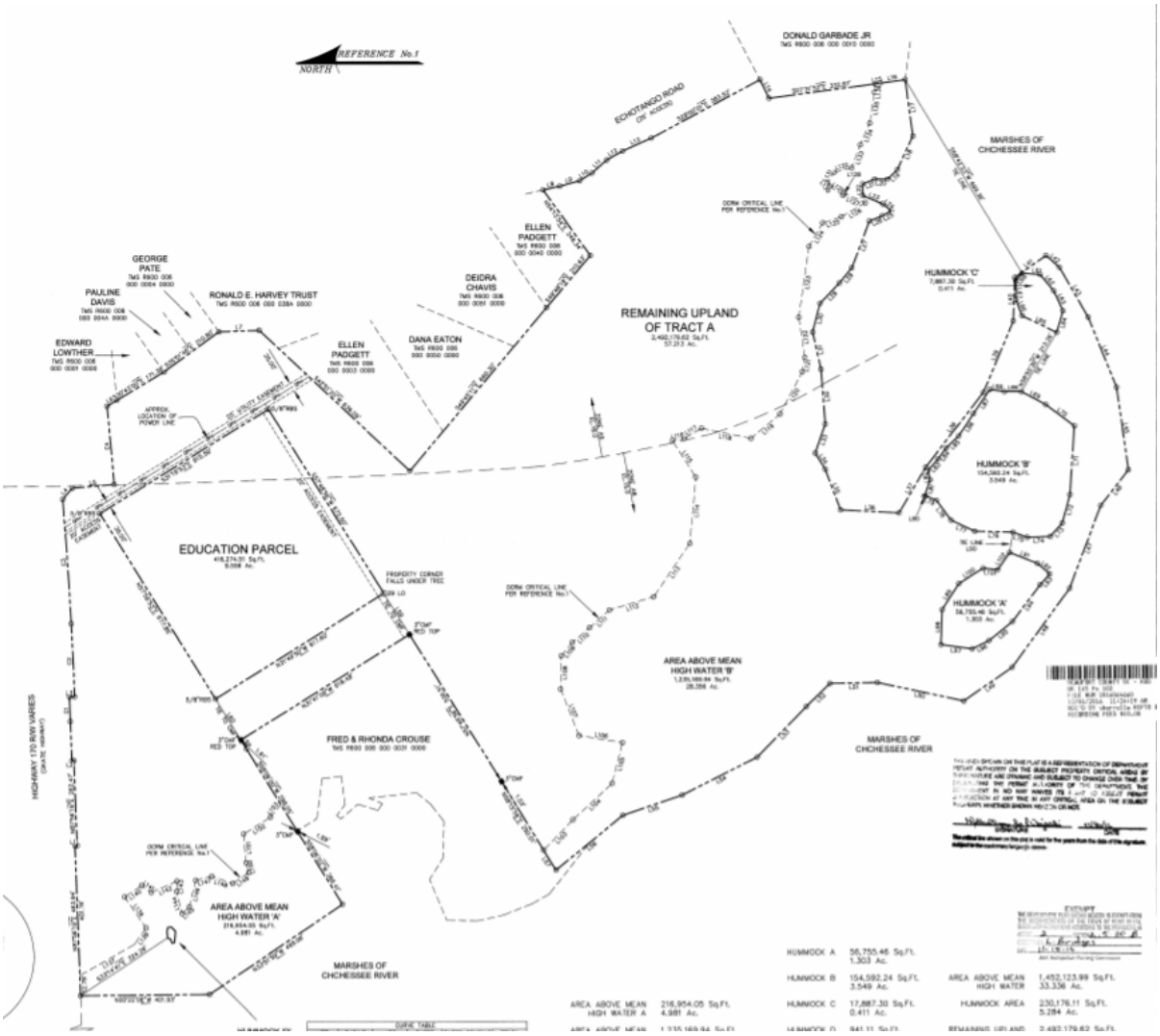
Location	W/S Sams Point Rd. at Oyster Factory Rd., Lady's Island
Parcel ID	R200 015 000 0051 0000 plus 051A
Date Sold	9/8/2015
Parties	B. McNeal Partnership LP to D.R. Horton, Inc.
Deed	3429/3049
Land Area	33.269 acres
Zoning	PDD Planned Development single family residential
Price	$1,835,000
Unit Price	$55,165 per acre

Remarks: Arms-length sale to national homebuilder D.R. Horton. Clearcut and subsequently developed for residential subdivision. Permitted for 113 lots. Home sales reported fairly brisk.



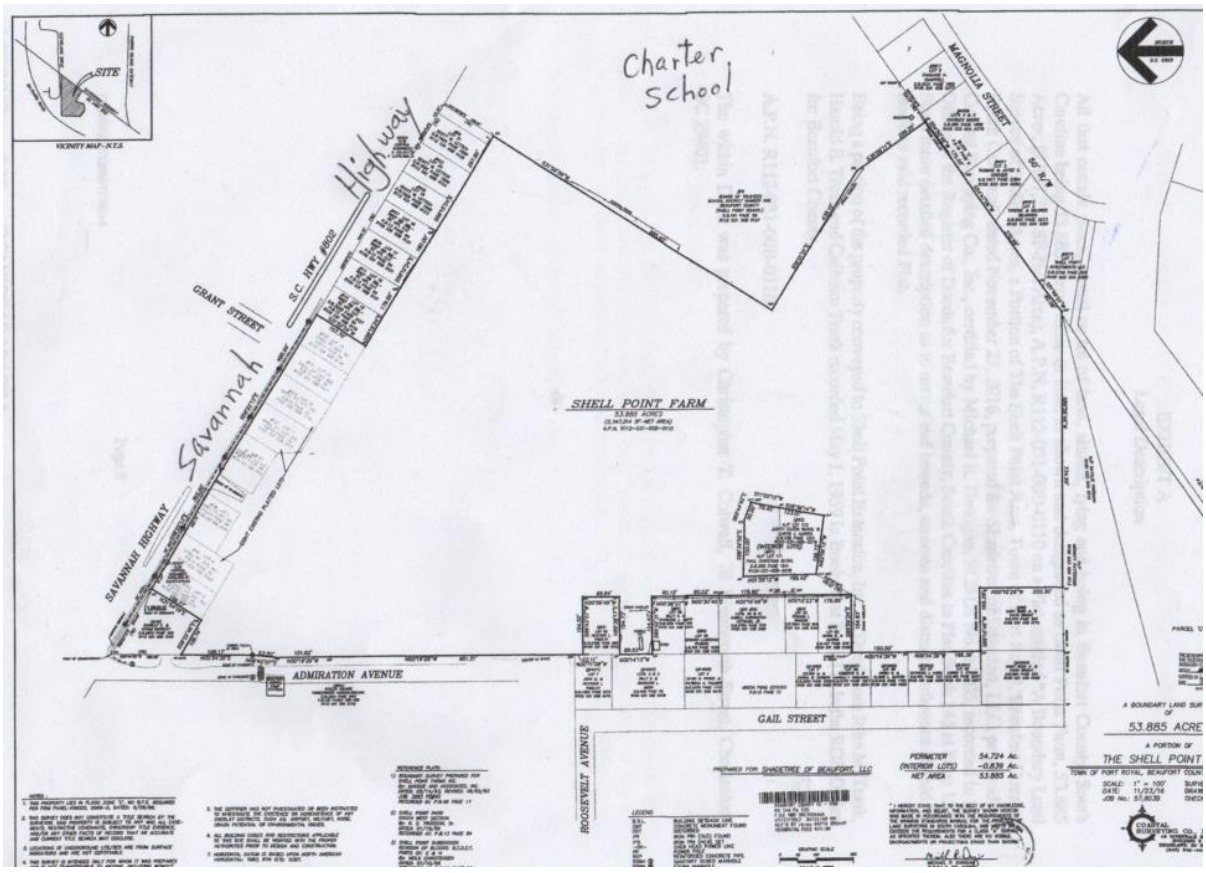
Land Sale 3

Location	Highway 170 at Echotango Rd., Okatie area
Parcel ID	R110 006 000 003C 0000
Date Sold	12/1/2016
Parties	Lyttleton Partners, LLC to Beaufort County
Deed	3534/98
Land Area	95.833 acres
Zoning	Rural
Price	$3,300,000
Unit Price	$34,435 per acre
Remarks	Arms-length sale to buyer Beaufort County. This was a conservation purchase to prevent development on this environmentally sensitive tract adjoining the Chechessee River marshes. Favorable price to County.



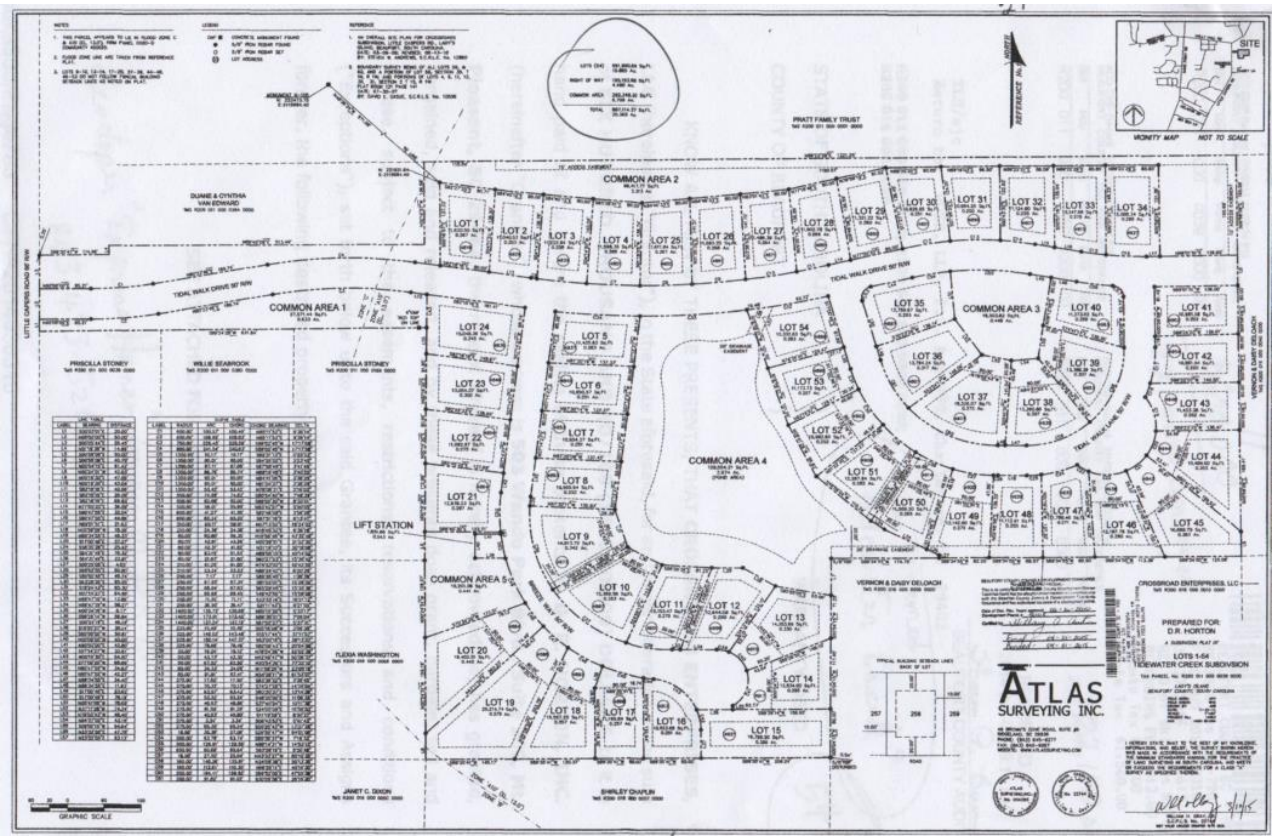
Land Sale 4

Location	Savannah Highway adj. to Riverview Charter School
Parcel ID	R112 031 00B 0110 0000
Date Sold	6/12/2017
Parties	Shell Point Farms, Inc. to Shadetree of Beaufort, LLC
Deed	3582/672
Land Area	53.885 acres
Zoning	T4 Neighborhood Center (annexed into Town of Port Royal)
Price	$1,300,000 (verified with purchaser Merritt Patterson)
Unit Price	$24,125 per acre
Remarks	Arms-length sale to subdivision developer, good location in Burton area. Sellers were Trask & Potter. Tract was permitted for 185 lots, density 3.43 lots per acre



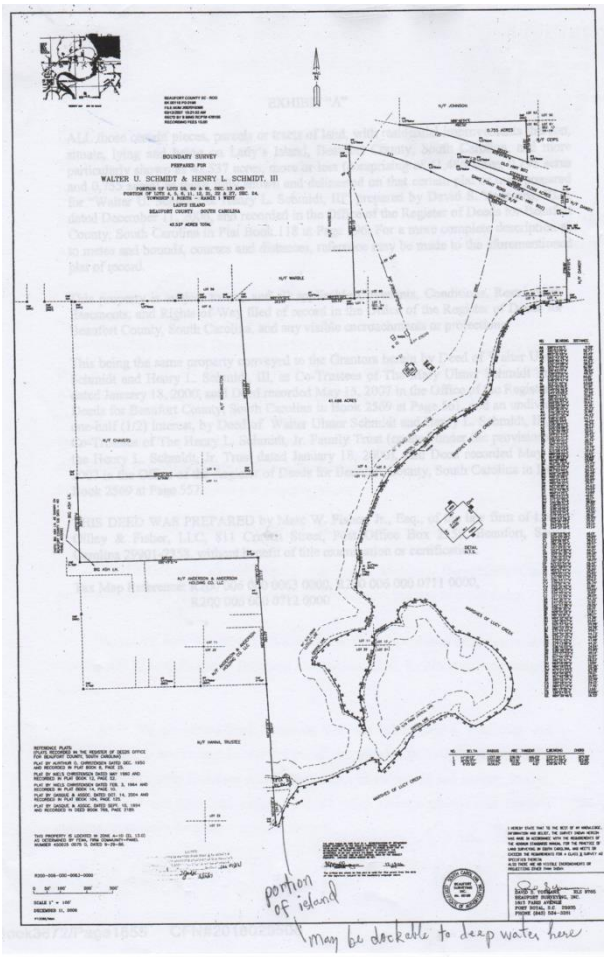
Land Sale No. 5

Location	Tidal Walk Dr. off Little Capers Rd., Lady's Island
Parcel ID	R200 011 000 038E 0000 plus parcel 0086
Date Sold	6/27/2014
Parties to Conveyance	Crossroads Enterprises, LLC to D.R. Horton, Inc.
Deed Book/Page	3330/785 Plat 140/120
Land Area	27.1 acres
Zoning	Residential
Price	$600,000 per deed affidavit
Unit Price	$22,140 per total acre
Remarks	Conveyance of residential tract subdivided into 54 lots. "Tidewater Creek". Lake on site. Dated sale, upward time adjustment would apply.



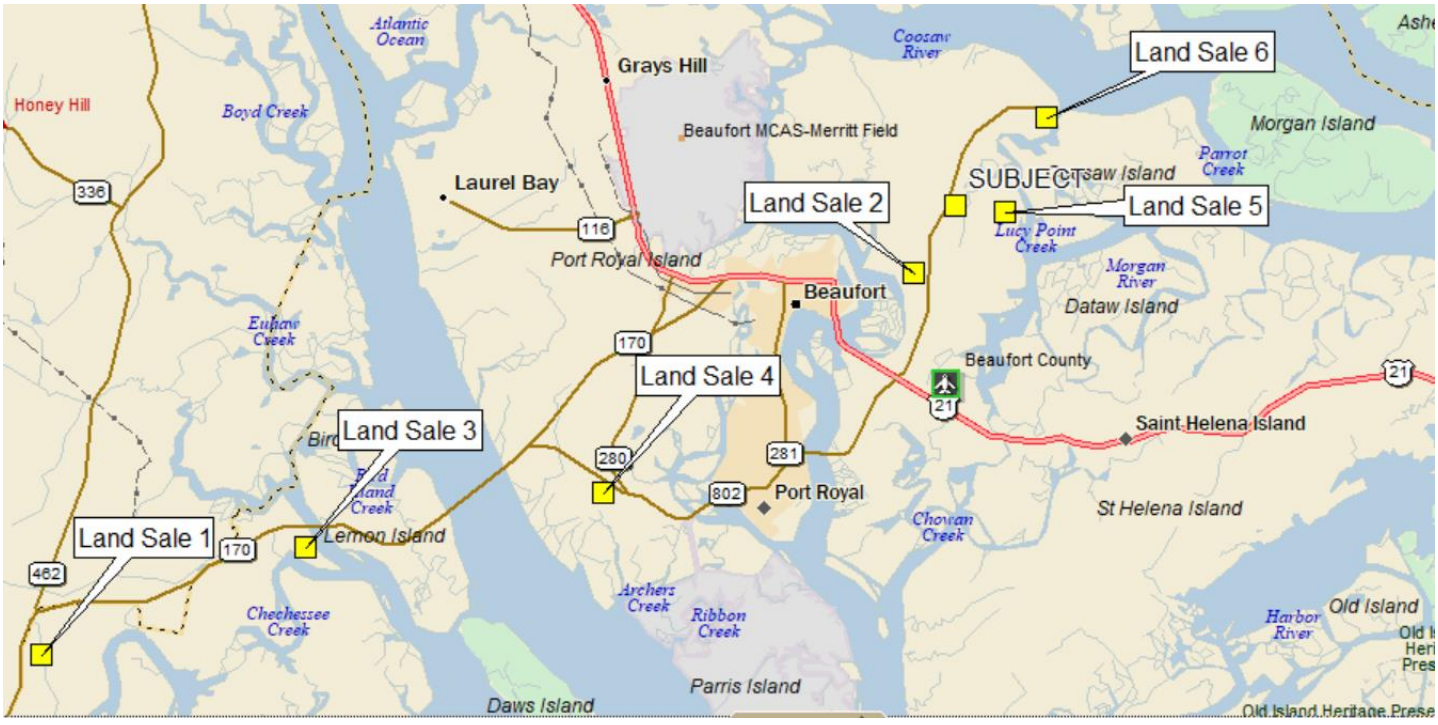
Land Sale No. 6

Location	1000 Sams Point Rd., Lady's Island
Parcel ID	R200 006 000 0063 0000 plus others
Date Sold	6/1/2018
Parties to Conveyance	Walter U. Schmidt and Henry L. Schmidt to R.A.M. Property Holdings Association, LLC
Deed Book/Page	3672/1852 Plat 118/196
Land Area	42.537 acres
Zoning	Rural
Price	$1,200,000 per deed affidavit
Unit Price	$28,211 per total acre
Remarks	Conveyance of residential tract which buyers plan to use as a family compound. Probably dockable to deepwater on Lucy Creek.



Land Sales pertinent to the Valuation of the Subject John Trask Tract

Location	Deed Ref.	Sold Price	Acres	Price/acre	Remarks
1. Heffalump Ln.	3537/2869	$4,800,000	108	$44,444	Conservation purchase by County
Okatie		12/16/2016			paid full price
2. Sams Point Rd	3429/3049	$1,835,000	33.269	$55,156	Purchaser national homebuilder
Lady's Island		9/8/2015			developed 113 lots/ 3.4 lots per acre
3. Highway 170	3534/98	$3,300,000	95.833	$34,435	Conservation purchase by County
Okatie		12/1/2016			think favorable price to County
4. Savannah Hwy	3582/672	$1,300,000	53.885	$24,125	Subdivided into 185 lots, density 3.43
Burton		6/12/2017			lots per acre, Port Royal
5. Tidal Walk Dr.	3330/785	$600,000	27.1	$22,140	Dated sale subdivision site, 2 lots per acre
Lady's Island		6/27/2014			developed subsequent to sale
6. 1000 Sams Point	3672/1852	$1,200,000	42.537	$28,211	Rural zoning, conveyance of waterfront
Lady's Island		6/1/2018			tract for family compound



Land Sales Location Map

Discussion

The sales indicate a fairly wide range of prices on a per-acre basis. The sales comparison process involved analyzing each sold property against the subject. The sold properties range from a low of $22K per acre to a high of $55K per acre. Zoning is an important factor in residential land value, in that some tracts have been recently permitted for up to 3.4 dwelling units per acre, whereas less intensely zoned tracts were permitted for only 2 units per acre. Tracts with Rural zoning in the County will only permit 1 dwelling unit per 3 acres, unless the tract can be rezoned for higher density. Thus the value of the subject is bracketed within a narrower range, and the appraiser proceeded to analyze further in order to refine the comparison.

The best comparables in the array from a locational standpoint are Sales 2, 5, and 6. However Sale 2 was developed to a much higher density (3.4 units per acre) than would be permitted for the subject (2 units per acre). Thus proportionally, the subject might be worth 2 divided by 3.4 or 59% of the price per acre of Sale 2. This would translate to about $32,445 per acre for the subject. The tidal creek access would add a measure of value above this parameter. But the fact that the subject is located 2 miles further north, on the 2-lane portion of Sams Point Road would justify a negative adjustment. If the combined net adjustment is zero, the adjusted value indication for the subject is about $32,000 per acre.

Sale 5 is dated, and the appraiser judges that this tract would be worth more in today's market than the $22,140 per acre; hence the time-adjusted indication would be at least

$30,000 per acre for the subject. Add another 5% for the tidal creek location, and the adjusted indication for the subject is $31,500 per acre.

It is difficult to construct a mathematical adjustment process for Sale 6, since this tract has rural zoning and unless upzoned could not be subdivided into typical small lots. This sale is located more remotely than the subject and is clearly worth less per-acre.

The closest comparable, Sale 2, sold for $1,835,000 and 113 lots were developed. The price is therefore equivalent to $16,239 per lot. This sale has a superior location closer to the business center of Lady's Island. If the subject is worth say $15,500 per lot, and 216 lots can be developed, this translates into a value of $3,348,000.

Value Conclusion

The appraiser carefully weighed the prices paid per acre for the sold properties, against the subject. A conservative parameter of $31,500 per acre would be a reasonable valuation, given the subject's specific location, topography, and the current zoning in place. This parameter would translate to a value estimate as follows.

108 acres valued @ $31,500 per acre =	$3,402,000
Value Rounded to	**$3,400,000**

The date applicable to the value estimate is December 5, 2018. This was the date of my latest field inspection.

ASSUMPTIONS AND LIMITING CONDITIONS

1. This appraisal is made under the assumption that title to the property is merchantable. Easements, restrictions, encroachments or other limitations upon value not mentioned in the report have not been considered.

2. Information regarding sales of comparable properties was obtained from reliable sources and is believed by the appraiser to be accurate. Reliability of such information cannot, however, be guaranteed.

3. Plats and other drawings, if included, are to assist the reader in visualizing the property, and while they are believed to be accurate, their correctness cannot be guaranteed.

4. Information concerning taxes and other financial data was supplied to the appraiser by others. It is believed to be reliable and accurate but cannot be guaranteed by the appraiser.

5. Disclosure of the contents of this appraisal report is governed by the By-Laws and Regulations of the Appraisal Institute.

6. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser or the firm with which he is connected, or any reference to the Appraisal Institute or to the MAI designation) shall be disseminated to the public through advertising media, public relations media, news media, sales media or any other public means of communication without the prior written consent and approval of the undersigned.

7. Inherent in the approaches to value is the assumption that the property will enjoy prudent management, with appropriate financial strength and skills, and that information provided to the appraiser by the owners concerning financial projections are reasonably accurate. The appraiser assumes that existing tax legislation will remain the same as it is on the date of the appraisal unless changes are specifically discussed in the body of the report.

8. The value estimate includes all existing infrastructure and land. It includes the value of the dock permit to the tidal creek, recognizing that the existing dock is not usable in its present condition.

9. The appraisal assumes, for purposes of valuation, that all land is held in fee simple ownership, unencumbered. No leases or bond-financing arrangements were considered in value.

10. The appraiser is not required to testify or appear in court on matters discussed herein, unless subsequent agreement is made for such services.

11. The Americans with Disabilities Act ("ADA") became effective January 26, 1992. We have not made a specific compliance survey and analysis of this property to determine whether or not it is in conformity with the various detailed requirements of the ADA. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect upon the value of the property. Since we have no direct evidence relating to this issue, we did not consider possible noncompliance with the requirements of ADA in estimating the value of the property.

