



AGENDA
FERNANDINA BEACH CITY COMMISSION
VIRTUAL REGULAR MEETING
APRIL 21, 2020
6:00 PM

The City Commission Regular Meeting will be held as a VIRTUAL MEETING with elected officials and City staff participating through video conferencing. This virtual meeting will be broadcasted live for members of the public to view on the City of Fernandina Beach website (www.fbfl.us) and Channel 264 (Comcast only).

1. **CALL TO ORDER**
2. **ROLL CALL**
3. **PLEDGE OF ALLEGIANCE / INVOCATION**
Invocation provided by Pastor Granardo Felix of Trinity United Methodist Church.
4. **PROCLAMATIONS / PRESENTATION**
 - 4.1 **PROCLAMATION - "NATIONAL LIBRARY WEEK"** - *Recognizes April 19-25, 2020, as "National Library Week."*
 - 4.2 **PROCLAMATION - WATER CONSERVATION MONTH** - *Recognizes the month of April as "Water Conservation Month."*
 - 4.3 **PROCLAMATION - NEW ZION MISSIONARY BAPTIST CHURCH 150TH ANNIVERSARY** - *Celebrates the 150th Anniversary of the New Zion Missionary Baptist Church.*
 - 4.4 **PROCLAMATION - RETIREMENT OF MS. ROBIN MARLEY** - *Recognizes Ms. Robin Marley upon her retirement after fifteen years and eight months of dedicated service to the City of Fernandina Beach. Ms. Marley retired on March 31, 2020.*
 - 4.5 **BUDGET SUMMARY** - *Please review attached presentation material (no actual presentation).*
5. **PUBLIC COMMENT** *Due to the continuing effects of the public health emergency, all designated public comments received by the City Manager (dmartin@fbfl.org) following the April 14 publication of the City Commission Regular Meeting Agenda on April 21 will be presented electronically to the City Commissioners at 5:00 PM, April 21, for review and inclusion into the formal record of the City Commission meeting.*
6. **RESOLUTIONS**
 - 6.1 **MAIN STREET PROGRAM SUPPORT AND EXPANSION** - RESOLUTION 2020-46
RECOMMENDING SUPPORT FOR EXPANDING THE MAIN STREET PROGRAM BOUNDARIES AND AUTHORIZING FISCAL SUPPORT FOR THREE YEARS THROUGH FISCAL YEAR 2023/2024; AND PROVIDING FOR AN EFFECTIVE DATE. *Synopsis: Authorizes City financial support for the Main Street program in the amount of \$40,000 per year for three years through September 30, 2024. Also supports the new boundaries and expansion of the Main Street Program.*
 - 6.2 **AGREEMENT APPROVAL - NASSAU HUMANE SOCIETY** - RESOLUTION 2020-56

APPROVING AN AGREEMENT BETWEEN THE CITY OF FERNANDINA BEACH AND NASSAU HUMANE SOCIETY TO PROVIDE ANIMAL CONTROL SERVICES TO THE RESIDENTS OF THE CITY OF FERNANDINA BEACH; AUTHORIZING EXECUTION; PROVIDING FOR AN EFFECTIVE DATE. *Synopsis: Approves a new five-year agreement for Nassau Humane Society to provide animal rescue services to the City.*

- 6.3 **EMERGENCY MENTAL HEALTH SERVICES FUNDING / BUDGET AMENDMENTS - NONPROFITS** - RESOLUTION 2020-57 APPROVING CONTRIBUTIONS TO BARNABAS CENTER - MEDICAL SERVICES, STARTING POINT BEHAVIORAL HEALTHCARE, AND MICAH'S PLACE; APPROVING AMENDMENTS TO THE BUDGET FOR FISCAL YEAR 2019/2020; AUTHORIZING EXECUTION; AND PROVIDING FOR AN EFFECTIVE DATE. *Synopsis: Provides emergency funding to Barnabas Center - Medical Services in the amount of \$9,000; Nassau County Mental Health DBA Starting Point Behavioral Healthcare in the amount of \$30,000; and Micah's Place in the amount of \$15,000 to serve citizens during the Coronavirus pandemic.*

7. **ORDINANCE - FIRST READING**

- 7.1 **CODE AMENDMENT - ELECTRICAL CODE** - ORDINANCE 2020-12 AMENDING SECTION 22-30, AMENDMENTS TO THE ELECTRICAL CODE, TO ALLOW FOR THE CITY MANAGER TO DELEGATE WAIVER AUTHORITY; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE. *Synopsis: Amends Section 22 of the Code of Ordinances pertaining to electrical code amendments.*

8. **ORDINANCES - SECOND READING**

- 8.1 **Legislative - FUTURE LAND USE MAP AMENDMENT - ZONING MAP CONFLICTS** - ORDINANCE 2020-03 CHANGING THE CITY'S FUTURE LAND USE MAP TO ADDRESS CONFLICTS WITH THE CITY'S ZONING MAP; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE. *Synopsis: Modifies parcels throughout the City to align the Future Land Use and Zoning Maps.*
- 8.2 **ZONING MAP AMENDMENT - LAND USE MAP CONFLICTS** - ORDINANCE 2020-04 CHANGING THE CITY'S ZONING MAP TO ALIGN WITH THE CITY'S FUTURE LAND USE MAP; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE. *Synopsis: Modifies parcels throughout the City to align the Future Land Use and Zoning Maps.*
- 8.3 **HISTORIC DISTRICT BOUNDARY EXPANSION - OLD NASSAU COUNTY JAIL (AMELIA ISLAND MUSEUM OF HISTORY)** - ORDINANCE 2020-09 EXPANDING THE BOUNDARY OF THE HISTORIC DISTRICT TO INCLUDE THE OLD NASSAU COUNTY JAIL BUILDING; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE. *Synopsis: Approves the Historic District boundary expansion to include the Old Nassau County Jail (Amelia Island Museum of History) building.*

9. **CITY COMMISSION DISCUSSION**

- 9.1 **MARINA** - *This item is placed on the agenda at the request of Commissioner Ross.*
- 9.2 **BEACHES** - *This item is placed on the agenda at the request of Vice Mayor Kreger.*
- 9.3 **LAND DEVELOPMENT CODE (LDC) AMENDMENT** - *This item is placed on the agenda at the request of Commissioner Ross.*

10. **CITY MANAGER REPORTS**

11. **CITY ATTORNEY REPORTS**

12. CITY CLERK REPORTS

13. MAYOR/COMMISSIONER COMMENTS

14. ADJOURNMENT

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- A THREE (3) MINUTE TIME LIMIT MAY BE IMPOSED FOR ALL SPEAKERS (EXCEPT IN A QUASI-JUDICIAL HEARING).
 - DISCUSSION – DIRECTION - ACTIONS ITEMS MAY BE ACTED UPON BY THE CITY COMMISSION BY EITHER A MOTION AND VOTE IN ACCORDANCE WITH ROBERTS RULES OF ORDER, OR BY A CONSENSUS OF THE CITY COMMISSION.
 - PURSUANT TO RESOLUTION 95-32, IF AN ITEM IS NOT ON THE AGENDA IT REQUIRES A FOUR-FIFTHS VOTE OF THE CITY COMMISSION DECLARING THE ITEM AN EMERGENCY BEFORE ACTION CAN BE TAKEN.
 - AT THE DISCRETION OF THE MAYOR, A RECESS MAY BE SCHEDULED EVERY NINETY MINUTES.
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Persons with disabilities requiring accommodations in order to participate should contact the City Clerk at (904) 310-3115 or TTY/TDD 711 (for the hearing or speech impaired).

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Proclamation
National Library Week

ITEM TYPE: Proclamations

REQUESTED ACTION: Presentation

SYNOPSIS: Attached is a Proclamation recognizing April 19-25, 2020, as "National Library Week."

FISCAL IMPACT: N/A

CITY ATTORNEY COMMENTS: N/A

CITY MANAGER RECOMMENDATION(S): N/A

Caroline Best, City Clerk	4/3/2020
Nicole Bednar, Administrative Services Manager	4/9/2020
Dale L. Martin, City Manager	4/9/2020

Submitted By:  Date: February 26, 2020

Caroline Best, City Clerk

COMMISSION ACTION:

Proclamation

WHEREAS, research shows in the mid-1950's that Americans were spending less on books and more on radios, televisions and musical instruments; and

WHEREAS, the American Library Association was concerned that Americans were reading less so they developed the very first "National Library Week" with the theme "Wake Up and Read!"; and

WHEREAS, "National Library Week" not only pays tribute to libraries as centers of learning, it also gives thanks to librarians for their knowledge and expertise; and

WHEREAS, today, as the world wide web has given way to more advertisement than editorial content, libraries have begun to reclaim their reputation for finding facts and information quickly and easily; and

WHEREAS, librarians are trained professionals who consistently offer customized, one-on-one patron assistance that far exceeds any web-based search engine results. Libraries and librarians open up a world of possibilities and transform lives by providing free access to career development resources and technology; and

WHEREAS, libraries support democracy and affect social change through their commitment to provide equitable access to information for all library users regardless of race, ethnicity, creed, ability, sexual orientation, gender identity or socio-economic status; and

WHEREAS, people often wonder aloud whether local public libraries are still relevant in the wired world? The answer, even in this new information age, is a resounding "YES."

NOW, THEREFORE, I, John A. Miller, by virtue of the authority vested in me as Mayor of the City of Fernandina Beach, Florida, do hereby proclaim the week of April 19-25, 2020 as

"NATIONAL LIBRARY WEEK"

and encourage all residents to visit the library this week to take advantage of the wonderful resources available therein.

IN WITNESS WHEREOF, I hereunto set my hand and caused the Official Seal of the City of Fernandina Beach, Florida, to be affixed this 21st day of April, 2020.

CITY OF FERNANDINA BEACH

John A. Miller
Mayor - Commissioner

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Proclamation
Water Conservation Month

ITEM TYPE: Proclamations

REQUESTED ACTION:

SYNOPSIS: Attached is a Proclamation proclaiming April, 2020, as "Water Conservation Month."

FISCAL IMPACT: N/A

CITY ATTORNEY COMMENTS: N/A

CITY MANAGER RECOMMENDATION(S): N/A

Dale L. Martin, City Manager 4/8/2020



Date: March 04, 2020

Submitted By: Caroline Best, City Clerk

COMMISSION ACTION:

Proclamation

WHEREAS, Florida's leading natural beauties are its unspoiled white sand beaches and the abundance of pristine, crystal blue waters. Together they attract over 113 million visitors from around the world every year; and

WHEREAS, Florida's quality of life and economy depend greatly upon a clean and healthy environment. Fresh, unpolluted and sustainable water resources are vital to Florida's present robust economy and its future economic success; and

WHEREAS, the State of Florida, the St. Johns River Water Management District, and the City of Fernandina Beach have designated April, typically a dry month, when water demands are most acute, as Florida's "Water Conservation Month," to educate citizens and visitors about how they can help save Florida's precious water resources; and

WHEREAS, local partners, the State of Florida and the St. Johns River Water Management District, are investing billions of dollars to develop alternative water supplies, clean up stormwater pollution, restore rivers, lakes and springs, upgrade drinking water facilities and improve wastewater treatment; and

WHEREAS, all water users, including commercial industrial, agricultural, institutional, hospitality, private citizens and schools, can help now by making positive contributions to reduce water use and protect Florida's water resources, thus promoting a healthy economy and community.

NOW THEREFORE, I, John A. Miller, by virtue of the authority vested in me as Mayor of the City of Fernandina Beach, Florida, do hereby proclaim the month of April, 2020 as:

"WATER CONSERVATION MONTH"

and call upon each citizen and business to help protect our precious resource by practicing water saving measures and becoming more aware of the need to save water.

IN WITNESS WHEREOF, I hereunto set my hand and caused the Official Seal of the City of Fernandina Beach, Florida, to be affixed this 7th day of April, 2020.

CITY OF FERNANDINA BEACH

JOHN A. MILLER
Mayor - Commissioner

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Proclamation
New Zion Missionary Baptist Church 150th Anniversary

ITEM TYPE: Proclamations

REQUESTED ACTION: Presentation

SYNOPSIS: Attached is a Proclamation celebrating the 150th Anniversary of the New Zion Missionary Baptist Church.

FISCAL IMPACT: N/A

CITY ATTORNEY COMMENTS: N/A

CITY MANAGER RECOMMENDATION(S): N/A

Dale L. Martin, City Manager 3/16/2020

Date: March 16, 2020

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION:

Proclamation

WHEREAS, New Zion Missionary Baptist Church was established on May 15, 1870, by Reverend Lewis Cook, a pioneer of the gospel, and sixty-nine steadfast followers; and

WHEREAS, in 1878, Father Cook and his parishioners purchased property at the corner of Atlantic Avenue and South 10th Street, six months later, a wood-built church had been constructed; and

WHEREAS, fire destroyed the wood-built church in 1907. The task of designing and rebuilding fell to the skillful hands of Mr. William “Billy” Rivers, a well-known local African American contractor and ship builder who reconstructed the church in the shape of an upside-down ship. This beautiful and unique brick structure, completed November 1907, still stands strong today; and

WHEREAS, 150 years later, the esteemed New Zion Missionary Baptist Church is the second oldest and largest African American Missionary Baptist Church on Amelia Island; and

WHEREAS, New Zion Missionary Baptist Church is located within the City’s charming Historic District and received the prestigious “contributing structure” designation in 2001. New Zion is known for its beautiful Queen Ann stained windows, stunning craftsmanship and meticulously maintained artisan woodwork; and

WHEREAS, for generations, New Zion Missionary Baptist Church has served Fernandina Beach parishioners and residents by hosting outreach ministries, Peck High School graduations, community fund raisers, youth activities, public events, annual Dr. Martin Luther King, Jr. Commemorative Services, and enjoys a robust partnership with “Access Florida” to provide food stamps, cash assistance and Medicaid programs for those in need.

NOW, THEREFORE, I, John A. Miller, by virtue of the authority vested in me as Mayor of the City of Fernandina Beach, Florida, do hereby recognize the:

“NEW ZION MISSIONARY BAPTIST CHURCH 150TH ANNIVERSARY”

and encourage all residents to attend a Sunday service to pay homage to this significant historic landmark which remains a guiding light of strong community faith.

IN WITNESS WHEREOF, I hereunto set my hand and caused the Official Seal of the City of Fernandina Beach, Florida, to be affixed this 17th day of March, 2020.

CITY OF FERNANDINA BEACH

John A. Miller
Mayor - Commissioner

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Proclamation
Retirement of Ms. Robin Marley

ITEM TYPE: Proclamations

REQUESTED ACTION:

SYNOPSIS: Attached is a Proclamation recognizing Ms. Robin Marley upon her retirement after fifteen years and eight months of dedicated service to the City of Fernandina Beach. Ms. Marley retired on March 31, 2020.

FISCAL IMPACT: N/A

CITY ATTORNEY COMMENTS: N/A

CITY MANAGER RECOMMENDATION(S): N/A

Nicole Bednar, Administrative Services Manager 3/19/2020

Dale L. Martin, City Manager 4/8/2020

Submitted By: Caroline Best
Caroline Best, City Clerk

Date: March 10, 2020

COMMISSION ACTION:

Proclamation

WHEREAS, it is with great honor that the City of Fernandina Beach recognizes the retirement of Ms. Robin Marley for her long and distinguished service as the City's Human Resources Director; and

WHEREAS, Ms. Marley began her exemplary career with the City of Fernandina Beach on July 12, 2004, and has served City employees with professionalism and integrity over the course of her tenure; and

WHEREAS, Ms. Marley is exceptionally well-qualified; she is a certified Human Resources Senior Professional and her career in Human Resources spans forty-two years; and

WHEREAS, Ms. Marley faithfully and thoroughly fulfilled her roles and responsibilities as Human Resources Director, frequently going above and beyond to ensure the tasks at hand were completed with meticulous attention to detail. She established numerous wellness initiatives resulting in the City receiving the prestigious First Coast Worksite Wellness Council Healthiest Companies award seven years in a row. This year, the City expects to receive the platinum award; and

WHEREAS, Ms. Marley retired on March 31, 2020. The sincere and conscientious efforts she demonstrated on the job during her fifteen years and eight months of dedicated service have dramatically benefitted the City of Fernandina Beach, but none more so than the members of the City's Human Resources Department.

NOW, THEREFORE, BE IT RESOLVED, by the City Commission of the City of Fernandina Beach, Florida, that genuine and sincere gratitude is hereby expressed for the professional and loyal efforts of Ms. Robin Marley during her tenure of service; and

BE IT FURTHER RESOLVED that a copy of this Proclamation is presented as a permanent matter of record in the proceedings of the City Commission as a testimonial of our sincerest thanks to:

MS. ROBIN MARLEY

IN WITNESS WHEREOF, I, John A. Miller, as Mayor have hereunto set my hand and caused the Official Seal of the City of Fernandina Beach to be affixed this 7th day of April, 2020.

CITY OF FERNANDINA BEACH

JOHN A. MILLER
Mayor-Commissioner

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Presentation
Budget Summary

ITEM TYPE: Presentation

REQUESTED ACTION:

SYNOPSIS: Comptroller Pauline Testagrose will answer any questions regarding the budget summary for March 2020.

FISCAL IMPACT: N/A

CITY ATTORNEY COMMENTS: N/A

CITY MANAGER RECOMMENDATION(S): N/A

Nicole Bednar, Administrative Services Manager 4/14/2020

Dale L. Martin, City Manager 4/14/2020

Date: October 21, 2019

Submitted By: Pauline Testagrose, Comptroller

COMMISSION ACTION:

Monthly Budget Report

March 2020

Overall: March's report is the sixth month of fiscal year 2019/2020 and represents 50.0% of the budgeted fiscal year. All revenue and various grant revenues have been accrued for the month of March. The State is saying it is too early to say how Florida's tax revenue will be impacted due to the COVID-19 pandemic. They have made no decisions regarding revenue revisions at this time and are saying the FY21 budget information may be delayed. I will continue to keep you informed when additional information is received.

The City's overall expenses are at 42.1% of the budget with a few exceptions noted below. All recurring expenses have been recorded. Finance will monitor expenses and prepare budget amendments to ensure budgeted amounts are not exceeded on a line by line basis. Reports comparing current YTD to prior year YTD are also available. Please let the Comptroller know if you wish to see any of these comparative reports.

General Fund: (001)

Total General Fund revenues are at 77.2% of the annual budget. This primarily due to the timing of Property Taxes. For the month of March 92.7% or just over \$14.6M has been received year to date. Local Business Tax revenue also above the 50.0% mark at 103.9% due to the timing of receipts. The accrual for March's Franchise Fees was recorded for \$140,000. Specific revenue sources we are tracking are detailed below.

	19/20 Budget	Mar 20 YTD \$	Mar 20 YTD %	Mar 19 YTD \$	Mar 19 YTD %
Local Option Gas Tax	432,084	164,110	38.0%	134,900	34.3%
Small County Surtax (one cent sales tax)	1,965,358	877,223	44.6%	854,697	43.2%
Half Cent Sales Tax	940,628	416,742	44.3%	418,587	47.1%
Franchise Fees	1,440,000	690,808	48.0%	698,487	48.5%
Total FY 19/20 Bud	4,778,070				
Total FY 18/19 Actual	4,507,916				
Total FY 18/19 Bud	4,700,835				

For expenses, City Clerk, Finance and IT are over the 50.0% due to the timing of annual maintenance contracts, professional services and the purchase of equipment.

Special Revenue Funds: (100-190)

In addition to the \$1.2million property tax levy, the Land Conservation Trust Fund has received \$232,130, year-to-date through March, in donations. This amount includes the funds received from Amelia Bluff and the private anonymous donation. The Building Fees Fund was previously accounting for as a restricted balance in the General Fund. In Fund 110 – Federal Forfeiture and Fund 190 – Law Enforcement Recovery, it was anticipated that expenditures would exceed revenues due to capital purchases.

Debt Service Funds: (220 –230)

Semiannual interest payments were paid in October for the GO Bond Debt Service Fund – Fund 220. The semiannual interest was paid this month on the Series 2013A Utility Bonds.

Capital Improvement Funds: (300-330)

For the Capital Improvements Fund encumbrances have been issued for a new fire truck, sidewalks, street paving, trails, beach monitoring and the Peck Center roof repair and door replacement.

Golf Course: (410)

Revenues exceed expenses due to the transfer from the General Fund. Year to date annual memberships were flat compared to last March. The margin on Pro Shop Sales and Food and Beverage is higher than the budget ratio.

Airport: (420)

Revenues exceeded expenses for the month due to payments for rent and land leases.

Sanitation: (440)

Revenues exceeded expenses year to date.

Wastewater: (450)

Revenue exceeds expenses due to septic dumping fees, interest, miscellaneous fees and year to date expenses slightly lower than the budgeted ratio. Revenue for Wastewater charges are \$92,833 or 3.2% higher than last March year to date.

Water: (460)

As anticipated, expenses exceed revenues year to date due to capital improvements, such as the new large reservoir #3 water plant.

Stormwater: (470)

Expenses exceed revenues primarily due to the loss on the disposal of a fixed asset (street sweeper).

Marina: (480)

Although the Marina is still running a deficit, for the month of March \$28,369 was recorded in transient slip rental fees.

Fleet: (510)

Revenues exceed expense year to date. This Fund is meant to be self-supporting.

Utility Billing and Utility Administration: (520 – 530)

It is anticipated in the budget, that Revenues plus Cash Balance Forward exceed Expenditures in Utility Billing and Utility Administration.