CERTIFICATION OF APPRAISER

I certify that, to the best of my knowledge and belief:

1. That statements of fact contained in this report are true and correct.
2. The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial and unbiased professional analyses, opinions and conclusions.
3. I have no present or prospective interest in the property that is the subject of this report, and no personal interest with respect to the parties involved.
4. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
5. My engagement in this assignment was not contingent upon developing or reporting predetermined results.
6. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
7. The reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Appraisal Ethics & Standards of Professional Practice of the Appraisal Institute, which include the Uniform Standards of Professional Practice.
8. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
9. I have made a personal inspection of the property that is the subject of this report.
10. No one provided significant real property appraisal assistance to the person signing this report.
11. As of the date of this report, I have completed the continuing education program of the Appraisal Institute.
12. My license status is active in the State in which the subject property is located.

George R. Owen, MAI

Date: December 12, 2018

QUALIFICATIONS OF GEORGE R. OWEN, MAI
REAL ESTATE APPRAISER AND CONSULTANT
LICENSED/CERTIFIED GENERAL APPRAISER

Experience

Principal, George R. Owen, Certified General Appraiser, 7 Claire's Point Rd., Beaufort, SC 29907. Practicing in Beaufort since 2004. Previously 32 years experience in Memphis, Tennessee. Assignments have included appraisals for mortgage loan purposes, appraisals for court testimony, condemnation appraisals, and appraisals for a large variety of institutional, individual and corporate clients. My practice excludes single family residential. I am currently licensed in South Carolina.

Types of properties appraised include:

- Shopping Centers
- Commercial Fast-food Operations
- Service Stations/Convenience Stores
- Warehouses/Industrials
- Service/Showroom
- Office Buildings
- Large & Small Apartment Projects
- Downtown Rehab Projects
- Truck Terminals
- Carwashes
- Nursing Homes/Congregate Care
- Subsidized Housing
- Vacant Land
- Subdivisions
- Heavy and Light Industrials
- Savings & Loan Institutions
- Bank Properties
- Mobile Home Parks
- Condemnations, partial takings, etc.
- Church Properties

Appraisal clients served include:

Corporate

- Anheuser-Busch
- AutoZone, Inc.
- Bemis Corporation
- Burger King
- Care Inns, Inc
- Cargill, Inc
- Clopay Corporation
- Digital Equipment Company
- Exxon Corporation
- Graceland/Elvis Presley Enterprises
- Holiday Inns
- JiffyLube Corporation
- Krispy Kreme Division, Ameris Bank
- Kemmons Wilson, Inc
- Loeb Properties
- McDonald's Corporation
- Railroad
- Ralston-Purina Corporation
- Sanyo Corporation
- SPL Corporation
- Sprint Petroleum
- Taco Bell
- Hargray Telephone Company
- Graybar Electric

Banks

- Bank of America
- South Carolina Bank & Trust
- Lowcountry National Bank
- Wachovia Bank
- First Commercial Bank
- First Tennessee Bank
- Financial Federal Savings Bank
- Bank of America (Atlanta)
- Regionsbank
- National Bank of Commerce
- NationsBank
- Nat. City Bank, St. Louis, MO
- Woodlands Bank
- Beatrice Foods Corporation
- Sunburst Bank
- SunTrust Bank (Nashville)
- Third National Bank (Nashville)
- Islands Community Bank
- Union Planters National Bank
- Huntington Bank, Cleveland, OH
- BankOne (New Orleans)
- BB&T
- Horry County (SC) State Bank
- Harbor Nat'l Bank (Charleston, SC)
- Colony Bank (Savannah, GA)

George R Owen, MAI Page 2

Developers/Entrepreneurs
Alco Properties
Aldrich Investment Company

Ampco, Inc.
Belz Enterprises
Boyle Investment Company
Culp & Assoc., Knoxville, TN
Fogelman Companies
H. Lance Forsdick Properties
Henry Turley Company
Jetero Properties
Joyner, Heard & Jones
Kemmons Wilson Companies
Loeb Enterprises
McCullar Realty

McNeil Investment Co

Patton & Taylor

Peck Industries

Syncorp
Tesco Development
Trammell Crow Companies
Trezevant Properties
Gibson Builders

Institutional
West TN Business College
Rhodes College
Grace - St. Luke's Episcopal Church
The Trust for Public Land

Law Firms
Burch, Porter & Johnson
Hardison, McCarroll, Cook & Cannon
Heiskell, Donelson, Bearman, Adams
Williams & Kirsch
Lawler, Humphreys, Dunlap & Wellford
Stokes, Kimbrough, Grusin & Kiser
Blanchard Tual, Attorney
Waring Cox Attorneys
Harvey & Battey, Attorneys

Other
The Trust for Public Land
Coastal Conservation Consultants

Governmental
City of Beaufort, SC
City of Germantown, TN

City of Memphis/ R.O.W. Dept
Federal Deposit Ins. Corp .
Federal Sav. & Loan Ins. Corp
Resolution Trust Corporation
Memphis Light, Gas & Water
Shelby County R.O.W. Dept
State of TN R.O.W. Dept
U. S. Postal Service
Veterans Administration
Tennessee Valley Authority
U.S. Department of the Navy
U.S. Federal Receiver

Beaufort County
Patterson Construction

Loan Underwriting

Connecticut General Life Ins

Federal National Mtg. Association
F.M. Crump & Co.
Holliday, Fenoglio & Tyler
The Latham Company
Lexington Properties
Mortgage Guaranty Ins. Corp
Ward & Company
Washington National Ins. Co.
Fogelman-Beaty Mortgage Co.
The Money Store

Insurance Companies
Capital Holding Company
Connecticut General Life Insurance
Delta Life & Annuity
Mutual of New York - Real Estate
Ohio National Life Insurance Co
Jefferson Pilot Life Insurance Co
Southern Farm Bureau Insurance
Washington National Insurance
Safeco Life Insurance Company
Protective Life Corporation
Pacific Mutual Life Insurance Co.
Farm Bureau Life Insurance Co.

Organizations
MAI, Member of Appraisal Institute *Currently Certified (Certif. No. 6189)
(Member of SC Chapter and Savannah, GA Chapter)
Past President, Memphis Chapter #51, Appraisal Institute.

Licenses
SC: Certified General Appraiser (No. 5064) Certified through 7/31/2020

Education
Master of Business Administration, 1971, University of Virginia
Master of Science, 1966, Rice University
Bachelor of Science, 1964, Vanderbilt University
Continuing Education Program of Appraisal Institute - through 12/31/2022
Lifetime commitment to continuing education at local universities

Additional Assignments (partial list)
Residence Inn, Spartanburg, SC; Ramada Inn, Rock Hill, SC
Holiday Inns, Grenada, MS; Frankfort, KY; Franklin, TN
Lagniappe Inns, Cincinnati, OH; Columbus, OH; Nashville, TN
La Quinta Inns, Nashville, TN; Lexington, KY; other locations in GA, TX, and OK
Potential development property, Back Bay, Biloxi, MS
Automobile Dealerships, Vicksburg, MS; Jackson, TN
Condominium feasibility study, Indianapolis, IN
Limited condominium feasibility study, Birmingham, AL
Apartment Project, Birmingham, AL
Old English Inn; West Tennessee Business College; Jackson, TN
Industrial Plants, various towns in west Tennessee, north Mississippi, Arkansas, South Carolina
Louisville Freezer/American Cold Storage, Louisville, KY
Haygood Truck & Trailer Parts, Chattanooga TN & Birmingham, AL

Contact Information

Cell 843 271 2481
E-mail: georgeowen84@gmail.com

EXHIBITS

A. PHOTOGRAPHS

B. 2018 SURVEY OF PROPERTY

C. ASSESSOR TAX SHEET, PLAT

Entrance gate

SUBJECT PHOTOGRAPHS

typical wooded terrain

Wetland area

View of marshes to the east

12/2/2018 Beaufort County, South Carolina

Beaufort County, South Carolina

generated on 12/2/2018 9:51:58 PM EST

Property ID (PIN)	Alternate ID (AIN)	Parcel Address	Data refreshed as of
R200 010 000 0170 0000	00256350	484 SAMS POINT RD,	11/9/2018

Current Parcel Information

Owner	PINEVIEW FARMS LLC	Property Class Code	AgVac Forest
Owner Address	PO BOX 1087 BEAUFORT SC 29907	Acreage	118.3000
Legal Description	SUBJ TO ROLL BACK TAX LIEN BISHOP TRACT TIMBERLAND MGFM:KEY#256181 2843052 10-8-96 CONSOLIDATE AT THE REQUEST OF JAMES A GRIMSLEY III (ATTY) 8-15-96		

Historic Information

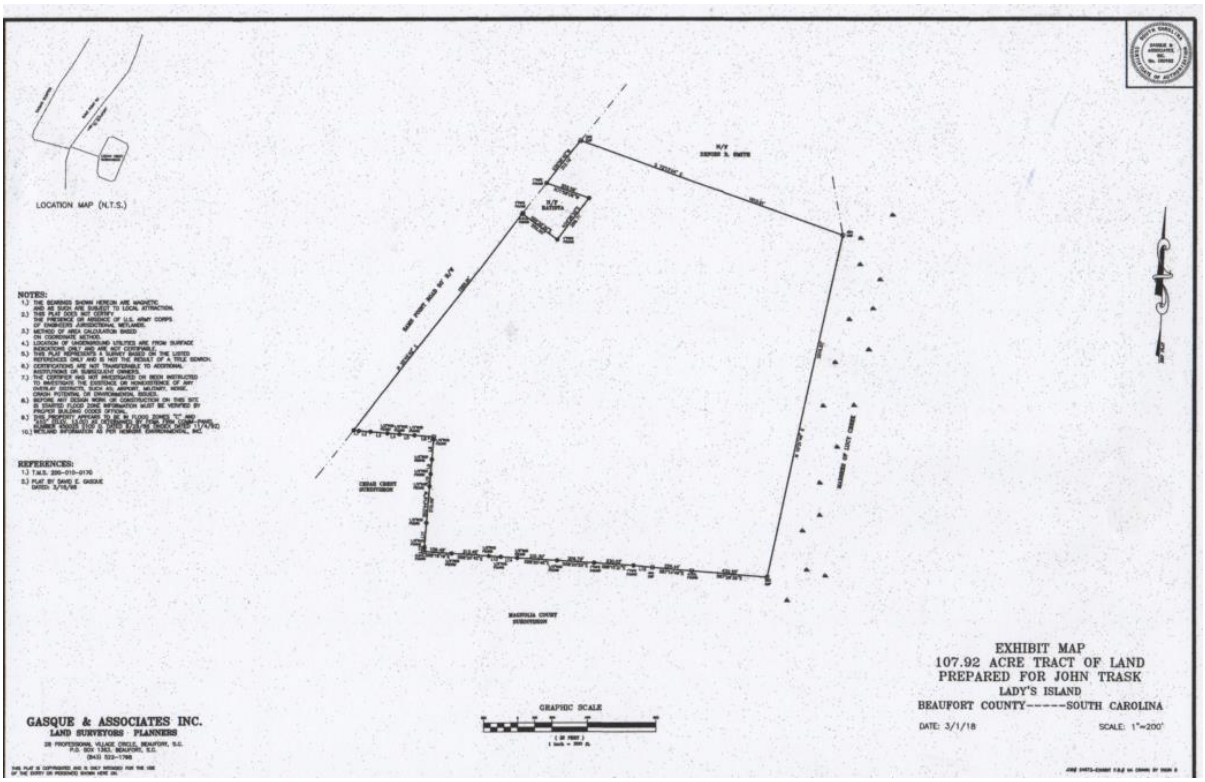
Tax Year	Land	Building	Market	Taxes	Payment
2018	$2,693,800		$2,693,800	$471.74	$0.00
2017	$1,242,500		$1,242,500	$480.09	$480.09
2016	$1,242,500		$1,242,500	$475.40	$475.40
2015	$1,242,500		$1,242,500	$438.72	$438.72
2014	$1,242,500		$1,242,500	$436.00	$436.00
2013	$1,242,500		$1,242,500	$429.22	$429.22
2012	$1,775,000		$1,775,000	$411.86	$411.86
2011	$1,775,000		$1,775,000	$409.00	$409.00
2010	$1,775,000		$1,775,000	$406.65	$406.65
2009	$1,775,000		$1,775,000	$403.08	$403.08
2008	$1,478,800		$1,478,800	$423.14	$423.14
2007	$1,478,800		$1,478,800	$388.68	$388.68

Sales Disclosure

Grantor	Book & Page	Date	Deed	Vacant	Sale Price
PINEVIEW FARMS LP	3339 2556	8/6/2014	Qu		$5
TRASK FLORA G	674 1387	12/21/1993	QC		$10
		12/31/1776	Or		$0

Improvements

Building	Type	Use Code Description	Constructed Year	Stories	Rooms	Square Footage	Improvement Size


LOCATION MAP (N.T.S.)
NOTES:
REFERENCES:
GRAPHIC SCALE
EXHIBIT MAP
107.92 ACRE TRACT OF LAND
PREPARED FOR JOHN TRASK
LADY'S ISLAND
BEAUFORT COUNTY------SOUTH CAROLINA
DATE: 3/1/18
SCALE: 1"=200'
GASQUE & ASSOCIATES INC.
LAND SURVEYORS · PLANNERS

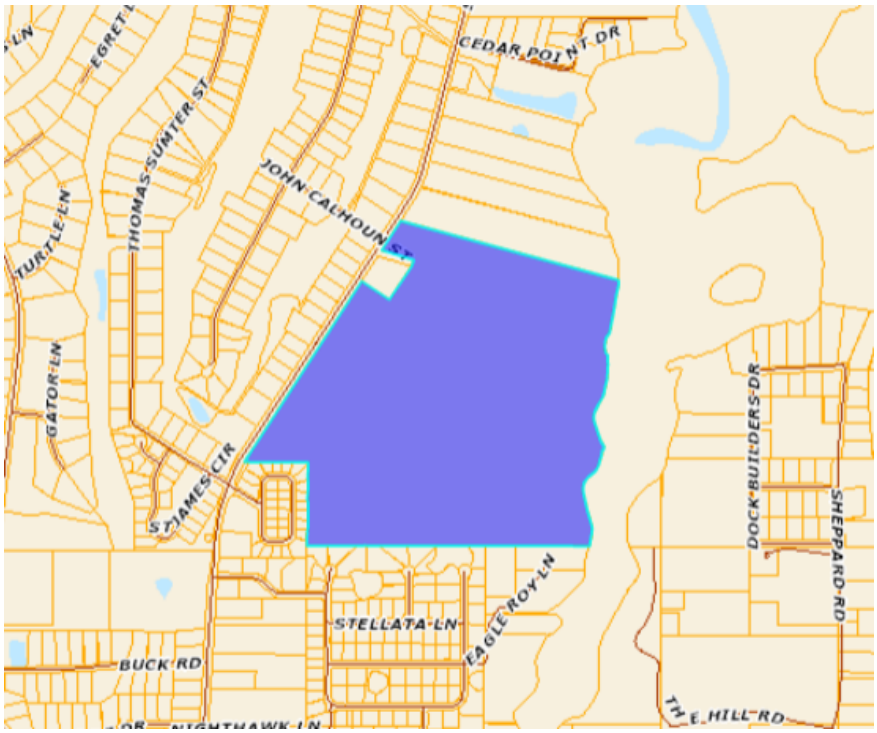

CEDAR POINT DR
JOHN CALHOUN ST
THOMAS SUMTER ST
TURTLE LN
GATOR LN
ST JAMES CIR
DOCK BUILDERS DR
SHEPPARD RD
STELLATA LN
EAGLE ROY LN
BUCK RD
THE HILL RD
NIGHTHAWK LN

EXHIBIT "A"

Parcel A

ALL that certain piece, parcel or tract of land, situate, lying and being on Lady's Island, Beaufort County, South Carolina, consisting of 108.5 acres, more or less, and being more particularly described by reference to the plat or survey prepared by the United States Direct Tax Commissioners for the District of South Carolina, as follows, to-wit: Lots 1, 2, 3, 4 and the eastern portion of Lot 5, all of Lot 13, Lot 14 and Lot 15, Section 34, 1N1W; AND ALSO, the southwestern portion of Lot 49, the southern portions of Lot 50 and Lot 51, and the easternmost portion of Lot 52, the southeastern portion of Lot 60, the eastern portion of Lot 61, all of Lot 62, Lot 63 and Lot 64, section 27, 1N1W; said property being bounded on the North by lands formerly of the Flora G. Trask; on the East by the marshes of Little Lucy Point Creek; on the West by South Carolina Highway No. 802, aka Sams Point Road; and on the South by lands now or Formerly of Coastal Contractors, Inc.

AND ALSO, ALL that certain piece, parcel or tract of land, situate, lying and being on Lady's Island, Beaufort County, South Carolina, consisting of 8.10 acres, more or less, and being more particularly described as the eastern portion of Lot 16, Section 34, 1N1W, according to the survey or plat prepared by the United States Direct Tax Commissioners for the District of South Carolina.

This property being conveyed to the within Grantor by deed dated December 21, 1993 and recorded in Deed Book 674 at Page 1387.

Parcel B

ALL that certain piece, parcel or lot of land, situate, lying and being on Lady's Island, Beaufort County, South Carolina, containing 1.74 acres and being the western portion of Lot 16 in Section 34 as shown on the maps of the United State Direct Tax Commissioners of the District of South Carolina, and bounded as follows, to-wit: On the West and North by lands formerly of Bishop, now of Pineview Farms, L.P.; on the East by Horsepen Creek; and on the South by lands of Grant; and measuring as follows: From the highwater mark of Horsepen Creek thence westward for 150 feet to a concrete marker; thence east for 80 feet to the highwater mark of Horsepen Creek.

This being the same property conveyed to the within Grantor by deed dated April 12th, 1996 and recorded in deed Book 850 at Page 980.

This instrument was prepared by Kevin E. Dukes of Harvey and Battey, P.A., 1001 Craven Street, Beaufort SC 29902.

R200-10-000-15A

Book3339/Page2558 CFN#2014038237

Legal description from 2014 quitclaim deed indicates 118.34 total acres

From: barbara@openlandtrust.com
Sent: Monday, December 3, 2018 8:12 AM
To: George Owen
Subject: Fee simple appraisal needed

Hi George,

The BCOLT, on behalf of the Rural & Critical Program would like to retain your services for a fee simple appraisal on a parcel of property on Lady's Island owned by members of the John Trask family in the Pineview Farms, LLC entity. The PIN # is R200 010 000 0170 0000.

The Pineview tract is one of two large undeveloped tracts of land on Lady's Island. The current zoning is Lady's Island Community Preservation with no PUD in place. According to Rob Merchant, the district is mostly residential and allows a gross density of 2 dwelling units per acre. The property has been used primarily for timber and for hunting.

The property totals 118.3 acres and is located north of Beaufort Academy, generally square-shaped with 1,600' of frontage on Sams Point Road and approximately 2,000 feet of water frontage on Rock Springs Creek, a tributary of the Harbor River. The property was timbered approximately 15 years ago, so land cover is primarily naturally regenerated successional scrub-shrub, Atlantic coastal plain dry and dry-mesic forest, Atlantic coastal plain maritime forest, and Atlantic coastal plain southern wet pine savanna and flatwoods. There are wetlands on the property, but not a significant amount.

Access to the tract is on a gated, unpaved road on the north side of the property that leads almost to Rock Springs Creek then turns right. That location on the marsh edge that would be the most feasible location for a public kayak launch. There are no structures on the property except for several hunting stands & feeders. There are walking trails on the property as well, but it would need to be cleaned up for public use. The piano-key shaped lot that abuts the entire northern border of the tract is protected by a BCOLT conservation easement.

I have attached several maps, a plat and current Beaufort County information on the parcel. Please let me know what else you might need.

Thank you!

Barbara G. Holmes
Director of Land Protection
Beaufort County Open Land Trust
P.O. Box 75
Beaufort, SC 29901
Office: (843) 521-2175
Cell: (843) 367-3780
barbara@openlandtrust.com

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

Widgeon Point Park Plan - PRESENTATION ONLY

Council Committee:

Natural Resource

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

Stefanie M. Nagid, Passive Parks Manager

Issues for Consideration:

Hear a presentation on the Widgeon Point Park plan.

Points to Consider:

Presentation on the park plan for information purposes.

Funding & Liability Factors:

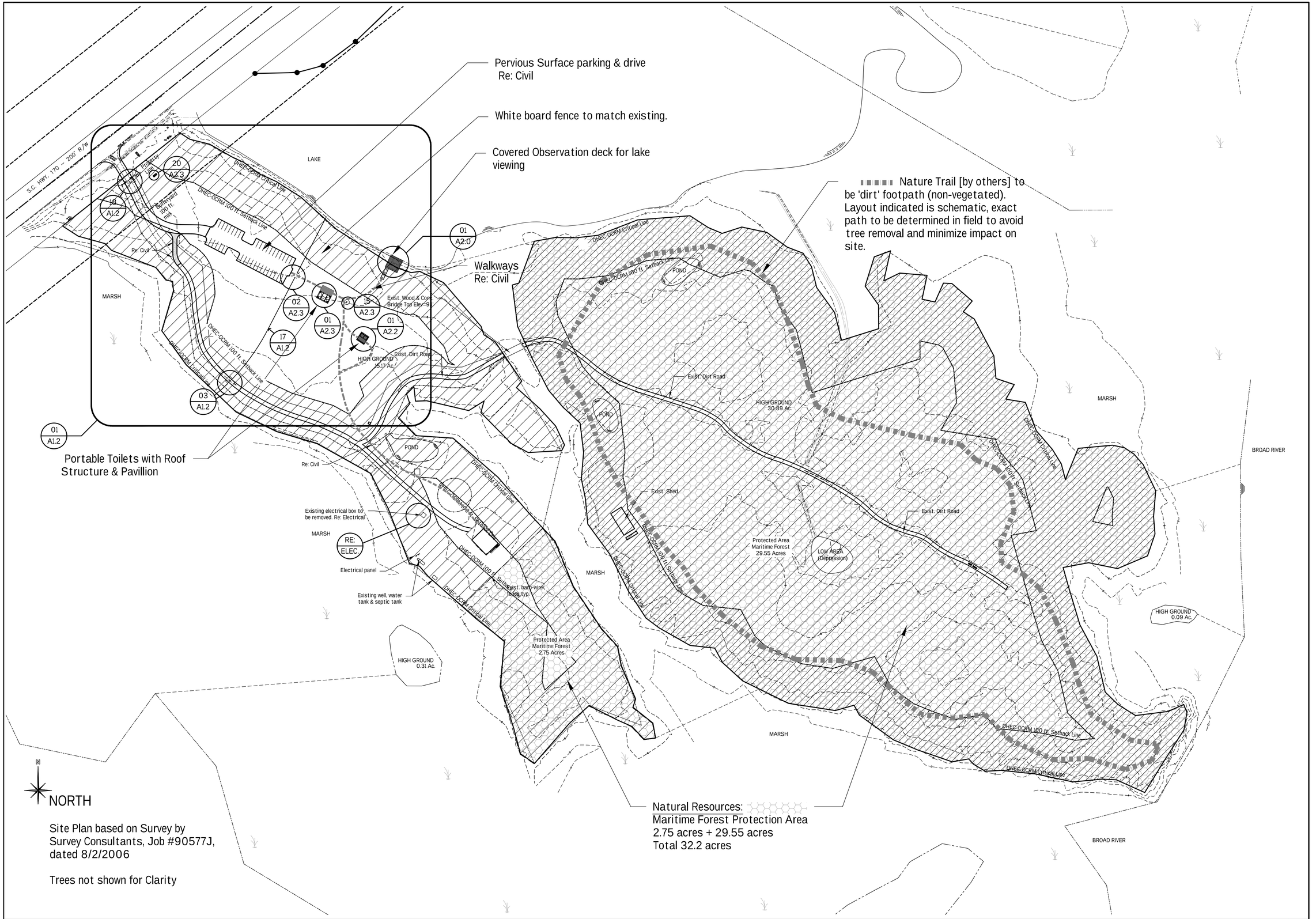
None at this time.

Council Options:

None at this time.

Recommendation:

None at this time.