**CITY OF FERNANDINA BEACH
MONTHLY MANAGEMENT REPORT
REVENUES AND EXPENDITURES
FISCAL YEAR TO DATE THROUGH MARCH 31, 2020**

50.0%

GENERAL FUND (001)	Revised Budget	Actuals	VARIANCE Fav/(UnFav)	%
REVENUES:				
Property Taxes	\$ 15,758,000	\$ 14,603,430	\$ (1,154,570)	92.7%
Sales /Use/Fuel Taxes	2,622,442	1,041,333	(1,581,109)	39.7%
Franchise Fees	1,460,000	703,824	(756,176)	48.2%
Licenses/Permits	366,750	280,249	(86,501)	76.4%
Intergovernmental	1,447,361	1,305,251	(142,110)	90.2%
Charges for Services	1,408,500	710,890	(697,610)	50.5%
Fines and Forfeitures	21,500	19,052	(2,448)	88.6%
Other	485,820	97,091	(388,729)	20.0%
Subtotal	23,570,373	18,761,121	(4,809,252)	79.6%
Transfers/Reimbursements				
Utility Tax	1,500,000	750,000	(750,000)	50.0%
Sanitation	36,000	18,000	(18,000)	50.0%
Wastewater	360,000	180,000	(180,000)	50.0%
Water	180,000	90,000	(90,000)	50.0%
Total Revenues (excluding cash balance)	25,646,373	19,799,121	(5,847,252)	77.2%
EXPENDITURES:				
City Commission	332,388	164,279	168,109	49.4%
City Clerk	538,003	280,912	257,091	52.2%
City Manager	639,551	219,991	419,560	34.4%
Finance	771,266	395,101	376,165	51.2%
Information and Technology	747,157	375,081	372,076	50.2%
Human Resources	392,609	174,889	217,720	44.5%
City Attorney	344,230	162,358	181,872	47.2%
Planning	655,651	271,019	384,632	41.3%
Facility Maintenance	703,410	347,664	355,746	49.4%
Police	6,110,101	2,769,862	3,340,239	45.3%
Police - Beach Rangers	63,040	8,271	54,769	13.1%
Fire	4,407,308	2,037,872	2,369,436	46.2%
Fire - Ocean Rescue	375,002	57,676	317,326	15.4%
Building / Permitting	45,650	6,502	39,148	14.2%
Code Enforcement	253,405	121,613	131,792	48.0%
Streets	1,775,646	730,393	1,045,253	41.1%
Downtown	78,964	38,256	40,708	48.4%
Public Assistance	128,000	29,783	98,217	23.3%
Library	14,644	3,439	11,205	23.5%
Recreation	1,373,533	537,285	836,248	39.1%
Parks	1,652,427	642,582	1,009,845	38.9%
Peck	248,520	99,997	148,523	40.2%
MLK Center	197,395	77,490	119,905	39.3%
Youth	342,847	122,626	220,221	35.8%
Aquatics	337,242	103,315	233,927	30.6%
Non-Departmental	259,320	131,635	127,686	50.8%
Contingency	100,920	0	100,920	
Transfers				
Debt Service	423,376	211,688	211,688	50.0%
Land Conservation	1,207,000	1,207,000	-	100.0%
Historic District Trust	30,000	15,000	15,000	50.0%
Capital Improvements	1,445,000	722,503	722,497	50.0%
Golf	715,000	605,003	109,997	84.6%
Cemetery	11,300	5,650	5,650	50.0%
Marina	300,000	150,000	150,000	50.0%
Subtotal	27,019,905	12,826,735	14,193,170	47.5%
Encumbrances - All Departments		291,500	(291,500)	
Reserves	4,175,767	-	4,175,767	
Total Expenditures (including Encumbrances)	31,195,672	13,118,235	18,077,437	42.1%
EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES	(5,549,299)	6,680,885	12,230,184	
Fund Balance, October 1, 2019 (Cash Balance)				
Unrestricted	5,549,299	5,549,299	-	
Fund Balance, March 31, 2020	\$ -	\$ 12,230,184	\$ 12,230,184	

**CITY OF FERNANDINA BEACH
MONTHLY MANAGEMENT REPORT
REVENUES AND EXPENDITURES
FISCAL YEAR TO DATE THROUGH MARCH 31, 2020**

50.0%

SPECIAL REVENUE FUNDS

FUND # NAME OF FUND	Revised Budget	Actuals	VARIANCE Fav/(UnFav)	% Used
REVENUES				
100 Law Enforcement Trust (LETf)	\$ 2,441	\$ 183	\$ (2,258)	7.5%
110 Federal Forfeiture	190,385	27,068	(163,317)	14.2%
125 Tree Trust	176,387	95,899	(80,488)	54.4%
126 Historic District (HDC)	51,975	21,437	(30,538)	41.2%
130 CDBG - Economic Development	101,181	1,931	(99,250)	1.9%
135 Land Conservation Trust	1,514,284	1,749,945	235,661	115.6%
140 Building Fees Fund	3,633,742	574,316	(3,059,426)	15.8%
145 Wastewater Impact Fees	1,982,529	323,000	(1,659,529)	16.3%
146 Water Impact Fees	685,141	122,311	(562,830)	17.9%
150 Utility Tax	1,808,526	846,325	(962,201)	46.8%
170 Cemetery	1,320,583	75,475	(1,245,108)	5.7%
180 Community Redevelopment Area	55,624	83	(55,541)	0.1%
190 Law Enforcement Recovery	220,749	53,454	(167,295)	24.2%
Total Revenues	\$ 11,743,547	\$ 3,891,427	\$ (7,852,120)	33.1%
EXPENDITURES:				
100 Law Enforcement Trust (LETf)	\$ 2,441	-	\$ 2,441	0.0%
110 Federal Forfeiture	190,385	144,832	45,553	76.1%
125 Tree Trust	176,387	3,821	172,566	2.2%
126 Historic District (HDC)	51,975	135	51,840	0.3%
130 CDBG - Economic Development	101,181	-	101,181	0.0%
135 Land Conservation Trust	1,514,284	623,849	890,435	41.2%
140 Building Fees Fund	3,633,742	512,886	3,120,856	14.1%
145 Wastewater Impact Fees	1,982,529	250,002	1,732,527	12.6%
146 Water Impact Fees	685,141	169,998	515,143	24.8%
150 Utility Tax	1,808,526	750,000	1,058,526	41.5%
170 Cemetery	1,320,583	101,260	1,219,323	7.7%
180 Community Redevelopment Area	55,624	-	55,624	0.0%
190 Law Enforcement Recovery	220,749	146,426	74,323	66.3%
Total Expenditures	\$ 11,743,547	\$ 2,703,209	\$ 9,040,338	23.0%

Special Revenue Funds - amounts shown include budgeted cash balance forward and reserves.

**CITY OF FERNANDINA BEACH
MONTHLY MANAGEMENT REPORT
REVENUES AND EXPENDITURES
FISCAL YEAR TO DATE THROUGH MARCH 31, 2020**

50.0%

CAPITAL PROJECTS FUNDS

FUND #	NAME OF FUND	Revised Budget	Actuals	VARIANCE Fav/(UnFav)	% Used
300	Capital Improvement				
	Revenues	\$ 2,592,137	\$ 1,455,967	\$ (1,136,170)	56.2%
	Expenses				
	General Government	\$ 706,637	\$ 196,777	509,860	27.8%
	Information Technology	125,000	94,444	30,556	0.0%
	Police	55,000	3,751	51,249	0.0%
	Fire	525,000	-	525,000	0.0%
	Streets	866,500	502,089	364,411	57.9%
	Recreation	100,000	6,373	93,627	6.4%
	Parks	83,670	-	83,670	0.0%
	Peck	55,330	30,082	25,248	54.4%
	MLK	75,000	18,928	56,072	25.2%
	Subtotal	<u>2,592,137</u>	<u>852,445</u>	<u>1,739,692</u>	<u>32.9%</u>
	Net Revenues(Expenses)	\$ -	\$ 603,522	\$ (603,522)	0.0%
310	Capital Expansion				
	Revenues				
	Grants/Interest/Loan	\$ 1,585,000	\$ 88,530	\$ (1,496,470)	5.6%
	Admin	1,020,266	63,182	(957,084)	6.2%
	Police	340,431	37,653	(302,778)	11.1%
	Fire	782,072	51,345	(730,727)	6.6%
	Sanitation	-	-	-	0.0%
	Recreation	4,038,460	243,710	(3,794,750)	6.0%
	Subtotal	<u>7,766,229</u>	<u>484,420</u>	<u>(7,281,809)</u>	<u>6.2%</u>
	Expenses				
	Admin	\$ 2,522,166	\$ 25,969	\$ 2,496,197	1.0%
	Police	340,927	-	\$ 340,927	0.0%
	Fire	783,503	108,937	\$ 674,566	13.9%
	Recreation	4,119,633	732,507	\$ 3,387,126	17.8%
	Subtotal	<u>7,766,229</u>	<u>867,412</u>	<u>6,898,817</u>	<u>11.2%</u>
	Net Revenues(Expenses)	\$ -	\$ (382,992)	\$ (382,992)	0.0%
330	Wastewater Improvement				
	Revenues	\$ 6,488,400	\$ 774,160	\$ (5,714,240)	11.9%
	Expenses	6,488,400	-	6,488,400	0.0%
	Net Revenues(Expenses)	\$ -	\$ 774,160	\$ 774,160	0.0%

**CITY OF FERNANDINA BEACH
MONTHLY MANAGEMENT REPORT
REVENUES AND EXPENDITURES
FISCAL YEAR TO DATE THROUGH MARCH 31, 2020**

50.0%

ENTERPRISE FUNDS	Revised Budget	Actuals	VARIANCE Fav/(UnFav)	% Used
Golf Course Fund 410				
Operating Revenues	\$ 1,367,650	\$ 709,511	\$ (658,139)	51.9%
Operating Expense*	1,450,311	720,500	729,811	49.7%
Operating Income (Loss)	(82,661)	(10,989)	71,672	13.3%
Non Operating Income (Expense) & Transfers	554,269	615,975	61,706	111.1%
Change in Net Position	\$ 471,608	\$ 604,985	\$ 133,377	128.3%
Airport Fund 420				
Operating Revenues	\$ 861,302	\$ 422,606	\$ (438,696)	49.1%
Operating Expense*	547,297	240,165	307,132	43.9%
Operating Income (Loss)	314,005	182,441	(131,564)	58.1%
Non Operating Income (Expense) & Transfers	2,534,495	66,821	(2,467,674)	2.6%
Change in Net Position	\$ 2,848,500	\$ 249,262	\$ (2,599,238)	8.8%
Sanitation Fund 440				
Operating Revenues	\$ 2,520,960	\$ 1,315,593	\$ (1,205,367)	52.2%
Operating Expense*	2,541,048	1,116,264	1,424,784	43.9%
Operating Income (Loss)	(20,088)	199,329	219,417	-992.3%
Non Operating Income (Expense) & Transfers	19,000	(4,503)	(23,503)	-23.7%
Change in Net Position	\$ (1,088)	\$ 194,825	\$ 195,913	-17906.7%
Wastewater Fund 450				
Operating Revenues	\$ 6,077,167	\$ 3,020,442	\$ (3,056,725)	49.7%
Operating Expense*	2,636,631	1,128,382	1,508,249	42.8%
Operating Income (Loss)	3,440,536	1,892,060	(1,548,476)	55.0%
Non Operating Income (Expense) & Transfers	(2,788,629)	(1,373,208)	1,415,421	49.2%
Change in Net Position	\$ 651,907	\$ 518,852	\$ (133,055)	79.6%
Water Fund 460				
Operating Revenues	\$ 4,365,617	\$ 2,115,567	\$ (2,250,050)	48.5%
Operating Expense*	2,432,349	947,913	1,484,436	39.0%
Operating Income (Loss)	1,933,268	1,167,655	(765,613)	60.4%
Non Operating Income (Expense) & Transfers	(954,684)	(499,472)	455,212	52.3%
Change in Net Position	\$ 978,584	\$ 668,183	\$ (310,401)	68.3%
Stormwater Fund 470				
Operating Revenues	\$ 825,000	\$ 443,536	\$ (381,464)	53.8%
Operating Expense*	1,007,343	334,421	672,922	33.2%
Operating Income (Loss)	(182,343)	109,115	291,458	-59.8%
Non Operating Income (Expense) & Transfers	983,945	328,690	(655,255)	33.4%
Change in Net Position	\$ 801,602	\$ 437,805	\$ (363,797)	54.6%
Marina Fund 480				
Operating Revenues	\$ 1,624,715	\$ 128,305	\$ (1,496,410)	7.9%
Operating Expense*	1,627,020	339,745	1,287,275	20.9%
Operating Income (Loss)	(2,305)	(211,440)	(209,135)	9173.1%
Non Operating Income (Expense) & Transfers	6,842,294	1,596,596	(5,245,698)	23.3%
Change in Net Position	\$ 6,839,989	\$ 1,385,156	\$ (5,454,833)	20.3%
*Does not include Depreciation Expense and Encumbrances.				
Capital Outlay by Fund				
Golf Course Fund 410	\$ 639,000	\$ -	\$ 639,000	0.0%
Airport Fund 420	2,998,178	216,384	\$ 2,781,794	7.2%
Sanitation Fund 440	15,000	-	15,000	0.0%
Wastewater Fund 450	1,123,500	141,910	981,590	12.6%
Water Fund 460	1,432,000	1,126,615	305,385	78.7%
Stormwater Fund 470	1,454,295	652,004	802,291	44.8%
Marina Fund 480	8,923,465	2,945,916	5,977,549	33.0%
Total Enterprise Funds	\$ 16,585,438	\$ 5,082,829	\$ 11,502,609	30.6%

**CITY OF FERNANDINA BEACH
MONTHLY MANAGEMENT REPORT
ENTERPRISE FUNDS
FISCAL YEAR TO DATE THROUGH MARCH 31, 2020**

Fund	YTD Revenue Excluding Transfers*	YTD Cost Excluding Transfers**	Net	Transfers In	Transfers Out	Debt Service (including Interest)***	Total
Golf Course (410)	722,781.96	720,499.95	2,282.01	605,004.00		2,300.68	604,985.33
Airport (420)	507,241.93	456,549.34	50,692.59			17,814.77	32,877.82
Sanitation (440)	1,329,089.61	1,116,264.32	212,825.29		(18,000.00)		194,825.29
Wastewater (450)	3,086,550.49	1,270,292.08	1,816,258.41		(1,439,316.00)		376,942.41
Water (460)	2,153,833.41	2,074,527.81	79,305.60	300,000.00	(837,738.00)		(458,432.40)
Storm Water Management (470)	815,438.00	1,029,637.81	(214,199.81)				(214,199.81)
Marina (480)	1,686,628.94	3,285,661.21	(1,599,032.27)	150,000.00		111,727.19	(1,560,759.46)

*Year to Date Revenue includes Grant Revenue and Loan Proceeds.

**Year to Date Cost includes Capital Expenditures.

***Debt Service is made annually and interest is recorded monthly and/or semi annually.

This schedule was added at the request of Commissioner Lednovich

City of Fernandina Beach
Accounts Receivable Analysis

3/31/2020

Utility Billing - Current Accounts

Number of Customers		Delinquency Days	\$	Avg Monthly Billing
8,685	Active Customers			\$ 1,074,950.76
761		30	87,901.61	Note - Suspended disconnects for nonpay 3/15/20.
125		60	10,511.05	*payment terms
34		90	1,997.69	
28		120+	3,277.73	
-				
761		Total	\$ 103,688.08	

Utility Billings - Closed accounts (not yet turned over to Collection Agency)

	253 accts. w/delinquent balances	\$ 64,319.02	Closed accounts in Munis - processing for collection action by 03/31/20	Note - Delay due to reporting issue that has been resolved.
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Utility Billings in Collections

Year based on final billing date	# of Accounts Transferred	Amt of \$ Transferred	Amt of \$ Recovered by CCI	Amt of \$ Recovered by UB	Total \$ Recovered	% recovered
2014 Charged Off	Effective 9/30/17	-	-	-		0.00%
2015 Charged off	Effective 9/30/18	-	-	-		0.00%
2016 (thru Dec)	161	27,511.96	1,735.32	5,914.23		27.80%
2017 (thru Dec)	148	26,629.59	1,407.24	3,367.91		17.93%
2018 (thru Oct)	367 (updated 10-2019)	73,138.63	3,309.90	2,005.80		7.27%
		\$ 127,280.18	\$ 6,452.46	\$ 11,287.94	\$ 17,740.40	13.94%
Recovered to date		\$ (17,740.40)				
Balance currently at CCI		\$ 109,539.78				

Airport

Number of Customers		Delinquency Days	\$	Avg Mo'ly Billing
76	ALL Customers			\$47,911.80
7		30	9,085.79	(Amelia Island Aviation - acct closed)
2		60	5,947.76	\$ -
3		90	2,024.28	\$ -
1		120+	1,395.41	\$ -
				\$ 8,758.77
7		Sub Total	\$ 18,453.24	\$ 8,758.77
				\$ 27,212.01

Marina

Number of Customers		Delinquency Days	\$	Avg Mo'ly Billing
As of 3/31/2020				\$63,460
9	ALL Customers			
		30		
		60		
		90		
		120		
1		150+	880.88	
			880.88	
				30
				60
David Johnson	In Collections			30+60
Total				150

Peck Center & Other City Leases

Number of Customers		Delinquency Days	\$	Avg Mo'ly Billing
7	ALL Customers			1,986.44
1		30	43.85	
0		60		
0		90	-	
0		120+	-	
1		Sub Total	\$ 43.85	

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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
001 GENERAL FUND							
001 31110		PROPERTY TAXES					
	-15,758,000.00	-15,758,000.00	-14,603,429.67	-195,677.56	0.00	-1,154,570.33	92.7%*
001 31240		LOCAL OPTION GAS TAX					
	-432,084.00	-432,084.00	-164,109.56	-29,721.72	0.00	-267,974.44	38.0%*
001 31251		STATE/FIRE INSURANCE TAX					
	-125,000.00	-125,000.00	0.00	0.00	0.00	-125,000.00	.0%*
001 31252		STATE/POLICE INSURANCE TAX					
	-100,000.00	-100,000.00	0.00	0.00	0.00	-100,000.00	.0%*
001 31260		SMALL COUNTY SURTAX					
	-1,965,358.00	-1,965,358.00	-877,223.12	-117,019.40	0.00	-1,088,134.88	44.6%*
001 31610		LOCAL BUSINESS TAX					
	-160,000.00	-160,000.00	-166,223.75	-2,250.25	0.00	6,223.75	103.9%
001 31620		LOCAL BUSINESS TAX - PENALTIES					
	-3,000.00	-3,000.00	-5,436.71	-753.64	0.00	2,436.71	181.2%
001 31630		LOCAL BUSINESS TAX-OTHER FEES					
	-50.00	-50.00	-1,278.13	-695.63	0.00	1,228.13	2556.3%
001 31640		LOCAL BUSINESS TAX-PAST DUE FE					
	-2,000.00	-2,000.00	-2,599.35	-13.13	0.00	599.35	130.0%
001 32204		BUILDING PERMIT-DRIVEWAY					
	-6,000.00	-6,000.00	-1,960.00	-385.00	0.00	-4,040.00	32.7%*
001 32210		BUILDING PERMIT-TREE REMOVAL					
	-25,000.00	-25,000.00	0.00	0.00	0.00	-25,000.00	.0%*
001 32211		BUILDING PERMIT-FENCING					
	-5,000.00	-5,000.00	0.00	0.00	0.00	-5,000.00	.0%*
001 32218		CLEARING/EXCAVATE-PERMITS					
	-25,000.00	-25,000.00	-4,529.00	-1,058.00	0.00	-20,471.00	18.1%*
001 32310		FRANCHISE FEES ELECTRIC					
	-1,440,000.00	-1,440,000.00	-690,808.18	-108,033.88	0.00	-749,191.82	48.0%*
001 32340		FRANCHISE FEES GAS					
	-20,000.00	-20,000.00	-13,016.23	-3,156.31	0.00	-6,983.77	65.1%*
001 32900		CODE ENFORCEMENT FEES & FINES					
	-25,000.00	-25,000.00	-1,100.00	0.00	0.00	-23,900.00	4.4%*
001 32901		ZONING PLAN REVIEW					
	-18,000.00	-18,000.00	-21,100.00	-5,125.00	0.00	3,100.00	117.2%
001 32903		SIGN PERMITS					
	-2,250.00	-2,250.00	0.00	0.00	0.00	-2,250.00	.0%*
001 32915		ANNEXATION APP FEE					
	-2,200.00	-2,200.00	-600.00	-600.00	0.00	-1,600.00	27.3%*
001 32916		BOA APP FEES-COMMERCIAL					
	0.00	0.00	-3,000.00	0.00	0.00	3,000.00	100.0%

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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
001 32917		BOA APP FEES-RESIDENTIAL					
	-11,050.00	-11,050.00	-4,250.00	-2,550.00	0.00	-6,800.00	38.5%*
001 32918		ZONING CERTIFICATION FEE					
	-3,200.00	-3,200.00	-1,300.00	-125.00	0.00	-1,900.00	40.6%*
001 32920		CDD COPIES MADE FEE					
	-1,250.00	-1,250.00	0.00	0.00	0.00	-1,250.00	.0%*
001 32921		COMP PLAN AMEND APP FEE					
	-1,500.00	-1,500.00	0.00	0.00	0.00	-1,500.00	.0%*
001 32926		PLAT APPROVAL APP FEE					
	-3,850.00	-3,850.00	0.00	0.00	0.00	-3,850.00	.0%*
001 32928		REZONING APP FEE					
	-4,200.00	-4,200.00	0.00	0.00	0.00	-4,200.00	.0%*
001 32929		SITE PLAN REVIEW APP FEE					
	-21,700.00	-21,700.00	-16,400.00	-3,000.00	0.00	-5,300.00	75.6%*
001 32932		DUE DILIGENCE					
	-750.00	-750.00	-250.00	0.00	0.00	-500.00	33.3%*
001 32933		TELECOMMUNICATION PERMIT					
	-400.00	-400.00	0.00	0.00	0.00	-400.00	.0%*
001 32935		ADMINISTRATIVE WAIVER					
	0.00	0.00	-800.00	-400.00	0.00	800.00	100.0%
001 32936		CODE TEXT AMENDMENT					
	-850.00	-850.00	0.00	0.00	0.00	-850.00	.0%*
001 32937		LOT LINE ADJUSTMENTS					
	-2,000.00	-2,000.00	-1,200.00	0.00	0.00	-800.00	60.0%*
001 32980		OTHER MISC PERMITS					
	0.00	0.00	-6,256.66	0.00	0.00	6,256.66	100.0%
001 32981		SPECIAL EVENT PERMITS					
	-4,500.00	-4,500.00	-2,686.00	-225.00	0.00	-1,814.00	59.7%*
001 32982		SPECIAL BANNER PERMITS					
	-2,000.00	-2,000.00	-235.00	0.00	0.00	-1,765.00	11.8%*
001 32992		FIRE MARSHALL'S FEES					
	-35,000.00	-35,000.00	-39,024.45	-1,985.45	0.00	4,024.45	111.5%
001 32995		ADDRESS ASSIGNMENT					
	-1,000.00	-1,000.00	-20.00	-20.00	0.00	-980.00	2.0%*
001 33120		FEMA GRANT					
	0.00	0.00	-646,074.44	0.00	0.00	646,074.44	100.0%
001 33170		DOS PRESERVATION					
	-37,500.00	-37,500.00	0.00	0.00	0.00	-37,500.00	.0%*
001 33350		HALF-CENT SALES TAX					
	-940,628.00	-940,628.00	-416,742.03	-66,788.80	0.00	-523,885.97	44.3%*
001 33512		STATE REVENUE SHARING PROCEED					
	-241,733.00	-241,733.00	-114,434.64	-19,072.44	0.00	-127,298.36	47.3%*
001 33514		MOBILE HOME TAX					
	-800.00	-800.00	-475.24	-47.00	0.00	-324.76	59.4%*