Master Site Plan

1" = 100'

01

MONTGOMERY ARCHITECTURE & PLANNING, INC.

www.monarchpl.com

404 Ribaut Road
Beaufort, SC 29902
Phone: (843) 522-8077
Fax: (843) 522-8011

STATE OF SOUTH CAROLINA — MONTGOMERY ARCHITECTURE & PLANNING, INC. BEAUFORT, SC No.01096 — REGISTERED ARCHITECTS

STATE OF SOUTH CAROLINA — ROBERT C. MONTGOMERY BEAUFORT, SC No. 4344 — REGISTERED ARCHITECT

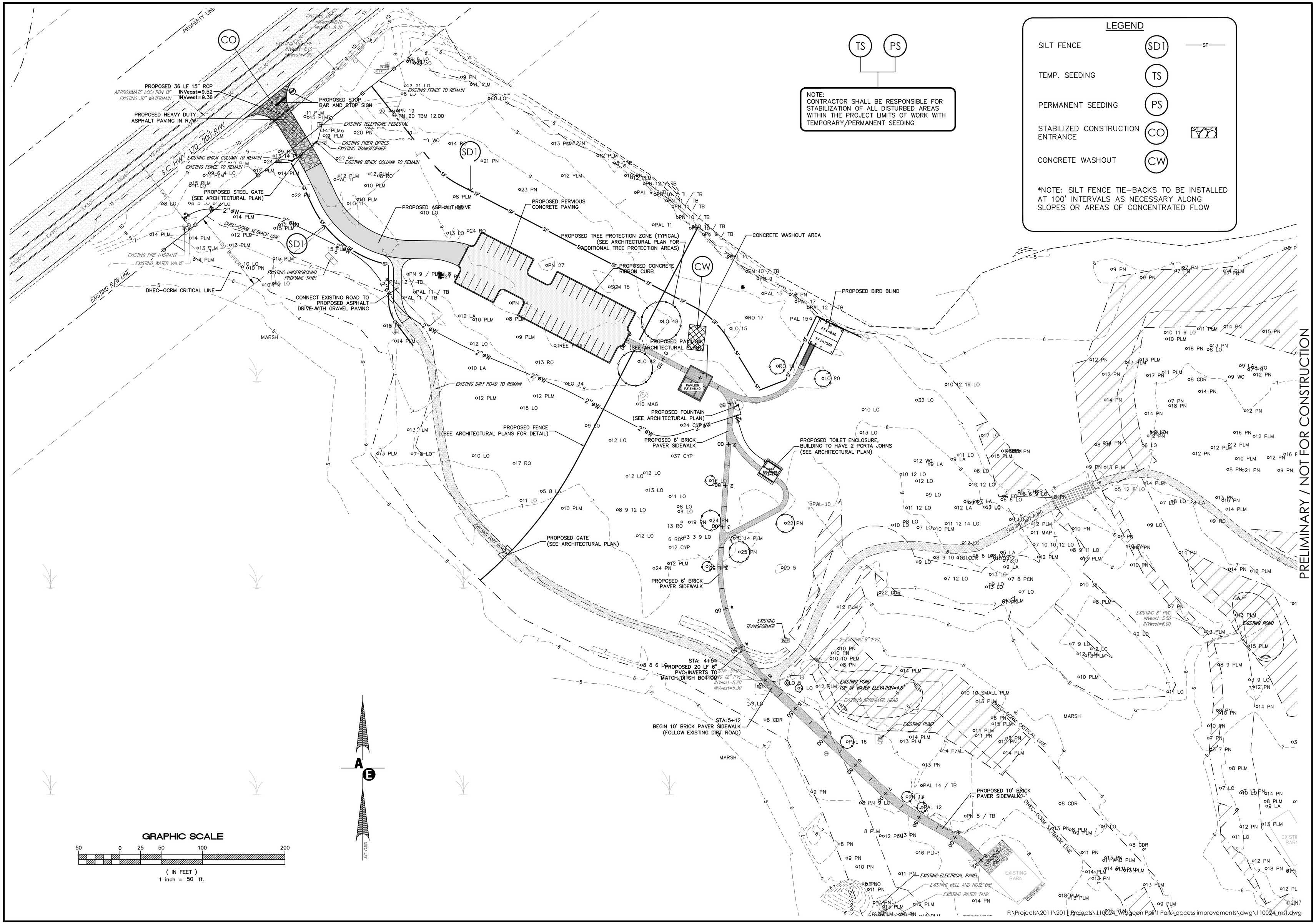
DATE	ISSUE
10-31-18	Review
11-12-18	Permit

Master Site Plan & Phase 2 Site Plan
Widgeon Point Park

Okatie Highway
Beaufort, South Carolina

A1.1

Project No: 326
Drawn By: AF
Checked By: RM



NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS WITHIN THE PROJECT LIMITS OF WORK WITH TEMPORARY/PERMANENT SEEDING

LEGEND

- SILT FENCE (SD1) —SF—
- TEMP. SEEDING (TS)
- PERMANENT SEEDING (PS)
- STABILIZED CONSTRUCTION ENTRANCE (CO)
- CONCRETE WASHOUT (CW)

*NOTE: SILT FENCE TIE-BACKS TO BE INSTALLED AT 100' INTERVALS AS NECESSARY ALONG SLOPES OR AREAS OF CONCENTRATED FLOW

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

S.C. GRID

PRELIMINARY / NOT FOR CONSTRUCTION

PLAN REVISIONS

NO.	DESCRIPTION:	DATE:	BY:
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-

SOUTH CAROLINA PROFESSIONAL ENGINEER STEVEN WADE ANDREWS NO. 12860 REGISTERED

SOUTH CAROLINA ANDREWS ENGINEERING CO. No. C00008 CERTIFICATE OF AUTHORIZATION

Andrews Engineering & Surveying
2712 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

Site Development Plan
For
Widgeon Point Park
S.C. Hwy. 170
Okatie
Beaufort County, SC

Overall Site and Sediment and Erosion Control Plan

Date Drawn:	09/23/11
Last Revised:	01/28/19
Drawn By:	R. Crosby
Engineer:	S. Andrews

SHEET #: 2

JOB: 110024

F:\Projects\2011\2011 Projects\110024 Widgeon Point Park access improvements\dwg\110024_mst.dwg

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

Rural & Critical Lands Preservation Board - Board Appointments

Council Committee:

Natural Resources Committee

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

N/A

Issues for Consideration:

(1) vacancy

Points to Consider:

Appointment must reside in Council District #8.

Funding & Liability Factors:

N/A

Council Options:

N/A

Recommendation:

Fill the vacancy.

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

Southern Beaufort County Corridor Beautification Board - Board Appointments

Council Committee:

Natural Resources Committee

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

N/A

Issues for Consideration:

(2) vacancies

Points to Consider:

Vacancies in:
Council District #5
Council District #8

Funding & Liability Factors:

N/A

Council Options:

N/A

Recommendation:

Fill the vacancies.

BEAUFORT COUNTY COUNCIL

Agenda Item Summary

Item Title:

Stormwater Management Utility Board

Council Committee:

Natural Resources Committee

Meeting Date:

March 18, 2019

Committee Presenter (Name and Title):

N/A

Issues for Consideration:

(1) vacancy

Points to Consider:

Vacancy in:
Stormwater District #5

Funding & Liability Factors:

N/A

Council Options:

N/A

Recommendation:

Fill the vacancy.

ADD-ONS

The document(s) herein were provided to Council for information and/or discussion after release of the official agenda and backup items.

Topic: Public Comment / Land Acquisition Procedures
Date Submitted: March 18, 2019
Submitted by: Douglas Koop, Rural & Critical Lands Brd.
Venue: Natural Resources Committee

March 18, 2019

To: Beaufort County Natural Resources Committee
From: Douglas Koop, 110 Bartram Drive, Beaufort. District 5 representative on the Rural and Critical Lands Board.
Re: Comments regarding Item #10 on the Committee's Agenda for March 18, 2019

Dear Committee Members,

While I am unable to attend today's Committee meeting due to work requirements, I respectfully submit the following comments. These comments are mine and are not to be considered a position of other RCLP Board members.

As a means of background prior to presenting comments, I wish to share with the Committee of some of my credentials which I believe are relevant to my appointment to the Rural and Critical Lands Board. My work history includes 20 years as executive director to two nationally accredited land conservancies, 18 years with The Little Forks Conservancy and 2 years with Legacy Land Conservancy. During the latter position, Legacy served as a contractor to the Washtenaw County Land Preservation Board in a role very similar to the role that BCOLT serves to Beaufort County. I also was a county planner for four years during which I was responsible for developing procedures and implementing programs for both County and State mandated ordinances. I present this information simply to make a point that I have substantially more experience in the processes of land preservation than my short term on the Board may convey.

I am only now learning of issues surrounding recent negotiations with RCLP acquisitions. I also do not believe I know all the facts and circumstances which are implied by the letter to Mr. Battey and specific to the Whitehall negotiations. I do recognize what appears to be an attempt to placate one or more parties who seemed to be aggrieved by the process.

I am concerned that the recommended changes to the Rural and Critical Land Program project process are reactionary and appear to be directed at a staff person of the contractor. If there truly are issues in the flow of work product, including behind the scenes negotiations, they should be addressed in a manner that strengthens the public's confidence in how the Rural and Critical Lands Program is run. I am not convinced that making these changes by administrative directive does that.

The declaration that "It is the county staff's intention through [Mr. Weaver's] directive to implement this fix immediately" implies that the program has gone horribly off track and emergency procedures are needed to correct some sort of egregious, deeply dysfunctional process that I have not seen in my albeit short tenure on the board. I have been aware of the program since its inception, and there has always been a sense that the process was working well. Whatever the Whitehall project's issues are, it does not seem to be emblematic of the entire program.

As a member of the RCLP Board, I am somewhat disappointed that a proposed solution was created without input from any Board representative. As a result, it appears the Board's ability to participate in the identification, review and recommendation of appropriate projects is being significantly curtailed. By my reading of the letter from Mr. Weaver the RCLP Board will not be considering a project until it has been reviewed and approved first by staff, and then by the Natural Resources Committee. It was my

public comment

understanding when I was appointed to the Board that vetting projects was the primary mission of the Board which would then lead to making a recommendation to the NRC and County Council.

What I find in this proposed new set of procedures is a potential removal of the RCLP Board from the process in any meaningful way as primary determination of a project's worthiness and value will now be placed under the control of staff. As I evaluate the proposed new process, the only mention of the RCLP Board is found in Item #5 when the Board will be asked for its written recommendation at a time when it is "simultaneously" moved forward to full Council for final disposition. I find it difficult to find any relevance for the Board at that point. I also find it rather disingenuous to add the caveat "or earlier if possible". Any review by the appointed RCLP Board, representing all districts of the county, becomes irrelevant.

One of my concerns about making these changes in order to protect public interest through better transparency is that the process may actually become less transparent by moving projects into this new review regime. Removing participation by an appointed Board of volunteer citizens, representing all parts of the community, is in my opinion problematic and has the high potential of creating greater distrust that millions of dollars are being spent appropriately.

While it appears that there is displeasure with the actions of a specific contractual staff person, the resulting proposed "solutions" to the process seem to be hasty. I applaud Mr. Weaver's belief that "this new process, first, will insure that there no longer will be any miscommunications or misunderstandings between the respective parties and, second, that Beaufort County will have a full understanding of all aspects of the transaction prior to making a final decision." It is what I always sought in the numerous transactions I brought to my boards for consideration. Even operating as accredited organizations, rarely did a project go through without a hitch or some misunderstanding along the way.

If new procedures are indeed warranted, I believe that input from the RCLP Board should be solicited more than it has been thus far and prior to implementation of proposed changes.

COASTAL
CONSERVATION
LEAGUE

March 18, 2019

Topic: Public Comment / Land Acquisition Procedures
Date Submitted: March 18, 2019
Submitted by: Kate Shaefer, Coastal Conserv. League
Venue: Natural Resources Committee

Natural Resources Committee
PO Drawer 1228,
Beaufort, SC 29901

Re: Agenda item 10, Discussion/Land Acquisition Procedures

Chairman Howard and Committee:

Thank you for the opportunity to comment today. We're sharing a summary of our comments when we addressed the Rural and Critical Lands board (enclosed), which include our suggestions for improving the already strong Rural and Critical Lands program. Broadly, we'd like to reaffirm our support for the program, understanding while not perfect, it can be improved so that it continues to be a trusted land protection program. Specifically, we'd like to speak to the back-up items and the proposed changes to internal processes for land acquisition and protection with Rural and Critical Lands tax funds.

When it comes to the Rural and Critical Lands program, we believe internal processes can improve with:

- **Continued third-party program management and an engaged and diverse Rural and Critical Lands Board:** We support a diverse and engaged Rural and Critical Lands board, with citizens serving because of their background and passion for agriculture, conservation, wildlife, and open space. Similarly, the third party manager has been a resource for the county through the years and is an important ingredient in the recipe for success. Accredited land trusts throughout South Carolina have worked with landowners to bring projects forward and to support this program and should continue doing so. The changes proposed today take land to the Natural Resources Committee first, and eliminate the due diligence of the RCLP board. Natural resources and the public should be aware of projects, but only after the conservation board vets them appropriately. The board's role – and presumably their expertise – is in vetting preliminary projects and other conservation related evaluations; council and the committee's role is much broader and should occur after board review.
- **Public engagement is important and should be part of the process:** There are so many beautiful properties and not enough dollars to protect them all, so we must be strategic. Information should be shared in a public forum and would be meaningful to the outcome. Property details like its conservation value and location should be available for public review and not just considered in executive session. Much like a rezoning sign is put in front of a parcel, the public should know when properties are eligible for conservation and why, so we can advocate for their protection. Overall, this could result in even broader support for a popular program.
- **Projects should be highly leveraged to make our tax dollars go further:** Funding sources could include Rural and Critical Lands program dollars, landowner donation via

bargain sale easement, private foundation dollars, private fundraising, federal and state grants, among others.

Furthermore, today's changes omit two important changes that should be adopted if the Rural and Critical Lands Program is going to continue to serve as a land protection program and not a county land-buying program for parks or other uses or whims.

- **All land purchased through the program should be permanently protected.** Currently not all properties have easements to protect them in perpetuity. The entire inventory of properties is a conservation asset and all properties should be protected.
- **Protecting land with conservation easements should be the highest program priority**: Buying development rights on rural land, rather than fee simple, is a smart strategy; it staves off development, keeps land on the tax roles, encourages traditional rural uses like farming and forestry, protects water quality and wildlife habitat, protects our air base, and does all of this for pennies on the dollar. This was a topic of discussion at the Rural and Critical Lands board retreat, and we support changes to the program and/or ranking criteria that prioritize the purchase of development rights over fee simple purchases.

In general, we emphasize natural resource protection, attention to development pressures and future land conversion, protection of rural farmland, the ability to leverage additional financial support of the given property, and ability for the property to meet the needs of the Greenprint and add to the regional greenbelt and protected landscape. In our response to the questionnaire, we will elaborate on the scoring criteria in more detail.

Conclusion:

Trust in your board, improved transparency, highly leveraged acquisitions, permanent protection for all assets and an emphasis on conservation easements is important and can only help the wildly successful program. Through coordinated and collaborative investments, over 1.2 million acres have been protected on the South Carolina coast. Locally, we have great stories to tell from past successes and future opportunities Binden, Lemon Island, Henry Farms, New Riverside and others are all great stories of land protection in strategic places that have benefitted us as a region. We have more work to do in these strategic rural corridors of incredible landscapes along Sheldon Church Road, the New River, Okatie Highway and on St Helena.

We look forward to future participation in the Greenprint process and in support of the program.

With thanks,

Kate Schaefer
Director of Programs
Coastal Conservation League

COASTAL CONSERVATION LEAGUE

February 14, 2019

Rural and Critical Lands Board
PO Drawer 1228,
Beaufort, SC 29901

Re: Community Development Department solicitation of public comments

Chairman Matthews and board:

Thank you for the opportunity to comment today. Broadly, we'd like to discuss our philosophy of why land conservation is so important to future land use and regional health, why specific public financing programs like the Rural and Critical Lands Program are important to the region, and thoughts on improvements to the program regarding policies, procedures, transparency and evaluation criteria. We will follow up with complete answers to the questionnaire and a written letter.

The significance of landscape-scale conservation:

First, It is important to put this program in context: why has this successful program been supported by voters five times and counting? Land conservation is a critical tool for managing growth, protecting water quality and enhancing the quality of life. This comes not from small parcels alone but large swaths of protected land that offer corridors for wildlife, absorption of stormwater and working rural landscapes.

A sustainable future for our region will largely depend on the conservation community's ability to align the interests of many county and municipal leaders, economic development leaders, education leaders and others to support permanent land protection and conservation financing region-wide. Development patterns and land conversion have a significant impact on the Port Royal Sound region as a whole, the fishery economy, the resilience of the community to sea level rise and flooding and conservation value.

The Beaufort County Rural and Critical Lands program, begun out of a recommendation in the 1999 Comprehensive Plan, is one such tool for increasing land protection in the region. With this program, the community can leverage pubic dollars to protect keystone rural parcels that would halt the march of encroaching development and thereby protect productive wetland systems, wildlife habitat and working farms, forming a vibrant rural greenbelt around the county.

Quality of life benefits from land protection include healthy fisheries, improved or stable water quality, traffic mitigation, natural resilience to floods and storm surges, ability for marsh migration in river corridors, preservation of farm and timer land and their economic value, preservation of rural way of life including hunting and fishing, access to water and waterways by the public.

The Coastal Conservation League is a long-time supporter of the program. We've supported the program directly by working on the 1999 Comprehensive Plan and supporting advocacy campaigns to get out the vote for referendums. We've also worked indirectly to support the program, by participating extensively on land use plans to protect rural land uses and prevent inappropriate development. In this vein, land conservation and specifically Rural and Critical lands acquisition should be a complement to existing land uses and not just a bail-out for developers. Land conservation, land use and transportation planning are three legs of the stool for a vibrant landscape.

How can we build on this programs' benefits and success?

We believe the RCLP process can be improved to better meet the goals of the program for future "rural" and "critical" protections. At a minimum, the following amendments are necessary:

- Expand eligible applicants to include land trusts, municipalities, and counties working in coordination with Beaufort County Open Land Trust
- Create an application process or public quarterly project review that will allow for meaningful competition and transparency among qualified projects,
- Improve valuation criteria, emphasizing financial leverage and regional benefit
- Suggest a greater funding priority on protecting rural lands via conservation easement or purchase of development rights,
- Improve RCLP Board Configuration, continuing to attract board members with backgrounds in estate law, finance, rural land ownership, agriculture or conservation rather than only focusing on district addresses

Expand eligible applicants where project selection is done in consultation with Beaufort County Open Land Trust but open to qualified applicants including land trusts, municipalities and counties. This allows for municipalities and other land trusts to work together with Beaufort County and the Beaufort County Open Land Trust and secure land protection. This has been done well in the past but policies and procedures may need to be amended to facilitate this collaboration.

Create a public application process or quarterly project review. This process should take place in public session. This could take several forms but the intent is to provide a transparent, competitive, and efficient process so that strategic parcels can continue to be protected with easements at the fairest cost to taxpayers. This also ensures the public's awareness of the potential for land protection, and likely a cadre of enthusiastic supporters.

An application process or regular review periods gives staff and board members an opportunity to review projects in groups rather than isolation. The approved valuation criteria become even more valuable because they are used to compare conservation and critical value of each projects. This process provides an avenue for projects to emerge and be evaluated by their own merit against program goals and others projects in the application group. In a county where many parcels are beautiful, rich in natural resources, and of interest for preservation, comparison of projects creates opportunity for fair evaluation and ideally should allow the best, more important project to move forward and earn funding.

This process could also give municipalities and other land trusts an opportunity to apply for funds or pursue land protection.

Systematic project review also allows for a public hearing with some information able to be shared publicly, which has generally been very meaningful to voters/supporters. Overall, this could result in even broader support for a popular program. The recent public engagement on Whitehall project proves the public is interested in, excited about, and deserves to know about land conservation purchases in the pipeline.

Improving criteria to emphasis partnerships and funding: All projects should be highly-leveraged: Funding sources could include Rural and Critical Lands program dollars, landowner donation via bargain sale easement, private foundation dollars, private fundraising, federal and state grants, among others. We are increasingly sensitive to over-reliance on Rural and Critical Lands dollars as the sole source for land protection money. Projects should reflect a diversified funding strategy so that more land can be protected per dollar spent. This also enables the program to be closer in line with the price per acre spent by the State Conservation Bank and other conservation funding. Establishing a precedent with a high price per acre creates a standard that other counties can't meet. This may result in reluctance among neighboring properties in other jurisdictions like Jasper County to protect their land unless they can receive the price the Beaufort pays.

An emphasis on easements in the rural areas: Buying development rights on rural land, rather than fee simple, is a smart strategy; it staves off development, keeps land on the tax roles, encourages traditional rural uses like farming and forestry, protects water quality and wildlife habitat, protects our air base, and does all of this for pennies on the dollar.

Per the referendum, up to 20% of the funds can be used for passive park infrastructure. The existing County passive parks inventory is large (at ~11,500 acres) and the allocated 20% is essential for trails, gravel parking lots, signage, and to accomplish the many goals of the County's Passive Parks plan. Therefore, the priority for the remaining funds should be conservation easements and the purchase of development rights rather than fee simple acquisition. Fee simply acquisition adds to the future Passive Parks inventory, adds to county ownership and maintenance costs and is an expensive way to protect land.

Continued Improved board configuration with preference given to board members that represent various interests, rather than just county regions. This should maintain 1 board member appointed by each council member but encourage backgrounds related to land conservation interests, finance, real estate, rural land ownership, agriculture, fishing, or estate law. These are common qualifiers found in similar programs and could give council a better guideline for appropriate board members. This configuration is also similar to what is required for other boards (e.g. Design Review Board, an architect must serve on the board).

Scoring Criteria should reflect the goals of the program.

The program is especially important for *the rural areas*, where working farms, forest, protected air space and family lands abound. *The program is critical for the urban edges, where inappropriate growth threatens to change this rural landscape.* Binden Plantation and the Mobley tract are prime examples of protected properties that were once threatened by

inappropriate development. Protecting natural resources, including prime soils, and evaluating the threat of development should be weighted heavily in the scoring rubric.

We also believe the project must be highly leveraged via a public/private partnership and based on a justifiable price per acre valuation, and those metrics should be weighted heavily in the scoring rubric.

In general, we emphasize natural resource protection, attention to development pressures and future land conversion, protection of rural farmland, the ability to leverage additional financial support of the given property, and ability for the property to meet the needs of the Greenprint and add to the regional greenbelt and protected landscape. In our response to the questionnaire, we will elaborate on the scoring criteria in more detail.

Conclusion:

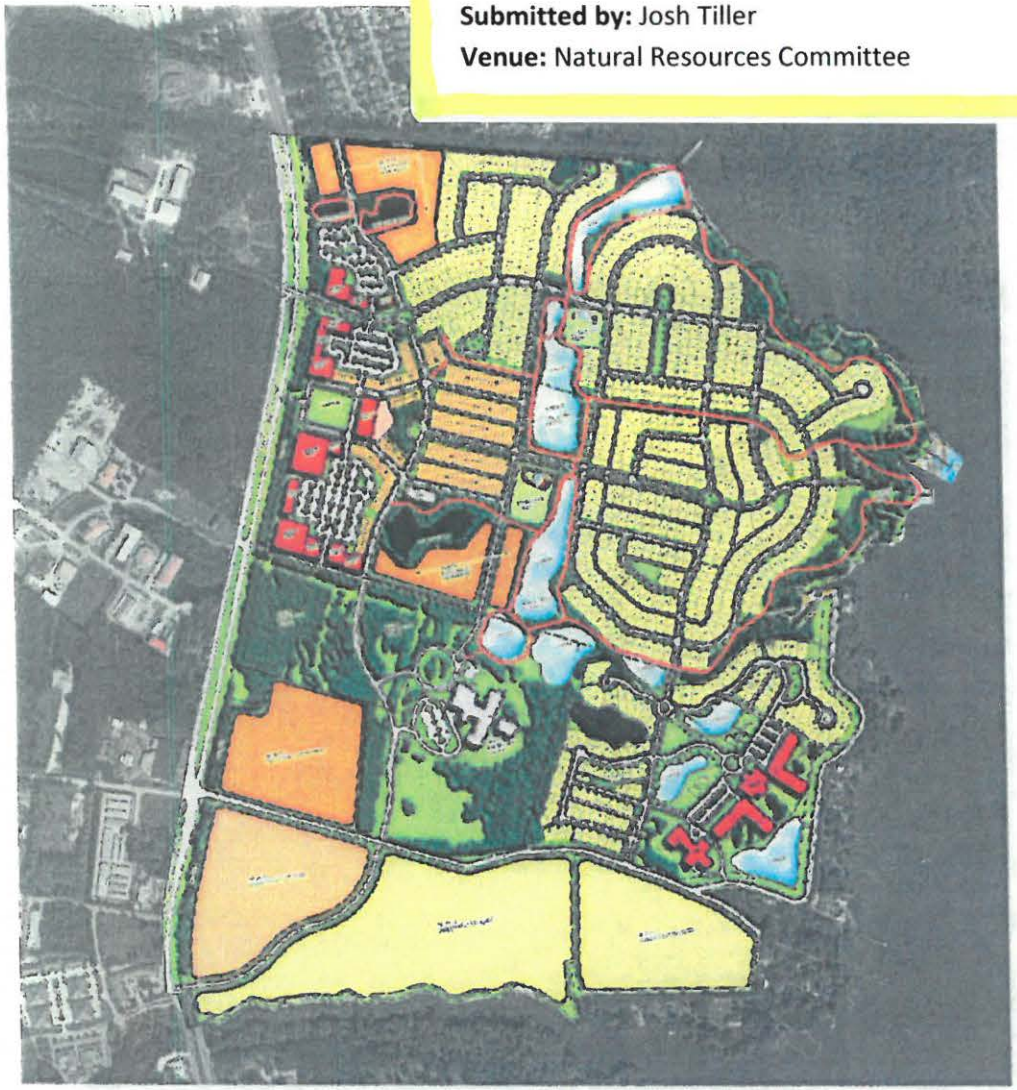
Additional transparency can only help the widly successful program. Through coordinated and collaborative investments, over 1.2 million acres have been protected on the South Carolina coast. Locally, we have great stories to tell from past successes and future opportunities Binden, Lemon Island, Henry Farms, New Riverside and others are all great stories of land protection in strategic places that have benefitted us as a region. We have more work to do in these strategic rural corridors of incredible landscapes along Sheldon Church Road, the New River, Okatie Highway and on St Helena.

We look forward to future participation in the Greenprint process and in support of the program.

With thanks,

Kate Schaefer
Director of Programs
Coastal Conservation League

Topic: Public Comment / River Oaks PUD Amendment
Date Submitted: March 18, 2019
Submitted by: Josh Tiller
Venue: Natural Resources Committee



OKATIE VILLAGE COMPOSITE PLAN DEVELOPMENT SUMMARY

OKATIE VILLAGE PUD MASTER PLAN (Okatie Marsh, Osprey Point, River Oaks and Other Parcels)

ORIGINAL DENSITY SUMMARY

OVERALL ACREAGE:	+/-428.31 ACRES
COMMERCIAL SF:	+/-272,500 SF
TOTAL DWELLING UNITS:	1670 UNITS
SINGLE-FAMILY DETACHED:	636 UNITS
SINGLE-FAMILY ATTACHED/VILLAGE CONDO:	516 UNITS
MULTI-FAMILY/APARTMENTS:	388 UNITS
DENSITY:	3.13 UNITS/AC
OPEN SPACE:	191.47 AC = 44.7 %

OKATIE MARSH PUD

ORIGINAL DENSITY SUMMARY

OVERALL ACREAGE:	+/-101.3 ACRES
COMMERCIAL SF:	+/-64,800 SF
TOTAL DWELLING UNITS:	395 UNITS
SINGLE-FAMILY DETACHED:	267 UNITS
SINGLE-FAMILY ATTACHED/VILLAGE CONDO:	N/A
MULTI-FAMILY/APARTMENTS:	128 UNITS
DENSITY:	3.89 UNITS/AC
OPEN SPACE:	34.77 AC = 34.3 %

OSPREY POINT PUD

ORIGINAL DENSITY SUMMARY

OVERALL ACREAGE:	+/-119.25 ACRES
COMMERCIAL SF:	+/-207,700 SF
TOTAL DWELLING UNITS:	527 UNITS
SINGLE-FAMILY DETACHED:	204 UNITS
SINGLE-FAMILY ATTACHED/VILLAGE CONDO:	213 UNITS
MULTI-FAMILY/APARTMENTS:	110 UNITS
DENSITY:	4.41 UNITS/AC
OPEN SPACE:	40.80 AC = 34.2 %

RIVER OAKS PUD

ORIGINAL DENSITY SUMMARY

OVERALL ACREAGE:	+/-63.34 ACRES
COMMERCIAL SF:	N/A
TOTAL DWELLING UNITS:	330 UNITS
DENSITY:	5.19 UNITS/AC
OPEN SPACE:	28.40 AC = 44.7 %

OTHER PARCELS (Includes Existing Elementary School, Future Middle School, and Future Development)

ORIGINAL DENSITY SUMMARY

OVERALL ACREAGE:	+/-144.22 ACRES
COMMERCIAL SF:	N/A
TOTAL DWELLING UNITS:	418 UNITS
SINGLE-FAMILY DETACHED:	165 UNITS
SINGLE-FAMILY ATTACHED:	103 UNITS
MULTI-FAMILY/APARTMENTS:	150 UNITS
DENSITY:	2.90 UNITS/AC
OPEN SPACE:	87.5 AC = 60.70 %

PREPARED FOR:
Village Park Homes & Callegro Investments

LAND PLANNING:
J. K. TILLER ASSOCIATES, INC.
LAND PLANNING LANDSCAPE ARCHITECTURE
111 RICHMOND AVE. SUITE 205 BEAUFORT, SC 29902

CIVIL CONSULTANT:
Ward Edwards ENGINEERING

OKATIE VILLAGE COMPOSITE PLAN
BEAUFORT COUNTY, SOUTH CAROLINA
JUNE 13, 2017

GRAPHIC SCALE
NORTH 0 300' 600' 900'

JKT Job Number: 201703-01

OKATIE VILLAGE COMPOSITE PLAN
DEVELOPMENT SUMMARY

OKATIE VILLAGE PUD MASTER PLAN (Okatie Marsh, Osprey Point, River Oaks and Other Parcels)

ORIGINAL DENSITY SUMMARY	
OVERALL ACREAGE:	+/-425.98 ACRES
COMMERCIAL SF:	+/-272,500 SF
TOTAL DWELLING UNITS:	1670 UNITS
SINGLE-FAMILY DETACHED:	636 UNITS
SINGLE-FAMILY ATTACHED/VILLAGE CONDO:	316 UNITS
MULTI-FAMILY/APARTMENTS:	388 UNITS
DENSITY:	3.92 UNITS/AC
OPEN SPACE:	191.47 AC = 44.9 %

PROPOSED DENSITY SUMMARY	
OVERALL ACREAGE:	+/-425.98 ACRES
COMMERCIAL SF:	190,000 SF
TOTAL DWELLING UNITS:	1129 UNITS
SINGLE-FAMILY DETACHED:	861 UNITS
SINGLE-FAMILY ATTACHED/VILLAGE CONDO:	103 UNITS
MULTI-FAMILY/APARTMENTS:	165 UNITS
DENSITY:	2.65 UNITS/AC
OPEN SPACE:	+/- 257.88 AC = 60.5 %

OKATIE MARSH PUD

ORIGINAL DENSITY SUMMARY	
OVERALL ACREAGE:	+/-101.3 ACRES
COMMERCIAL SF:	+/-64,800 SF
TOTAL DWELLING UNITS:	395 UNITS
SINGLE-FAMILY DETACHED:	267 UNITS
SINGLE-FAMILY ATTACHED/VILLAGE CONDO:	N/A
MULTI-FAMILY/APARTMENTS:	128 UNITS
DENSITY:	3.89 UNITS/AC
OPEN SPACE:	34.77 AC = 34.3 %

COUNTY PASSIVE PARK

PROPOSED DENSITY SUMMARY	
OVERALL ACREAGE:	+/-101.3 ACRES
COMMERCIAL SF:	N/A
TOTAL DWELLING UNITS:	N/A
SINGLE-FAMILY DETACHED:	N/A
SINGLE-FAMILY ATTACHED/VILLAGE CONDO:	N/A
MULTI-FAMILY/APARTMENTS:	N/A
DENSITY:	N/A
OPEN SPACE:	+/-98.3 AC = 97 %

OSPREY POINT PUD

ORIGINAL DENSITY SUMMARY	
OVERALL ACREAGE:	+/-119.25 ACRES
COMMERCIAL SF:	+/-207,700 SF
TOTAL DWELLING UNITS:	527 UNITS
SINGLE-FAMILY DETACHED:	204 UNITS
SINGLE-FAMILY ATTACHED/VILLAGE CONDO:	213 UNITS
MULTI-FAMILY/APARTMENTS:	110 UNITS
DENSITY:	4.41 UNITS/AC
OPEN SPACE:	40.80 AC = 34.2 %

MALIND BLUFF PUD

PROPOSED DENSITY SUMMARY	
OVERALL ACREAGE:	+/-119.25 ACRES
COMMERCIAL SF:	190,000 SF
TOTAL DWELLING UNITS:	396 UNITS
SINGLE-FAMILY DETACHED:	381 UNITS
SINGLE-FAMILY ATTACHED/VILLAGE CONDO:	N/A
MULTI-FAMILY/APARTMENTS:	15 UNITS
DENSITY:	3.32 UNITS/AC
OPEN SPACE:	44.44 AC = 37 %

RIVER OAKS PUD

ORIGINAL DENSITY SUMMARY	
OVERALL ACREAGE:	+/-61.21 ACRES
COMMERCIAL SF:	N/A
TOTAL DWELLING UNITS:	330 UNITS
DENSITY:	5.39 UNITS/AC
OPEN SPACE:	28.40 AC = 46.4 %

MALIND POINTE PUD

PROPOSED DENSITY SUMMARY	
OVERALL ACREAGE:	+/-61.21 ACRES
COMMERCIAL SF:	N/A
TOTAL DWELLING UNITS:	315 UNITS
DENSITY:	5.15 UNITS/AC
OPEN SPACE:	27.64 AC = 45.1 %

OTHER PARCELS (Includes Existing Elementary School, Future Middle School, and Future Development)

ORIGINAL DENSITY SUMMARY	
OVERALL ACREAGE:	+/-144.22 ACRES
COMMERCIAL SF:	N/A
TOTAL DWELLING UNITS:	418 UNITS
SINGLE-FAMILY DETACHED:	165 UNITS
SINGLE-FAMILY ATTACHED:	103 UNITS
MULTI-FAMILY/APARTMENTS:	150 UNITS
DENSITY:	2.90 UNITS/AC
OPEN SPACE:	87.5 AC = 60.70 %

PROPOSED DENSITY SUMMARY	
OVERALL ACREAGE:	+/-144.22 ACRES
COMMERCIAL SF:	N/A
TOTAL DWELLING UNITS:	418 UNITS
SINGLE-FAMILY DETACHED:	165 UNITS
SINGLE-FAMILY ATTACHED:	103 UNITS
MULTI-FAMILY/APARTMENTS:	150 UNITS
DENSITY:	2.90 UNITS/AC
OPEN SPACE:	87.5 AC = 60.70 %

PREPARED FOR:
Village Park Homes & Callegro Investments

LAND PLANNING:
J. K. TILLER ASSOCIATES, INC.

CIVIL CONSULTANT:
Ward Edwards ENGINEERING

OKATIE VILLAGE
COMPOSITE PLAN
BEAUFORT COUNTY, SOUTH CAROLINA

FEBRUARY 2, 2018

GRAPHIC SCALE
NORTH 0 300' 600' 900'

JKT Job No. 2017[illegible]
20171001

February 15, 2018

Beaufort County Planning Division
Beaufort County
Post Office Drawer 1228
Beaufort, SC 29901-1228

Re: Proposed PUD Master Plan Amendments for Osprey Point (Malind Bluff) and River Oaks (Malind Pointe)

Dear Sir/Madam,

This letter is to update the previously submitted September 2017 and November 2017 letters regarding the Proposed PUD Master Plan Amendments for Osprey Point (Malind Bluff) and River Oaks (Malind Pointe). Beaufort County School District is currently working with the developers, PulteGroup and Village Park Homes, on access to SC highway 170. It appears that we are headed in a mutually beneficial direction.

It is my understanding that the developer has removed their petition for the removal of impact fees. Due to the potential overcrowding of schools in the Bluffton area, the Beaufort County School District has been requesting that Beaufort County leverage impact fees on all new developments. The Beaufort County School Board met and reviewed the developer's request on January 16, 2018. At that meeting, the Board did not support any agreements with the developer that included the removal of impact fees. Now that the impact fees are included, I see potential for the Board supporting an agreement.

I feel confident that this type of development would attract residential families with school aged children. The additional homes in this area has the potential to produce a localized neighborhood school. Presently the School District does not have the funding to add capacity to handle additional school children in the Bluffton area. The impact fees in the existing PUD agreement will go a long way to ensure that there are facilities available for future school aged children of Beaufort County. I can recommend to the Beaufort County School District to support an agreement that includes the existing impact fees.

Sincerely,

Jeffery C. Moss, Ed.D
Superintendent, Beaufort County School District

Re: Rob Merchant, Beaufort County
Tony Criscitiello, Beaufort County
Drew Davis, Beaufort County School District
Tony Crosby, Beaufort County School District
Charles Norris, Pulte Homes
Richard Swartz, Village Park Homes

After recording, please return to:
McNair Law Firm, P.A. (WJN)
P.O. Drawer 3
Hilton Head Island, SC 29938-0003
(843) 785-2171

STATE OF SOUTH CAROLINA	)	**FIRST AMENDMENT TO DEVELOPMENT AGREEMENT FOR RIVER OAKS AT OKATIE VILLAGE AND PLANNED UNIT DEVELOPMENT ZONING (Reference: Book 2888 at Pages 0579-1047)**
	)	
	)	
COUNTY OF BEAUFORT	)	

THIS FIRST AMENDMENT TO DEVELOPMENT AGREEMENT FOR RIVER OAKS AT OKATIE VILLAGE AND PLANNED UNIT DEVELOPMENT ZONING (the "First Amendment") is made and entered into effective the 25th day of July, 2014 by and Bank of the Ozarks, an Arkansas state bank authorized to conduct business in South Carolina (the "Bank") and the governmental authority of Beaufort County, South Carolina ("Beaufort County"), a South Carolina municipal corporation.

RECITALS

WHEREAS, the Bank is the owner of certain real property located in Beaufort County, South Carolina (the "Property"), which is subject to that certain Development Agreement for River Oaks at Okatie Village dated September 3, 2009 and recorded in the Office of the Register of Deeds for Beaufort County in Book **2888** at Pages **0579-1047** (the "Development Agreement"); and

WHEREAS, among other matters, the Development Agreement provides for the construction of an age restricted residential community on the Property (the "Project"); and

WHEREAS, the Project contemplates the construction of lots, buildings and associated infrastructure on the Property, all as depicted in the master plan (the "Master Plan") for the River Oaks at Okatie Village Planned Unit Development (the "River Oaks PUD") approved together with and pursuant to the Development Agreement; and

WHEREAS, the Development Agreement and the River Oaks PUD were approved by Beaufort County as part of a larger coordinated development area known as "Okatie Village", which includes two (2) development agreements for adjacent tracts of land identified as "Osprey Point" and "Okatie Marsh", each with a concurrently approved planned unit development ordinance; and

WHEREAS, since the approval of Okatie Village, no Development has occurred in Okatie Village, due in large part to the long and sustained national economic downturn; and

WHEREAS, the Bank, as successor in interest to the Owner, has requested the amendment to the Development Agreement in order to remove the use restriction that residential density shall be for only

"senior independent living" and "senior living, with or without assistance" and has requested the removal of any requirement or reference contained in the Development Agreement or the River Oaks PUD that the residential use shall be limited to only "senior" living or restricted to persons sixty-five (65) years of age and older; and

WHEREAS, Beaufort County has determined that the amendments are minor and has agreed to the modifications in accordance with Article XII of the Development Agreement.

NOW, THEREFORE, the Bank and Beaufort County and in consideration of the aforesaid premises and the covenants and agreements set forth in this First Amendment hereby agree as follows:

1. **Recitals.** The aforesaid Recitals are incorporated herein by this reference as if fully restated herein.

2. **Age Restriction.** All references to "senior independent living"; "senior living"; "age restricted"; "age restricted housing"; "Senior Village"; and "seniors", together with the requirement or any reference thereto that the use and Development of the Property shall be restricted to seniors or persons sixty-five (65) years of age and older, are hereby deleted.

3. **Residential Development.** The Property may be used and developed as a non-age restricted residential community subject to the densities provided in the Development Agreement.

4. **Definitions.** Any and all defined terms used herein shall have the same meaning as set forth in the Development Agreement unless otherwise herein defined.

5. **Control.** In the event of any inconsistency between this First Amendment and the Development Agreement, this First Amendment shall control. Except as amended or modified by the terms recited herein, the Development Agreement and all terms and conditions thereof shall continue in full force and effect.

[Signatures follow]

IN WITNESS WHEREOF, the parties hereby set their hands and seals, effective the date first above written.

WITNESSES:

Bank of the Ozarks

By: RYAN TANNER
Its: SENIOR VICE PRESIDENT.

STATE OF North Carolina)
) **ACKNOWLEDGMENT**
COUNTY OF New Hanover)

I HEREBY CERTIFY, that on this 14th day of July, 2014, before me, the undersigned Notary Public of the State and County stated below, personally appeared Ryan Tanner, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within document, as the appropriate official of Bank of the Ozarks, an Arkansas state bank, who acknowledged the due execution of the foregoing document.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year last above mentioned.

THERESA G. DEMERS NOTARY PUBLIC NEW HANOVER COUNTY, NC

Notary Public for NC. NH
My Commission Expires: 5/22/2015

"senior independent living" and "senior living, with or without assistance" and has requested the removal of any requirement or reference contained in the Development Agreement or the River Oaks PUD that the residential use shall be limited to only "senior" living or restricted to persons sixty-five (65) years of age and older; and

WHEREAS, Beaufort County has determined that the amendments are minor and has agreed to the modifications in accordance with Article XII of the Development Agreement.

NOW, THEREFORE, the Bank and Beaufort County and in consideration of the aforesaid premises and the covenants and agreements set forth in this First Amendment hereby agree as follows:

1. **Recitals.** The aforesaid Recitals are incorporated herein by this reference as if fully restated herein.

2. **Age Restriction.** All references to "senior independent living"; "senior living"; "age restricted"; "age restricted housing"; "Senior Village"; and "seniors", together with the requirement or any reference thereto that the use and Development of the Property shall be restricted to seniors or persons sixty-five (65) years of age and older, are hereby deleted.

3. **Residential Development.** The Property may be used and developed as a non-age restricted residential community subject to the densities provided in the Development Agreement.

4. **Definitions.** Any and all defined terms used herein shall have the same meaning as set forth in the Development Agreement unless otherwise herein defined.

5. **Control.** In the event of any inconsistency between this First Amendment and the Development Agreement, this First Amendment shall control. Except as amended or modified by the terms recited herein, the Development Agreement and all terms and conditions thereof shall continue in full force and effect.

[Signatures follow]

IN WITNESS WHEREOF, the parties hereby set their hands and seals, effective the date first above written.

WITNESSES:

Bank of the Ozarks

By: RYAN TANNER
Its: SENIOR VICE PRESIDENT.

STATE OF North Carolina)
) **ACKNOWLEDGMENT**
COUNTY OF New Hanover)

I HEREBY CERTIFY, that on this 14th day of July, 2014, before me, the undersigned Notary Public of the State and County stated below, personally appeared Ryan Tanner, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within document, as the appropriate official of Bank of the Ozarks, an Arkansas state bank, who acknowledged the due execution of the foregoing document.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year last above mentioned.

THERESA G. DEMERS NOTARY PUBLIC NEW HANOVER COUNTY, NC

Notary Public for NC. NH
My Commission Expires: 5/22/2015

WITNESSES:

Beaufort County, South Carolina

By: Bryan J. Hill
Its: Deputy County Administrator

STATE OF SOUTH CAROLINA.)
) ACKNOWLEDGMENT
COUNTY OF BEAUFORT)

I HEREBY CERTIFY, that on this 25th day of July, 2014, before me, the undersigned Notary Public of the State and County aforesaid, personally appeared Bryan J. Hill, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within document, as the appropriate official of Beaufort County, South Carolina, who acknowledged the due execution of the foregoing document.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year last above mentioned.

Notary Public for South Carolina
My Commission Expires: 1-7-2021

HILTONHEAD 858837v1

COUNTY COUNCIL OF BEAUFORT COUNTY
Community Development Department
Beaufort County Government Robert Smalls Complex
Administration Building, 100 Ribaut Road
Post Office Drawer 1228, Beaufort, South Carolina 29901-1228

TO:	Beaufort County Planning Commission
FROM:	Anthony Criscitiello, Beaufort County Community Development Director T.C.
DATE:	October 31, 2017
SUBJECT:	**River Oaks Planned Unit Development (PUD) Master Plan Amendment**

STAFF REPORT:

A. BACKGROUND:

Case No.	ZMA-2017-11
Owner:	BBII Holding Company, LLC (Roger L. Saunders)
Applicant:	Joshua Tiller, J.K. Tiller and Associates
Property Location:	Located in the Okatie area on Cherry Point Road approximately 2,000 feet from SC 170
District/Map/Parcel:	R603-013-000-008C-0000
Property Size:	63.5 acres

A. **SUMMARY OF REQUEST:** The River Oaks PUD is located in the Okatie area on Cherry Point Road approximately 2,000 feet from SC 170. The property is immediately to the East of the Okatie Elementary school and south of the Osprey Point PUD. The applicant is requesting to amend the PUD by changing it from a senior village to a single-family subdivision. The revised master plan consists of 315 single-family houses. 124 of the lots will be 4,400 square feet (40' x 110'); and the remaining 191 lots will be 3,300 square feet (30' x 110'). The main entrance of the subdivision is off Cherry Point Road. The PUD proposes a connection to the Osprey Point PUD. The revised master plan provides a network of pedestrian sidewalks with a connection to the property line of Okatie Elementary. The lots along the perimeter of the property are proposed to be 4,400 square feet and be accessed from the front. The remaining lots will be 3,300 square feet and will be accessed by alleys. The applicant is proposing to develop 45 affordable housing units in the combined Osprey Point and River Oaks PUDs.

Changes from September 7 Planning Commission Meeting: The applicant revised the plan to address some of concerns of the Planning Commission. They reconfigured the master plan to provide for a more traditional pattern of streets and blocks. In the original plan, all of the 315 lots were accessed from the street. In the revised plan, 60% of the lots are accessed from the rear via alleys. The open spaces were largely reconfigured to be surrounded by streets rather that located at the rear of the lots. While these revisions are improvements on the previously submitted master plan, it should be noted that the total number of workforce housing units to be supplied in the combined PUDs has been reduced from 45 to 40.

Existing PUD: The River Oaks PUD sits on 63.5 acres and was designed to accommodate seniors (65 or older) with a combination of independent and assisted living quarters and a nursing home. The PUD consists of 118 cottages for independent living, 146 apartment units for independent and

assisted living, and 66 nursing home beds. The original River Oaks PUD was approved by County Council in 2008 in conjunction with two adjoining PUDs – Osprey Point and Okatie Marsh. This action amended the zoning of a total of 284 acres and increased the allowable density nine-fold. The combined PUDs featured an integrated street network, a mix of land uses and housing types, and a system of pathways, sidewalks and bike lanes. County Council eventually supported the zoning change because they determined that these features made the community economically sustainable and provided enough internal trip capture to reduce the development's impact on SC 170. Since the adoption of the original PUD, in 2012 Okatie Marsh (395 dwelling units, 97.7 acres) was purchased through the Rural and Critical Lands Program.

B. **CONSISTENCY WITH ZDSO PUD STANDARDS:** The Zoning and Development Standards Ordinance states the purpose of PUDs is to implement the Comprehensive Plan by allowing flexibility that would result in improved design, character, and quality while preserving natural and scenic features. Innovative features may include preservation of open space and natural areas; greenways, sidewalks, and other bike/pedestrian features; enhanced landscaping and deeper buffers; vehicular and pedestrian connectivity; provision of affordable housing; dedication of public parks and community facilities; mitigating adverse impacts on neighboring properties, and burying utilities. The revised master plan addresses some of these features. The plan provides for a system of streets and blocks with a network of sidewalks and pathways. Three of the stormwater ponds also function as usable civic space that are accessible to community residents by being located on streets rather than in the interior of blocks. The plan also makes a provision for affordable housing.

C. **CONSISTENCY WITH THE COMPREHENSIVE PLAN:** The future land use designation for the River Oaks PUD is Neighborhood Mixed-Use. This district calls for new development to be pedestrian-friendly, have a mix of housing types, a mix of land uses and interconnected streets. The maximum gross residential density is approximately two dwelling units per acre. Residential areas are to have a network of sidewalks and trails to link the development to retail, employment, and schools. The Plan allows for some density bonuses for the creation of affordable housing.