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	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
001 33515		ALCOHOLIC BEV LICENSE					
	-23,000.00	-23,000.00	-21,399.02	0.00	0.00	-1,600.98	93.0%*
001 33522		FIREFIGHTERS SUPPLEMENT					
	-10,000.00	-10,000.00	-5,820.00	0.00	0.00	-4,180.00	58.2%*
001 33720		SCHOOL RESOURCE OFFICER					
	-131,200.00	-131,200.00	-95,162.38	-30,701.78	0.00	-36,037.62	72.5%*
001 33721		DEA REIMBURSEMENT					
	-12,500.00	-12,500.00	-5,143.72	0.00	0.00	-7,356.28	41.1%*
001 33722		NASSAU COUNTY OCEAN RESCUE					
	-130,000.00	-130,000.00	-13,647.85	0.00	0.00	-116,352.15	10.5%*
001 33910		OCEAN, HIGHWAY AND PRT AUTHORIT					
	-50,000.00	-50,000.00	0.00	0.00	0.00	-50,000.00	.0%*
001 34260		AMBULANCE SERVICES					
	-450,000.00	-450,000.00	-290,044.75	-44,937.51	0.00	-159,955.25	64.5%*
001 34290		SHRIMP FESTIVAL REIMBURSEMENT					
	-6,000.00	-6,000.00	0.00	0.00	0.00	-6,000.00	.0%*
001 34700		TRUST ACTIVITIES NON-TAXABLE					
	-160,000.00	-160,000.00	-111,284.06	-12,239.76	0.00	-48,715.94	69.6%*
001 34701		TRUST ACTIVITIES TAXABLE					
	-23,000.00	-23,000.00	-23,686.38	-1,688.29	0.00	686.38	103.0%
001 34702		PARKS TRUST NON-TAXABLE					
	-12,000.00	-12,000.00	-11,542.15	-2,905.00	0.00	-457.85	96.2%*
001 34703		PARKS TRUST TAXABLE					
	0.00	0.00	-3,147.50	-112.50	0.00	3,147.50	100.0%
001 34704		RENTALS NON-TAXABLE					
	-8,000.00	-8,000.00	-5,057.50	7.50	0.00	-2,942.50	63.2%*
001 34705		SOFTBALL COMPLEX					
	-500.00	-500.00	-110.00	-65.00	0.00	-390.00	22.0%*
001 34706		PARKS LAWN CHARGES					
	-13,500.00	-13,500.00	-381.46	0.00	0.00	-13,118.54	2.8%*
001 34720		RENTALS					
	-10,000.00	-10,000.00	-4,815.99	290.10	0.00	-5,184.01	48.2%*
001 34721		PECK RENTS					
	-8,000.00	-8,000.00	-1,285.00	-150.00	0.00	-6,715.00	16.1%*
001 34722		PECK RENTS NON-TAXABLE					
	-25,000.00	-25,000.00	-9,015.68	-1,458.24	0.00	-15,984.32	36.1%*
001 34723		PECK TRUST TAXABLE					
	-6,500.00	-6,500.00	-4,425.51	-712.28	0.00	-2,074.49	68.1%*
001 34724		PECK TRUST NON-TAXABLE					
	-42,000.00	-42,000.00	-17,218.00	-3,492.00	0.00	-24,782.00	41.0%*
001 34725		MLK RENTS					
	-4,500.00	-4,500.00	-2,294.70	-210.00	0.00	-2,205.30	51.0%*
001 34726		MLK RENTS NON-TAXABLE					
	0.00	0.00	-1,139.00	94.00	0.00	1,139.00	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
001 34728		MLK TRUST NON-TAXABLE					
	-12,500.00	-12,500.00	-16,362.00	-1,467.00	0.00	3,862.00	130.9%
001 34730		YOUTH TRUST ACTIVITIES					
	-17,000.00	-17,000.00	-5,003.67	-5,003.67	0.00	-11,996.33	29.4%*
001 34731		YOUTH CAMPS					
	-310,000.00	-310,000.00	-134,229.54	-11,684.05	0.00	-175,770.46	43.3%*
001 34741		AQUATICS TRUST NON-TAXABLE					
	-116,000.00	-116,000.00	-37,105.00	-7,268.00	0.00	-78,895.00	32.0%*
001 34742		SWIMMING POOLS					
	-54,000.00	-54,000.00	-18,696.63	-1,724.33	0.00	-35,303.37	34.6%*
001 34745		GREENWAY					
	0.00	0.00	-205.00	10.00	0.00	205.00	100.0%
001 34746		GREENWAY TAXABLE					
	0.00	0.00	-193.00	0.00	0.00	193.00	100.0%
001 35100		COURT CASES GENERAL FUND					
	-8,000.00	-8,000.00	-6,578.37	-1,034.49	0.00	-1,421.63	82.2%*
001 35115		PARKING TICKETS					
	-11,000.00	-11,000.00	-10,596.50	-1,875.00	0.00	-403.50	96.3%*
001 35120		POLICE EDUCATION					
	-1,500.00	-1,500.00	-791.34	-152.65	0.00	-708.66	52.8%*
001 35911		FINGERPRINT-ACCI-INC REPORT					
	-1,000.00	-1,000.00	-1,086.00	-217.00	0.00	86.00	108.6%
001 36110		INTEREST					
	-165,000.00	-165,000.00	-67,449.47	-10,628.41	0.00	-97,550.53	40.9%*
001 36210		RENTS					
	-3,044.00	-3,044.00	0.00	0.00	0.00	-3,044.00	.0%*
001 36215		RENTS NON-TAXABLE					
	-23,800.00	-23,800.00	-9,918.75	-1,983.75	0.00	-13,881.25	41.7%*
001 36990		OTHER REVENUE					
	-15,026.00	-15,026.00	-11,039.32	-2,430.58	0.00	-3,986.68	73.5%*
001 36995		LATE FEES					
	0.00	0.00	-3.41	0.00	0.00	3.41	100.0%
001 36996		REVENUE-GARNISHMENT FEE					
	-100.00	-100.00	-92.00	-12.00	0.00	-8.00	92.0%*
001 36997		TDC REVENUE					
	-271,350.00	-271,350.00	0.00	0.00	0.00	-271,350.00	.0%*
001 38215		FROM UTILITY TAX					
	-1,500,000.00	-1,500,000.00	-750,000.00	-125,000.00	0.00	-750,000.00	50.0%*
001 38244		FROM SANITATION					
	-36,000.00	-36,000.00	-18,000.00	-3,000.00	0.00	-18,000.00	50.0%*
001 38245		FROM WASTEWATER OPERATIONS					
	-360,000.00	-360,000.00	-180,000.00	-30,000.00	0.00	-180,000.00	50.0%*
001 38246		FROM WATER OPERATIONS					
	-180,000.00	-180,000.00	-90,000.00	-15,000.00	0.00	-90,000.00	50.0%*



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	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
<u>001 38910</u>	CASH BALANCE FORWARD						
	-5,549,299.00	-5,549,299.00	0.00	0.00	0.00	-5,549,299.00	.0%*
TOTAL GENERAL FUND	-31,188,172.00	-31,188,172.00	-19,790,532.81	-875,454.90	0.00	-11,397,639.19	63.5%
TOTAL REVENUES	-31,188,172.00	-31,188,172.00	-19,790,532.81	-875,454.90	0.00	-11,397,639.19	
0012200 FIRE							
<u>0012200 36993</u>	DONATIONS/CONTRIBUTIONS						
	-7,500.00	-7,500.00	-8,587.70	5,224.66	0.00	1,087.70	114.5%
TOTAL FIRE	-7,500.00	-7,500.00	-8,587.70	5,224.66	0.00	1,087.70	114.5%
TOTAL REVENUES	-7,500.00	-7,500.00	-8,587.70	5,224.66	0.00	1,087.70	
GRAND TOTAL	-31,195,672.00	-31,195,672.00	-19,799,120.51	-870,230.24	0.00	-11,396,551.49	63.5%

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Revenue	Amount	% Used
Revised Budget	(\$31,195,672.00)	63.5%
Less: Cash Balance Forward		
38910	5,549,299.00	
38911	.00	
Revised Budget excluding Cash	(\$25,646,373.00)	
YTD Actual Revenue	(\$19,799,120.51)	77.2%

Revised Budget excluding Cash	(\$25,646,373.00)
Less: YTD Expenditures	12,826,735.39
Net (Revenues) Expenditures	(\$12,819,637.61)

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ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
0011100 CITY COMMISSION						
322,388.00	332,388.00	164,279.29	34,288.35	0.00	168,108.71	49.4%
0011200 CITY CLERK						
538,003.00	538,003.00	280,911.97	30,438.50	0.00	257,091.03	52.2%
0011210 CITY MANAGER						
639,551.00	639,551.00	219,991.08	52,302.74	1,283.94	418,275.98	34.6%
0011300 FINANCE						
771,266.00	771,266.00	395,101.31	56,455.93	3,200.00	372,964.69	51.6%
0011310 INFORMATION TECHNOLOGY						
747,157.00	747,157.00	375,080.68	56,248.97	12,376.00	359,700.32	51.9%
0011350 HUMAN RESOURCES						
392,609.00	392,609.00	174,889.31	25,690.30	0.00	217,719.69	44.5%
0011400 CITY ATTORNEY						
344,230.00	344,230.00	162,358.23	32,201.68	0.00	181,871.77	47.2%
0011500 PLANNING						
655,651.00	655,651.00	271,019.14	39,289.99	0.00	384,631.86	41.3%
0011910 NON DEPARTMENTAL						
259,320.00	259,320.00	131,634.50	25,823.78	353.07	127,332.43	50.9%
0011930 FACILITIES MAINTENANCE						
689,730.00	703,410.00	347,663.94	53,970.56	0.00	355,746.06	49.4%
0012100 POLICE						
6,110,101.00	6,110,101.00	2,769,862.13	409,389.29	74,777.62	3,265,461.25	46.6%
0012101 POLICE RANGERS						
63,040.00	63,040.00	8,270.54	474.64	0.00	54,769.46	13.1%
0012200 FIRE						
4,418,808.00	4,407,308.00	2,037,871.58	317,351.32	12,412.52	2,357,023.90	46.5%
0012201 FIRE OCEAN RESCUE						
363,502.00	375,002.00	57,676.02	16,343.84	0.00	317,325.98	15.4%
0012400 BUILDING / PERMITTING						
20,250.00	45,650.00	6,502.12	4,954.76	0.00	39,147.88	14.2%
0012420 CODE ENFORCEMENT						
253,405.00	253,405.00	121,612.73	14,468.68	0.00	131,792.27	48.0%
0014100 STREETS						
1,775,646.00	1,775,646.00	730,393.02	113,357.30	55,245.10	990,007.88	44.2%
0015200 DOWNTOWN						
78,964.00	78,964.00	38,256.24	4,280.61	0.00	40,707.76	48.4%
0015640 PUBLIC ASSISTANCE						
128,000.00	128,000.00	29,783.27	5,603.80	0.00	98,216.73	23.3%
0017100 LIBRARY						
14,644.00	14,644.00	3,438.91	452.80	0.00	11,205.09	23.5%
0017200 RECREATION						
1,372,394.00	1,373,533.00	537,284.80	88,379.67	69,936.00	766,312.20	44.2%
0017210 PARKS						
1,653,362.00	1,652,427.00	642,582.09	86,042.46	61,916.30	947,928.61	42.6%



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0017220 PECK	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
0017220 PECK	248,706.00	248,520.00	99,996.96	12,211.50	0.00	148,523.04	40.2%
0017225 MLK CENTER	197,413.00	197,395.00	77,489.66	12,029.71	0.00	119,905.34	39.3%
0017230 YOUTH	342,847.00	342,847.00	122,626.48	21,641.90	0.00	220,220.52	35.8%
0017240 AQUATICS	337,242.00	337,242.00	103,315.39	15,903.96	0.00	233,926.61	30.6%
0018100 INTERFUND TRANSFERS OUT	3,636,676.00	4,131,676.00	2,916,844.00	697,474.00	0.00	1,214,832.00	70.6%
0018200 CONTINGENCIES	150,000.00	100,920.00	0.00	0.00	0.00	100,920.00	.0%
0018300 RESERVES	4,670,767.00	4,175,767.00	0.00	0.00	0.00	4,175,767.00	.0%
GRAND TOTAL		31,195,672.00	12,826,735.39	2,227,071.04	291,500.55	18,077,436.06	42.1%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
100 LAW ENFORCEMENT TRUST							
100 35110		FINES/FORFEITURES					
	-140.00	-140.00	-174.00	0.00	0.00	34.00	124.3%
100 36110		INTEREST					
	0.00	0.00	-8.92	-1.76	0.00	8.92	100.0%
100 38910		CASH BALANCE FORWARD					
	-2,301.00	-2,301.00	0.00	0.00	0.00	-2,301.00	.0%*
100 55200		OPERATING SUPPLIES					
	2,200.00	2,200.00	0.00	0.00	0.00	2,200.00	.0%
100 59990		RESERVE					
	241.00	241.00	0.00	0.00	0.00	241.00	.0%
TOTAL LAW ENFORCEMENT TRUST							
	0.00	0.00	-182.92	-1.76	0.00	182.92	100.0%
TOTAL REVENUES							
	-2,441.00	-2,441.00	-182.92	-1.76	0.00	-2,258.08	
TOTAL EXPENSES							
	2,441.00	2,441.00	0.00	0.00	0.00	2,441.00	
GRAND TOTAL							
	0.00	0.00	-182.92	-1.76	0.00	182.92	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
110 FEDERAL FORFEITURE							
110 35120		SEIZED CONTRABAND					
	0.00	0.00	-11,822.98	0.00	0.00	11,822.98	100.0%
110 35121		SEIZED CONTRABAND					
	-25,000.00	-25,000.00	-7,910.21	0.00	0.00	-17,089.79	31.6%*
110 36110		INTEREST					
	0.00	0.00	-500.78	-64.88	0.00	500.78	100.0%
110 36992		GAIN ON SALE OF ASSET					
	0.00	0.00	-6,833.70	-2,950.00	0.00	6,833.70	100.0%
110 38910		CASH BALANCE FORWARD					
	-165,385.00	-165,385.00	0.00	0.00	0.00	-165,385.00	.0%*
110 55200		OPERATING SUPPLIES					
	15,000.00	10,800.00	659.44	0.00	0.00	10,140.56	6.1%
110 56400		MACH/EQUIP					
	148,500.00	148,500.00	144,172.14	53,168.14	0.00	4,327.86	97.1%
110 56401		EQUIP-NON CAPITAL					
	0.00	4,200.00	0.00	0.00	0.00	4,200.00	.0%
110 59990		RESERVE					
	26,885.00	26,885.00	0.00	0.00	0.00	26,885.00	.0%
TOTAL FEDERAL FORFEITURE							
	0.00	0.00	117,763.91	50,153.26	0.00	-117,763.91	100.0%
TOTAL REVENUES							
	-190,385.00	-190,385.00	-27,067.67	-3,014.88	0.00	-163,317.33	
TOTAL EXPENSES							
	190,385.00	190,385.00	144,831.58	53,168.14	0.00	45,553.42	
GRAND TOTAL							
	0.00	0.00	117,763.91	50,153.26	0.00	-117,763.91	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
125 TREE TRUST SPECIAL REV FUND							
125 32219		TREE TRUST FUND RESERVE					
	-52,380.00	-52,380.00	-95,140.00	-8,195.00	0.00	42,760.00	181.6%
125 36110		INTEREST					
	0.00	0.00	-759.14	-181.51	0.00	759.14	100.0%
125 38910		CASH BALANCE FORWARD					
	-124,007.00	-124,007.00	0.00	0.00	0.00	-124,007.00	.0%*
125 53100		PROFESSIONAL SERVICES					
	10,000.00	10,000.00	0.00	0.00	0.00	10,000.00	.0%
125 54970		PROGRAM COSTS					
	6,900.00	6,900.00	3,740.42	0.00	0.00	3,159.58	54.2%
125 55200		OPERATING SUPPLIES					
	3,900.00	3,900.00	80.97	0.00	0.00	3,819.03	2.1%
125 59990		RESERVE					
	155,587.00	155,587.00	0.00	0.00	0.00	155,587.00	.0%
TOTAL TREE TRUST SPECIAL REV FUND							
	0.00	0.00	-92,077.75	-8,376.51	0.00	92,077.75	100.0%
TOTAL REVENUES							
	-176,387.00	-176,387.00	-95,899.14	-8,376.51	0.00	-80,487.86	
TOTAL EXPENSES							
	176,387.00	176,387.00	3,821.39	0.00	0.00	172,565.61	
GRAND TOTAL							
	0.00	0.00	-92,077.75	-8,376.51	0.00	92,077.75	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
126 HDC SPECIAL REVENUE FUND							
126 32924		HDC APPLICATION FEE					
	0.00	0.00	-3,660.00	-220.00	0.00	3,660.00	100.0%
126 32931		HDC VARIANCE					
	-1,700.00	-1,700.00	-2,700.00	0.00	0.00	1,000.00	158.8%
126 32934		CHANGE OF USE					
	-8,025.00	-8,025.00	0.00	0.00	0.00	-8,025.00	.0%*
126 36110		INTEREST					
	0.00	0.00	-77.06	-20.52	0.00	77.06	100.0%
126 38101		FROM GENERAL FUND					
	-30,000.00	-30,000.00	-15,000.00	-2,500.00	0.00	-15,000.00	50.0%*
126 38910		CASH BALANCE FORWARD					
	-12,250.00	-12,250.00	0.00	0.00	0.00	-12,250.00	.0%*
126 53100		PROFESSIONAL SERVICES					
	500.00	500.00	0.00	0.00	0.00	500.00	.0%
126 54970		PROGRAM COSTS					
	33,000.00	33,000.00	135.00	135.00	0.00	32,865.00	.4%
126 59990		RESERVE					
	18,475.00	18,475.00	0.00	0.00	0.00	18,475.00	.0%
TOTAL HDC SPECIAL REVENUE FUND							
	0.00	0.00	-21,302.06	-2,605.52	0.00	21,302.06	100.0%
TOTAL REVENUES							
	-51,975.00	-51,975.00	-21,437.06	-2,740.52	0.00	-30,537.94	
TOTAL EXPENSES							
	51,975.00	51,975.00	135.00	135.00	0.00	51,840.00	
GRAND TOTAL							
	0.00	0.00	-21,302.06	-2,605.52	0.00	21,302.06	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
130 CDBG ECON DEV							
130 36110		INTEREST					
	0.00	0.00	-1,931.46	-331.96	0.00	1,931.46	100.0%
130 38910		CASH BALANCE FORWARD					
	-101,181.00	-101,181.00	0.00	0.00	0.00	-101,181.00	.0%*
130 56300		IMPROVEMENTS					
	101,181.00	101,181.00	0.00	0.00	0.00	101,181.00	.0%
TOTAL CDBG ECON DEV	0.00	0.00	-1,931.46	-331.96	0.00	1,931.46	100.0%
		TOTAL REVENUES					
	-101,181.00	-101,181.00	-1,931.46	-331.96	0.00	-99,249.54	
		TOTAL EXPENSES					
	101,181.00	101,181.00	0.00	0.00	0.00	101,181.00	
	GRAND TOTAL	0.00	-1,931.46	-331.96	0.00	1,931.46	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
135 LAND CONSERVATION TRUST							
135 36110		INTEREST					
	0.00	0.00	-3,531.45	-791.24	0.00	3,531.45	100.0%
135 36601		DONATIONS/LAND CONSERVATION					
	0.00	0.00	-232,130.00	-13,780.00	0.00	232,130.00	100.0%
135 36800		CAPITAL CONTRIBUTION					
	0.00	-307,284.00	-307,283.75	0.00	0.00	-0.25	100.0%*
135 38101		FROM GENERAL FUND					
	-1,207,000.00	-1,207,000.00	-1,207,000.00	0.00	0.00	0.00	100.0%
135 56100		LAND					
	1,000,000.00	1,307,284.00	623,849.25	0.00	0.00	683,434.75	47.7%
135 59990		RESERVE					
	207,000.00	207,000.00	0.00	0.00	0.00	207,000.00	.0%
TOTAL LAND CONSERVATION TRUST							
	0.00	0.00	-1,126,095.95	-14,571.24	0.00	1,126,095.95	100.0%
TOTAL REVENUES							
	-1,207,000.00	-1,514,284.00	-1,749,945.20	-14,571.24	0.00	235,661.20	
TOTAL EXPENSES							
	1,207,000.00	1,514,284.00	623,849.25	0.00	0.00	890,434.75	
GRAND TOTAL							
	0.00	0.00	-1,126,095.95	-14,571.24	0.00	1,126,095.95	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
140 BUILDING FEES FUND							
140 31610		LOCAL BUSINESS TAX					
	0.00	0.00	0.00	1,044.55	0.00	0.00	.0%
140 31620		LOCAL BUSINESS TAX - PENALTIES					
	0.00	0.00	0.00	288.75	0.00	0.00	.0%
140 31630		LOCAL BUSINESS TAX-OTHER FEES					
	0.00	0.00	0.00	485.63	0.00	0.00	.0%
140 32200		BUILDING PERMITS					
	-655,000.00	-655,000.00	-296,727.60	-45,008.75	0.00	-358,272.40	45.3%*
140 32202		BUILDING PERMIT-CONSTRUCTION					
	-300,000.00	-300,000.00	-120,996.50	-16,086.50	0.00	-179,003.50	40.3%*
140 32203		BUILDING PERMIT-DEMOLITION					
	-7,500.00	-7,500.00	-2,546.00	-1,117.00	0.00	-4,954.00	33.9%*
140 32206		BUILDING PERMIT-AFTER THE FACT					
	-5,000.00	-5,000.00	-16,510.00	-3,584.00	0.00	11,510.00	330.2%
140 32207		BUILDING PERMIT-REINSPECTION					
	-3,500.00	-3,500.00	-1,330.00	-35.00	0.00	-2,170.00	38.0%*
140 32208		BUILDING PERMIT-2ND REINSPECT					
	-100.00	-100.00	-350.00	0.00	0.00	250.00	350.0%
140 32903		SIGN PERMITS					
	-2,250.00	-2,250.00	-2,422.00	-540.00	0.00	172.00	107.6%
140 32905		ELECTRICAL PERMITS-GENERAL					
	-60,000.00	-60,000.00	-32,430.00	-7,750.00	0.00	-27,570.00	54.1%*
140 32906		ELECTRICAL PERMITS-TEMPORARY P					
	-8,500.00	-8,500.00	-2,775.00	-900.00	0.00	-5,725.00	32.6%*
140 32908		GAS PERMITS-GENERAL					
	-14,000.00	-14,000.00	-6,960.00	-1,120.00	0.00	-7,040.00	49.7%*
140 32909		GAS PERMITS-LP INSTALLATION					
	-6,000.00	-6,000.00	-2,025.00	-450.00	0.00	-3,975.00	33.8%*
140 32911		MECHANICAL					
	-75,000.00	-75,000.00	-20,581.00	-1,760.00	0.00	-54,419.00	27.4%*
140 32912		PLUMBING PERMITS					
	-35,000.00	-35,000.00	-14,916.00	-3,200.00	0.00	-20,084.00	42.6%*
140 32913		PLUMBING-FIXTURE FEES					
	-25,000.00	-25,000.00	-14,070.00	-1,715.00	0.00	-10,930.00	56.3%*
140 32920		CDD COPIES MADE FEE					
	0.00	0.00	-379.45	-3.30	0.00	379.45	100.0%
140 32960		ADMINISTRATION COST BLDING SU					
	-2,000.00	-2,000.00	-1,624.49	0.00	0.00	-375.51	81.2%*
140 32980		OTHER MISC PERMITS					
	-1,000.00	-1,000.00	-400.00	-100.00	0.00	-600.00	40.0%*

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
140 36110		INTEREST					
	0.00	0.00	-12,541.66	-2,410.47	0.00	12,541.66	100.0%
140 36992		GAIN ON SALE OF ASSET					
	-24,000.00	-24,000.00	-24,731.00	0.00	0.00	731.00	103.0%
140 38910		CASH BALANCE FORWARD					
	-2,409,892.00	-2,409,892.00	-3,250,862.25	0.00	0.00	840,970.25	134.9%
140 51200		SALARIES					
	658,235.00	658,235.00	238,759.78	37,528.01	0.00	419,475.22	36.3%
140 51300		SEASONAL/TEMPORARY					
	0.00	93,600.00	0.00	0.00	0.00	93,600.00	.0%
140 51350		PART-TIME					
	40,164.00	40,164.00	7,697.10	0.00	0.00	32,466.90	19.2%
140 51400		OVERTIME					
	5,000.00	5,000.00	4,012.16	1,762.70	0.00	987.84	80.2%
140 52100		FICA					
	53,810.00	61,010.00	18,370.94	2,864.82	0.00	42,639.06	30.1%
140 52200		RETIREMENT					
	150,472.00	150,472.00	58,168.07	9,414.03	0.00	92,303.93	38.7%
140 52300		HEALTH INSUR					
	121,789.00	121,789.00	48,315.14	7,642.37	0.00	73,473.86	39.7%
140 52301		LIFE INSUR					
	3,493.00	3,493.00	1,391.27	212.65	0.00	2,101.73	39.8%
140 52400		WORKERS' COMP					
	10,412.00	11,012.00	5,208.00	868.00	0.00	5,804.00	47.3%
140 53100		PROFESSIONAL SERVICES					
	137,000.00	287,000.00	28,384.01	0.00	8,400.00	250,215.99	12.8%
140 53400		CONTRACTUAL					
	109,325.00	101,825.01	21,056.97	544.82	0.00	80,768.04	20.7%
140 54000		TRAINING/TRAVEL					
	49,040.00	49,040.00	10,005.60	3,394.06	0.00	39,034.40	20.4%
140 54100		COMM - PHONE/FAX/ALARM					
	647.00	647.00	93.38	18.48	0.00	553.62	14.4%
140 54101		COMMUNICATIONS-CELLULAR					
	4,920.00	12,419.99	4,632.85	1,527.32	0.00	7,787.14	37.3%
140 54500		INSURANCE					
	8,470.00	8,470.00	4,236.00	706.00	0.00	4,234.00	50.0%
140 54620		R/M EQUIPMENT					
	685.00	685.00	0.00	0.00	0.00	685.00	.0%
140 54630		R/M VEHICLES-LABOR					
	1,200.00	1,200.00	1,384.00	325.00	0.00	-184.00	115.3%*
140 54640		R/M VEHICLES-PARTS					
	500.00	500.00	4,134.45	1,613.74	0.00	-3,634.45	826.9%*
140 54700		PRINTING					
	9,675.00	2,175.01	0.00	0.00	0.00	2,175.01	.0%



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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
140 54934		LEGAL/CONTRACTUAL					
	20,825.00	20,825.00	0.00	0.00	0.00	20,825.00	.0%
140 55100		OFFICE SUPPLIES					
	5,000.00	5,000.00	2,198.88	178.01	0.00	2,801.12	44.0%
140 55200		OPERATING SUPPLIES					
	8,680.00	16,179.99	13,433.47	3,508.33	0.00	2,746.52	83.0%
140 55210		UNIFORMS					
	4,350.00	4,350.00	1,403.41	0.00	0.00	2,946.59	32.3%
140 55230		GAS/OIL					
	3,500.00	3,500.00	1,720.53	238.88	0.00	1,779.47	49.2%
140 55400		BOOKS/SUBS/DUES					
	21,000.00	21,000.00	4,452.51	165.00	0.00	16,547.49	21.2%
140 56400		EQUIPMENT					
	30,000.00	124,671.00	29,437.30	0.00	94,670.85	562.85	99.5%
140 56401		NON CAP EQUIP					
	5,400.00	5,400.00	4,389.96	0.00	0.00	1,010.04	81.3%
140 59990		RESERVE					
	2,170,150.00	1,824,079.00	0.00	0.00	0.00	1,824,079.00	.0%
TOTAL BUILDING FEES FUND	0.00	0.00	-3,312,292.17	-11,448.87	103,070.85	3,209,221.32	100.0%
		TOTAL REVENUES					
	-3,633,742.00	-3,633,742.00	-3,825,177.95	-83,961.09	0.00	191,435.95	
		TOTAL EXPENSES					
	3,633,742.00	3,633,742.00	512,885.78	72,512.22	103,070.85	3,017,785.37	
		GRAND TOTAL					
	0.00	0.00	-3,312,292.17	-11,448.87	103,070.85	3,209,221.32	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
145 WASTEWATER IMPACT							
145 36110		INTEREST					
	-10,800.00	-10,800.00	-5,871.26	-1,075.21	0.00	-4,928.74	54.4%*
145 36310		IMPACT FEES- INCORPORATED AREA					
	-464,200.00	-464,200.00	-300,789.99	-2,321.00	0.00	-163,410.01	64.8%*
145 36311		IMPACT FEES- UNINCORPORATED					
	-72,531.00	-72,531.00	-16,338.89	-305.44	0.00	-56,192.11	22.5%*
145 38910		CASH BALANCE FORWARD					
	-1,434,998.00	-1,434,998.00	0.00	0.00	0.00	-1,434,998.00	.0%*
145 59230		TRANSFER TO UTIL ACQ DS					
	500,000.00	500,000.00	250,002.00	41,667.00	0.00	249,998.00	50.0%
145 59990		RESERVE					
	1,482,529.00	1,482,529.00	0.00	0.00	0.00	1,482,529.00	.0%
TOTAL WASTEWATER IMPACT	0.00	0.00	-72,998.14	37,965.35	0.00	72,998.14	100.0%
TOTAL REVENUES	-1,982,529.00	-1,982,529.00	-323,000.14	-3,701.65	0.00	-1,659,528.86	
TOTAL EXPENSES	1,982,529.00	1,982,529.00	250,002.00	41,667.00	0.00	1,732,527.00	
GRAND TOTAL	0.00	0.00	-72,998.14	37,965.35	0.00	72,998.14	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
146 WATER IMPACT							
146 36110		INTEREST					
	0.00	0.00	-1,643.67	-278.07	0.00	1,643.67	100.0%
146 36310		IMPACT FEES- INCORPORATED AREA					
	-191,800.00	-191,800.00	-112,825.88	-959.00	0.00	-78,974.12	58.8%*
146 36311		IMPACT FEES- UNINCORPORATED					
	-59,937.00	-59,937.00	-7,841.58	-108.18	0.00	-52,095.42	13.1%*
146 38910		CASH BALANCE FORWARD					
	-433,404.00	-433,404.00	0.00	0.00	0.00	-433,404.00	.0%*
146 59230		TRANSFER TO UTIL ACQ DS					
	340,000.00	340,000.00	169,998.00	28,333.00	0.00	170,002.00	50.0%
146 59990		RESERVE					
	345,141.00	345,141.00	0.00	0.00	0.00	345,141.00	.0%
TOTAL WATER IMPACT							
	0.00	0.00	47,686.87	26,987.75	0.00	-47,686.87	100.0%
TOTAL REVENUES							
	-685,141.00	-685,141.00	-122,311.13	-1,345.25	0.00	-562,829.87	
TOTAL EXPENSES							
	685,141.00	685,141.00	169,998.00	28,333.00	0.00	515,143.00	
GRAND TOTAL							
	0.00	0.00	47,686.87	26,987.75	0.00	-47,686.87	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
150 UTILITY TAX							
150 31410		ELECTRIC MUNICIPAL TAX					
	-700,376.00	-700,376.00	-413,076.93	-77,133.36	0.00	-287,299.07	59.0%*
150 31420		TELEPHONE MUNICIPAL TAX					
	-659,022.00	-659,022.00	-356,527.34	-63,251.54	0.00	-302,494.66	54.1%*
150 31430		WATER MUNICIPAL TAX					
	0.00	0.00	197.20	0.00	0.00	-197.20	100.0%*
150 31440		GAS MUNICIPAL TAX					
	-110,000.00	-110,000.00	-75,466.26	-14,512.48	0.00	-34,533.74	68.6%*
150 36110		INTEREST					
	0.00	0.00	-1,452.11	-302.74	0.00	1,452.11	100.0%
150 38910		CASH BALANCE FORWARD					
	-339,128.00	-339,128.00	0.00	0.00	0.00	-339,128.00	.0%*
150 59100		TRANSFER TO GENERAL FUND					
	1,500,000.00	1,500,000.00	750,000.00	125,000.00	0.00	750,000.00	50.0%
150 59990		RESERVE					
	308,526.00	308,526.00	0.00	0.00	0.00	308,526.00	.0%
TOTAL UTILITY TAX							
	0.00	0.00	-96,325.44	-30,200.12	0.00	96,325.44	100.0%
TOTAL REVENUES							
	-1,808,526.00	-1,808,526.00	-846,325.44	-155,200.12	0.00	-962,200.56	
TOTAL EXPENSES							
	1,808,526.00	1,808,526.00	750,000.00	125,000.00	0.00	1,058,526.00	
GRAND TOTAL							
	0.00	0.00	-96,325.44	-30,200.12	0.00	96,325.44	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
170 CEMETERY							
170 32970		BURIAL PERMITS					
	-3,000.00	-3,000.00	-2,040.00	-560.00	0.00	-960.00	68.0%*
170 34560		MARKER SETTING FEES					
	-2,200.00	-2,200.00	-1,760.00	-240.00	0.00	-440.00	80.0%*
170 34570		PERPETUAL CARE					
	-50,000.00	-50,000.00	-20,036.80	-5,389.28	0.00	-29,963.20	40.1%*
170 34580		SALE OF LOTS					
	-82,500.00	-82,500.00	-34,485.12	-9,163.66	0.00	-48,014.88	41.8%*
170 36110		INTEREST					
	-10,000.00	-10,000.00	-10,473.59	-669.27	0.00	473.59	104.7%
170 36120		UNREALIZED GAIN					
	0.00	0.00	-1,027.18	-828.39	0.00	1,027.18	100.0%
170 38101		FROM GENERAL FUND					
	-11,300.00	-11,300.00	-5,652.00	-942.00	0.00	-5,648.00	50.0%*
170 38910		CASH BALANCE FORWARD					
	-111,261.00	-111,261.00	0.00	0.00	0.00	-111,261.00	.0%*
170 38913		CASH BAL FOR RESTD CEMET					
	-1,050,322.00	-1,050,322.00	0.00	0.00	0.00	-1,050,322.00	.0%*
170 51200		SALARIES					
	77,162.00	77,162.00	36,321.90	5,878.40	0.00	40,840.10	47.1%
170 51400		OVERTIME					
	2,000.00	2,000.00	2.95	0.00	0.00	1,997.05	.1%
170 52100		FICA					
	6,056.00	6,056.00	2,536.83	407.08	0.00	3,519.17	41.9%
170 52200		RETIREMENT					
	18,488.00	18,488.00	8,703.41	1,408.46	0.00	9,784.59	47.1%
170 52300		HEALTH INSUR					
	26,712.00	26,712.00	13,356.00	2,226.00	0.00	13,356.00	50.0%
170 52301		LIFE INSUR					
	431.00	431.00	216.20	36.19	0.00	214.80	50.2%
170 52400		WORKERS' COMP					
	7,006.00	7,006.00	3,504.00	584.00	0.00	3,502.00	50.0%
170 53200		AUDITING					
	2,265.00	2,265.00	1,134.00	189.00	0.00	1,131.00	50.1%
170 53400		CONTRACTUAL					
	8,588.00	8,588.00	4,711.43	4,066.14	0.00	3,876.57	54.9%
170 54101		COMMUNICATIONS-CELLULAR					
	0.00	50.00	3.44	1.75	0.00	46.56	6.9%
170 54300		UTILITIES ELECTRIC					
	3,800.00	3,800.00	518.85	101.29	0.00	3,281.15	13.7%



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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
170 54310		UTILITIES-WATER & WASTEWATER					
	1,000.00	1,000.00	87.61	11.96	0.00	912.39	8.8%
170 54500		INSURANCE					
	2,834.00	2,834.00	1,416.00	236.00	0.00	1,418.00	50.0%
170 54610		R/M BLDG & GROUNDS					
	13,000.00	13,000.00	3,061.71	51.91	0.00	9,938.29	23.6%
170 54620		R/M EQUIPMENT					
	2,000.00	2,000.00	370.42	370.42	0.00	1,629.58	18.5%
170 54630		R/M VEHICLES-LABOR					
	2,200.00	2,200.00	675.00	77.50	0.00	1,525.00	30.7%
170 54640		R/M VEHICLES-PARTS					
	1,500.00	1,500.00	555.00	40.00	0.00	945.00	37.0%
170 55200		OPERATING SUPPLIES					
	2,500.00	2,321.00	76.60	0.00	0.00	2,244.40	3.3%
170 55210		UNIFORMS					
	1,200.00	1,200.00	781.07	0.00	0.00	418.93	65.1%
170 55230		GAS/OIL					
	3,000.00	3,000.00	1,098.32	151.65	0.00	1,901.68	36.6%
170 56400		MACH/EQUIP					
	22,000.00	22,129.00	22,128.90	0.00	0.00	0.10	100.0%
170 59990		RESERVE					
	40,236.00	40,236.00	0.00	0.00	0.00	40,236.00	.0%
170 59997		RESERVE REST'D FOR CEMETERY					
	1,076,605.00	1,076,605.00	0.00	0.00	0.00	1,076,605.00	.0%
TOTAL CEMETERY	0.00	0.00	25,784.95	-1,954.85	0.00	-25,784.95	100.0%
	TOTAL REVENUES						
	-1,320,583.00	-1,320,583.00	-75,474.69	-17,792.60	0.00	-1,245,108.31	
	TOTAL EXPENSES						
	1,320,583.00	1,320,583.00	101,259.64	15,837.75	0.00	1,219,323.36	
	GRAND TOTAL						
	0.00	0.00	25,784.95	-1,954.85	0.00	-25,784.95	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
180 COMM DEVELOP AREA							
180 31110		PROPERTY TAXES					
	-11,453.00	-11,453.00	0.00	0.00	0.00	-11,453.00	.0%*
180 31117		PROPERTY TAXES-COUNTY					
	-13,386.00	-13,386.00	0.00	0.00	0.00	-13,386.00	.0%*
180 36110		INTEREST					
	0.00	0.00	-83.44	-15.62	0.00	83.44	100.0%
180 36991		PARKING REVENUE					
	-1,000.00	-1,000.00	0.00	0.00	0.00	-1,000.00	.0%*
180 38910		CASH BALANCE FORWARD					
	-29,785.00	-29,785.00	0.00	0.00	0.00	-29,785.00	.0%*
180 59990		RESERVE					
	55,624.00	55,624.00	0.00	0.00	0.00	55,624.00	.0%
TOTAL COMM DEVELOP AREA							
	0.00	0.00	-83.44	-15.62	0.00	83.44	100.0%
TOTAL REVENUES							
	-55,624.00	-55,624.00	-83.44	-15.62	0.00	-55,540.56	
TOTAL EXPENSES							
	55,624.00	55,624.00	0.00	0.00	0.00	55,624.00	
GRAND TOTAL							
	0.00	0.00	-83.44	-15.62	0.00	83.44	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
190 LAW ENFORCE RECOVERY							
190 34210		FEDERAL LAW ENFORCEMENT SUPP					
	-123,726.00	-123,726.00	-51,552.50	-20,621.00	0.00	-72,173.50	41.7%*
190 36110		INTEREST					
	0.00	0.00	-226.44	-6.29	0.00	226.44	100.0%
190 36992		GAIN ON SALE OF ASSET					
	0.00	0.00	-1,675.00	0.00	0.00	1,675.00	100.0%
190 38910		CASH BALANCE FORWARD					
	-97,023.00	-97,023.00	0.00	0.00	0.00	-97,023.00	.0%*
190 53400		CONTRACTUAL					
	0.00	0.00	2,200.00	2,200.00	0.00	-2,200.00	100.0%*
190 54000		TRAINING/TRAVEL					
	11,500.00	6,900.00	2,698.20	0.00	0.00	4,201.80	39.1%
190 54921		UNDERCOVER					
	7,000.00	7,000.00	3,000.00	3,000.00	0.00	4,000.00	42.9%
190 55200		OPERATING SUPPLIES					
	30,000.00	30,000.00	22,549.22	3,037.15	0.00	7,450.78	75.2%
190 56400		MACH/EQUIP					
	109,000.00	113,600.00	106,374.05	12,685.07	0.00	7,225.95	93.6%
190 56401		EQUIP-NON CAPITAL					
	13,000.00	13,000.00	9,604.99	-2,200.00	0.00	3,395.01	73.9%
190 59990		RESERVE					
	50,249.00	50,249.00	0.00	0.00	0.00	50,249.00	.0%
TOTAL LAW ENFORCE RECOVERY							
	0.00	0.00	92,972.52	-1,905.07	0.00	-92,972.52	100.0%
TOTAL REVENUES							
	-220,749.00	-220,749.00	-53,453.94	-20,627.29	0.00	-167,295.06	
TOTAL EXPENSES							
	220,749.00	220,749.00	146,426.46	18,722.22	0.00	74,322.54	
GRAND TOTAL							
	0.00	0.00	92,972.52	-1,905.07	0.00	-92,972.52	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
220 BOND DEBT SERVICE							
220 36110		INTEREST					
	0.00	0.00	-387.48	-133.76	0.00	387.48	100.0%
220 38101		FROM GENERAL FUND					
	-423,376.00	-423,376.00	-211,686.00	-35,281.00	0.00	-211,690.00	50.0%*
220 38910		CASH BALANCE FORWARD					
	-4,464.00	-4,464.00	0.00	0.00	0.00	-4,464.00	.0%*
220 57100		PRINCIPAL					
	404,000.00	404,000.00	0.00	0.00	0.00	404,000.00	.0%
220 57200		INTEREST					
	19,376.00	19,376.00	9,687.80	0.00	0.00	9,688.20	50.0%
220 59990		RESERVE					
	4,464.00	4,464.00	0.00	0.00	0.00	4,464.00	.0%
TOTAL BOND DEBT SERVICE							
	0.00	0.00	-202,385.68	-35,414.76	0.00	202,385.68	100.0%
TOTAL REVENUES							
	-427,840.00	-427,840.00	-212,073.48	-35,414.76	0.00	-215,766.52	
TOTAL EXPENSES							
	427,840.00	427,840.00	9,687.80	0.00	0.00	418,152.20	
GRAND TOTAL							
	0.00	0.00	-202,385.68	-35,414.76	0.00	202,385.68	100.0%

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FOR 2020 06

ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
230 UTILITY DEBT SERVICE						
230 36110	INTEREST					
	0.00	0.00	-3,077.64	-673.71	0.00	3,077.64 100.0%
230 38140	FROM WW IMPACT FEES					
	-500,000.00	-500,000.00	-250,002.00	-41,667.00	0.00	-249,998.00 50.0%*
230 38141	FROM WATER IMPACT FEES					
	-340,000.00	-340,000.00	-169,998.00	-28,333.00	0.00	-170,002.00 50.0%*
230 38145	FROM WASTEWATER					
	-418,629.00	-418,629.00	-209,316.00	-34,886.00	0.00	-209,313.00 50.0%*
230 38146	FROM WATER					
	-1,495,471.00	-1,495,471.00	-747,738.00	-124,623.00	0.00	-747,733.00 50.0%*
230 38910	CASH BALANCE FORWARD					
	-274,000.00	-274,000.00	0.00	0.00	0.00	-274,000.00 .0%*
230 57100	PRINCIPAL					
	1,575,000.00	1,575,000.00	0.00	0.00	0.00	1,575,000.00 .0%
230 57200	INTEREST					
	1,179,100.00	1,179,100.00	589,576.38	0.00	0.00	589,523.62 50.0%
230 59990	RESERVE					
	274,000.00	274,000.00	0.00	0.00	0.00	274,000.00 .0%
TOTAL UTILITY DEBT SERVICE						
	0.00	0.00	-790,555.26	-230,182.71	0.00	790,555.26 100.0%
TOTAL REVENUES						
	-3,028,100.00	-3,028,100.00	-1,380,131.64	-230,182.71	0.00	-1,647,968.36
TOTAL EXPENSES						
	3,028,100.00	3,028,100.00	589,576.38	0.00	0.00	2,438,523.62
GRAND TOTAL						
	0.00	0.00	-790,555.26	-230,182.71	0.00	790,555.26 100.0%

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FOR 2020 06

ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
300 CAPITAL IMPROVEMENT						
300 33324	USACE REFUND					
0.00	0.00	-224,354.46	-224,354.46	0.00	224,354.46	100.0%
300 33400	STATE GRANT					
-64,900.00	-64,900.00	-440,296.12	-440,296.12	0.00	375,396.12	678.4%
300 33544	8TH CENT GAS TAX					
-125,000.00	-125,000.00	-58,951.20	-9,825.20	0.00	-66,048.80	47.2%*
300 33710	COUNTY GRANT					
-35,100.00	-35,100.00	0.00	0.00	0.00	-35,100.00	.0%*
300 36110	INTEREST					
-12,000.00	-12,000.00	-4,512.85	0.00	0.00	-7,487.15	37.6%*
300 38101	FROM GENERAL FUND					
-1,445,000.00	-1,445,000.00	-722,502.00	-120,417.00	0.00	-722,498.00	50.0%*
300 38152	FROM UB					
-10,700.00	-10,700.00	-5,350.02	-891.67	0.00	-5,349.98	50.0%*
300 38410	LOAN PROCEEDS					
-525,000.00	-525,000.00	0.00	0.00	0.00	-525,000.00	.0%*
300 38910	CASH BALANCE FORWARD					
-374,437.00	-374,437.00	0.00	0.00	0.00	-374,437.00	.0%*
TOTAL CAPITAL IMPROVEMENT						
-2,592,137.00	-2,592,137.00	-1,455,966.65	-795,784.45	0.00	-1,136,170.35	56.2%
TOTAL REVENUES						
-2,592,137.00	-2,592,137.00	-1,455,966.65	-795,784.45	0.00	-1,136,170.35	
GRAND TOTAL						
-2,592,137.00	-2,592,137.00	-1,455,966.65	-795,784.45	0.00	-1,136,170.35	56.2%

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ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
3001000 GENERAL GOVERNMENT						
3001000 57100	PRINCIPAL					
685,090.00	685,090.00	187,668.93	0.00	0.00	497,421.07	27.4%
3001000 57200	INTEREST					
16,301.00	16,301.00	8,478.49	6,479.93	0.00	7,822.51	52.0%
3001000 57310	BOND EXPENSE					
700.00	700.00	630.00	0.00	0.00	70.00	90.0%
3001000 59990	RESERVE					
4,546.00	4,546.00	0.00	0.00	0.00	4,546.00	.0%
TOTAL GENERAL GOVERNMENT						
706,637.00	706,637.00	196,777.42	6,479.93	0.00	509,859.58	27.8%
TOTAL EXPENSES						
706,637.00	706,637.00	196,777.42	6,479.93	0.00	509,859.58	
3001310 CAP IMP IT						
3001310 56400	EQUIPMENT					
125,000.00	125,000.00	94,444.33	0.00	0.00	30,555.67	75.6%
TOTAL CAP IMP IT						
125,000.00	125,000.00	94,444.33	0.00	0.00	30,555.67	75.6%
TOTAL EXPENSES						
125,000.00	125,000.00	94,444.33	0.00	0.00	30,555.67	
3002100 CAP IMP POLICE						
3002100 56400	EQUIPMENT					
55,000.00	55,000.00	3,751.33	0.00	38,665.33	12,583.34	77.1%
TOTAL CAP IMP POLICE						
55,000.00	55,000.00	3,751.33	0.00	38,665.33	12,583.34	77.1%
TOTAL EXPENSES						
55,000.00	55,000.00	3,751.33	0.00	38,665.33	12,583.34	
3002200 CAP IMP FIRE						
3002200 56400	MACH/EQUIP					
525,000.00	525,000.00	0.00	0.00	520,100.00	4,900.00	99.1%