The River Oaks PUD is also designated as a village in the Place Type Overlay District which calls for clusters of residential neighborhoods of sufficient intensity to support a central, mixed-use environment. Villages are meant to be organized within an interconnected network of streets and blocks in multiple pedestrian sheds. They include areas where one has the opportunity to walk, bike, or ride transit to work, to fulfill daily shopping needs (such as groceries), and to access other amenities within close proximity.

D. **STORMWATER:** The County's Stormwater Manager reviewed the revised PUD and drainage plan and stated that the concept that the applicant has submitted is acceptable. However, the revised PUD document needs to clearly incorporate the County's existing Stormwater BMP Manual and any revisions that are made in the future. When the original PUD was approved in 2008, the County did not have volume control standards in place. The project's location on the Okatie River makes it crucial that it follow the latest standards and practices for stormwater management. The Okatie River is an impaired waterway and is currently protected by a set of Total Maximum Daily Load (TMDL) regulations to ensure its continued or improved health in the future.

E. **CONSISTENCY WITH THE COMMUNITY DEVELOPMENT CODE (CDC):**
The Community Development Code provides transect zones to foster the creation of walkable communities with density and character ranging from the most rural (T1) to the most urban (T4). The only districts that would allow lots this small are T4 Hamlet Center and T4 Neighborhood Center.

F. **TRANSPORTATION ISSUES:**

- **Updated Traffic Impact Analysis (TIA) Ordinance Needed:** At the September 7, 2017 meeting, the Planning Commission requested that the applicant provide a new Traffic Impact Analysis (TIA) that accounted for the combined impacts of the Osprey Point and River Oaks PUDs. The revised TIA needs to look at existing traffic volumes and utilize the Lowcountry Regional Model. The applicant has stated that the revised TIA is underway but not complete due to a backlog of work at CDM Smith, the consultant charged with running the traffic model. Therefore the results of the TIA are not available to the Planning Commission for this review.

- **Paving of Cherry Point Road:** Approximately 1,300 feet of Cherry Point Road would need to be paved in order to accommodate this PUD.

G. **POTENTIAL SCHOOL IMPACTS:** The combined amendments to the Osprey Point and Cherry Point PUDs may have significant implications on the number of potential students. Both existing PUDs have age restrictions and therefore would have little to no impacts. The proposed amendments would result in the creation of 711 single-family dwelling units with no age restrictions. The School District has been given copies of the two revised PUDs and has expressed concerns about not having excess capacity to address the potential increase in the number of students in southern Beaufort County.

H. **RECOMMENDATION:** Staff **recommends conditional approval** of the application for the following conditions:

- The revised PUD document needs to clearly incorporate the County's existing Stormwater BMP Manual and any revisions that are made in the future.
- A Traffic Impact Analysis (TIA) needs to be conducted for the combined impacts of the Osprey Point and River Oaks PUDs. This TIA needs to look at existing traffic volumes and utilize the Lowcountry Regional Model. Any recommended improvements resulting from the findings of the TIA need to be incorporated into the PUD document before approval by County Council.

I. **ATTACHMENTS:**

- Locational Map
- Application with backup documentation, including TIA
- List of Property Owners Notified of Request
- Notification Letter to Property Owners

EXHIBIT B

LOT YEILD: 315

30' X 110'

40' X 110'

Total Acres: +/-61.21

Residential Density: 5.14 DU/AC

Open Space: 26.26 AC (42.90%)

NORTH

GRAPHIC SCALE 0 150' 300' 450'

PREPARED FOR:
VILLAGE PARK HOMES, LLC

PREPARED BY:
J. K. TILLER ASSOCIATES, INC.
LAND PLANNING · LANDSCAPE ARCHITECTURE
151 BLUFFTON ROAD · SUITE F102 · BLUFFTON, SC 29910

Ward Edwards ENGINEERING

RIVER OAKS (MALIND POINTE) AMENDED MASTER PLAN

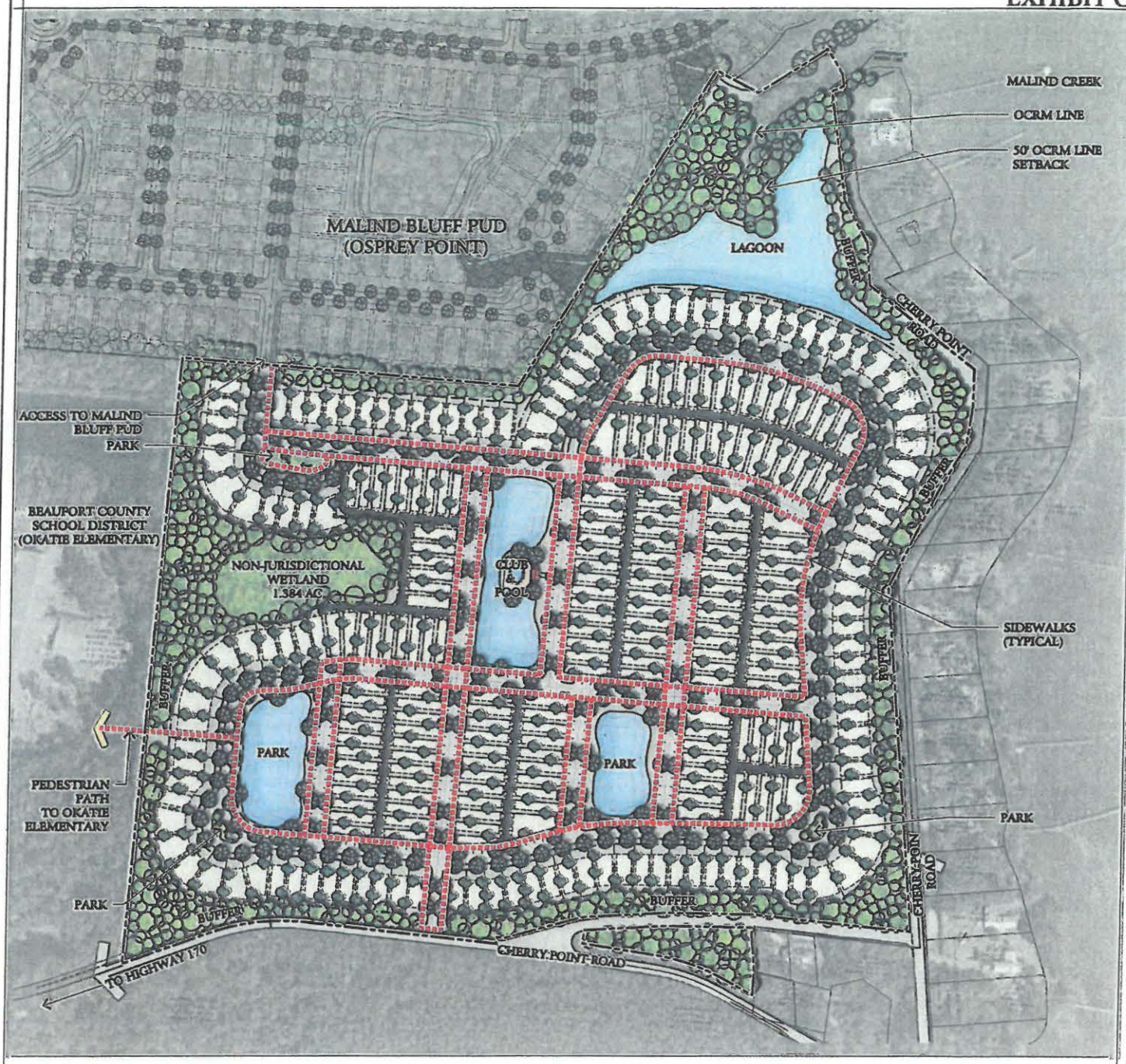
BEAUFORT COUNTY, SOUTH CAROLINA

MARCH 11, 2019

JKT Job Number: 201705-01

T:\Projects\201705-01\-DWG\MasterPlan_MPoints.dwg, TITLE (PUBLIC), 2/5/2019 3:34:10 PM

EXHIBIT C



TRAILS AND OPEN SPACE

INTERNAL SIDEWALKS

PARKS

Total Acres: +/-61.21

Residential Density: 5.14 DU/AC

Open Space*: 26.26 AC (42.90 %)

*THE OPEN SPACES INCLUDE GARDENS, NATURAL AREAS, BUFFERS, STORMWATER AMENITIES, TRAILS AND OTHER NON-BUILDABLE LAND.

NORTH

GRAPHIC SCALE 0 200' 400' 600'

PREPARED FOR:
VILLAGE PARK HOMES, LLC

PREPARED BY:
J. K. TILLER ASSOCIATES, INC.
LAND PLANNING LANDSCAPE ARCHITECTURE
111 BLUFFTON ROAD SUITE B101 BLUFFTON, SC 29910

Ward Edwards ENGINEERING

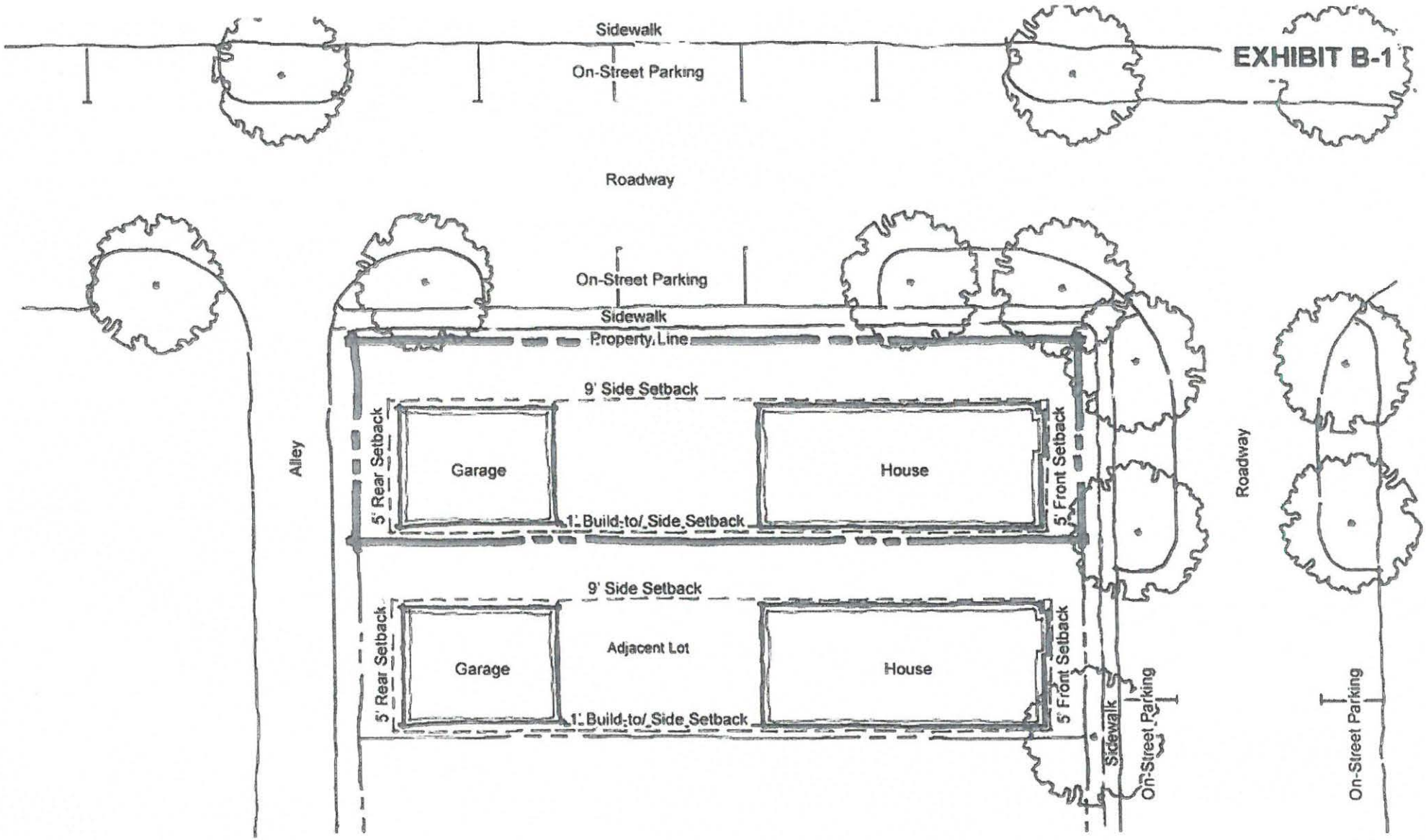
RIVER OAKS (MALIND POINTE) TRAILS AND OPEN SPACE PLAN

BEAUFORT COUNTY, SOUTH CAROLINA

MARCH 11, 2019

JKT Job Number 201705-01

EXHIBIT B-1



River Oaks (Malind Pointe) - Typical 30' Z-Lot Building Placement

LOT DEVELOPMENT STANDARDS:

Standard Lot Information:

30' wide x 110' deep, alley access

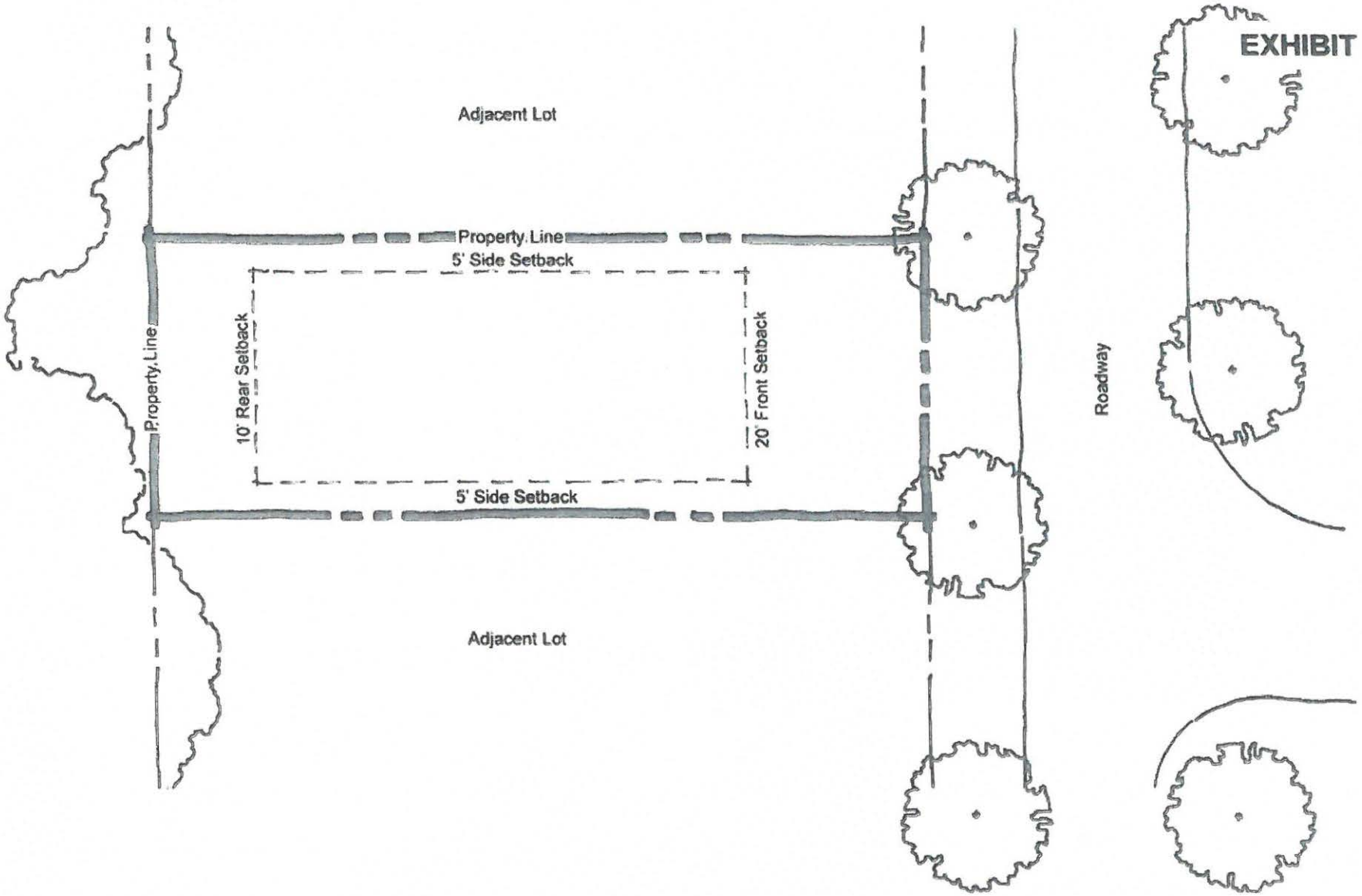
Setbacks:

5' front, 5' rear, 9' & 1' (build-to) side

NOTES:

1. Garage may be substituted for carport or paved pad
2. The 1' build-to side setback is to be placed next to the 9' setback on the adjacent lot.
3. Corner lots must address both adjacent roadways. Build to line is located on the side neighboring the adjacent lot.

EXHIBIT B-2



River Oaks (Malind Pointe) - Typical 40' Lot Building Placement

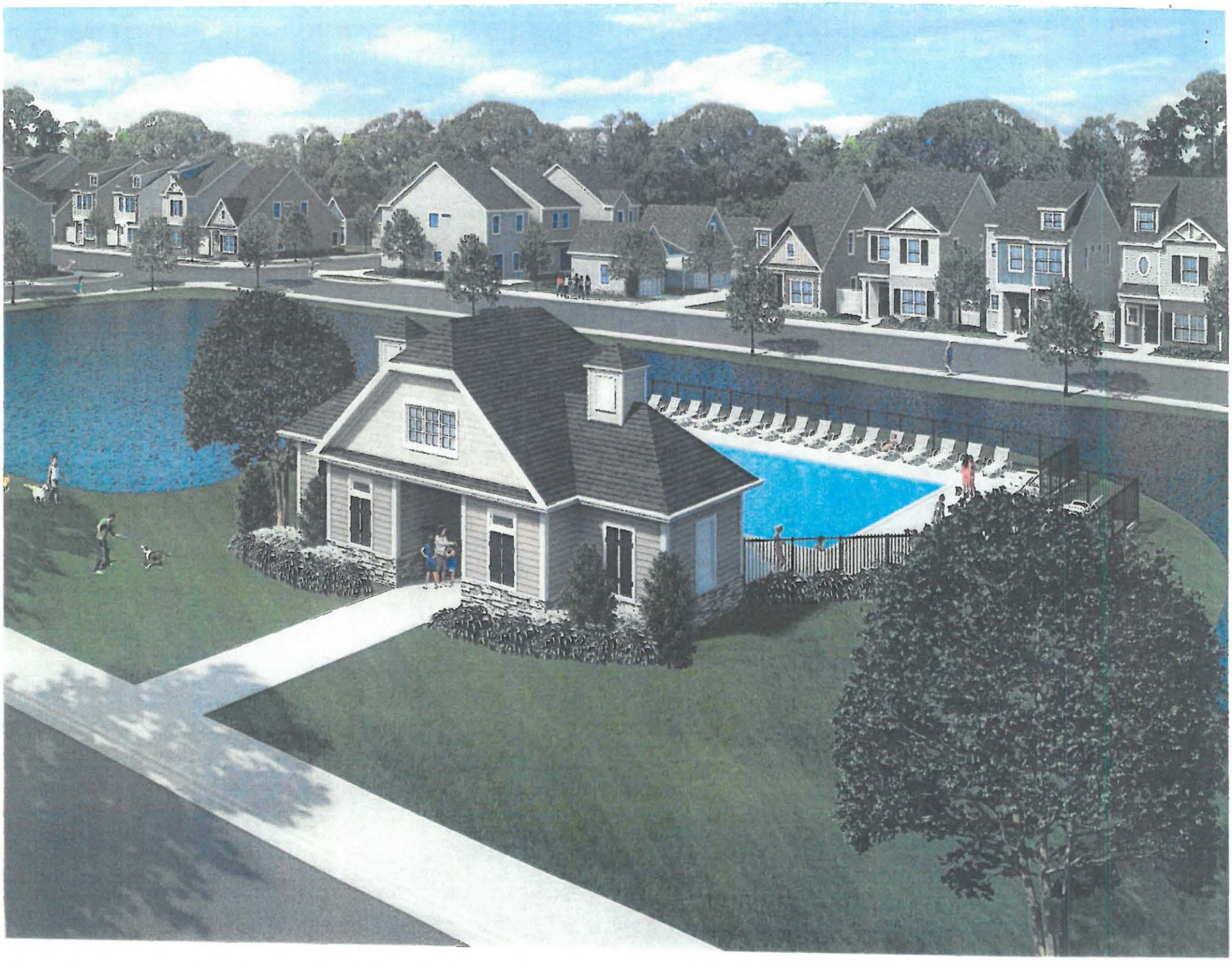
LOT DEVELOPMENT STANDARDS:

Standard Lot Information:

40' wide x 110' deep, front load access

Setbacks:

20' front, 10' rear, 5' side



COUNTY COUNCIL OF BEAUFORT COUNTY
Community Development Department
Beaufort County Government Robert Smalls Complex
Administration Building, 100 Ribaut Road, Room 115
Mailing: Post Office Drawer 1228, Beaufort SC 29901-1228
Phone: (843) 255-2140 • FAX: (843) 255-9432

PLANNING COMMISSION
Monday, December 4, 2017
6:00 p.m.
Council Chambers, Administration Building
100 Ribaut Road, Beaufort, South Carolina

In accordance with South Carolina Code of Laws, 1976, Section 30-4-80(d), as amended, all local media was duly notified of the time, date, place and agenda of this meeting.

1. COMMISSIONER'S WORKSHOP – 5:30 P.M.
   Community Development Office, Room 115, County Administration Building

2. REGULAR MEETING – 6:00 P.M.
   Council Chambers

3. CALL TO ORDER – 6:00 P.M.

4. PLEDGE OF ALLEGIANCE

5. REVIEW OF MEETING MINUTES FOR SEPTEMBER 7, 2017 (backup)

6. CHAIRMAN'S REPORT

7. PUBLIC COMMENT ON NON-AGENDA ITEMS

8. TEXT AMENDMENT TO THE BEAUFORT COUNTY COMMUNITY DEVELOPMENT CODE (CDC), SECTION 1.3.50 (EXEMPTIONS) (TO EXEMPT EXISTING DIRT ROADS PAVED AS PART OF THE COUNTY'S DIRT ROAD PAVING PROGRAM FROM THE STANDARDS OF THE CDC) APPLICANT: BEAUFORT COUNTY PUBLIC FACILITIES COMMITTEE AND COMMUNITY DEVELOPMENT STAFF (backup)

9. LADY'S ISLAND ZONING MAP AMENDMENT/REZONING REQUEST FOR R200 019 000 013A 0000 (0.21 ACRES AT 391 SEA ISLAND PARKWAY) FROM T2-R (RURAL) TO T2-RC (RURAL CENTER); OWNER: CAVU HOLDINGS, LLC/ APPLICANT: STAFF (TO CORRECT A MAPPING ERROR) (backup)

10. SOUTHERN BEAUFORT COUNTY MAP AMENDMENT / OSPREY POINT (MALIND BLUFF) PUD MASTER PLAN AMENDMENT REQUEST FOR R600 013 000 0006 0000 (119.90 ACRES EAST OF HIGHWAY 170, OKATIE); OWNER / APPLICANT: LCP III, LLC / MR. J. NATHAN DUGGINS, AGENT: JOSH TILLER (backup)

11. SOUTHERN BEAUFORT COUNTY MAP AMENDMENT / RIVER OAKS (MALIND POINTE) PUD MASTER PLAN AMENDMENT REQUEST FOR R600 013 000 008C 0000 (+/- 63.54ACRES EAST OF HIGHWAY 170, OKATIE); OWNER / APPLICANT: BBI HOLDING / MR. ROGER L. SAUNDERS; AGENT: JOSH TILLER (backup)

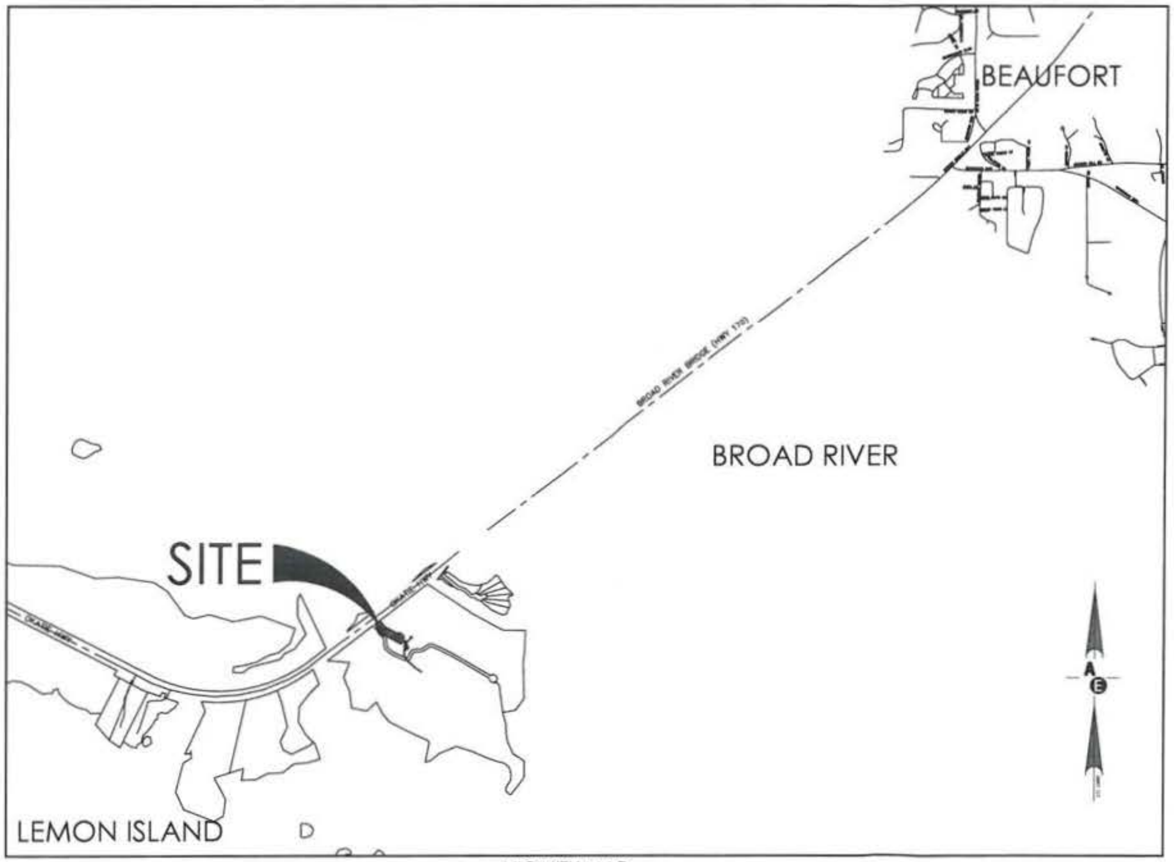
The County Channel

12. NEW/OTHER BUSINESS:
    A. New/Other Business
    B. Next Scheduled Regular Planning Commission Meeting: Thursday, January 4, 2018, at 6:00 p.m. in Council Chambers, County Administration Building, 100 Ribaut Road, Beaufort, South Carolina

13. ADJOURNMENT

Topic: Widgeon Point Park
Date Submitted: March 18, 2019
Submitted by: Eric Greenway
Venue: Natural Resources Committee

SITE DEVELOPMENT PLAN
FOR
WIDGEON POINT PARK
S.C. HWY. 170 (OKATIE HWY.)
OKATIE
BEAUFORT COUNTY, SOUTH CAROLINA



VICINITY MAP
SCALE: 1" = 1,000'

DATUM: NGVD29 VERTICAL / NAD83 HORZ.

N.P.D.E.S. DISTURBED AREA = 2.09 ACRES

3 DAYS BEFORE DIGGING IN SOUTH CAROLINA
CALL 1-888-721-7877
PALMETTO UTILITY PROTECTION SERVICE

APPROXIMATE LOCATION OF SITE:
LONGITUDE: 80°-48'-02"
LATITUDE: 32°-22'-21"

DEVELOPER NAME:
BEAUFORT COUNTY
MS. STEFANIE NAGID
100 RIBAUT ROAD
BEAUFORT, SC 29902
843-255-2152

PROJECT DATA INFORMATION:
WIDGEON POINT PARK – ACCESS IMPROVEMENT
DISTRICT #: R600
MAP #: 07
PARCEL #: 0001
PROJECT ZONING: RESOURCE CONSERVATION
FLOOD ZONE: A8
ADDRESS: 2789 N. OKATIE HIGHWAY

PHONE #:		PERMIT#:
B.J.W.S.A.	843.987.9250	----------
D.H.E.C.	843.522.3345	----------
O.C.R.M.	843.744.5898	----------
S.C.D.O.T.	843.524.7255	----------
S.C.E.&G.	843.525.7712	----------
PAL. ELEC.	843.208.5512	----------

APPROVED FOR CONSTRUCTION
BY: ____________________ __/__/__ DATE

INDEX OF DRAWINGS

SHEET #	DESCRIPTION
	TITLE
A	LEGEND & NOTES SHEET
1	EXISTING SITE AND DEMOLITION PLAN
2	OVERALL SITE & SEDIMENT AND EROSION CONTROL PLAN
3	SEDIMENT AND EROSION CONTROL DETAILS
4	PARK AREA PLAN
5	SIDEWALK PLAN/PROFILE
6	SIDEWALK CROSS SECTIONS
7	SITE DETAILS SHEET 1
8	SITE DETAILS SHEET 2

Andrews Engineering & Surveying
2712 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

DRAWING RELEASED FOR:

☑ PLAN REVIEW	01 / 28 / 2019
☐ PERMIT DRAWINGS	11 / 15 / 2018
☐ CONSTRUCTION DRAWINGS	__/__/__
☐ BID SET	__/__/__
☐ RECORD DRAWINGS	__/__/__
☐ OTHER: ________	__/__/__

PLAN REVISIONS

NO.	DESCRIPTION:	DATE:	BY:
△	–	–	–
△	–	–	–
△	–	–	–
△	–	–	–
△	–	–	–
△	–	–	–
△	–	–	–
△	–	–	–

01/28/2019 RESUBMITTAL TO BJWSA AND SCDOT

WIDGEON POINT PARK
BJWSA JOB#: 2019-062

Handout NRC

TYPICAL LINE TYPES

Line label	Description
← ← ←	CONSTRUCTED SWALE
	ROAD CENTERLINE(PROP & EXIST)
CBL	CABLE TV LINE
FOP	FIBER OPTICS
CDT	CONDUIT LINE
	CHAIN LINK FENCE
	SQUARE WOODEN FENCE
	SILT FENCE
	TREE PROTECTION FENCE
EFM	EXISTING PVC FORCEMAIN
1"FM	PROPOSED 1" PVC (C900-DR25) FORCEMAIN
2"FM	PROPOSED 2" PVC (C900-DR25) FORCEMAIN
4"FM	PROPOSED 4" PVC (C900-DR25) FORCEMAIN
6"FM	PROPOSED 6" PVC (C900-DR25) FORCEMAIN
8"FM	PROPOSED 8" PVC (C900-DR25) FORCEMAIN
OHP	OVERHEAD POWERLINE
ESAN	EXISTING SANITARY SEWER LINE
10"WSS	PROPOSED 10" SANITARY SEWER LINE
12"WSS	PROPOSED 12" SANITARY SEWER LINE
6"WSS	PROPOSED 6" SANITARY SEWER LINE
8"WSS	PROPOSED 8" SANITARY SEWER LINE
FSAN	FUTURE SANITARY SEWER LINE
EGAS	EXISTING GAS LINE
4"DIP	4" DIP (DUCTILE IRON PIPE)
6"DIP	6" DIP
8"DIP	8" DIP
10"DIP	10" DIP
	EXISTING PROPERTY LINE
	FUTURE PROPERTY LINE
	PROPOSED PROPERTY LINE
	EXISTING RIGHT OF WAY
	FUTURE RIGHT OF WAY
	PROPOSED RIGHT OF WAY
	EXISTING SETBACK
	FUTURE SETBACK
TEL	TELEPHONE LINE
UGP	UNDERGROUND POWER LINE
UT3	3 UNDERGROUND TELEPHONE LINE
UTL	UNDERGROUND TELEPHONE LINE
1"WM	PROPOSED 1" PE (SDR17) WATERLINE
10"WM	PROPOSED 10" PVC (C900-DR25-CL100) WATERLINE
12"WM	PROPOSED 12" PVC (C900-DR25-CL100) WATERLINE
2"WM	PROPOSED 2" PVC (SDR21-CL200) WATERLINE
30"WM	PROPOSED 30" PVC (C900-DR25-CL100) WATERLINE
4"WM	PROPOSED 4" PVC (C900-DR25-CL100) WATERLINE
6"WM	PROPOSED 6" PVC (C900-DR25-CL100) WATERLINE
8"WM	PROPOSED 8" PVC (C900-DR25-CL100) WATERLINE
EWM	EXISTING WATERLINE
EW10"	EXISTING 10" PVC WATERLINE
EW12"	EXISTING 12" PVC WATERLINE
EW2"	EXISTING 2" PVC WATERLINE
EW4"	EXISTING 4" PVC WATERLINE
EW30"	EXISTING 30" PVC WATERLINE
EW6"	EXISTING 6" PVC WATERLINE
EW8"	EXISTING 8" PVC WATERLINE
FWM	FUTURE PVC WATERLINE
	STRIPING LANE LINES
	STRIPING FOR TURN LANES
	STRIPED LANE MARKERS

South Carolina 811
Call 811 Before you Dig

TYPICAL ABBREVIATIONS

AC	AIR CONDITIONER
BB	BOTTOM OF BANK
BC	BUILDING CORNER
BD	BOTTOM OF DITCH
BENCH	TEMP. BENCHMARK
BFC	BOTTOM FACE OF CURB
BOC	BACK OF CURB
BS#	BACKSIGHT (POINT#)
BSW	BACK OF SIDEWALK
BW	BOTTOM OF WALL
CA	CORNER OF ASPHALT
CB	CATCH BASIN
CC	CORNER OF CONCRETE
CDK	CORNER OF DECK
CG	CORNER OF GRAVEL
CI	CURB INLET
CLBP	CENTERLINE OF BIKE PATH
CLCP	CENTERLINE CART PATH
CLCR	CENTERLINE OF CREEK
CLD	CENTERLINE OF DITCH
CLINT	CENTERLINE OF INTERSECTION
CLP	CENTERLINE OF PAVEMENT
CLR	CENTERLINE OF ROAD
CLSW	CENTERLINE OF SIDEWALK
CMF	CONCRETE MONUMENT FOUND
CMP	CORRUGATED METAL PIPE
CMS	CONCRETE MONUMENT SET
CO	CLEAN OUT
COGO	CALCULATED POINT
COL	COLUMN
CP	CONTROL PANEL
CPL	CORNER OF POOL
CPP	CORRUGATED PLASTIC PIPE
CRIT	S.C. COASTAL CRITICAL LINE
CSW	CORNER OF SIDEWALK
CTV	CABLE TELEVISION BOX
DK	DECK
EA	EDGE OF ASPHALT
EB	ELECTRIC BOX
EBP	EDGE OF BIKE PATH
EC	EDGE OF CONCRETE
ECON	ELECTRIC CONDUIT
EDK	EDGE OF DECK
EDR	EDGE OF DIRT ROAD
EDW	EDGE OF DRIVEWAY(DIRT/GRASS)
EG	EDGE OF GRAVEL
EM	EDGE OF MARSH
EMET	ELECTRIC METER
ECP	EDGE OF CART PATH
ESTUB	ELECTRIC STUB-OUT
ESW	EDGE OF SIDEWALK
EW	EDGE OF WATER
F	FENCE
FC	FENCE CORNER
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FENCE LINE
FOM	FIBER OPTIC MARKER
FP	FLAG POLE
FS	FORESIGHT
GI	GRATE INLET
GL	GROUND LIGHT
GPS#	GPS CONTROL (POINT#)
GRV	GRAVE
GT	GAS TANK
GUT	GUTTER LINE
GV	GAS VALVE
GW	GUY WIRE
HPS	HANDICAP PARKING STRIPE
HSB	HOSE BIB
HT#	HUB & TACK (POINT#)
IM	IRRIGATION METER
INV	INVERT ELEVATION
IPC	IRON PIN CALCULATED(CORNER)
IPF	IRON PIN FOUND
IPS	IRON PIN SET
IV	IRRIGATION VALVE
LI	LANDSCAPE ISLAND
LP	LIGHT POLE/LAMP POST
MB	MAIL BOX
MW	MONITOR WELL
NWL	NORMAL WATER LEVEL

TYPICAL ABBREVIATIONS

OHP	OVER HEAD WIRE
PC	PORCH CORNER
PI	POINT OF INTERSECTION
PN#	P/K NAIL (AS SETUPS)
PP	POWER POLE
PS	PARKING STRIPE
PVC	POLYVINYL CHLORIDE PIPE
PKS	PK NAIL SET
RCP	REINFORCED CONCRETE PIPE
RIM	MANHOLE RIM
RIP	EDGE OF RIP-RAP
RP	RADIUS POINT
SB	SETBACK
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SGN"DESC"	SIGN (TYCK A DESC.)
SH	SPRINKLER HEAD
SLAT	SEWER LATERAL
SLM	SEWER LINE MARKER
SSMH	SANITARY SEWER MANHOLE
STOP	STOP BAR
STP	STEP
SUN#	SETUP NAIL#
SV	SEWER VALVE
SVM	SEWER VALVE MARKER
SWB	BACK OF SIDEWALK
T	TOPO SHOT (ELEVATION)
TB	TOP OF BANK
TBC	TOP BACK OF CURB
TBM	TEMPORARY BENCHMARK
TEL	TELEPHONE PEDESTAL
TIE#	TIE TO SETUP NAIL
TL	TREE LINE
TMH	TELEPHONE MANHOLE
TOP	TOP OF PIPE
TP	TRAVERSE POINT
TRNF	TRANSFORMER
TSB	TRAFFIC STOP BAR
TW	TOP OF WALL
UC	UNDERGROUND CABLE TV
UE	UNDERGROUND ELECTRIC
UFO	UNDERGROUND FIBER OPTIC
UGG	UNDERGROUND GAS LINE
UGM	UNDERGROUND GAS MARKER
USS	UNDERGROUND SANITARY SEWER
UT	UNDERGROUND TELEPHONE
UW	UNDERGROUND WATER
VCP	VERIFIED CLAY PIPE
WELL	WATER WELL
WF	WATER FOUNTAIN
WL	WHITE LINE
WLAT	WATER LATERAL
WLM	WHITE LINE MARKER
WM	WATER METER
WP	WATER PIPE
WT	WATER TANK
WV	WATER VALVE
WVM	WATER VALVE MARKER
YL	YELLOW LINE
	SUFFIXES
END	END (EX. BFC_END)
OL	ON LINE (EX. BFC_OL)

UTILITY MARKINGS:

RED - ELECTRIC
GREEN - SEWER
BLUE - WATER
YELLOW - GAS
ORANGE - CABLE
ORANGE "T'S - TELEPHONE

TYPICAL LEGEND
UNLESS OTHERWISE NOTED

WETLANDS
DEMOLITION
LAGOON/POND
EXISTING ASPHALT PAVEMENT
CONCRETE PAVEMENT
STONE RIP RAP ON ENGR FABRIC
BRICK PAVEMENT
TYP. ASPHALT PAVEMENT
PERVIOUS PAVEMENT

EDGE OF PAVEMENT EP	EDGE OF GRAVEL EG
TOP OF BANK TB	BOTTOM OF BANK BB
EXISTING SPOT ELEVATION	×8.43 GS
LANDSCAPE AREA	SHRUB
CONCRETE MARKER	IRON PIN
TEMPORARY BENCHMARK	SIGNAL BOX
CURB INLET	GRATE INLET
DRAINAGE MANHOLE	CATCH BASIN
PROP FIRE HYDRANT	EXIST FIRE HYDRANT
WATER VALVE	IRRIGATION VALVE
WATER VALVE MARKER	WATER METER
POST INDICATOR VALVE	FIRE DEPT CONNECTOR
MONITORING WELL	WELL
SPRINKLER HEAD	HOSE BIB
SANITARY SEWER MANHOLE	SEWER VALVE
SANITARY SEWER CLEAN OUT	
TRANSFORMER	CABLE TV BOX
EXISTING POWER POLE	TELEPHONE PEDESTAL
GUY WIRE	ELECTRIC BOX
LIGHT POLE	GROUND LIGHT
AIR CONDITIONER	SIGN
FIBER OPTIC MANHOLE	
UNDERGROUND GAS MARKER	GAS VALVE
MAILBOX	FLAG POLE

DIP CROSSING	
PROP STORM DRAIN	
EXISTING STORM DRAIN	
TOP OF PAVEMENT	TP15.30
TOP OF CURB	TC16.00
TOP OF SIDEWALK	TS15.35
FINISHED GRADE	FG13.50
EXISTING CONTOUR	18.00
PROPOSED CONTOUR	18

PROJECT REQUIREMENTS FOR HARGRAY TELEPHONE & CATV:

1. COMMERCIAL BUILDINGS-APARTMENTS-VILLAS TO HAVE A MINIMUM 4" DIAMETER CONDUIT SCH. 40 PVC WITH PULL STRING BURIED AT 24" TO 30" DEPTH, FROM THE EQUIPMENT ROOM OR POWER METER LOCATION TO A POINT DESIGNATED BY HARGRAY AT ROAD RIGHT-OF-WAY OR PROPERTY LINE. CONDUITS ARE REQUIRED FROM EACH BUILDING SITE & MULTIPLE CONDUITS MAY APPLY.

2. COMMERCIAL BUILDINGS WITH MULTIPLE "UNITS" MAY REQUIRE CONDUIT(S) MINIMUM 3/4" FROM MAIN EQUIPMENT ENTRY POINT TO TERMINATION POINT INSIDE UNIT. PLENUM TYPE CEILINGS REQUIRE CONDUITS OR FLAME RETARDANT TEFLON WIRING TO COMPLY WITH CODE.

3. HOTEL OR LARGE COMMERCIAL PROJECT REQUIREMENTS WOULD BE 3-4" DIAMETER SCH. 40 PVC UNDERGROUND CONDUITS.

4. EQUIPMENT ROOMS TO HAVE 3/4" 4'X8' SHEET OF PLYWOOD MOUNTED ON WALL TO RECEIVE TELEPHONE EQUIPMENT.

5. A POWER GROUND ACCESSIBLE AT EQUIPMENT ROOM OR AN INSULATED #6 FROM THE SERVICE PANEL OR POWER MGN TO THE BACKBOARD.

6. RESIDENTIAL WIRING REQUIRES MINIMUM THREE PAIR TWISTED IN LOOP CONFIGURATION (INDUSTRY STANDARD).

7. CATV INSIDE WIRING WILL BE RG6 FOIL WRAPPED 60% BRAID MINIMUM, HOME RUN TO EACH OUTLET.

8. ALL INTERIOR WIRING SHOULD BE PULLED TO THE AREA IMMEDIATELY ADJACENT TO THE PLYWOOD BACKBOARD OR POWER METER LOCATION. A MINIMUM OF 5' OF SLACK IS REQUIRED FOR TERMINATIONS.

9. EASEMENTS ARE REQUIRED.

UTILITY NOTES:

1. SHOWN ON PLAN ARE KNOWN UNDERGROUND UTILITY LOCATIONS. HOWEVER, NOT SHOWN BUT POSSIBLY ENCOUNTERED IN THE AREA OF THE SITE ARE OTHER BURIED UTILITIES INCLUDING, BUT NOT NECESSARILY LIMITED TO:

A. TELEPHONE
B. FIBER OPTICS
C. CABLE TELEVISION
D. POTABLE WATER
E. SANITARY SEWER
F. GAS PIPELINE / TRANSMISSION LINE
G. STORM SEWER

(NOTE: ALL UTILITIES ENCOUNTERED TO BE PROTECTED DURING CONSTRUCTION)

2. WHEN ENCOUNTERED, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WRITTEN GRAPHICAL INFORMATION PERTAINING TO THE VERTICAL & HORIZONTAL ALIGNMENT OF UTILITY LOCATIONS.

3. ADDITIONAL COST ASSOCIATED WITH THE LOCATING, RELOCATING (DUE TO CONFLICTS), OR DELAYS AS A RESULT OF OTHER UNDERGROUND UTILITIES ENCOUNTERED WILL BE THE RESPONSIBILITY OF THE OWNER.

4. THOSE COSTS BEING ADDITIONAL PIPING, BORES, ASPHALT CUT & PATCH, CLEARING & GRUBBING, STABILIZATION & GRASSING, OR OTHER SPECIAL CONSTRUCTION TECHNIQUES TO BE CHARGED AT THE UNIT BID PRICE OR A NEGOTIATED FEE.

WATER & SANITARY SEWER NOTES:

1. THE EXISTING WATERLINE INFORMATION HAS BEEN SUPPLIED BY OTHERS. ITS LOCATION AND SIZE ARE APPROXIMATE. THE CONTRACTOR IS TO FIELD VERIFY THE EXACT SIZE AND LOCATION OF THE EXISTING WATERLINE PRIOR TO THE BEGINNING OF CONSTRUCTION.

2. THE CONTRACTOR IS TO COORDINATE THE WATERLINE TIE IN WITH BJWSA SEVENTY TWO (72) HOURS MINIMUM BEFORE WATERLINE SHUTDOWN.

3. WATERLINES 4" AND ABOVE ARE TO BE C900-DR18-CL150. ALL 2" WATERLINES ARE TO BE HDPE, AND ALL DUCTILE IRON PIPE (DIP) IS TO BE CL150.

4. WATER METERS ARE 1" DIA. UNLESS OTHERWISE NOTED, AND ARE TO BE PROVIDED AND SET BY BJWSA.

5. ALL SANITARY SEWER PIPE LENGTHS IN PLAN AND PROFILE VIEWS ARE TO THE CENTERLINE OF THE MANHOLES.

6. SANITARY SEWER PIPE IS TO BE PVC SDR26.

7. EXISTING MANHOLE LOCATION, RIM ELEVATION, AND INVERTS HAVE BEEN SUPPLIED BY THE SURVEYOR. THE PIPE LOCATION IS APPROXIMATE AND IS TO BE FIELD VERIFIED BY THE CONTRACTOR IF APPLICABLE.

8. SANITARY SEWER LATERALS ARE TO BE LAID WITH A MINIMUM SLOPE OF 2.00% AS SHOWN ON PLANS.

GENERAL NOTES:

1. NO SITE WORK SHALL BEGIN ON A REGULATED SITE UNTIL ALL TREE PROTECTION IS IN PLACE AND ALL REQUIRED SILT FENCE HAS BEEN INSTALLED.

2. A HORIZONTAL & VERTICAL CONTROL MONUMENT HAS BEEN DESIGNATED BY THE ENGINEER. THE VERTICAL DATUM IS NGVD-29, AND THE HORIZONTAL DATUM IS NAD 83.

3. ALL PAVEMENT DIMENSIONS (i.e.: ROAD WIDTHS, PARKING LOTS, LANDSCAPE ISLANDS, etc.) ARE GIVEN TO THE EDGE OF PAVEMENT OR BACK OF CURB, AS SITE DICTATES.

4. ALL BUILDING TIES ARE PERPENDICULAR TO THE PROPERTY LINES.

5. CONTRACTOR TO IDENTIFY AND LOCATE ALL UNDERGROUND UTILITIES PRIOR TO STARTING CONSTRUCTION.

6. CONTRACTOR RESPONSIBLE FOR TRAFFIC CONTROL AND SAFETY DURING CONSTRUCTION.

7. CONTRACTOR RESPONSIBLE FOR SECURING SITE DURING NON-WORKING HOURS TO ENSURE TRAFFIC AND PEDESTRIAN SAFETY.

8. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL BE AWARE THAT SOME PART OR ALL OF THE CONSTRUCTION OF THIS SITE MAY FALL UNDER THE JURISDICTION OF SPECIFIC CONDITIONS RELEVANT TO A SCDOT OR BEAUFORT COUNTY ENCROACHMENT PERMIT, UNITED STATES ARMY CORPS PERMIT, SETBACKS/BUFFERS PERTINENT TO THE ESTABLISHED ZONING ORDINANCES, SC-DHEC PERMITS, DHEC-OCRM PERMITS OR THE WATER AND SEWER AUTHORITY OF JURISDICTION. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO CONFIRM THE EXISTENCE AND CONDITIONS OF ALL PERMITS RELEVANT TO THIS PROJECT PRIOR TO THE COMMENCEMENT OF THE IMPACTED PHASE(S) OF CONSTRUCTION.