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3002200 CAP IMP FIRE	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
TOTAL CAP IMP FIRE	525,000.00	525,000.00	0.00	0.00	520,100.00	4,900.00	99.1%
TOTAL EXPENSES	525,000.00	525,000.00	0.00	0.00	520,100.00	4,900.00	
3004100 CAP IMP STREETS							
3004100 56311	117,000.00	115,185.00	84,353.12	17,383.28	3,071.57	27,760.31	75.9%
3004100 56312	37,000.00	37,000.00	0.00	0.00	36,910.00	90.00	99.8%
3004100 56320	462,500.00	464,315.00	417,735.60	222,663.80	46,576.00	3.40	100.0%
3004100 56500	250,000.00	250,000.00	0.00	0.00	0.00	250,000.00	.0%
TOTAL CAP IMP STREETS	866,500.00	866,500.00	502,088.72	240,047.08	86,557.57	277,853.71	67.9%
TOTAL EXPENSES	866,500.00	866,500.00	502,088.72	240,047.08	86,557.57	277,853.71	
3007200 CAP IMP REC							
3007200 56327	65,000.00	65,000.00	0.00	0.00	0.00	65,000.00	.0%
3007200 56331	35,000.00	35,000.00	3,998.00	1,182.00	26,002.00	5,000.00	85.7%
3007200 56365	0.00	0.00	2,375.00	0.00	0.00	-2,375.00	100.0%*
TOTAL CAP IMP REC	100,000.00	100,000.00	6,373.00	1,182.00	26,002.00	67,625.00	32.4%
TOTAL EXPENSES	100,000.00	100,000.00	6,373.00	1,182.00	26,002.00	67,625.00	
3007210 PARKS IMPROVEMENTS							
3007210 56300	84,000.00	83,670.00	0.00	0.00	0.00	83,670.00	.0%



FOR 2020 06							
3007210	PARKS IMPROVEMENTS ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
	TOTAL PARKS IMPROVEMENTS						
	84,000.00	83,670.00	0.00	0.00	0.00	83,670.00	.0%
	TOTAL EXPENSES						
	84,000.00	83,670.00	0.00	0.00	0.00	83,670.00	
3007220 CAP IMP PECK							
	IMPROVEMENTS						
	55,000.00	55,330.00	30,081.51	0.00	25,247.84	0.65	100.0%
	TOTAL CAP IMP PECK						
	55,000.00	55,330.00	30,081.51	0.00	25,247.84	0.65	100.0%
	TOTAL EXPENSES						
	55,000.00	55,330.00	30,081.51	0.00	25,247.84	0.65	
3007225 MLK CENTER							
	IMPROVEMENTS						
	75,000.00	75,000.00	18,928.46	10,543.23	9,817.50	46,254.04	38.3%
	TOTAL MLK CENTER						
	75,000.00	75,000.00	18,928.46	10,543.23	9,817.50	46,254.04	38.3%
	TOTAL EXPENSES						
	75,000.00	75,000.00	18,928.46	10,543.23	9,817.50	46,254.04	
	GRAND TOTAL						
	2,592,137.00	2,592,137.00	852,444.77	258,252.24	706,390.24	1,033,301.99	60.1%

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Revenues	(\$1,455,967)
Expenses	\$ 852,445
Net	(\$ 603,522)

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ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
310 CAPITAL EXPANSION						
310 33400	STATE GRANT					
	0.00 -75,000.00	-67,991.50	-59,500.00	0.00	-7,008.50	90.7%*
310 36110	INTEREST					
	-10,000.00 -10,000.00	-20,538.65	-3,525.78	0.00	10,538.65	205.4%
310 38410	LOAN PROCEEDS					
	-1,500,000.00 -1,500,000.00	0.00	0.00	0.00	-1,500,000.00	.0%*
TOTAL CAPITAL EXPANSION						
	-1,510,000.00 -1,585,000.00	-88,530.15	-63,025.78	0.00	-1,496,469.85	5.6%
TOTAL REVENUES						
	-1,510,000.00 -1,585,000.00	-88,530.15	-63,025.78	0.00	-1,496,469.85	
3101000 CAP EXP ADMIN						
3101000 32410	IMPACT FEES ADMIN					
	-221,500.00 -221,500.00	-63,182.45	-6,372.99	0.00	-158,317.55	28.5%*
3101000 38910	CASH BALANCE FORWARD					
	-798,766.00 -798,766.00	0.00	0.00	0.00	-798,766.00	.0%*
TOTAL CAP EXP ADMIN						
	-1,020,266.00 -1,020,266.00	-63,182.45	-6,372.99	0.00	-957,083.55	6.2%
TOTAL REVENUES						
	-1,020,266.00 -1,020,266.00	-63,182.45	-6,372.99	0.00	-957,083.55	
3102100 CAP EXP POLICE						
3102100 32421	IMPACT FEES POLICE					
	-132,000.00 -132,000.00	-37,652.72	-3,797.90	0.00	-94,347.28	28.5%*
3102100 38910	CASH BALANCE FORWARD					
	-208,431.00 -208,431.00	0.00	0.00	0.00	-208,431.00	.0%*
TOTAL CAP EXP POLICE						
	-340,431.00 -340,431.00	-37,652.72	-3,797.90	0.00	-302,778.28	11.1%
TOTAL REVENUES						
	-340,431.00 -340,431.00	-37,652.72	-3,797.90	0.00	-302,778.28	
3102200 CAP EXP FIRE						
3102200 32422	IMPACT FEES FIRE					



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3102200 CAP EXP FIRE	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
	-180,000.00	-180,000.00	-51,344.64	-5,178.96	0.00	-128,655.36	28.5%*
3102200 38910	CASH BALANCE FORWARD						
	-602,072.00	-602,072.00	0.00	0.00	0.00	-602,072.00	.0%*
TOTAL CAP EXP FIRE	-782,072.00	-782,072.00	-51,344.64	-5,178.96	0.00	-730,727.36	6.6%
TOTAL REVENUES	-782,072.00	-782,072.00	-51,344.64	-5,178.96	0.00	-730,727.36	
3107200 CAP EXP RECREATION							
3107200 32470	IMPACT FEES RECREATION						
	-1,442,500.00	-1,442,500.00	-243,710.38	-41,503.61	0.00	-1,198,789.62	16.9%*
3107200 38910	CASH BALANCE FORWARD						
	-2,595,960.00	-2,595,960.00	0.00	0.00	0.00	-2,595,960.00	.0%*
TOTAL CAP EXP RECREATION	-4,038,460.00	-4,038,460.00	-243,710.38	-41,503.61	0.00	-3,794,749.62	6.0%
TOTAL REVENUES	-4,038,460.00	-4,038,460.00	-243,710.38	-41,503.61	0.00	-3,794,749.62	
GRAND TOTAL	-7,691,229.00	-7,766,229.00	-484,420.34	-119,879.24	0.00	-7,281,808.66	6.2%

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ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
3101000 CAP EXP ADMIN						
3101000 56200	BUILDING					
1,500,000.00	1,500,000.00	0.00	0.00	0.00	1,500,000.00	.0%
3101000 56368	MAIN STREET IMPROVEMENTS					
0.00	25,600.00	25,968.65	7,224.02	3,878.45	-4,247.10	116.6%*
3101000 56500	INFRASTRUCTURE					
50,500.00	50,500.00	0.00	0.00	0.00	50,500.00	.0%
3101000 59990	RESERVE					
971,666.00	946,066.00	0.00	0.00	0.00	946,066.00	.0%
TOTAL CAP EXP ADMIN						
2,522,166.00	2,522,166.00	25,968.65	7,224.02	3,878.45	2,492,318.90	1.2%
TOTAL EXPENSES						
2,522,166.00	2,522,166.00	25,968.65	7,224.02	3,878.45	2,492,318.90	
3102100 CAP EXP POLICE						
3102100 59990	RESERVE					
340,927.00	340,927.00	0.00	0.00	0.00	340,927.00	.0%
TOTAL CAP EXP POLICE						
340,927.00	340,927.00	0.00	0.00	0.00	340,927.00	.0%
TOTAL EXPENSES						
340,927.00	340,927.00	0.00	0.00	0.00	340,927.00	
3102200 CAP EXP FIRE						
3102200 56200	BUILDING					
0.00	140,000.00	108,936.90	18,349.00	4,313.10	26,750.00	80.9%
3102200 56400	MACH/EQUIP					
182,044.00	42,044.00	0.00	0.00	0.00	42,044.00	.0%
3102200 59990	RESERVE					
601,459.00	601,459.00	0.00	0.00	0.00	601,459.00	.0%
TOTAL CAP EXP FIRE						
783,503.00	783,503.00	108,936.90	18,349.00	4,313.10	670,253.00	14.5%
TOTAL EXPENSES						
783,503.00	783,503.00	108,936.90	18,349.00	4,313.10	670,253.00	



FOR 2020 06							
3107200 CAP EXP RECREATION	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
3107200 CAP EXP RECREATION							
3107200 56100	LAND						
	0.00	900,000.00	0.00	0.00	0.00	900,000.00	.0%
3107200 56200	BUILDING						
	655,000.00	655,000.00	153,196.08	149,874.58	132,555.00	369,248.92	43.6%
3107200 56300	IMPROVEMENTS						
	1,601,500.00	1,676,500.00	561,905.50	552,664.00	153,620.00	960,974.50	42.7%
3107200 56315	DUNE WALKOVERS						
	0.00	0.00	0.00	0.00	1,050.00	-1,050.00	100.0%*
3107200 56400	MACH/EQUIP						
	18,000.00	18,000.00	17,405.00	0.00	0.00	595.00	96.7%
3107200 56500	INFRASTRUCTURE						
	900,000.00	0.00	0.00	0.00	0.00	0.00	.0%
3107200 59990	RESERVE						
	870,133.00	870,133.00	0.00	0.00	0.00	870,133.00	.0%
TOTAL CAP EXP RECREATION							
	4,044,633.00	4,119,633.00	732,506.58	702,538.58	287,225.00	3,099,901.42	24.8%
TOTAL EXPENSES							
	4,044,633.00	4,119,633.00	732,506.58	702,538.58	287,225.00	3,099,901.42	
GRAND TOTAL							
	7,691,229.00	7,766,229.00	867,412.13	728,111.60	295,416.55	6,603,400.32	15.0%

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Revenues	(\$ 484,420)
Expenses	\$ 867,412
Net	\$ 382,992



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City of Fernandina Beach
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FOR 2020 06

ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
330 WASTEWATER IMPROVEMENT						
330 36110	INTEREST					
0.00	0.00	-24,165.29	-5,007.53	0.00	24,165.29	100.0%
330 36120	UNREALIZED GAIN					
0.00	0.00	4.81	-324.37	0.00	-4.81	100.0%*
330 38145	FROM WASTEWATER					
-1,500,000.00	-1,500,000.00	-750,000.00	-125,000.00	0.00	-750,000.00	50.0%*
330 38910	CASH BALANCE FORWARD					
-4,988,400.00	-4,988,400.00	0.00	0.00	0.00	-4,988,400.00	.0%*
330 59990	RESERVE					
6,488,400.00	6,488,400.00	0.00	0.00	0.00	6,488,400.00	.0%
TOTAL WASTEWATER IMPROVEMENT						
0.00	0.00	-774,160.48	-130,331.90	0.00	774,160.48	100.0%
TOTAL REVENUES						
-6,488,400.00	-6,488,400.00	-774,160.48	-130,331.90	0.00	-5,714,239.52	
TOTAL EXPENSES						
6,488,400.00	6,488,400.00	0.00	0.00	0.00	6,488,400.00	
GRAND TOTAL						
0.00	0.00	-774,160.48	-130,331.90	0.00	774,160.48	100.0%

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City of Fernandina Beach
YEAR-TO-DATE BUDGET REPORT

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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
410 GOLF							
410 33120		FEMA GRANT					
	0.00	0.00	-707.88	0.00	0.00	707.88	100.0%
410 34710		GREEN FEES					
	-283,185.00	-283,185.00	-174,958.21	-36,852.52	0.00	-108,226.79	61.8%*
410 34713		GOLF CARTS					
	-456,931.00	-456,931.00	-180,910.80	-32,071.02	0.00	-276,020.20	39.6%*
410 34714		RANGE FEES					
	-45,370.00	-45,370.00	-17,770.24	-3,108.73	0.00	-27,599.76	39.2%*
410 34715		PRO SHOP SALES					
	-74,352.00	-74,352.00	-28,692.82	-5,785.91	0.00	-45,659.18	38.6%*
410 34716		SNACK BAR SALES					
	-327,822.00	-327,822.00	-173,393.58	-36,761.80	0.00	-154,428.42	52.9%*
410 34718		FACILITY RENTAL					
	-41,748.00	-41,748.00	-37,189.98	-30,630.56	0.00	-4,558.02	89.1%*
410 34719		SCHOOL OF GOLF					
	-3,600.00	-3,600.00	LY \$96,367.55 0.00	0.00	0.00	-3,600.00	.0%*
410 34733		MEMBERSHIPS					
	-134,642.00	-134,642.00	-96,594.89	-2,129.80	0.00	-38,047.11	71.7%*
410 36990		OTHER REVENUE					
	-22,292.00	-22,292.00	-18,568.82	2,246.52	0.00	-3,723.18	83.3%*
410 36992		GAIN ON SALE OF ASSET					
	0.00	0.00	6,005.26	2,944.62	0.00	-6,005.26	100.0%*
410 38101		FROM GENERAL FUND					
	-220,000.00	-715,000.00	-605,004.00	-513,334.00	0.00	-109,996.00	84.6%*
410 38910		CASH BALANCE FORWARD					
	1,001,163.00	1,001,163.00	0.00	0.00	0.00	1,001,163.00	.0%
410 52350		OPEB COSTS					
	878.00	878.00	438.00	73.00	0.00	440.00	49.9%
410 53100		PROFESSIONAL SERVICES					
	0.00	0.00	2,722.51	0.00	0.00	-2,722.51	100.0%*
410 53200		AUDITING					
	6,795.00	6,795.00	3,396.00	566.00	0.00	3,399.00	50.0%
410 53400		CONTRACTUAL					
	648,744.00	648,744.00	321,384.26	52,710.95	0.00	327,359.74	49.5%
410 54000		TRAINING/TRAVEL					
	6,768.00	6,768.00	1,071.80	148.48	0.00	5,696.20	15.8%
410 54100		COMM - PHONE/FAX/ALARM					
	1,200.00	1,200.00	379.28	55.44	0.00	820.72	31.6%
410 54101		COMMUNICATIONS-CELLULAR					
	2,520.00	2,520.00	280.00	0.00	0.00	2,240.00	11.1%

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GOLF

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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
410 54103		COMMUNICATIONS-INTERNET					
	7,900.00	7,900.00	1,826.04	153.33	0.00	6,073.96	23.1%
410 54200		POSTAGE					
	600.00	600.00	420.48	135.44	0.00	179.52	70.1%
410 54300		UTILITIES ELECTRIC					
	64,200.00	64,200.00	28,631.06	3,361.31	0.00	35,568.94	44.6%
410 54310		UTILITIES-WATER & WASTEWATER					
	9,050.00	9,050.00	8,583.22	1,279.04	0.00	466.78	94.8%
410 54400		RENTALS/LEASES					
	7,560.00	7,560.00	2,984.10	348.16	0.00	4,575.90	39.5%
410 54500		INSURANCE					
	71,400.00	71,400.00	42,619.30	7,103.22	0.00	28,780.70	59.7%
410 54610		R/M BLDG & GROUNDS					
	1,200.00	17,200.00	13,550.00	12,900.00	0.00	3,650.00	78.8%
410 54620		R/M EQUIPMENT					
	49,200.00	49,200.00	24,616.56	3,557.10	0.00	24,583.44	50.0%
410 54800		PROMOTIONAL					
	32,175.00	32,175.00	13,309.35	700.00	0.00	18,865.65	41.4%
410 54900		MISC EXPENSE					
	0.00	0.00	798.67	0.00	0.00	-798.67	100.0%*
410 55100		OFFICE SUPPLIES					
	1,956.00	1,956.00	702.86	69.00	0.00	1,253.14	35.9%
410 55200		OPERATING SUPPLIES					
	174,608.00	174,608.00	83,867.06	19,588.85	0.00	90,740.94	48.0%
410 55210		UNIFORMS					
	7,200.00	7,200.00	3,162.43	476.06	0.00	4,037.57	43.9%
410 55230		GAS/OIL					
	30,600.00	30,600.00	12,160.27	1,204.76	0.00	18,439.73	39.7%
410 55400		BOOKS/SUBS/DUES					
	7,900.00	7,900.00	3,626.25	0.00	0.00	4,273.75	45.9%
410 55545		PRO SHOP COST OF SALES					
	46,098.00	46,098.00	17,411.53	3,803.78	0.00	28,686.47	37.8%
410 55550		F&B COST OF SALES					
	141,537.00	141,537.00	76,570.51	13,288.70	0.00	64,966.49	54.1%
410 55555		F&B PERSONNEL COSTS					
	114,222.00	114,222.00	55,988.41	11,609.82	0.00	58,233.59	49.0%
410 56200		BUILDING					
	45,000.00	29,000.00	0.00	0.00	0.00	29,000.00	.0%
410 56300		IMPROVEMENTS					
	40,000.00	535,000.00	0.00	0.00	0.00	535,000.00	.0%
410 56400		MACH/EQUIP					
	75,000.00	75,000.00	0.00	0.00	0.00	75,000.00	.0%
410 57100		PRINCIPAL					
	175,722.00	175,722.00	0.00	0.00	0.00	175,722.00	.0%



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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
410 57200		INTEREST					
	7,301.00	7,301.00	2,300.68	1,731.54	0.00	5,000.32	31.5%
410 59990		RESERVE					
	-1,168,555.00	-1,168,555.00	0.00	0.00	0.00	-1,168,555.00	.00*
TOTAL GOLF	0.00	0.00	-604,985.33	-520,619.22	0.00	604,985.33	100.0%
	TOTAL REVENUES						
	-608,779.00	-1,103,779.00	-1,327,785.96	-655,483.20	0.00	224,006.96	
	TOTAL EXPENSES						
	608,779.00	1,103,779.00	722,800.63	134,863.98	0.00	380,978.37	
	GRAND TOTAL						
	0.00	0.00	-604,985.33	-520,619.22	0.00	604,985.33	100.0%

** END OF REPORT - Generated by Christina Poston **

Golf	Budget		Mar YTD	
Pro Shop Sales	74,352.00		28,692.82	
Cost of Good Sold	<u>46,098.00</u>		<u>17,411.53</u>	
Profit/(Loss)	28,254.00	61.3%	11,281.29	64.8%
F&B Sales	327,822.00		173,393.58	
Cost of Good Sold	<u>255,759.00</u>		<u>132,558.92</u>	
Profit/(Loss)	72,063.00	28.2%	40,834.66	30.8%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
420 AIRPORT							
420 33220		FAA GRANT					
	-2,143,000.00	-2,143,000.00	-67,967.81	-28,320.83	0.00	-2,075,032.19	3.2%*
420 33323		FDOT GRANT					
	-505,500.00	-505,500.00	-14,131.19	-1,888.06	0.00	-491,368.81	2.8%*
420 34704		RENTALS NON-TAXABLE					
	0.00	0.00	-680.00	0.00	0.00	680.00	100.0%
420 34720		RENTALS					
	0.00	0.00	-1,000.00	0.00	0.00	1,000.00	100.0%
420 34970		FUEL SALES					
	-24,800.00	-24,800.00	-11,566.88	-4,779.92	0.00	-13,233.12	46.6%*
420 34971		LEASE PAYMENTS-LAND LEASE					
	-69,797.00	-69,797.00	-38,476.36	-6,367.90	0.00	-31,320.64	55.1%*
420 34972		BUILDING LEASE					
	0.00	0.00	-2,599.98	-433.33	0.00	2,599.98	100.0%
420 34973		LAND LEASE- AMELIA RIVER					
	-205,960.00	-205,960.00	-98,113.92	-16,958.06	0.00	-107,846.08	47.6%*
420 34974		LAND LEASE PAYMENTS-NON TAXABL					
	-37,105.00	-37,105.00	-18,096.32	-3,163.86	0.00	-19,008.68	48.8%*
420 34975		RENT/LEASE PAYMENTS					
	-293,707.00	-293,707.00	-135,782.42	-22,643.31	0.00	-157,924.58	46.2%*
420 34976		8 FLAGS RENT (TAXABLE)					
	-67,017.00	-67,017.00	-27,422.76	-9,152.44	0.00	-39,594.24	40.9%*
420 34978		8 FLAGS RENT NON-TAXABLE					
	-50,266.00	-50,266.00	-33,285.65	-6,581.34	0.00	-16,980.35	66.2%*
420 34979		TRANSIENT REVENUE					
	0.00	0.00	-2,805.00	-960.00	0.00	2,805.00	100.0%
420 36110		INTEREST					
	0.00	0.00	-2,536.53	-482.62	0.00	2,536.53	100.0%
420 36990		OTHER REVENUE					
	-112,650.00	-112,650.00	-51,488.50	-9,138.50	0.00	-61,161.50	45.7%*
420 36991		PARKING REVENUE					
	-2,004.00	-2,004.00	0.00	0.00	0.00	-2,004.00	.0%*
420 36995		LATE FEES					
	0.00	0.00	-1,288.61	-291.86	0.00	1,288.61	100.0%
420 38910		CASH BALANCE FORWARD					
	-173,581.00	-173,581.00	0.00	0.00	0.00	-173,581.00	.0%*
420 51200		SALARIES					
	128,570.00	128,570.00	61,813.34	10,005.40	0.00	66,756.66	48.1%
420 51350		PART-TIME					
	15,809.00	15,809.00	0.00	0.00	0.00	15,809.00	.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
420 52100		FICA					
	11,045.00	11,045.00	4,289.83	688.48	0.00	6,755.17	38.8%
420 52200		RETIREMENT					
	30,806.00	30,806.00	14,807.51	2,397.30	0.00	15,998.49	48.1%
420 52300		HEALTH INSUR					
	29,687.00	29,687.00	14,869.04	2,479.02	0.00	14,817.96	50.1%
420 52301		LIFE INSUR					
	713.00	713.00	367.07	61.57	0.00	345.93	51.5%
420 52350		OPEB COSTS					
	1,756.00	1,756.00	876.00	146.00	0.00	880.00	49.9%
420 52400		WORKERS' COMP					
	3,150.00	3,150.00	1,578.00	263.00	0.00	1,572.00	50.1%
420 53100		PROFESSIONAL SERVICES					
	25,000.00	25,000.00	12,750.00	4,250.00	3,500.00	8,750.00	65.0%
420 53200		AUDITING					
	6,795.00	6,795.00	3,396.00	566.00	0.00	3,399.00	50.0%
420 53400		CONTRACTUAL					
	54,790.00	54,790.00	15,210.53	3,435.71	5,490.00	34,089.47	37.8%
420 54000		TRAINING/TRAVEL					
	3,000.00	3,000.00	17.51	0.00	0.00	2,982.49	.6%
420 54100		COMM - PHONE/FAX/ALARM					
	2,203.00	2,203.00	839.62	166.32	0.00	1,363.38	38.1%
420 54101		COMMUNICATIONS-CELLULAR					
	2,000.00	2,000.00	688.33	104.05	0.00	1,311.67	34.4%
420 54103		COMMUNICATIONS-INTERNET					
	5,750.00	5,750.00	1,113.00	185.50	0.00	4,637.00	19.4%
420 54200		POSTAGE					
	100.00	100.00	0.00	0.00	0.00	100.00	.0%
420 54300		UTILITIES ELECTRIC					
	42,000.00	42,000.00	15,428.82	3,254.82	0.00	26,571.18	36.7%
420 54310		UTILITIES-WATER & WASTEWATER					
	13,400.00	13,400.00	3,813.73	0.00	0.00	9,586.27	28.5%
420 54500		INSURANCE					
	42,349.00	42,349.00	21,174.00	3,529.00	0.00	21,175.00	50.0%
420 54610		R/M BLDG & GROUNDS					
	94,000.00	93,600.00	50,036.86	2,826.38	0.00	43,563.14	53.5%
420 54620		R/M EQUIPMENT					
	1,500.00	1,500.00	0.00	0.00	0.00	1,500.00	.0%
420 54630		R/M VEHICLES-LABOR					
	4,600.00	4,600.00	3,805.00	715.00	0.00	795.00	82.7%
420 54640		R/M VEHICLES-PARTS					
	5,000.00	5,000.00	5,216.71	469.47	0.00	-216.71	104.3%*
420 54700		PRINTING					
	1,057.00	1,057.00	0.00	0.00	0.00	1,057.00	.0%