9. THE WATER AND SEWER CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE INSTALLATION OF WATER AND SEWER SERVICES IN ACCORDANCE WITH THE SPECIFICATIONS AND RELEVANT DETAILS OF THE WATER AND SEWER AUTHORITY OF JURISDICTION. THE LOCATION OF WATER AND/OR SEWER SERVICES SHOWN ON THESE PLANS IS TO BE CONSIDERED TO BE SCHEMATIC AND HAS BEEN SHOWN ON THESE DRAWINGS FOR REFERENCE PURPOSES ONLY. SEE DETAILS OR ARCHITECTURAL DRAWINGS FOR EXACT LOCATION.

10. ALL DEDICATED FIRE LINES FROM PIV TO BUILDING AND FDC'S TO BE DESIGNED, PERMITTED, INSTALLED AND TESTED BY FIRE SPRINKLER DESIGNER/FIRE SPRINKLER CONTRACTOR.

11. CONTRACTOR IS MADE AWARE THAT OSHA REQUIRES A PROTECTIVE SYSTEM DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR EXCAVATIONS DEEPER THAN 20 FT.

12. CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO EXISTING ROADWAYS FROM CONSTRUCTION AREAS.

STORM SEWER NOTES:

1. RCP IS TO BE (CLIII) UNLESS OTHERWISE NOTED.

2. HDPE IS TO BE N-12 UNLESS OTHERWISE NOTED.

3. FOR DESIGN PURPOSES ALL PIPE LENGTHS IN THE PLAN AND PROFILE VIEWS ARE TO THE CENTERLINE OF THE STRUCTURE. (i.e.: CB, JB, OR OUTFALL. FOR PAYMENT IT WILL BE THE NET LENGTH INSTALLED)

4. SUBGRADE DRAIN IS TO BE 4" PERFORATED HDPE WITH GEOTEXTILE SOCK.

5. WRAP ALL JOINTS W/GEOTEXTILE FABRIC.

TREE PROTECTION & REMOVAL NOTES:

INSTALL ALL TREE PROTECTION FENCE PRIOR TO THE COMMENCEMENT OF LAND DISTURBANCE ACTIVITIES.

PRELIMINARY / NOT FOR CONSTRUCTION

PLAN REVISIONS

NO.	DESCRIPTION:	DATE:	BY:
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER STEVEN MACK ANDREWS NO. 12960
SOUTH CAROLINA ANDREWS ENGINEERING CO. CERTIFICATE OF AUTHORIZATION

Andrews Engineering & Surveying
2712 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

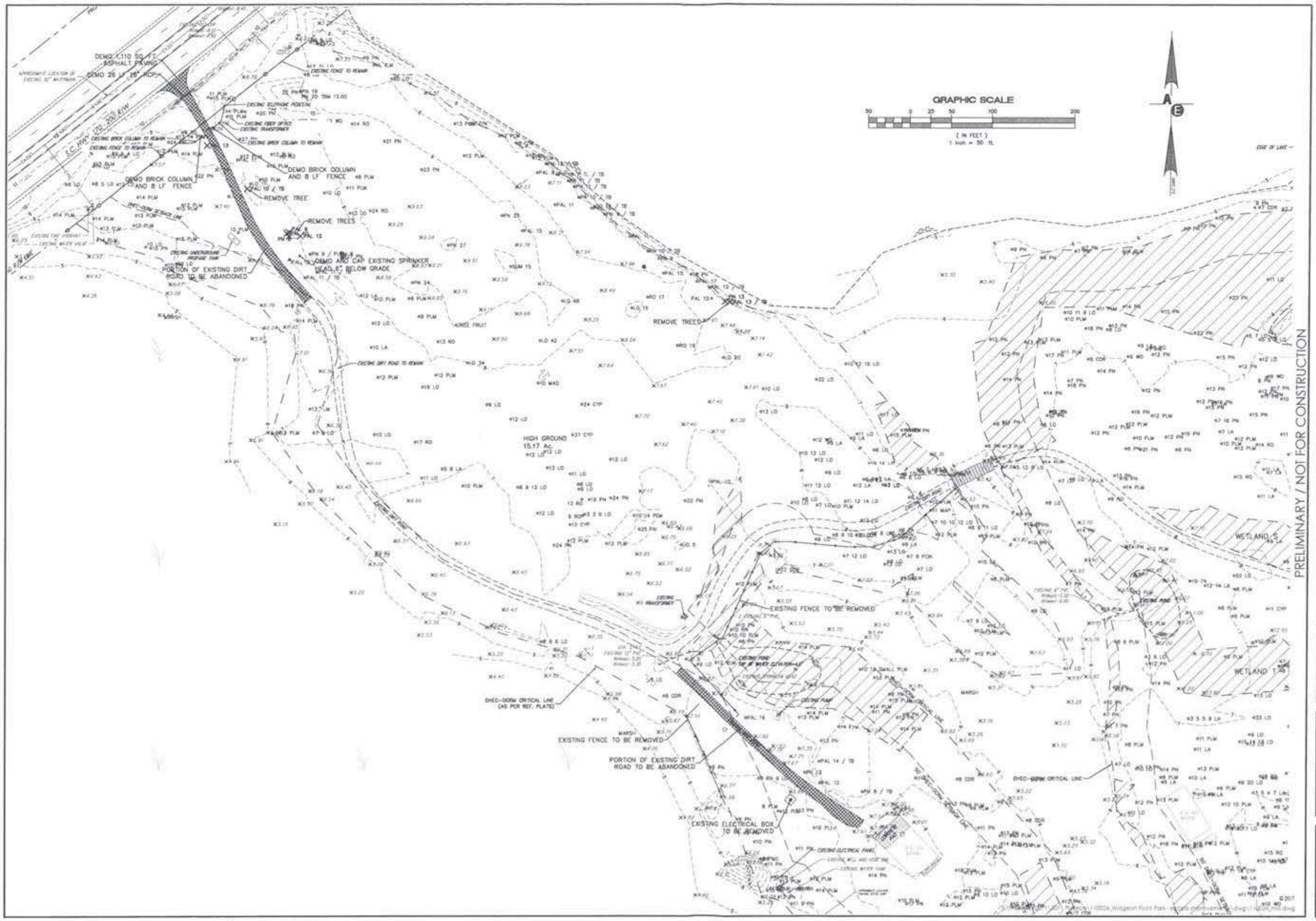
Site Development Plan
For
Widgeon Point Park
S.C. Hwy. 170
Okatie
Beaufort County, SC

Typical Legend
and
Note Sheet

Date Drawn:	09/23/11
Last Revised:	01/28/19
Drawn By:	R. Crosby
Engineer:	S. Andrews

SHEET #:
A

JOB: 110024



PLAN REVISIONS

NO.	DESCRIPTION:	DATE:	BY:
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
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7	-	-	-
8	-	-	-

SOUTH CAROLINA ANDREWS ENGINEERING CO. No. C00008 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 12860 REGISTERED STEVEN WADE ANDREWS

Andrews Engineering & Surveying
27-2 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

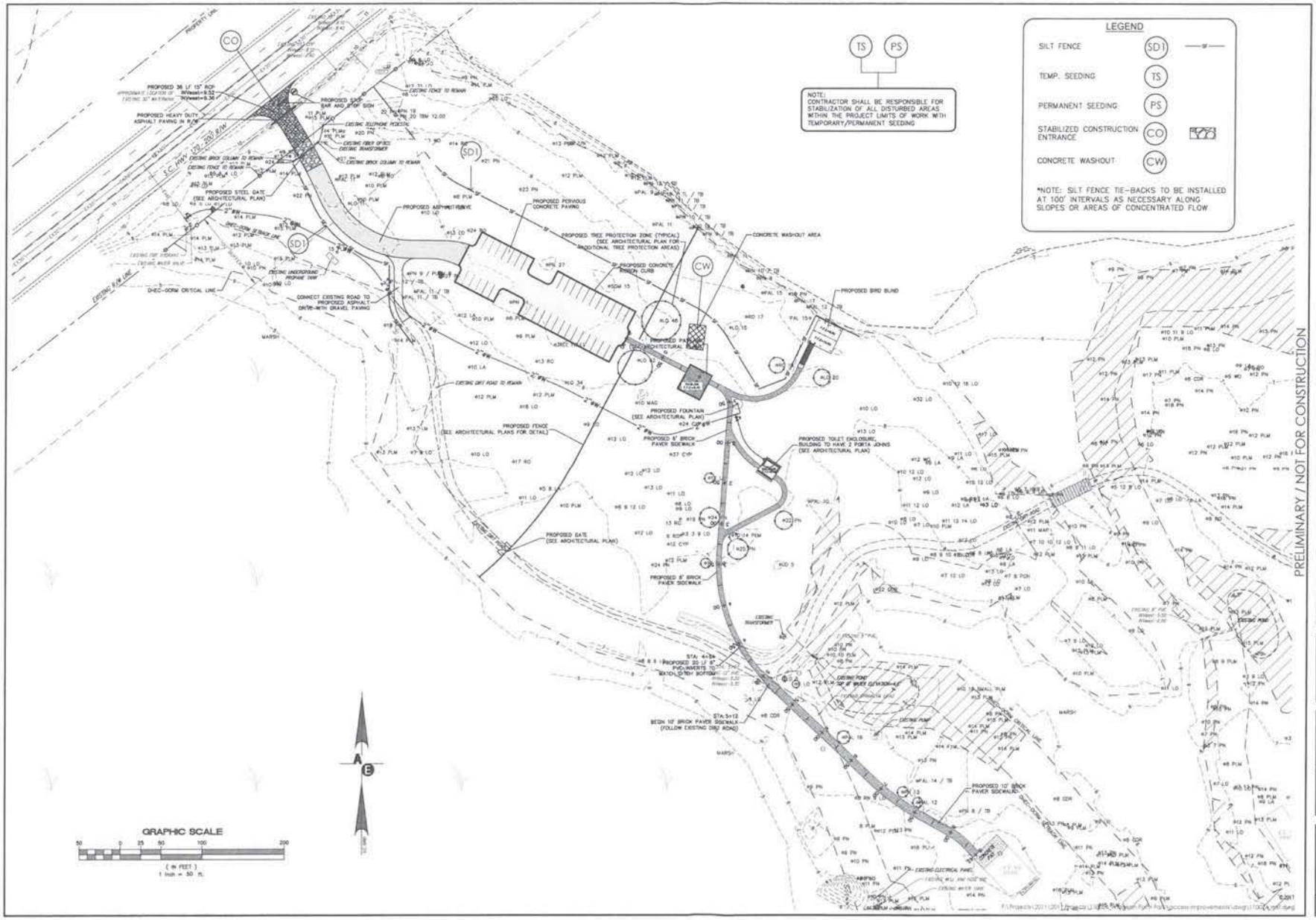
Site Development Plan
For
Widgeon Point Park
S.C. Hwy. 170
Okatie
Beaufort County, SC

Existing Site
and Demolition
Plan

Date Drawn:	09/23/11
Last Revised:	01/28/19
Drawn By:	R. Crosby
Engineer:	S. Andrews

SHEET #: 1

JOB: 110024



PLAN REVISIONS			
NO.	DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			
6			
7			
8			

Andrews Engineering & Surveying
2712 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

Site Development Plan
For
Widgeon Point Park
S.C. Hwy. 170
Okatie
Beaufort County, SC

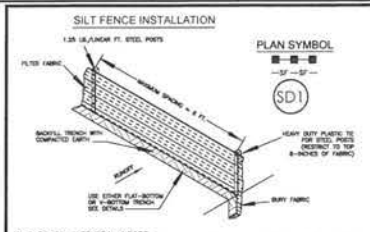
Overall Site and Sediment and Erosion Control Plan

Date Drawn:	09/23/11
Last Revised:	01/28/19
Drawn By:	R. Darby
Engineer:	S. Andrews

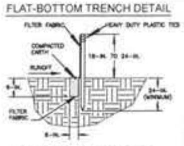
SHEET #: 2

JOB: 110024

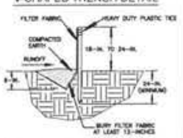
SILT FENCE INSTALLATION



FLAT-BOTTOM TRENCH DETAIL



V-SHAPED TRENCH DETAIL



SILT FENCE - GENERAL NOTES

1. Do not place silt fence across channels or in other areas subject to concentrated flows. Silt fence should not be used as a velocity control BMP. Concentrated flows are any flows greater than 0.5 cfs.
2. Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
3. Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
4. Silt fence joints, when necessary, shall be completed by one of the following options:
   - Wrap each fabric together at a support post with both ends fastened to the post, with a 1-foot minimum overlap;
   - Overlap silt fence by installing 3-feet passed the support post to which the new silt fence roll is attached. Attach old roll to new roll with heavy-duty plastic ties; or,
   - Overlap entire width of each silt fence roll from one support post to the next support post.
5. Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
6. Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.
7. Install Silt Fence Checks (Tie-Backs) every 50-100 feet, dependent on slope, along silt fence that is installed with slope and where concentrated flows are expected or are documented along the proposed/installed silt fence.

South Carolina Department of Health and Environmental Control
SILT FENCE
SC-03 Page 1 of 2
NOT TO SCALE

SILT FENCE - POST REQUIREMENTS

1. Silt fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
   - Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Steel posts may need to have a metal soil stabilization plate welded near the bottom when installed along steep slopes or installed in loose soils. The plate should have a minimum cross section of 17-square inches and be composed of 15 gauge steel, at a minimum. The metal soil stabilization plate should be completely buried.
4. Install posts to a minimum of 24-inches. A minimum height of 1- to 2-inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
5. Post spacing shall be at a maximum of 6-feet on center.

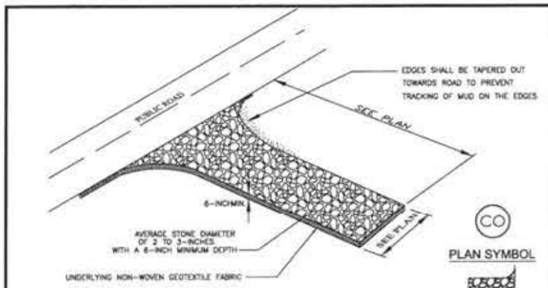
SILT FENCE - FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

SILT FENCE - INSPECTION & MAINTENANCE

1. The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the silt fence, or where the fence has sagged or collapsed due to runoff overtopping the silt fence. Install checks/tie-backs and/or reinstall silt fence, as necessary.
7. Check for tears within the silt fence, areas where silt fence has begun to decompose, and for any other circumstance that may render the silt fence ineffective. Removed damaged silt fence and reinstall new silt fence immediately.
8. Silt fence should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.

South Carolina Department of Health and Environmental Control
SILT FENCE
SC-03 PAGE 2 of 2
GENERAL NOTES



SPECIFICATION	SIZE
ROCK PAD THICKNESS	6 INCHES
ROCK PAD WIDTH	SEE PLAN
ROCK PAD LENGTH	SEE PLAN
ROCK PAD STONE SIZE	D = 2-3 INCHES

South Carolina Department of Health and Environmental Control
CONSTRUCTION ENTRANCE
SC-06 PAGE 1 of 2
NOT TO SCALE

CONSTRUCTION ENTRANCE - GENERAL NOTES

1. Stabilized construction entrances should be used at all points where traffic will egress/ingress a construction site onto a public road or any impervious surface, such as parking lots.
2. Install a non-woven geotextile fabric prior to placing any stone.
3. Install a culvert pipe across the entrance when needed to provide positive drainage.
4. The entrance shall consist of 2-inch to 3-inch D50 stone placed at a minimum depth of 6-inches.

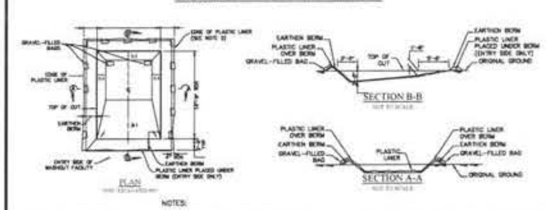
   Minimum dimensions of the entrance shall be as shown on plans, and may be modified as necessary to accommodate site constraints.
5. The edges of the entrance shall be tapered out towards the road to prevent tracking at the edge of the entrance.
7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin or other sediment trapping structure.
8. Limestone may not be used for the stone pad.

CONSTR. ENTRANCE - INSPECTION & MAINTENANCE

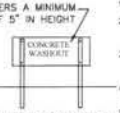
1. The key to functional construction entrances is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of construction entrances shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. During regular inspections, check for mud and sediment buildup and pad integrity. Inspection frequencies may need to be more frequent during long periods of wet weather.
4. Reshape the stone pad as necessary for drainage and runoff control.
5. Wash or replace stones as needed and as directed by site inspector. The stone in the entrance should be washed or replaced whenever the entrance fails to reduce the amount of mud being carried off-site by vehicles. Frequent washing will extend the useful life of stone pad.
6. Immediately remove mud and sediment tracked or washed onto adjacent impervious surfaces by brushing or sweeping. Flushing should only be used when the water can be discharged to a sediment trap or basin.
7. During maintenance activities, any broken pavement should be repaired immediately.
8. Construction entrances should be removed after the site has reached final stabilization. Permanent vegetation should replace areas from which construction entrances have been removed, unless area will be converted to an impervious surface to serve post-construction.

South Carolina Department of Health and Environmental Control
CONSTRUCTION ENTRANCE
SC-06 PAGE 2 of 2
GENERAL NOTES

EXCAVATED PIT CONCRETE WASHOUT



LETTERS A MINIMUM OF 5" IN HEIGHT



CONCRETE WASHOUT SIGN DETAIL

NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL CONCRETE WASHOUT SIGN (24"X24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% FULL.
5. THE KEY TO FUNCTIONAL CONCRETE WASHOUTS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR CLEAN OUT.
6. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.
7. A ROCK CONSTRUCTION ENTRANCE MAY BE NECESSARY ALONG ONE SIDE OF THE WASHOUT TO PROVIDE VEHICLE ACCESS.

South Carolina Department of Health and Environmental Control
CONCRETE WASHOUT
EXCAVATED PIT
RC-08 PAGE 1 of 1
NOT TO SCALE

(TS) TEMPORARY SEEDING

ESTABLISHING TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS ON DISTURBED AREAS.

(PS) PERMANENT SEEDING

ESTABLISHING PERMANENT VEGETATIVE COVER SUCH AS TREES, SHRUBS, VINES, GRASSES, SOD, OR LEGUMES ON DISTURBED AREAS.

VEGETATIVE SEEDING NOTES

-TEMPORARY STABILIZATION IS REQUIRED WITHIN 14 DAYS AFTER CONSTRUCTION ACTIVITY IS COMPLETE UNLESS CONSTRUCTION ACTIVITY IS GOING TO RESUME WITHIN 21 DAYS.

-COVER SEEDED AREAS WITH AN APPROPRIATE MULCH TO PROVIDE PROTECTION FROM THE WEATHER.

-WHEN THE TEMPORARY VEGETATION DOES NOT GROW QUICKLY OR THICK ENOUGH TO PREVENT EROSION, RE-SEED AS SOON AS POSSIBLE.

-KEEP SEEDED AREAS ADEQUATELY MOIST. IRRIGATE THE SEEDED AREA IF NORMAL RAINFALL IS NOT ADEQUATE FOR THE GERMINATION AND GROWTH OF SEEDLINGS.

-WATER SEEDED AREAS AT CONTROLLED RATES THAT ARE LESS THAN THE RATE AT WHICH THE SOIL CAN ABSORB WATER TO PREVENT RUNOFF.

-SEED SELECTION IS BASED ON GEOGRAPHICAL LOCATION, SOIL TYPE AND THE SEASON
OF THE YEAR IN WHICH THE PLANTING IS TO BE DONE.

SEDIMENT AND EROSION CONTROL NOTES

1. If necessary, slopes, which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.
2. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.
   - Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable.
   - Where construction activity on a portion of the Site is temporarily ceased, and earth-disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the Site.
3. All sediment and erosion control devices shall be inspected once every calendar week. If periodic inspection or other information indicates that a BMP has been inappropriately or incorrectly installed, the Permittee must address the necessary replacement or modification required to correct the BMP within 48 hours of identification.
4. Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation. Fill, cover, and temporary seeding at the end of each day are recommended. If water is encountered while trenching, the water should be filtered to remove sediment before being pumped back into any waters of the State.
5. All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.
6. The contractor must take necessary action to minimize the tracking of mud onto paved roadway(s) from construction areas and the generation of dust. The contractor shall daily remove mud/soil from pavement, as may be required.
7. Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during construction or obtain approval of an individual plan in accordance with S.C. Reg. 72-300 et seq. and SCR100000.
8. Temporary diversion berms and/or ditches will be provided as needed during construction to protect work areas from upslope runoff and/or to divert sediment-laden water to appropriate traps or stable outlets.
9. All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50-foot buffer can't be maintained between the disturbed area and all WoS. A 10-foot buffer should be maintained between the last row of silt fence and all WoS.
10. Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.
11. A copy of the OS-SWPPP, inspections records, and rainfall data must be retained at the construction site or a nearby location easily accessible during normal business hours, from the date of commencement of construction activities to the date that final stabilization is reached.
12. Initiate stabilization measures on any exposed steep slope (3H:1V or greater) where land-disturbing activities have permanently or temporarily ceased, and will not resume for a period of 7 calendar days.
13. Minimize soil compaction and, unless infeasible, preserve topsoil.
14. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
15. Minimize the discharge of pollutants from dewatering of trenches and excavated areas. These discharges are to be routed through appropriate BMPs (sediment basin, filter bag, etc.).
16. The following discharges from sites are prohibited:
   - Wastewater from washout of concrete, unless managed by an appropriate control;
   - Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
   - Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
   - Soaps or solvents used in vehicle and equipment washing.
17. After construction activities begin, inspections must be conducted at a minimum of at least once every calendar week and must be conducted until final stabilization is reached on all areas of the construction site.
18. If existing BMPs need to be modified or if additional BMPs are necessary to comply with the requirements of this permit and/or SC's Water Quality Standards, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the OS-SWPPP and alternative BMPs must be implemented as soon as reasonably possible.
19. A Pre-Construction Conference must be held for each construction site with an approved On-Site SWPPP prior to the implementation of construction activities. For non-linear projects that disturb 10 acres or more this conference must be held on-site unless the Department has approved otherwise.

Permanent Seeding - Coastal

Species	Lbs/Ac	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sandy, Droughty Sites													
Browntop Millet Bahiagrass	10 lbs./ac. 40 lbs./ac.			■	■	■	■	■	■				
Browntop Millet Bahiagrass Sericea Lespedeza	10 lbs./ac. 30 lbs./ac. 40 lbs./ac.			■	■	■	■	■	■				
Browntop Millet Atlantic Coastal Panicgrass	10 lbs./ac. 15 lbs./ac. PLS			■	■	■	■						
Browntop Millet Switchgrass (Alamo) Little Bluestem Sericea Lespedeza	10 lbs./ac. 8 lbs./ac. PLS 4 lbs./ac. 20 lbs./ac.			■	■	■	■						
Browntop Millet Weeping Lovegrass	10 lbs./ac. 8 lbs./ac.			■	■	■	■						
Well drained, clayey/loamey Sites													
Browntop Millet Bahiagrass	10 lbs./ac. 40 lbs./ac.			■	■	■	■	■	■				
Rye, Grain Bahiagrass Clover, Crimson (Annual)	10 lbs./ac. 40 lbs./ac. 5 lbs./ac.									■	■	■	
Browntop Millet Bahiagrass Sericea lespedeza	10 lbs./ac. 30 lbs./ac. 40 lbs./ac.			■	■	■	■	■	■				
Browntop Millet Bermuda, Common Sericea lespedeza	10 lbs./ac. 10 lbs./ac. 40 lbs./ac.			■	■	■	■	■	■				
Browntop Millet Bermuda, Common Kobe Lespedeza (Annual)	10 lbs./ac. 15 lbs./ac. 10 lbs./ac.			■	■	■	■	■	■				
Browntop Millet Bahiagrass Bermuda, Common Sericea lespedeza	10 lbs./ac. 20 lbs./ac. 6 lbs./ac. 40 lbs./ac.			■	■	■	■	■	■				
Browntop Millet Switchgrass Little Bluestem Indiangrass	10 lbs./ac. 8 lbs./ac. PLS 3 lbs./ac. PLS 5 lbs./ac. PLS			■	■	■	■	■	■				

Temporary Seeding – Coastal

Species	Lbs/Ac	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sandy, Droughty Sites													
Browntop Millet	40 lbs./ac.			■	■	■	■	■	■				
Rye, Grain	50 lbs./ac.	■	■	■						■	■	■	■
Ryegrass	50 lbs./ac.	■	■	■	■					■	■	■	■
Well drained, clayey/loamey Sites													
Browntop Millet or Japanese Millet	40 lbs./ac.			■	■	■	■	■	■				
Rye, Grain or Oats	56 lbs./ac. 75 lbs./ac.	■	■	■						■	■	■	■
Ryegrass	50 lbs./ac.	■	■	■	■					■	■	■	■

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PRELIMINARY / NOT FOR CONSTRUCTION

PLAN REVISIONS

NO.	DESCRIPTION	DATE	BY
1	-	-	-
2	-	-	-
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8	-	-	-

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 12880 STEVEN WADE ANDREWS
SOUTH CAROLINA ANDREWS ENGINEERING CO., INC. No. C00006 CERTIFICATE OF AUTHORIZATION

Andrews Engineering & Surveying
2712 Bull Street Suite A
Beaufort, SC 29902
843.379.2222
Fax 843.379.2223

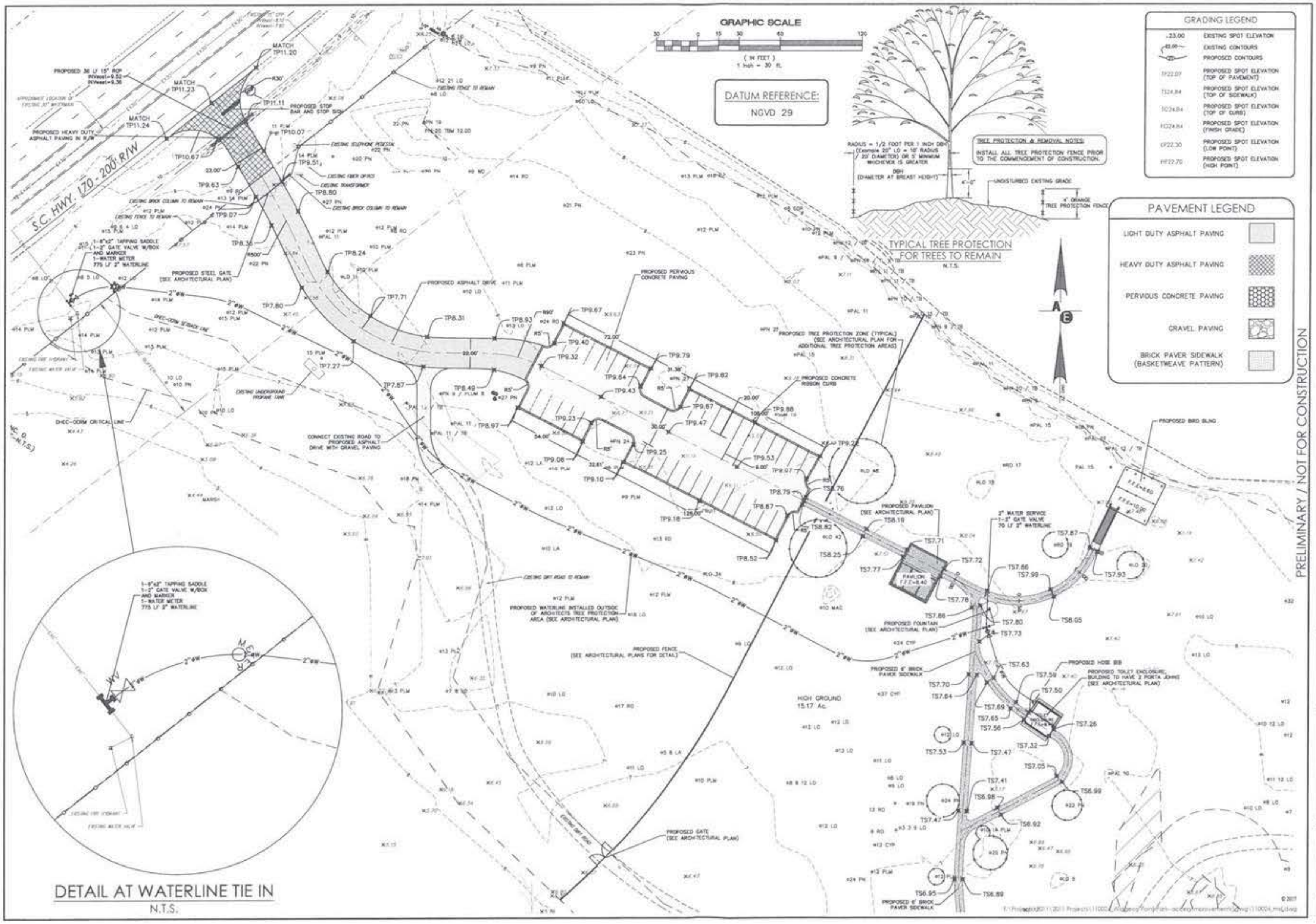
Site Development Plan for Widgeon Point Park
S.C. Hwy. 170
Okatie
Beaufort County, SC

Sediment and Erosion Control Details

Date Drawn: 09/23/11
Last Revised: 01/28/19
Drawn By: R. Crosby
Engineer: S. Andrews

SHEET #: 3

JOB: 110024



PLAN REVISIONS

NO.	DESCRIPTION:	DATE:	BY:
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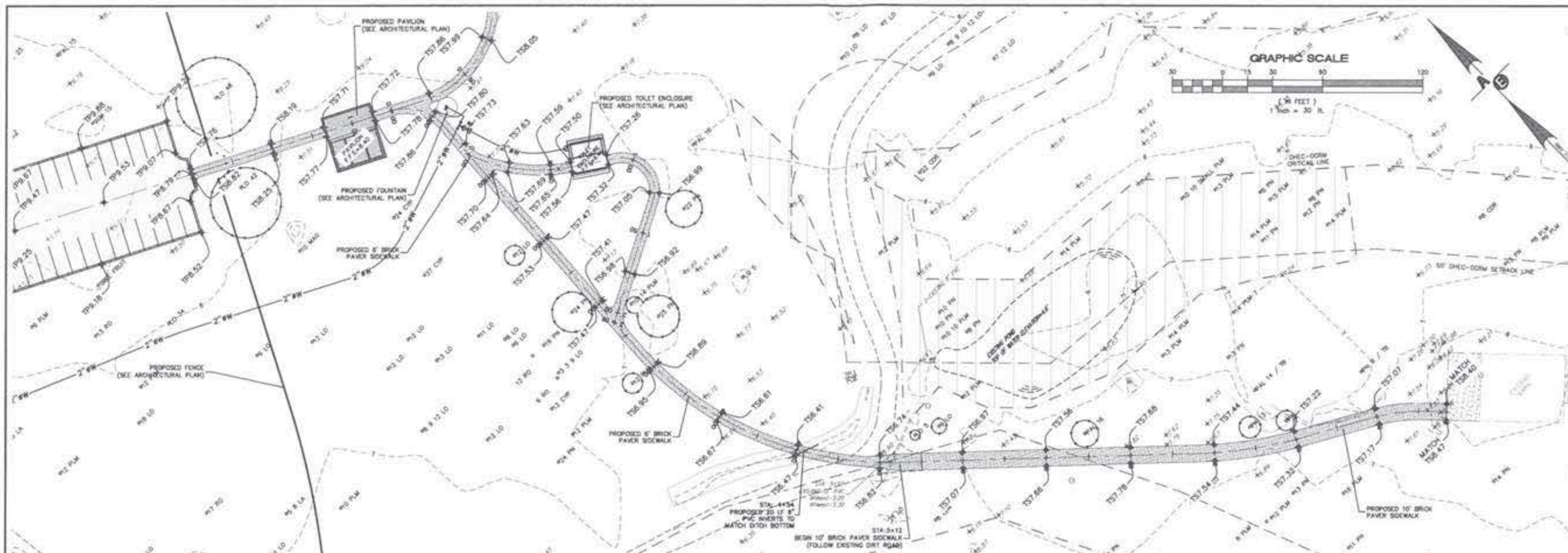
Site Development Plan
For
Widgeon Point Park
S.C. Hwy. 170
Okatie
Beaufort County, SC

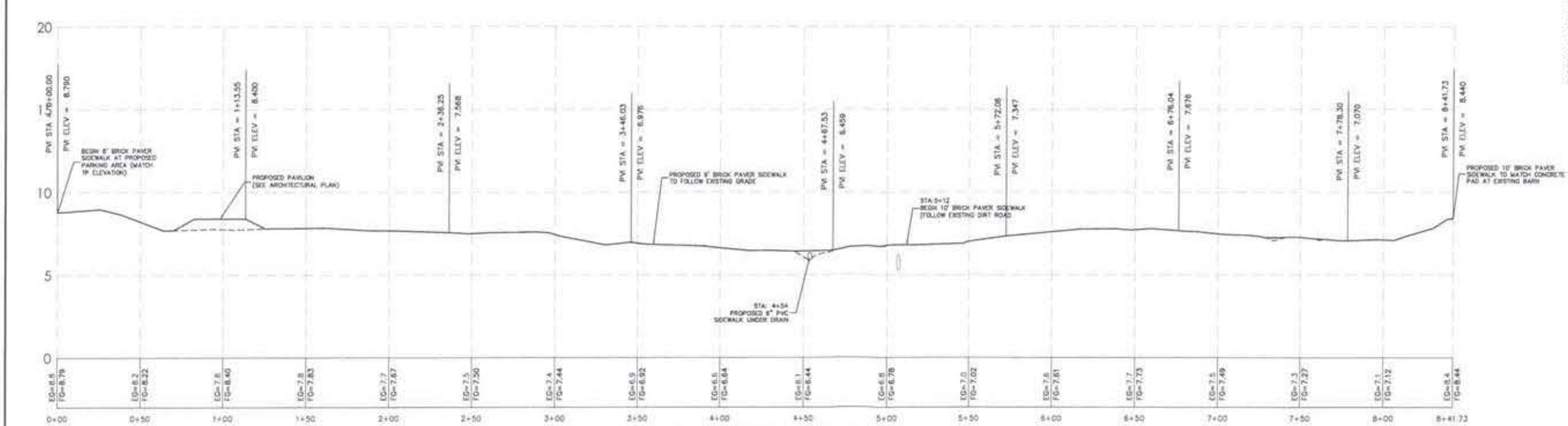
Park Area
Plan

Date Drawn: 09/23/11
Last Revised: 01/28/19
Drawn By: R. Oxsby
Engineer: S. Andrews

SHEET #:
4

JOB: 110024





MAIN SIDEWALK PROFILE

SCALE: VERT 1"=2' HORZ 1"=20'

PRELIMINARY / NOT FOR CONSTRUCTION

PLAN REVISIONS

NO.	DESCRIPTION:	DATE:	BY:
1			
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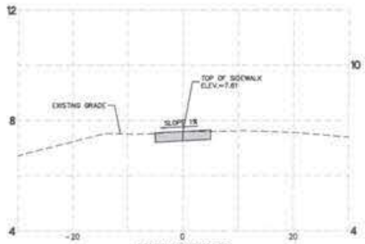
Site Development Plan
For
Widgeon Point Park
S.C. Hwy. 170
Okatie
Beaufort County, SC

Sidewalk
Plan/Profile

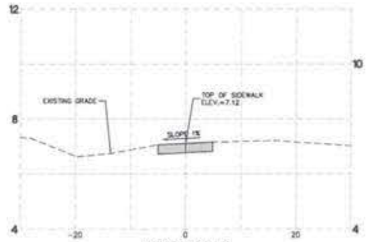
Date Drawn: 09/23/11
Last Revised: 01/28/19
Drawn By: R. Crosby
Engineer: S. Andrews

SHEET #: 5

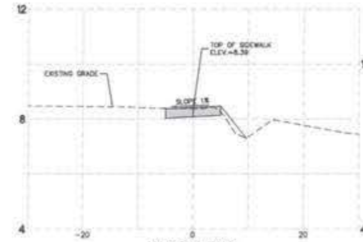
JOB: 110024



MAIN SIDEWALK
STA 6+00 CROSS SECTION
SCALE: HORZ. 1"=10' VERT. 1"=2'



MAIN SIDEWALK
STA 8+00 CROSS SECTION
SCALE: HORZ. 1"=10' VERT. 1"=2'



MAIN SIDEWALK
STA 8+41 CROSS SECTION
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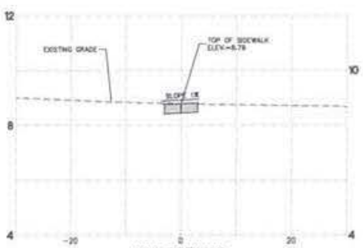

MAIN SIDEWALK
STA 0+00 CROSS SECTION
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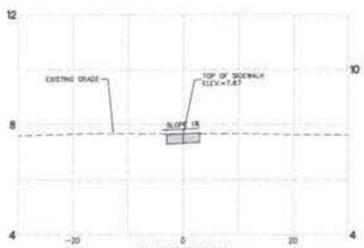
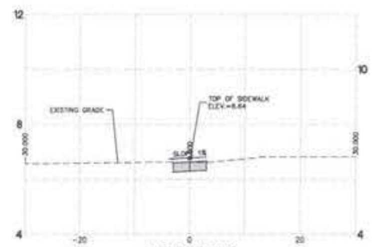


MAIN SIDEWALK
STA 2+00 CROSS SECTION
SCALE: HORZ. 1"=10' VERT. 1"=2'



MAIN SIDEWALK
STA 4+00 CROSS SECTION
SCALE: HORZ. 1"=10' VERT. 1"=2'

PRELIMINARY / NOT FOR CONSTRUCTION

PLAN REVISIONS

NO.	DESCRIPTION:	DATE:	BY:
1	-	-	-
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Site Development Plan
For
Widgeon Point Park
S.C. Hwy. 170
Okatie
Beaufort County, SC

Sidewalk
Cross Sections

Date Drawn: 09/23/11
Last Revised: 01/28/19
Drawn By: R. Crosby
Engineer: S. Andrews

SHEET #: 6

JOB: 110024

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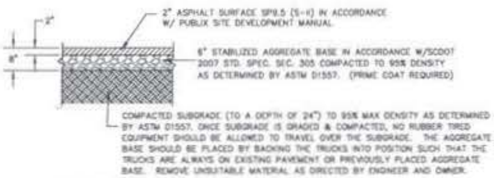
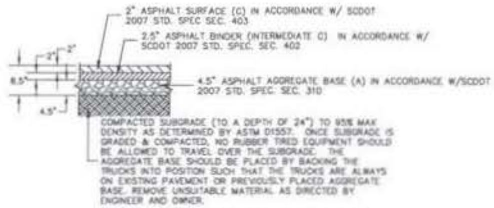


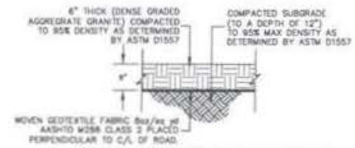
LIGHT DUTY ASPHALT PAVING DETAIL

N.T.S.



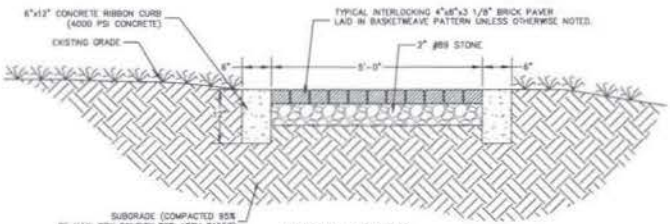
HEAVY DUTY ASPHALT PAVING DETAIL
IN SCDOT R/W

N.T.S.



DETAIL CRUSHED GRANITE PAVING

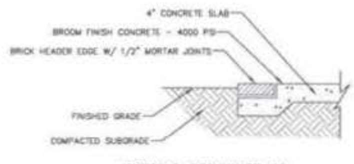
N.T.S.



TYPICAL SECTION
BRICK PAVER SIDEWALK WITH RIBBON CURB

N.T.S.

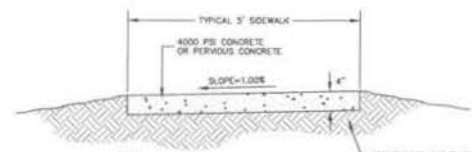
(BID OPTION)



TYPICAL CONCRETE OR
PERVIOUS CONCRETE SIDEWALK
W/BRICK PAVER BORDER DETAIL

N.T.S.

(BID OPTION)

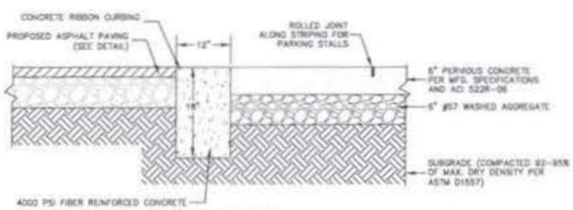


NOTE:
CONTRACTION JOINTS SHALL BE PLACED AT NO MORE THAN 5' AND EXPANSION JOINTS SHALL BE PLACED AT NO MORE THAN 20' IN SIDEWALK

TYPICAL CONCRETE
SIDEWALK DETAIL

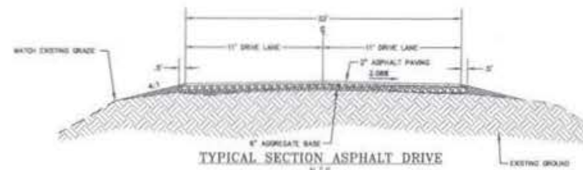
N.T.S.

(BID OPTION)



TYPICAL SECTION
PERVIOUS CONCRETE & RIBBON CURB

N.T.S.



TYPICAL SECTION ASPHALT DRIVE

N.T.S.

PRELIMINARY / NOT FOR CONSTRUCTION

PLAN REVISIONS

NO.	DESCRIPTION	DATE	BY
1			
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3			
4			
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Beaufort, SC 29902
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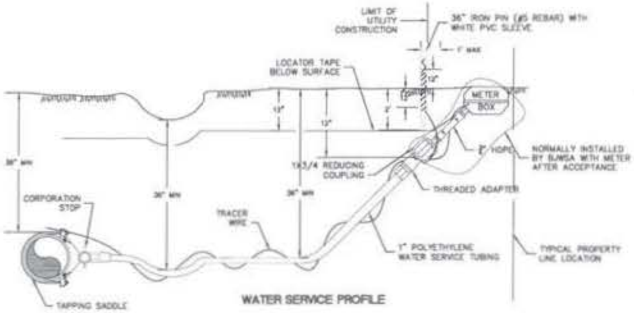
Site Development Plan
for
Widgeon Point Park
S.C. Hwy. 170
Okatie
Beaufort County, SC

Site Details
Sheet 1

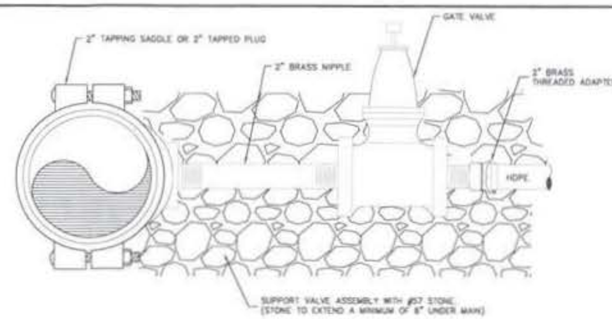
Date Drawn: 09/23/11
Last Revised: 01/28/19
Drawn By: K. Crosby
Engineer: S. Andrews

SHEET #: 7

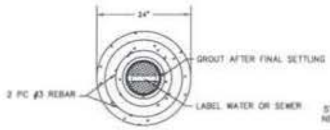
JOB: 110024



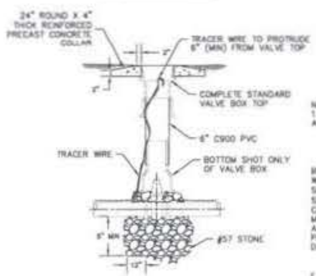
WATER SERVICE PROFILE



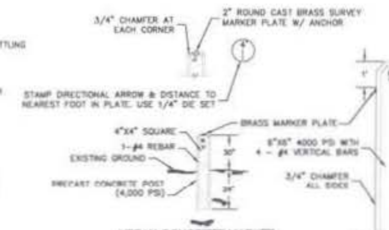
2" CONNECTION



CONCRETE COLLAR

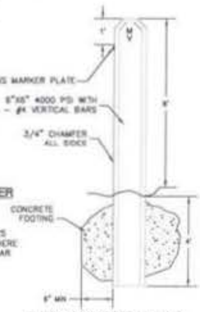


VALVE AND VALVE BOX



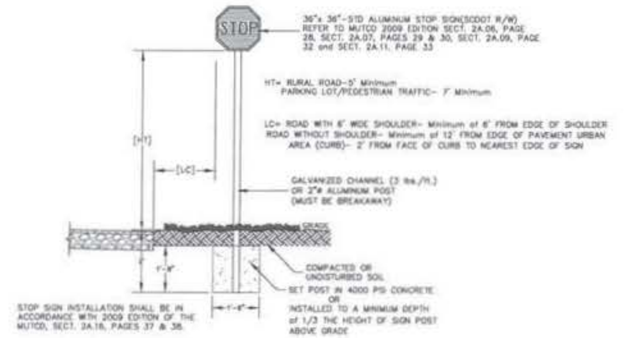
URBAN CONCRETE MARKER

NOTES:
1. MARKERS
A. VALVE MARKERS ARE REQUIRED FOR EACH VALVE (EXCEPT HYDRANT VALVES). PIPE LINE MARKERS ARE REQUIRED AT FITTINGS AND EACH 700' WHERE LINES RUN THROUGH AN UNDEVELOPED AREA. AR MANHOLE REQUIRES MANHOLE.
B. MARKER PAINTING
WATER – PAINTING NOT REQUIRED
SEWER INFLUENT – TOP 4" GREEN
SEWER EFFLUENT – TOP 4" PURPLE
C. MARK MARKERS AS FOLLOWS
MV – MAIN VALVE
AV – AIR RELEASE VALVE
PIPELINE – PIPELINE MARKER
D. VALVE AND PIPELINE MARKERS IN MOWED AREAS TO BE SET TO AN EXPOSURE OF NOT MORE THAN 18" OR LESS THAN 6" ABOVE FINAL GRADE.
E. IF SOILS ARE NOT STABLE ENOUGH TO MAINTAIN THE URBAN MARKERS VERTICAL, CONCRETE FOOTINGS ARE TO BE INSTALLED.
2. VALVE BOX LID SHALL BE WITHIN ½" OF COLLAR TOP. COLLAR TOP IS TO BE NO MORE THAN 1" ABOVE FINAL GRADE AND NO LOWER THAN 1" BELOW FINAL GRADE.
3. CONCRETE COLLAR NOT REQUIRED IN PAVEMENT. VALVE BOX TOP IS TO BE TRAFFIC RATED.



RURAL CONCRETE MARKER

STANDARD VALVE DETAIL

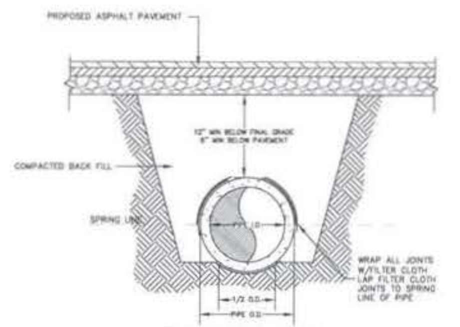


DETAIL–TYPICAL STOP SIGN
N.T.S.

NOTE: ALL STOP BARS ARE TO BE SOLID WHITE LINES EXTENDING ACROSS THE LANE(S) AND INSTALLED IN ACCORDANCE WITH THE 2009 EDITION OF THE MUTCD SECT. 3B.16, PAGE 381.

ALL CROSSWALKS SHALL BE AS INSTALLED AS INDICATED ON THE PLANS AND IN ACCORDANCE WITH SECT. 3B.18, PAGE 383 OF THE 2009 MUTCD, OR MOST CURRENT EDITION, UNLESS OTHERWISE DIRECTED.

STOP BAR DETAIL
N.T.S.



TYPICAL STORM SEWER PIPE BEDDING DETAIL
N.T.S.

PRELIMINARY / NOT FOR CONSTRUCTION

PLAN REVISIONS

NO.	DESCRIPTION:	DATE:	BY:
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Site Development Plan
for
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S.C. Hwy. 170
Okatie
Beaufort County, SC

Site Details
Sheet 2

Date Drawn: 09/22/11
Last Revised: 01/28/19
Drawn By: R. Crosby
Engineer: S. Andrews

SHEET #: 8

JOB: 110024