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YEAR-TO-DATE BUDGET REPORT

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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
420 54800		PROMOTIONAL					
	1,000.00	1,000.00	0.00	0.00	0.00	1,000.00	.0%
420 54910		BILLING COSTS					
	7,300.00	7,300.00	3,648.00	608.00	0.00	3,652.00	50.0%
420 55100		OFFICE SUPPLIES					
	7,300.00	5,907.00	373.50	0.00	0.00	5,533.50	6.3%
420 55200		OPERATING SUPPLIES					
	2,285.00	2,285.00	221.36	37.21	0.00	2,063.64	9.7%
420 55210		UNIFORMS					
	400.00	400.00	0.00	0.00	0.00	400.00	.0%
420 55230		GAS/OIL					
	5,000.00	5,000.00	3,226.39	1,062.68	0.00	1,773.61	64.5%
420 55400		BOOKS/SUBS/DUES					
	525.00	725.00	605.00	275.00	0.00	120.00	83.4%
420 56300		IMPROVEMENTS					
	2,860,250.00	2,965,585.00	183,818.57	31,467.59	89,988.21	2,691,778.22	9.2%
420 56400		MACH/EQUIP					
	30,000.00	30,200.00	30,172.62	975.00	0.00	27.38	99.9%
420 56401		EQUIP-NON CAPITAL					
	1,000.00	2,393.00	2,393.00	0.00	0.00	0.00	100.0%
420 57100		PRINCIPAL					
	79,000.00	79,000.00	0.00	0.00	0.00	79,000.00	.0%
420 57200		INTEREST					
	35,005.00	35,005.00	17,814.77	17,814.77	0.00	17,190.23	50.9%
420 59990		RESERVE					
	131,242.00	25,907.00	0.00	0.00	0.00	25,907.00	.0%
TOTAL AIRPORT	0.00	0.00	-32,877.82	-23,378.76	98,978.21	-66,100.39	100.0%
		TOTAL REVENUES					
	-3,685,387.00	-3,685,387.00	-507,241.93	-111,162.03	0.00	-3,178,145.07	
		TOTAL EXPENSES					
	3,685,387.00	3,685,387.00	474,364.11	87,783.27	98,978.21	3,112,044.68	
		GRAND TOTAL					
	0.00	0.00	-32,877.82	-23,378.76	98,978.21	-66,100.39	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
440 SANITATION							
440 34340		GARBAGE FEES					
	-2,520,960.00	-2,520,960.00	-1,315,592.88	-222,611.68	0.00	-1,205,367.12	52.2%*
440 36110		INTEREST					
	0.00	0.00	-1,247.88	-126.95	0.00	1,247.88	100.0%
440 36990		OTHER REVENUE					
	-19,000.00	-19,000.00	-12,248.85	-4,648.75	0.00	-6,751.15	64.5%*
440 38910		CASH BALANCE FORWARD					
	-102,008.00	-102,008.00	0.00	0.00	0.00	-102,008.00	.0%*
440 53200		AUDITING					
	6,795.00	6,795.00	3,396.00	566.00	0.00	3,399.00	50.0%
440 53400		CONTRACTUAL					
	125,000.00	125,000.00	10,502.73	2,122.05	45,000.00	69,497.27	44.4%
440 53440		SANITATION SERVICES EXPENSE					
	2,291,553.00	2,291,553.00	1,045,995.75	186,447.69	0.00	1,245,557.25	45.6%
440 53444		RECYCLING SERVICES					
	20,000.00	20,000.00	10,002.00	1,667.00	0.00	9,998.00	50.0%
440 54910		BILLING COSTS					
	92,000.00	92,000.00	46,002.00	7,667.00	0.00	45,998.00	50.0%
440 55200		OPERATING SUPPLIES					
	700.00	700.00	365.84	0.00	0.00	334.16	52.3%
440 55644		NON PROFIT KNB					
	5,000.00	5,000.00	0.00	0.00	0.00	5,000.00	.0%
440 56401		NON CAP EQUIP					
	15,000.00	15,000.00	0.00	0.00	0.00	15,000.00	.0%
440 59100		TRANSFER TO GENERAL FUND					
	36,000.00	36,000.00	18,000.00	3,000.00	0.00	18,000.00	50.0%
440 59990		RESERVE					
	49,920.00	49,920.00	0.00	0.00	0.00	49,920.00	.0%
TOTAL SANITATION							
	0.00	0.00	-194,825.29	-25,917.64	45,000.00	149,825.29	100.0%
TOTAL REVENUES							
	-2,641,968.00	-2,641,968.00	-1,329,089.61	-227,387.38	0.00	-1,312,878.39	
TOTAL EXPENSES							
	2,641,968.00	2,641,968.00	1,134,264.32	201,469.74	45,000.00	1,462,703.68	
GRAND TOTAL							
	0.00	0.00	-194,825.29	-25,917.64	45,000.00	149,825.29	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
450 WASTEWATER							
			LY \$2,881,100.89				
450 34345		WASTEWATER CHARGES					
	-6,005,917.00	-6,005,917.00	-2,973,933.10	-507,062.90	0.00	-3,031,983.90	49.5%*
450 34530		SEPTIC DUMPING					
	-35,000.00	-35,000.00	-22,227.20	-4,636.80	0.00	-12,772.80	63.5%*
450 34535		WASTEWATER TAP FEES					
	-31,250.00	-31,250.00	-13,750.00	0.00	0.00	-17,500.00	44.0%*
450 34910		WASTEWATER MISCELLANEOUS FEES					
	-5,000.00	-5,000.00	-10,532.15	0.00	0.00	5,532.15	210.6%
450 36110		INTEREST					
	-90,000.00	-90,000.00	-65,510.35	-11,153.56	0.00	-24,489.65	72.8%*
450 36120		UNREALIZED GAIN					
	0.00	0.00	4.81	-324.37	0.00	-4.81	100.0%*
450 36992		GAIN ON SALE OF ASSET					
	0.00	0.00	-602.50	-400.00	0.00	602.50	100.0%
450 38910		CASH BALANCE FORWARD					
	-6,017,119.00	-6,017,119.00	0.00	0.00	0.00	-6,017,119.00	.0%*
450 51200		SALARIES					
	568,299.00	568,299.00	265,819.64	42,708.08	0.00	302,479.36	46.8%
450 51350		PART-TIME					
	31,948.00	31,948.00	10,610.39	2,999.15	0.00	21,337.61	33.2%
450 51400		OVERTIME					
	100,000.00	100,000.00	60,061.53	8,969.59	0.00	39,938.47	60.1%
450 52100		FICA					
	53,569.00	53,569.00	24,073.40	3,874.36	0.00	29,495.60	44.9%
450 52200		RETIREMENT					
	139,656.00	139,656.00	75,625.44	12,381.94	0.00	64,030.56	54.2%
450 52300		HEALTH INSUR					
	168,423.00	168,423.00	82,915.26	13,570.01	0.00	85,507.74	49.2%
450 52301		LIFE INSUR					
	3,158.00	3,158.00	1,608.94	267.64	0.00	1,549.06	50.9%
450 52350		OPEB COSTS					
	15,361.00	15,361.00	7,680.00	1,280.00	0.00	7,681.00	50.0%
450 52400		WORKERS' COMP					
	20,189.00	20,189.00	10,092.00	1,682.00	0.00	10,097.00	50.0%
450 53200		AUDITING					
	14,345.00	14,345.00	7,170.00	1,195.00	0.00	7,175.00	50.0%
450 53400		CONTRACTUAL					
	251,098.00	251,098.00	79,916.77	8,138.54	0.00	171,181.23	31.8%
450 54000		TRAINING/TRAVEL					
	16,375.00	14,375.00	4,225.00	1,100.00	0.00	10,150.00	29.4%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
450 54100		COMM - PHONE/FAX/ALARM					
	3,555.00	3,555.00	372.72	73.92	0.00	3,182.28	10.5%
450 54101		COMMUNICATIONS-CELLULAR					
	2,400.00	2,400.00	1,245.02	213.70	0.00	1,154.98	51.9%
450 54103		COMMUNICATIONS-INTERNET					
	1,635.00	3,635.00	1,734.16	292.25	0.00	1,900.84	47.7%
450 54200		POSTAGE					
	3,000.00	3,000.00	305.28	22.06	0.00	2,694.72	10.2%
450 54300		UTILITIES ELECTRIC					
	190,000.00	190,000.00	83,491.83	13,268.22	0.00	106,508.17	43.9%
450 54310		UTILITIES-WATER & WASTEWATER					
	31,287.00	31,287.00	14,412.62	990.86	0.00	16,874.38	46.1%
450 54320		UTILITIES-PROPANE/OTHER					
	7,800.00	7,800.00	0.00	0.00	0.00	7,800.00	.0%
450 54500		INSURANCE					
	71,388.00	71,388.00	35,694.00	5,949.00	0.00	35,694.00	50.0%
450 54610		R/M BLDG & GROUNDS					
	20,000.00	20,000.00	2,933.41	137.52	0.00	17,066.59	14.7%
450 54620		R/M EQUIPMENT					
	110,000.00	110,000.00	43,705.18	5,057.76	0.00	66,294.82	39.7%
450 54630		R/M VEHICLES-LABOR					
	27,000.00	27,000.00	10,074.50	1,948.75	0.00	16,925.50	37.3%
450 54640		R/M VEHICLES-PARTS					
	40,000.00	40,000.00	18,328.73	3,855.63	0.00	21,671.27	45.8%
450 54910		BILLING COSTS					
	200,000.00	200,000.00	100,002.00	16,667.00	0.00	99,998.00	50.0%
450 54920		UTILITY ADMIN COSTS					
	225,000.00	225,000.00	112,500.00	18,750.00	0.00	112,500.00	50.0%
450 55100		OFFICE SUPPLIES					
	1,100.00	1,100.00	0.00	0.00	0.00	1,100.00	.0%
450 55200		OPERATING SUPPLIES					
	198,120.00	198,120.00	29,960.39	7,961.69	0.00	168,159.61	15.1%
450 55210		UNIFORMS					
	10,525.00	10,525.00	3,255.98	42.00	0.00	7,269.02	30.9%
450 55220		JANITORIAL SUPPLIES					
	1,500.00	1,500.00	551.88	177.88	0.00	948.12	36.8%
450 55230		GAS/OIL					
	30,000.00	30,000.00	11,565.01	1,714.45	0.00	18,434.99	38.6%
450 55240		CHEMICALS					
	70,000.00	70,000.00	26,701.88	8,483.92	0.00	43,298.12	38.1%
450 55300		ROAD MATERIALS					
	8,000.00	8,000.00	1,244.97	0.00	0.00	6,755.03	15.6%
450 55400		BOOKS/SUBS/DUES					
	1,900.00	1,900.00	504.25	18.75	0.00	1,395.75	26.5%



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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
450 56300		IMPROVEMENTS					
	940,000.00	940,000.00	133,088.90	2,421.09	144,231.00	662,680.10	29.5%
450 56400		MACH/EQUIP					
	160,000.00	160,000.00	6,600.00	0.00	0.00	153,400.00	4.1%
450 56401		EQUIP-NON CAPITAL					
	23,500.00	23,500.00	2,221.00	0.00	0.00	21,279.00	9.5%
450 59100		TRANSFER TO GENERAL FUND					
	360,000.00	360,000.00	180,000.00	30,000.00	0.00	180,000.00	50.0%
450 59230		TRANSFER TO UTIL ACQ DS					
	418,629.00	418,629.00	209,316.00	34,886.00	0.00	209,313.00	50.0%
450 59330		TRANSFER TO WW CAPITAL					
	1,500,000.00	1,500,000.00	750,000.00	125,000.00	0.00	750,000.00	50.0%
450 59460		TRANSFER TO WATER FUND					
	600,000.00	600,000.00	300,000.00	50,000.00	0.00	300,000.00	50.0%
450 59990		RESERVE					
	5,545,526.00	5,545,526.00	0.00	0.00	0.00	5,545,526.00	.0%
TOTAL WASTEWATER	0.00	0.00	-376,942.41	-97,478.87	144,231.00	232,711.41	100.0%
TOTAL REVENUES	-12,184,286.00	-12,184,286.00	-3,086,550.49	-523,577.63	0.00	-9,097,735.51	
TOTAL EXPENSES	12,184,286.00	12,184,286.00	2,709,608.08	426,098.76	144,231.00	9,330,446.92	
GRAND TOTAL	0.00	0.00	-376,942.41	-97,478.87	144,231.00	232,711.41	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
460 WATER							
			LY \$1,990,617.12				
460 34346		WATER CHARGES					
	-4,233,544.00	-4,233,544.00	-2,050,738.75	-349,133.29	0.00	-2,182,805.25	48.4%*
460 34610		WATER TAP CHARGES					
	-53,560.00	-53,560.00	-17,250.00	-1,000.00	0.00	-36,310.00	32.2%*
460 34620		WATER METER INSTALLATION FEES					
	-37,801.00	-37,801.00	-8,415.07	-203.44	0.00	-29,385.93	22.3%*
460 34621		WATER NONPAY RECONNECT FEE					
	-30,000.00	-30,000.00	-36,022.60	-3,380.00	0.00	6,022.60	120.1%
460 34910		MISCELLANEOUS FEES					
	-10,712.00	-10,712.00	-3,140.98	-540.98	0.00	-7,571.02	29.3%*
460 36110		INTEREST					
	-79,745.00	-79,745.00	-25,138.32	-4,731.83	0.00	-54,606.68	31.5%*
460 36120		UNREALIZED GAIN					
	0.00	0.00	4.90	-334.21	0.00	-4.90	100.0%*
460 36323		EXTENSION CHARGES					
	-24,720.00	-24,720.00	-875.00	0.00	0.00	-23,845.00	3.5%*
460 36992		GAIN ON SALE OF ASSET					
	0.00	0.00	-455.00	0.00	0.00	455.00	100.0%
460 36995		LATE FEES					
	-16,322.00	-16,322.00	-11,802.59	-1,140.82	0.00	-4,519.41	72.3%*
460 38145		FROM WASTEWATER					
	-600,000.00	-600,000.00	-300,000.00	-50,000.00	0.00	-300,000.00	50.0%*
460 38910		CASH BALANCE FORWARD					
	-5,182,226.00	-5,182,226.00	0.00	0.00	0.00	-5,182,226.00	.0%*
460 38912		RESERVE - R & R FUND					
	-200,000.00	-200,000.00	0.00	0.00	0.00	-200,000.00	.0%*
460 51200		SALARIES					
	509,731.00	509,731.00	214,910.10	34,777.40	0.00	294,820.90	42.2%
460 51400		OVERTIME					
	105,000.00	105,000.00	62,504.08	8,527.61	0.00	42,495.92	59.5%
460 52100		FICA					
	47,027.00	47,027.00	20,368.74	3,151.80	0.00	26,658.26	43.3%
460 52200		RETIREMENT					
	122,316.00	122,316.00	62,820.73	10,375.86	0.00	59,495.27	51.4%
460 52300		HEALTH INSUR					
	134,776.00	134,776.00	58,617.83	9,851.69	0.00	76,158.17	43.5%
460 52301		LIFE INSUR					
	2,744.00	2,744.00	1,232.73	206.79	0.00	1,511.27	44.9%
460 52350		OPEB COSTS					
	14,483.00	14,483.00	7,242.00	1,207.00	0.00	7,241.00	50.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
460 52400		WORKERS' COMP					
	23,942.00	23,942.00	11,970.00	1,995.00	0.00	11,972.00	50.0%
460 53100		PROFESSIONAL SERVICES					
	0.00	0.00	-30.45	0.00	0.00	30.45	100.0%
460 53200		AUDITING					
	9,815.00	9,815.00	4,908.00	818.00	0.00	4,907.00	50.0%
460 53400		CONTRACTUAL					
	149,980.00	149,980.00	58,804.47	11,256.64	0.00	91,175.53	39.2%
460 54000		TRAINING/TRAVEL					
	12,120.00	12,120.00	2,609.45	0.00	0.00	9,510.55	21.5%
460 54100		COMM - PHONE/FAX/ALARM					
	2,115.00	2,115.00	484.40	95.90	0.00	1,630.60	22.9%
460 54101		COMMUNICATIONS-CELLULAR					
	5,000.00	5,000.00	1,986.42	313.76	0.00	3,013.58	39.7%
460 54103		COMMUNICATIONS-INTERNET					
	5,250.00	5,250.00	1,499.55	275.41	0.00	3,750.45	28.6%
460 54200		POSTAGE					
	1,825.00	1,825.00	69.43	0.00	0.00	1,755.57	3.8%
460 54300		UTILITIES ELECTRIC					
	275,000.00	275,000.00	101,976.64	20,668.45	0.00	173,023.36	37.1%
460 54310		UTILITIES-WATER & WASTEWATER					
	1,000.00	1,000.00	661.64	225.55	0.00	338.36	66.2%
460 54320		UTILITIES-PROPANE/OTHER					
	6,000.00	6,000.00	0.00	0.00	0.00	6,000.00	.0%
460 54440		LAND RENT					
	25,000.00	25,000.00	8,319.50	1,534.39	0.00	16,680.50	33.3%
460 54500		INSURANCE					
	30,315.00	30,315.00	15,156.00	2,526.00	0.00	15,159.00	50.0%
460 54610		R/M BLDG & GROUNDS					
	3,000.00	3,000.00	474.22	0.00	0.00	2,525.78	15.8%
460 54620		R/M EQUIPMENT					
	230,000.00	230,000.00	4,505.24	50.00	8,370.00	217,124.76	5.6%
460 54630		R/M VEHICLES-LABOR					
	14,000.00	14,000.00	6,307.75	505.00	0.00	7,692.25	45.1%
460 54640		R/M VEHICLES-PARTS					
	20,000.00	20,000.00	7,669.78	1,105.43	0.00	12,330.22	38.3%
460 54800		PROMOTIONAL					
	10,000.00	10,000.00	2,500.00	0.00	0.00	7,500.00	25.0%
460 54910		BILLING COSTS					
	200,000.00	200,000.00	100,002.00	16,667.00	0.00	99,998.00	50.0%
460 54920		UTILITY ADMIN COSTS					
	225,000.00	225,000.00	112,500.00	18,750.00	0.00	112,500.00	50.0%
460 55100		OFFICE SUPPLIES					
	1,000.00	1,000.00	0.00	0.00	0.00	1,000.00	.0%

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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
460 55200		OPERATING SUPPLIES					
	161,420.00	161,420.00	49,613.97	9,456.94	1,089.10	110,716.93	31.4%
460 55210		UNIFORMS					
	9,900.00	9,900.00	4,363.04	212.50	0.00	5,536.96	44.1%
460 55220		JANITORIAL SUPPLIES					
	450.00	450.00	172.88	172.88	0.00	277.12	38.4%
460 55230		GAS/OIL					
	35,000.00	35,000.00	14,887.68	1,904.98	0.00	20,112.32	42.5%
460 55240		CHEMICALS					
	25,000.00	25,000.00	5,279.00	0.00	0.00	19,721.00	21.1%
460 55300		ROAD MATERIALS					
	8,000.00	8,000.00	1,770.19	0.00	0.00	6,229.81	22.1%
460 55400		BOOKS/SUBS/DUES					
	6,140.00	6,140.00	1,755.50	81.25	0.00	4,384.50	28.6%
460 56300		IMPROVEMENTS					
	1,370,000.00	1,370,000.00	1,083,514.59	312,547.99	246,767.00	39,718.41	97.1%
460 56400		MACH/EQUIP					
	37,000.00	37,000.00	37,114.10	4,692.00	0.00	-114.10	100.3%*
460 56401		EQUIP-NON CAPITAL					
	25,000.00	25,000.00	5,986.61	4,540.00	0.00	19,013.39	23.9%
460 59100		TRANSFER TO GENERAL FUND					
	180,000.00	180,000.00	90,000.00	15,000.00	0.00	90,000.00	50.0%
460 59230		TRANSFER TO UTIL ACQ DS					
	1,495,471.00	1,495,471.00	747,738.00	124,623.00	0.00	747,733.00	50.0%
460 59910		CONTINGENCY R & R					
	200,000.00	200,000.00	0.00	0.00	0.00	200,000.00	.0%
460 59990		RESERVE					
	4,728,810.00	4,728,810.00	0.00	0.00	0.00	4,728,810.00	.0%
TOTAL WATER	0.00	0.00	458,432.40	207,651.65	256,226.10	-714,658.50	100.0%
	TOTAL REVENUES						
	-10,468,630.00	-10,468,630.00	-2,453,833.41	-410,464.57	0.00	-8,014,796.59	
	TOTAL EXPENSES						
	10,468,630.00	10,468,630.00	2,912,265.81	618,116.22	256,226.10	7,300,138.09	
	GRAND TOTAL						
	0.00	0.00	458,432.40	207,651.65	256,226.10	-714,658.50	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
470 STORMWATER							
470 33120		FEMA FED GRANT					
	-383,803.00	-383,803.00	0.00	0.00	0.00	-383,803.00	.0%*
470 33400		STATE GRANT					
	-231,197.00	-231,197.00	-133,641.49	-19,089.67	0.00	-97,555.51	57.8%*
470 33700		SJRWMD GRANT					
	-412,945.00	-412,945.00	-103,565.59	-103,565.59	0.00	-309,379.41	25.1%*
470 34347		WATER DRAINAGE FEES					
	-825,000.00	-825,000.00	-439,755.60	LY \$430,062.87 -73,370.00	0.00	-385,244.40	53.3%*
470 34910		MISCELLANEOUS FEES					
	0.00	0.00	-3,779.95	0.00	0.00	3,779.95	100.0%
470 36110		INTEREST					
	0.00	0.00	-214.60	0.00	0.00	214.60	100.0%
470 36992		GAIN ON SALE OF ASSET					
	0.00	0.00	94,026.87	0.00	0.00	-94,026.87	100.0%*
470 38410		LOAN PROCEEDS					
	-235,000.00	-235,000.00	-228,508.00	0.00	0.00	-6,492.00	97.2%*
470 38910		CASH BALANCE FORWARD					
	-365,173.00	-365,173.00	0.00	0.00	0.00	-365,173.00	.0%*
470 51200		SALARIES					
	284,591.00	284,591.00	135,475.82	21,139.80	0.00	149,115.18	47.6%
470 51400		OVERTIME					
	13,000.00	13,000.00	1,510.49	310.05	0.00	11,489.51	11.6%
470 52100		FICA					
	22,766.00	22,766.00	9,828.71	1,517.19	0.00	12,937.29	43.2%
470 52200		RETIREMENT					
	68,188.00	68,188.00	32,786.78	5,119.99	0.00	35,401.22	48.1%
470 52300		HEALTH INSUR					
	72,481.00	72,481.00	34,482.19	6,040.05	0.00	37,998.81	47.6%
470 52301		LIFE INSUR					
	1,576.00	1,576.00	773.28	134.89	0.00	802.72	49.1%
470 52350		OPEB COSTS					
	2,194.00	2,194.00	1,098.00	183.00	0.00	1,096.00	50.0%
470 52400		WORKERS' COMP					
	15,468.00	15,468.00	7,734.00	1,289.00	0.00	7,734.00	50.0%
470 53100		PROFESSIONAL SERVICES					
	75,000.00	75,000.00	6,652.63	910.00	0.00	68,347.37	8.9%
470 53200		AUDITING					
	6,040.00	6,040.00	3,018.00	503.00	0.00	3,022.00	50.0%
470 53400		CONTRACTUAL					
	209,238.00	209,238.00	31,492.65	3,360.84	0.00	177,745.35	15.1%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
470 54000		TRAINING/TRAVEL					
	6,583.00	6,583.00	1,594.81	0.00	0.00	4,988.19	24.2%
470 54100		COMM - PHONE/FAX/ALARM					
	216.00	216.00	0.00	0.00	0.00	216.00	.0%
470 54101		COMMUNICATIONS-CELLULAR					
	2,500.00	2,500.00	1,205.20	203.23	0.00	1,294.80	48.2%
470 54103		COMMUNICATIONS-INTERNET					
	1,635.00	1,635.00	359.70	62.76	0.00	1,275.30	22.0%
470 54200		POSTAGE					
	50.00	50.00	0.00	0.00	0.00	50.00	.0%
470 54300		UTILITIES ELECTRIC					
	3,600.00	3,600.00	1,849.25	457.62	0.00	1,750.75	51.4%
470 54310		UTILITIES-WATER & WASTEWATER					
	600.00	600.00	456.58	77.31	0.00	143.42	76.1%
470 54500		INSURANCE					
	847.00	847.00	426.00	71.00	0.00	421.00	50.3%
470 54610		R/M BLDG & GROUNDS					
	2,500.00	2,500.00	532.31	178.64	0.00	1,967.69	21.3%
470 54620		R/M EQUIPMENT					
	5,000.00	5,000.00	835.80	835.80	0.00	4,164.20	16.7%
470 54630		R/M VEHICLES-LABOR					
	8,500.00	8,500.00	3,468.25	33.75	0.00	5,031.75	40.8%
470 54640		R/M VEHICLES-PARTS					
	12,000.00	12,000.00	6,053.76	22.53	0.00	5,946.24	50.4%
470 54700		PRINTING					
	500.00	500.00	72.00	72.00	0.00	428.00	14.4%
470 54800		PROMOTIONAL					
	1,500.00	1,500.00	0.00	0.00	0.00	1,500.00	.0%
470 54910		BILLING COSTS					
	35,000.00	35,000.00	17,502.00	2,917.00	0.00	17,498.00	50.0%
470 55100		OFFICE SUPPLIES					
	1,500.00	1,500.00	0.00	0.00	0.00	1,500.00	.0%
470 55200		OPERATING SUPPLIES					
	135,060.00	135,060.00	27,312.37	3,449.59	0.00	107,747.63	20.2%
470 55210		UNIFORMS					
	3,300.00	3,300.00	2,575.65	0.00	0.00	724.35	78.1%
470 55230		GAS/OIL					
	15,000.00	15,000.00	4,600.49	735.25	0.00	10,399.51	30.7%
470 55400		BOOKS/SUBS/DUES					
	910.00	910.00	724.20	0.00	0.00	185.80	79.6%
470 56300		IMPROVEMENTS					
	1,209,295.00	1,209,295.00	421,896.17	173,083.67	379,872.05	407,526.78	66.3%
470 56400		MACH/EQUIP					
	235,000.00	235,000.00	230,108.00	0.00	0.00	4,892.00	97.9%



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STORMWATER MANAGEMENT

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
470 56401		EQUIP-NON CAPITAL					
	10,000.00	10,000.00	0.00	0.00	0.00	10,000.00	.0%
470 57100		PRINCIPAL					
	44,000.00	40,000.00	39,779.36	0.00	0.00	220.64	99.4%
470 57200		INTEREST					
	0.00	4,000.00	3,433.36	0.00	0.00	566.64	85.8%
470 59990		RESERVE					
	-52,520.00	-52,520.00	0.00	0.00	0.00	-52,520.00	.0%*
TOTAL STORMWATER	0.00	0.00	214,199.45	26,682.70	379,872.05	-594,071.50	100.0%
		TOTAL REVENUES					
	-2,453,118.00	-2,453,118.00	-815,438.36	-196,025.26	0.00	-1,637,679.64	
		TOTAL EXPENSES					
	2,453,118.00	2,453,118.00	1,029,637.81	222,707.96	379,872.05	1,043,608.14	
		GRAND TOTAL					
	0.00	0.00	214,199.45	26,682.70	379,872.05	-594,071.50	100.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
480 MARINA							
480 33120		FEMA GRANT					
	-7,047,971.00	-7,047,971.00	0.00	0.00	0.00	-7,047,971.00	.0%*
480 33400		STATE GRANT					
	-200,000.00	-200,000.00	0.00	0.00	0.00	-200,000.00	.0%*
480 33420		FEMA STATE					
	-1,174,662.00	-1,174,662.00	0.00	0.00	0.00	-1,174,662.00	.0%*
480 34750		SLIP RENTALS - PERMANENT					
	-190,550.00	-190,550.00	-60,300.43	-26,005.18	0.00	-130,249.57	31.6%*
480 34755		SLIP RENTALS - TRANSIENT					
	-433,350.00	-433,350.00	-48,800.44	-28,368.91	0.00	-384,549.56	11.3%*
480 34757		SLIP RENTALS - NON-TAXABLE					
	-31,850.00	-31,850.00	-960.00	0.00	0.00	-30,890.00	3.0%*
480 34760		BUSINESS RENTALS					
	-25,000.00	-25,000.00	-12,538.08	-2,089.68	0.00	-12,461.92	50.2%*
480 34762		MOORINGS-TAXABLE					
	-26,665.00	-26,665.00	-700.00	-700.00	0.00	-25,965.00	2.6%*
480 34766		SERVICES-NON TAXABLE					
	-100.00	-100.00	-45.71	-45.71	0.00	-54.29	45.7%*
480 34767		SERVICES-TAXABLE					
	-1,200.00	-1,200.00	-361.21	-150.00	0.00	-838.79	30.1%*
480 34770		FUEL-DIESEL					
	-740,000.00	-740,000.00	0.00	0.00	0.00	-740,000.00	.0%*
480 34771		FUEL-GAS					
	-179,000.00	-179,000.00	0.00	0.00	0.00	-179,000.00	.0%*
480 34773		FUEL-DIESEL NON-TAXABLE					
	-5,000.00	-5,000.00	0.00	0.00	0.00	-5,000.00	.0%*
480 34775		FUEL-DISCOUNTS DIESEL					
	7,335.00	7,335.00	0.00	0.00	0.00	7,335.00	.0%
480 34776		FUEL-DISCOUNTS GAS					
	665.00	665.00	0.00	0.00	0.00	665.00	.0%
480 36215		NON-TAXABLE RENT					
	0.00	0.00	-4,599.60	-766.60	0.00	4,599.60	100.0%
480 36990		OTHER REVENUE					
	-600.00	-600.00	-23.47	-5.25	0.00	-576.53	3.9%*
480 38101		FROM GENERAL FUND					
	300,000.00	300,000.00	150,000.00	-25,000.00	0.00	-150,000.00	50.0%*
480 38410		LOAN PROCEEDS					
	-7,321,100.00	-7,321,100.00	-1,558,300.00	-226,000.00	0.00	-5,762,800.00	21.3%*
480 38910		CASH BALANCE FORWARD					
	1,104,719.00	1,104,719.00	0.00	0.00	0.00	1,104,719.00	.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
480 51300		SEASONAL/TEMPORARY					
	80,000.00	80,000.00	54,920.10	8,888.80	0.00	25,079.90	68.7%
480 52100		FICA					
	6,150.00	6,150.00	4,223.14	683.83	0.00	1,926.86	68.7%
480 52400		WORKERS' COMP					
	1,850.00	1,850.00	924.00	154.00	0.00	926.00	49.9%
480 53100		PROFESSIONAL SERVICES					
	20,000.00	20,000.00	8,314.47	0.00	0.00	11,685.53	41.6%
480 53200		AUDITING					
	6,795.00	6,795.00	3,396.00	566.00	0.00	3,399.00	50.0%
480 53400		CONTRACTUAL					
	492,198.00	492,198.00	168,799.72	21,162.61	0.00	323,398.28	34.3%
480 54000		TRAINING/TRAVEL					
	1,650.00	1,650.00	0.00	0.00	0.00	1,650.00	.0%
480 54100		COMM - PHONE/FAX/ALARM					
	3,675.00	3,675.00	1,387.55	276.50	0.00	2,287.45	37.8%
480 54101		COMMUNICATIONS-CELLULAR					
	2,780.00	2,780.00	895.50	169.29	0.00	1,884.50	32.2%
480 54103		COMMUNICATIONS-INTERNET					
	10,900.00	10,900.00	4,356.52	174.42	0.00	6,543.48	40.0%
480 54300		UTILITIES ELECTRIC					
	41,225.00	41,225.00	6,719.78	1,399.03	0.00	34,505.22	16.3%
480 54310		UTILITIES-WATER & WASTEWATER					
	30,025.00	30,025.00	5,931.66	1,013.37	0.00	24,093.34	19.8%
480 54400		RENTALS/LEASES					
	3,024.00	3,024.00	2,457.00	378.00	0.00	567.00	81.3%
480 54500		INSURANCE					
	65,338.00	65,338.00	32,670.00	5,445.00	0.00	32,668.00	50.0%
480 54610		R/M BLDG & GROUNDS					
	44,500.00	41,500.00	16,178.56	7,235.79	4,429.90	20,891.54	49.7%
480 54620		R/M EQUIPMENT					
	7,750.00	7,750.00	7,764.12	12.10	0.00	-14.12	100.2%*
480 54630		R/M VEHICLES-LABOR					
	0.00	1,500.00	455.00	0.00	0.00	1,045.00	30.3%
480 54640		R/M VEHICLES-PARTS					
	0.00	1,500.00	375.40	0.00	0.00	1,124.60	25.0%
480 54675		R/M MOORING FIELD					
	23,600.00	23,600.00	12,894.88	12,894.88	0.00	10,705.12	54.6%
480 54700		PRINTING					
	3,300.00	3,300.00	48.00	0.00	0.00	3,252.00	1.5%
480 54800		PROMOTIONAL					
	2,400.00	2,400.00	0.00	0.00	0.00	2,400.00	.0%
480 55100		OFFICE SUPPLIES					
	6,800.00	6,800.00	1,629.39	687.12	0.00	5,170.61	24.0%

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	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
480 55200		OPERATING SUPPLIES					
	59,185.00	56,085.00	4,595.56	759.77	0.00	51,489.44	8.2%
480 55210		UNIFORMS					
	1,600.00	1,600.00	509.00	0.00	0.00	1,091.00	31.8%
480 55220		JANITORIAL SUPPLIES					
	2,800.00	2,800.00	0.00	0.00	0.00	2,800.00	.0%
480 55230		GAS/OIL					
	1,750.00	1,750.00	100.00	0.00	0.00	1,650.00	5.7%
480 55400		BOOKS/SUBS/DUES					
	825.00	825.00	200.00	200.00	0.00	625.00	24.2%
480 55510		FUEL FOR RESALE					
	710,000.00	710,000.00	0.00	0.00	0.00	710,000.00	.0%
480 56200		BUILDING					
	6,540,365.00	6,540,365.00	2,149,806.50	648,581.69	887,922.13	3,502,636.37	46.4%
480 56300		IMPROVEMENTS					
	2,380,000.00	2,380,000.00	796,109.36	9,880.50	20,663.19	1,563,227.45	34.3%
480 56400		MACH/EQUIP					
	0.00	3,100.00	0.00	0.00	0.00	3,100.00	.0%
480 57100		PRINCIPAL					
	8,720,557.00	8,720,557.00	0.00	0.00	0.00	8,720,557.00	.0%
480 57200		INTEREST					
	481,482.00	481,482.00	111,727.19	30,457.63	0.00	369,754.81	23.2%
480 59990		RESERVE					
	-3,188,195.00	-3,188,195.00	0.00	0.00	0.00	-3,188,195.00	.0%*
TOTAL MARINA	0.00	0.00	1,560,759.46	441,889.00	913,015.22	-2,473,774.68	100.0%
		TOTAL REVENUES					
	-16,564,329.00	-16,564,329.00	-1,836,628.94	-309,131.33	0.00	-14,727,700.06	
		TOTAL EXPENSES					
	16,564,329.00	16,564,329.00	3,397,388.40	751,020.33	913,015.22	12,253,925.38	
		GRAND TOTAL					
	0.00	0.00	1,560,759.46	441,889.00	913,015.22	-2,473,774.68	100.0%

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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
510 FLEET							
510 36990		OTHER REVENUE					
	-9,000.00	-9,000.00	-1,222.50	-600.00	0.00	-7,777.50	13.6%*
510 36992		GAIN ON SALE OF ASSET					
	-45,000.00	-45,000.00	-23,446.55	-10,250.00	0.00	-21,553.45	52.1%*
510 36994		LOANER VEHICLE REVENUE					
	-2,000.00	-2,000.00	-630.60	-258.90	0.00	-1,369.40	31.5%*
510 38045		LABOR					
	0.00	0.00	-475.00	-56.25	0.00	475.00	100.0%
510 38047		HUMANE SOCIETY-PARTS					
	-500.00	-500.00	0.00	0.00	0.00	-500.00	.0%*
510 38048		HUMANE SOCIETY-LABOR					
	-600.00	-600.00	0.00	0.00	0.00	-600.00	.0%*
510 38049		HUMANE SOCIETY-FUEL					
	-3,000.00	-3,000.00	-1,535.77	-183.43	0.00	-1,464.23	51.2%*
510 38053		GAS/OIL					
	-362,000.00	-362,000.00	-135,920.93	-20,658.34	0.00	-226,079.07	37.5%*
510 38144		FROM SANITATION					
	-20,000.00	-20,000.00	-10,002.00	-1,667.00	0.00	-9,998.00	50.0%*
510 38910		CASH BALANCE FORWARD					
	43,889.00	43,889.00	0.00	0.00	0.00	43,889.00	.0%
TOTAL FLEET	-398,211.00	-398,211.00	-173,233.35	-33,673.92	0.00	-224,977.65	43.5%
		TOTAL REVENUES					
	-398,211.00	-398,211.00	-173,233.35	-33,673.92	0.00	-224,977.65	
5101000 GENERAL FUND							
5101000 38040		PARTS					
	-268,250.00	-268,250.00	-118,457.90	-17,909.94	0.00	-149,792.10	44.2%*
5101000 38045		LABOR					
	-159,100.00	-159,100.00	-79,200.00	-13,200.00	0.00	-79,900.00	49.8%*
TOTAL GENERAL FUND	-427,350.00	-427,350.00	-197,657.90	-31,109.94	0.00	-229,692.10	46.3%
		TOTAL REVENUES					
	-427,350.00	-427,350.00	-197,657.90	-31,109.94	0.00	-229,692.10	
5102400 FLEET BUILDING/PERMITTING							
5102400 38040		PARTS					

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5102400 FLEET BUILDING/PERMITTING	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
	0.00	0.00	-2,952.70	-1,613.74	0.00	2,952.70	100.0%
TOTAL FLEET BUILDING/PERMITTING	0.00	0.00	-2,952.70	-1,613.74	0.00	2,952.70	100.0%
TOTAL REVENUES	0.00	0.00	-2,952.70	-1,613.74	0.00	2,952.70	
5102401 FLEET BUILDING/PERMITTING							
5102401 38045 LABOR	0.00	0.00	-1,384.00	-325.00	0.00	1,384.00	100.0%
TOTAL FLEET BUILDING/PERMITTING	0.00	0.00	-1,384.00	-325.00	0.00	1,384.00	100.0%
TOTAL REVENUES	0.00	0.00	-1,384.00	-325.00	0.00	1,384.00	
5103900 CEMETERY							
5103900 38040 PARTS	-1,500.00	-1,500.00	-555.00	-40.00	0.00	-945.00	37.0%*
5103900 38045 LABOR	-2,200.00	-2,200.00	-675.00	-77.50	0.00	-1,525.00	30.7%*
TOTAL CEMETERY	-3,700.00	-3,700.00	-1,230.00	-117.50	0.00	-2,470.00	33.2%
TOTAL REVENUES	-3,700.00	-3,700.00	-1,230.00	-117.50	0.00	-2,470.00	
5104200 AIRPORT							
5104200 38040 PARTS	-5,000.00	-5,000.00	-5,216.71	-469.47	0.00	216.71	104.3%
5104200 38045 LABOR	-4,600.00	-4,600.00	-3,805.00	-715.00	0.00	-795.00	82.7%*
TOTAL AIRPORT	-9,600.00	-9,600.00	-9,021.71	-1,184.47	0.00	-578.29	94.0%
TOTAL REVENUES	-9,600.00	-9,600.00	-9,021.71	-1,184.47	0.00	-578.29	

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5104500 WASTEWATER	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
5104500 WASTEWATER							
5104500 38040	PARTS						
	-40,000.00	-40,000.00	-18,328.73	-3,855.63	0.00	-21,671.27	45.8%*
5104500 38045	LABOR						
	-27,000.00	-27,000.00	-10,074.50	-1,948.75	0.00	-16,925.50	37.3%*
TOTAL WASTEWATER							
	-67,000.00	-67,000.00	-28,403.23	-5,804.38	0.00	-38,596.77	42.4%
TOTAL REVENUES							
	-67,000.00	-67,000.00	-28,403.23	-5,804.38	0.00	-38,596.77	
5104600 WATER							
5104600 38040	PARTS						
	-20,000.00	-20,000.00	-7,669.78	-1,105.43	0.00	-12,330.22	38.3%*
5104600 38045	LABOR						
	-14,000.00	-14,000.00	-6,307.75	-505.00	0.00	-7,692.25	45.1%*
TOTAL WATER							
	-34,000.00	-34,000.00	-13,977.53	-1,610.43	0.00	-20,022.47	41.1%
TOTAL REVENUES							
	-34,000.00	-34,000.00	-13,977.53	-1,610.43	0.00	-20,022.47	
5104700 STORMWATER							
5104700 38040	PARTS						
	-12,000.00	-12,000.00	-6,048.37	-22.53	0.00	-5,951.63	50.4%*
5104700 38045	LABOR						
	-8,500.00	-8,500.00	-3,468.25	-33.75	0.00	-5,031.75	40.8%*
TOTAL STORMWATER							
	-20,500.00	-20,500.00	-9,516.62	-56.28	0.00	-10,983.38	46.4%
TOTAL REVENUES							
	-20,500.00	-20,500.00	-9,516.62	-56.28	0.00	-10,983.38	
5104800 MARINA							
5104800 38040	PARTS						
	0.00	0.00	-375.40	0.00	0.00	375.40	100.0%



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5104800	MARINA	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED	
5104800	38045	LABOR	0.00	0.00	-455.00	0.00	0.00	455.00	100.0%
TOTAL MARINA		0.00	0.00	-830.40	0.00	0.00	830.40	100.0%	
TOTAL REVENUES		0.00	0.00	-830.40	0.00	0.00	830.40		
GRAND TOTAL		-960,361.00	-960,361.00	-438,207.44	-75,495.66	0.00	-522,153.56	45.6%	
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	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
510 FLEET							
510 51200		SALARIES					
	135,818.00	135,818.00	59,274.17	9,552.20	0.00	76,543.83	43.6%
510 51350		PART-TIME					
	29,108.00	29,108.00	13,534.34	2,271.61	0.00	15,573.66	46.5%
510 51400		OVERTIME					
	8,000.00	8,000.00	4,215.87	622.97	0.00	3,784.13	52.7%
510 52100		FICA					
	13,229.00	13,229.00	5,793.63	916.69	0.00	7,435.37	43.8%
510 52200		RETIREMENT					
	32,637.00	32,637.00	15,257.55	2,437.96	0.00	17,379.45	46.7%
510 52300		HEALTH INSUR					
	24,204.00	24,204.00	10,698.33	2,355.89	0.00	13,505.67	44.2%
510 52301		LIFE INSUR					
	708.00	708.00	300.32	58.98	0.00	407.68	42.4%
510 52400		WORKERS' COMP					
	5,836.00	5,836.00	2,916.00	486.00	0.00	2,920.00	50.0%
510 53200		AUDITING					
	2,265.00	2,265.00	1,134.00	189.00	0.00	1,131.00	50.1%
510 53400		CONTRACTUAL					
	19,582.00	19,582.00	13,563.46	701.84	0.00	6,018.54	69.3%
510 54000		TRAINING/TRAVEL					
	3,450.00	3,450.00	1,396.95	612.96	0.00	2,053.05	40.5%
510 54100		COMM - PHONE/FAX/ALARM					
	288.00	288.00	0.00	0.00	0.00	288.00	.0%
510 54101		COMMUNICATIONS-CELLULAR					
	1,150.00	1,150.00	435.96	66.17	0.00	714.04	37.9%
510 54103		COMMUNICATIONS-INTERNET					
	1,635.00	1,635.00	672.48	112.08	0.00	962.52	41.1%
510 54300		UTILITIES ELECTRIC					
	4,000.00	4,000.00	1,578.64	246.14	0.00	2,421.36	39.5%
510 54310		UTILITIES-WATER & WASTEWATER					
	2,100.00	2,100.00	991.39	171.14	0.00	1,108.61	47.2%
510 54500		INSURANCE					
	18,150.00	18,150.00	9,078.00	1,513.00	0.00	9,072.00	50.0%
510 54610		R/M BLDG & GROUNDS					
	5,000.00	5,000.00	1,388.69	0.00	0.00	3,611.31	27.8%
510 54620		R/M EQUIPMENT					
	7,500.00	7,500.00	7,462.90	127.83	0.00	37.10	99.5%
510 54630		R/M VEHICLES-LABOR					
	2,500.00	2,500.00	497.50	56.25	0.00	2,002.50	19.9%



FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
510 54640		R/M VEHICLES-PARTS					
	3,500.00	3,500.00	1,532.33	61.98	0.00	1,967.67	43.8%
510 55100		OFFICE SUPPLIES					
	200.00	149.00	43.48	0.00	0.00	105.52	29.2%
510 55200		OPERATING SUPPLIES					
	8,500.00	8,450.00	6,235.63	2,139.54	0.00	2,214.37	73.8%
510 55210		UNIFORMS					
	1,025.00	1,126.00	1,125.60	0.00	0.00	0.40	100.0%
510 55230		GAS/OIL					
	4,500.00	4,500.00	2,024.99	169.39	0.00	2,475.01	45.0%
510 55240		CHEMICALS					
	500.00	500.00	0.00	0.00	0.00	500.00	.0%
510 55400		BOOKS/SUBS/DUES					
	200.00	200.00	133.75	83.75	0.00	66.25	66.9%
510 56400		MACH/EQUIP					
	13,500.00	13,500.00	0.00	0.00	7,130.47	6,369.53	52.8%
510 56401		EQUIP-NON CAPITAL					
	6,000.00	6,000.00	0.00	0.00	0.00	6,000.00	.0%
510 58600		GAS/OIL COSTS					
	320,000.00	320,000.00	119,453.19	20,273.80	0.00	200,546.81	37.3%
510 58700		VEHICLE PARTS/SRVS COSTS					
	307,000.00	307,000.00	137,967.35	23,442.89	0.00	169,032.65	44.9%
510 59990		RESERVE					
	-21,724.00	-21,724.00	0.00	0.00	0.00	-21,724.00	.0%*
TOTAL FLEET							
	960,361.00	960,361.00	418,706.50	68,670.06	7,130.47	534,524.03	44.3%
TOTAL EXPENSES							
	960,361.00	960,361.00	418,706.50	68,670.06	7,130.47	534,524.03	
GRAND TOTAL							
	960,361.00	960,361.00	418,706.50	68,670.06	7,130.47	534,524.03	44.3%

** END OF REPORT - Generated by Susan Carless **

Revenues	(\$ 438,207.44)
Expenses	418,706.50
Net (Rev)Exp	(\$ 19,500.94)

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scarlessCity of Fernandina Beach
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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
520 UTILITY BILLING							
520 34300		UB ADMIN FEES					
	-32,000.00	-32,000.00	-13,148.55	-2,380.00	0.00	-18,851.45	41.1%*
520 36110		INTEREST					
	0.00	0.00	-379.70	-94.29	0.00	379.70	100.0%
520 36990		OTHER REVENUE					
	0.00	0.00	-48.00	0.00	0.00	48.00	100.0%
520 38910		CASH BALANCE FORWARD					
	-3,183.00	-3,183.00	0.00	0.00	0.00	-3,183.00	.0%*
TOTAL UTILITY BILLING	-35,183.00	-35,183.00	-13,576.25	-2,474.29	0.00	-21,606.75	38.6%
TOTAL REVENUES	-35,183.00	-35,183.00	-13,576.25	-2,474.29	0.00	-21,606.75	
5204200 AIRPORT							
5204200 38052		CHARGES FOR UB SERVICES					
	-7,300.00	-7,300.00	-3,648.00	-608.00	0.00	-3,652.00	50.0%*
TOTAL AIRPORT	-7,300.00	-7,300.00	-3,648.00	-608.00	0.00	-3,652.00	50.0%
TOTAL REVENUES	-7,300.00	-7,300.00	-3,648.00	-608.00	0.00	-3,652.00	
5204400 SANITATION							
5204400 38052		CHARGES FOR UB SERVICES					
	-92,000.00	-92,000.00	-46,002.00	-7,667.00	0.00	-45,998.00	50.0%*
TOTAL SANITATION	-92,000.00	-92,000.00	-46,002.00	-7,667.00	0.00	-45,998.00	50.0%
TOTAL REVENUES	-92,000.00	-92,000.00	-46,002.00	-7,667.00	0.00	-45,998.00	
5204500 WASTE WATER							
5204500 38052		CHARGES FOR UB SERVICES					
	-200,000.00	-200,000.00	-100,002.00	-16,667.00	0.00	-99,998.00	50.0%*

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5204500 WASTE WATER	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
TOTAL WASTE WATER	-200,000.00	-200,000.00	-100,002.00	-16,667.00	0.00	-99,998.00	50.0%
TOTAL REVENUES	-200,000.00	-200,000.00	-100,002.00	-16,667.00	0.00	-99,998.00	
5204600 WATER							
5204600 38052 CHARGES FOR UB SERVICES	-200,000.00	-200,000.00	-100,002.00	-16,667.00	0.00	-99,998.00	50.0%*
TOTAL WATER	-200,000.00	-200,000.00	-100,002.00	-16,667.00	0.00	-99,998.00	50.0%
TOTAL REVENUES	-200,000.00	-200,000.00	-100,002.00	-16,667.00	0.00	-99,998.00	
5204700 STORMWATER							
5204700 38052 CHARGES FOR UB SERVICES	-35,000.00	-35,000.00	-17,502.00	-2,917.00	0.00	-17,498.00	50.0%*
TOTAL STORMWATER	-35,000.00	-35,000.00	-17,502.00	-2,917.00	0.00	-17,498.00	50.0%
TOTAL REVENUES	-35,000.00	-35,000.00	-17,502.00	-2,917.00	0.00	-17,498.00	
GRAND TOTAL	-569,483.00	-569,483.00	-280,732.25	-47,000.29	0.00	-288,750.75	49.3%

** END OF REPORT - Generated by Susan Carless **

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	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
520 UTILITY BILLING							
520 51200		SALARIES					
	190,532.00	190,532.00	88,010.11	13,694.15	0.00	102,521.89	46.2%
520 51400		OVERTIME					
	2,000.00	2,000.00	1,851.77	329.10	0.00	148.23	92.6%
520 52100		FICA					
	14,729.00	14,729.00	6,690.78	1,054.97	0.00	8,038.22	45.4%
520 52200		RETIREMENT					
	45,652.00	45,652.00	21,520.26	3,359.97	0.00	24,131.74	47.1%
520 52300		HEALTH INSUR					
	38,849.00	38,849.00	17,697.50	2,430.59	0.00	21,151.50	45.6%
520 52301		LIFE INSUR					
	1,076.00	1,076.00	510.25	76.14	0.00	565.75	47.4%
520 52400		WORKERS' COMP					
	439.00	439.00	222.00	37.00	0.00	217.00	50.6%
520 53400		CONTRACTUAL					
	33,033.00	33,033.00	19,277.97	512.32	0.00	13,755.03	58.4%
520 54000		TRAINING/TRAVEL					
	3,070.00	3,070.00	419.01	85.12	0.00	2,650.99	13.6%
520 54100		COMM - PHONE/FAX/ALARM					
	862.00	862.00	186.76	36.96	0.00	675.24	21.7%
520 54103		COMMUNICATIONS-INTERNET					
	1,635.00	1,635.00	672.48	112.08	0.00	962.52	41.1%
520 54200		POSTAGE					
	40,000.00	40,000.00	24,294.00	4,299.00	0.00	15,706.00	60.7%
520 54300		UTILITIES ELECTRIC					
	3,675.00	3,675.00	1,144.73	162.13	0.00	2,530.27	31.1%
520 54310		UTILITIES-WATER & WASTEWATER					
	1,100.00	1,100.00	401.83	76.96	0.00	698.17	36.5%
520 54610		R/M BLDG & GROUNDS					
	1,500.00	1,500.00	0.00	0.00	0.00	1,500.00	.0%
520 54620		R/M EQUIPMENT					
	700.00	700.00	0.00	0.00	0.00	700.00	.0%
520 54700		PRINTING					
	6,652.00	6,652.00	3,130.85	0.00	0.00	3,521.15	47.1%
520 54902		BAD DEBT EXPENSE					
	1,500.00	1,500.00	0.00	0.00	0.00	1,500.00	.0%
520 55100		OFFICE SUPPLIES					
	3,332.00	3,332.00	424.42	0.00	0.00	2,907.58	12.7%
520 55200		OPERATING SUPPLIES					
	60,260.00	60,260.00	19,436.42	2,970.99	0.00	40,823.58	32.3%



FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
520 55210		UNIFORMS					
	1,200.00	1,200.00	346.00	236.00	0.00	854.00	28.8%
520 55220		JANITORIAL SUPPLIES					
	685.00	685.00	229.47	9.21	0.00	455.53	33.5%
520 59300		TRANSFER TO CAP IMP					
	10,700.00	10,700.00	5,350.02	891.67	0.00	5,349.98	50.0%
520 59990		RESERVE					
	106,302.00	106,302.00	0.00	0.00	0.00	106,302.00	.0%
TOTAL UTILITY BILLING							
	569,483.00	569,483.00	211,816.63	30,374.36	0.00	357,666.37	37.2%
TOTAL EXPENSES							
	569,483.00	569,483.00	211,816.63	30,374.36	0.00	357,666.37	
GRAND TOTAL							
	569,483.00	569,483.00	211,816.63	30,374.36	0.00	357,666.37	37.2%

** END OF REPORT - Generated by Susan Carless **

Revenues	(\$ 280,732.25)
Expenses	211,816.63
Net (Rev)Exp	(\$ 68,915.62)



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City of Fernandina Beach
YEAR-TO-DATE BUDGET REPORT

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FOR 2020 06

ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
530 UTILITY ADMIN						
530 36110	INTEREST					
	0.00	0.00	-297.61	-71.98	0.00	297.61 100.0%
530 38910	CASH BALANCE FORWARD					
	-15,840.00	-15,840.00	0.00	0.00	0.00	-15,840.00 .0%*
TOTAL UTILITY ADMIN						
	-15,840.00	-15,840.00	-297.61	-71.98	0.00	-15,542.39 1.9%
TOTAL REVENUES						
	-15,840.00	-15,840.00	-297.61	-71.98	0.00	-15,542.39
5304500 WASTE WATER						
5304500 38054	CHARGES FOR UTIL ADM					
	-225,000.00	-225,000.00	-112,500.00	-18,750.00	0.00	-112,500.00 50.0%*
TOTAL WASTE WATER						
	-225,000.00	-225,000.00	-112,500.00	-18,750.00	0.00	-112,500.00 50.0%
TOTAL REVENUES						
	-225,000.00	-225,000.00	-112,500.00	-18,750.00	0.00	-112,500.00
5304600 WATER						
5304600 38054	CHARGES FOR UTIL ADM					
	-225,000.00	-225,000.00	-112,500.00	-18,750.00	0.00	-112,500.00 50.0%*
TOTAL WATER						
	-225,000.00	-225,000.00	-112,500.00	-18,750.00	0.00	-112,500.00 50.0%
TOTAL REVENUES						
	-225,000.00	-225,000.00	-112,500.00	-18,750.00	0.00	-112,500.00
GRAND TOTAL						
	-465,840.00	-465,840.00	-225,297.61	-37,571.98	0.00	-240,542.39 48.4%

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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
530 UTILITY ADMIN							
530 51200		SALARIES					
	250,022.00	250,022.00	100,828.60	16,323.24	0.00	149,193.40	40.3%
530 51400		OVERTIME					
	2,500.00	2,500.00	1,563.57	0.00	0.00	936.43	62.5%
530 52100		FICA					
	19,318.00	19,318.00	7,342.45	1,169.21	0.00	11,975.55	38.0%
530 52200		RETIREMENT					
	59,905.00	59,905.00	24,533.17	3,911.05	0.00	35,371.83	41.0%
530 52300		HEALTH INSUR					
	54,611.00	54,611.00	19,170.15	2,966.13	0.00	35,440.85	35.1%
530 52301		LIFE INSUR					
	1,386.00	1,386.00	585.57	94.26	0.00	800.43	42.2%
530 52400		WORKERS' COMP					
	8,280.00	8,280.00	4,140.00	690.00	0.00	4,140.00	50.0%
530 53400		CONTRACTUAL					
	3,455.00	3,455.00	2,431.78	687.83	0.00	1,023.22	70.4%
530 54000		TRAINING/TRAVEL					
	5,250.00	5,250.00	524.20	0.00	0.00	4,725.80	10.0%
530 54100		COMM - PHONE/FAX/ALARM					
	779.00	779.00	93.38	18.48	0.00	685.62	12.0%
530 54101		COMMUNICATIONS-CELLULAR					
	2,000.00	2,000.00	867.50	123.98	0.00	1,132.50	43.4%
530 54103		COMMUNICATIONS-INTERNET					
	1,635.00	1,635.00	685.98	114.33	0.00	949.02	42.0%
530 54200		POSTAGE					
	1,500.00	1,500.00	0.00	0.00	0.00	1,500.00	.0%
530 54300		UTILITIES ELECTRIC					
	3,000.00	3,000.00	1,144.69	162.13	0.00	1,855.31	38.2%
530 54310		UTILITIES-WATER & WASTEWATER					
	800.00	800.00	401.80	76.96	0.00	398.20	50.2%
530 54610		R/M BLDG & GROUNDS					
	2,500.00	2,500.00	0.00	0.00	0.00	2,500.00	.0%
530 55100		OFFICE SUPPLIES					
	4,000.00	4,000.00	0.00	0.00	0.00	4,000.00	.0%
530 55200		OPERATING SUPPLIES					
	6,785.00	6,785.00	724.30	249.74	0.00	6,060.70	10.7%
530 55210		UNIFORMS					
	1,800.00	1,800.00	452.20	100.00	0.00	1,347.80	25.1%
530 55220		JANITORIAL SUPPLIES					
	4,000.00	4,000.00	229.44	9.21	0.00	3,770.56	5.7%



FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
530 55400		BOOKS/SUBS/DUES					
	2,100.00	2,100.00	10.49	0.00	0.00	2,089.51	.5%
530 59990		RESERVE					
	30,214.00	30,214.00	0.00	0.00	0.00	30,214.00	.0%
TOTAL UTILITY ADMIN							
	465,840.00	465,840.00	165,729.27	26,696.55	0.00	300,110.73	35.6%
TOTAL EXPENSES							
	465,840.00	465,840.00	165,729.27	26,696.55	0.00	300,110.73	
GRAND TOTAL							
	465,840.00	465,840.00	165,729.27	26,696.55	0.00	300,110.73	35.6%
** END OF REPORT - Generated by Susan Carless **							

Revenues	(\$ 225,297.61)
Expenses	<u>165,729.27</u>
Net (Rev)Exp	(\$ 59,568.34)

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FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
610 PENSION - GENERAL							
610 36110		INTEREST					
	-425,000.00	-425,000.00	-333,611.57	-19,593.07	0.00	-91,388.43	78.5%*
610 36120		UNREALIZED GAIN					
	-55,000.00	-55,000.00	-11,722.90	0.00	0.00	-43,277.10	21.3%*
610 36130		INCOME/LOSS/REALIZED G/L					
	-60,000.00	-60,000.00	-21,925.51	0.00	0.00	-38,074.49	36.5%*
610 36700		GAIN/LOSS ON INVESTMENT					
	-1,400,000.00	-1,400,000.00	-44,962.89	-7,335.49	0.00	-1,355,037.11	3.2%*
610 36840		CONTRIBUTIONS FROM CITY					
	-1,605,000.00	-1,605,000.00	-340,258.38	0.00	0.00	-1,264,741.62	21.2%*
610 36850		CONTRIBUTIONS FROM EMPLOYEES					
	-350,000.00	-350,000.00	-155,674.68	-32,087.50	0.00	-194,325.32	44.5%*
610 36990		OTHER REVENUE					
	0.00	0.00	5,559.53	2,024.93	0.00	-5,559.53	100.0%*
610 38910		CASH BALANCE FORWARD					
	-23,758,006.00	-23,758,006.00	0.00	0.00	0.00	-23,758,006.00	.0%*
610 53400		CONTRACTUAL					
	74,435.00	74,435.00	36,062.61	242.00	0.00	38,372.39	48.4%
610 53401		CONTRACTUAL AMERICAN CORE REA					
	20,600.00	20,600.00	6,424.69	0.00	0.00	14,175.31	31.2%
610 53404		INVESTMENT EXPENSE					
	35,765.00	35,765.00	16,248.97	0.00	0.00	19,516.03	45.4%
610 53600		RETIREE BENEFITS					
	1,712,000.00	1,712,000.00	659,797.70	128,253.80	0.00	1,052,202.30	38.5%
610 59990		RESERVE					
	25,810,206.00	25,810,206.00	0.00	0.00	0.00	25,810,206.00	.0%
TOTAL PENSION - GENERAL							
	0.00	0.00	-184,062.43	71,504.67	0.00	184,062.43	100.0%
TOTAL REVENUES							
	-27,653,006.00	-27,653,006.00	-902,596.40	-56,991.13	0.00	-26,750,409.60	
TOTAL EXPENSES							
	27,653,006.00	27,653,006.00	718,533.97	128,495.80	0.00	26,934,472.03	
GRAND TOTAL							
	0.00	0.00	-184,062.43	71,504.67	0.00	184,062.43	100.0%

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FOR 2020 06

ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
620 PENSION - POLICE/FIRE						
620 31251	STATE/FIRE INSURANCE TAX					
-115,000.00	-115,000.00	-1,044.06	0.00	0.00	-113,955.94	.9%*
620 31252	STATE/POLICE INSURANCE TAX					
-110,000.00	-110,000.00	0.00	0.00	0.00	-110,000.00	.0%*
620 36110	INTEREST					
-450,000.00	-450,000.00	-368,228.25	-24,995.04	0.00	-81,771.75	81.8%*
620 36120	UNREALIZED GAIN					
-55,000.00	-55,000.00	-13,424.82	0.00	0.00	-41,575.18	24.4%*
620 36130	INCOME/LOSS/REALIZED G/L					
-70,000.00	-70,000.00	-25,108.63	0.00	0.00	-44,891.37	35.9%*
620 36700	GAIN/LOSS ON INVESTMENT					
-1,800,000.00	-1,800,000.00	-21,697.73	-10,765.83	0.00	-1,778,302.27	1.2%*
620 36850	CONTRIBUTIONS FROM EMPLOYEES					
-315,000.00	-315,000.00	-136,549.77	-24,971.26	0.00	-178,450.23	43.3%*
620 36990	OTHER REVENUE					
0.00	0.00	7,172.48	2,359.91	0.00	-7,172.48	100.0%*
620 38910	CASH BALANCE FORWARD					
-27,833,370.00	-27,833,370.00	0.00	0.00	0.00	-27,833,370.00	.0%*
TOTAL PENSION - POLICE/FIRE						
-30,748,370.00	-30,748,370.00	-558,880.78	-58,372.22	0.00	-30,189,489.22	1.8%
TOTAL REVENUES						
-30,748,370.00	-30,748,370.00	-558,880.78	-58,372.22	0.00	-30,189,489.22	
6202100 POLICE						
6202100 36840	CONTRIBUTIONS FROM CITY					
-700,000.00	-700,000.00	-174,610.47	0.00	0.00	-525,389.53	24.9%*
TOTAL POLICE						
-700,000.00	-700,000.00	-174,610.47	0.00	0.00	-525,389.53	24.9%
TOTAL REVENUES						
-700,000.00	-700,000.00	-174,610.47	0.00	0.00	-525,389.53	
6202200 FIRE						
6202200 36840	CONTRIBUTIONS FROM CITY					
-590,000.00	-590,000.00	-137,193.94	0.00	0.00	-452,806.06	23.3%*



FOR 2020 06							
6202200 FIRE	ORIGINAL APPROP	REVISED BUDGET	YTD ACTUAL	MTD ACTUAL	ENCUMBRANCES	AVAILABLE BUDGET	% USED
TOTAL FIRE	-590,000.00	-590,000.00	-137,193.94	0.00	0.00	-452,806.06	23.3%
TOTAL REVENUES	-590,000.00	-590,000.00	-137,193.94	0.00	0.00	-452,806.06	
GRAND TOTAL	-32,038,370.00	-32,038,370.00	-870,685.19	-58,372.22	0.00	-31,167,684.81	2.7%
** END OF REPORT - Generated by Susan Carless **							



FOR 2020 06

	ORIGINAL APPROP	REVISED BUDGET	YTD EXPENDED	MTD EXPENDED	ENCUMBRANCES	AVAILABLE BUDGET	% USED
620 PENSION - POLICE/FIRE							
620 53400		CONTRACTUAL					
	79,700.00	79,700.00	41,860.46	4,941.70	0.00	37,839.54	52.5%
620 53401		CONTRACTUAL-AMERICAN CORE REA					
	21,630.00	21,630.00	7,357.42	0.00	0.00	14,272.58	34.0%
620 53404		INVESTMENT EXPENSE					
	53,000.00	53,000.00	25,699.07	15.80	0.00	27,300.93	48.5%
620 53600		RETIREE BENEFITS					
	1,868,000.00	1,868,000.00	755,364.69	130,551.52	0.00	1,112,635.31	40.4%
620 59990		RESERVE					
	30,016,040.00	30,016,040.00	0.00	0.00	0.00	30,016,040.00	.0%
TOTAL PENSION - POLICE/FIRE							
	32,038,370.00	32,038,370.00	830,281.64	135,509.02	0.00	31,208,088.36	2.6%
TOTAL EXPENSES							
	32,038,370.00	32,038,370.00	830,281.64	135,509.02	0.00	31,208,088.36	
GRAND TOTAL							
	32,038,370.00	32,038,370.00	830,281.64	135,509.02	0.00	31,208,088.36	2.6%

** END OF REPORT - Generated by Susan Carless **

CITY COMMISSION AGENDA ITEM

City of Fernandina Beach



SUBJECT: Resolution 2020-46
Main Street Program Support and Expansion

ITEM TYPE: Resolution (w/ fiscal impact)

REQUESTED ACTION: Consider Resolution 2020-46

SYNOPSIS: On January 7, 2020, the Community Redevelopment Agency (CRA) indicated support for expanding the Main Street Program boundaries as described in the attached map and Resolution. In addition, Main Street is requesting financial support from the City beyond 2021 in the amount of \$40,000 per year for 3 more years (until Sept. 2024) to continue its programs and support for economic development in the downtown CRA, Historic District and 8th Street Corridor.

FISCAL IMPACT: Funding will be included in City Commission Professional Services account, 0011100 53100.

CITY ATTORNEY COMMENTS: No additional comments.

CITY MANAGER RECOMMENDATION(S): I recommend that the City Commission adopt proposed Resolution 2020-46.

Dale L. Martin, City Manager	3/19/2020
Pauline Testagrose, Comptroller	3/19/2020
Tammi E. Bach, City Attorney	4/3/2020

Date: March 16, 2020

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION: Adopt

RESOLUTION 2020-46

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, RECOMMENDING SUPPORT FOR EXPANDING THE MAIN STREET PROGRAM BOUNDARIES AND AUTHORIZING FISCAL SUPPORT FOR THREE YEARS THROUGH FISCAL YEAR 2023/2024; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Florida Main Street Program was created to assist Florida communities in developing public-private efforts to revitalize their downtown “Main Street” areas; and

WHEREAS, the Florida Main Street Program is a part of the original Main Street program established by the National Trust for Historic Preservation; and

WHEREAS, the Main Street program is designed to foster an economically healthy downtown that builds a positive image for the community, creates job opportunities, saves tax dollars, preserves the community’s historic resources, and helps to control sprawl; and

WHEREAS, the program emphasizes a four-point approach for economic development within the context of historic preservation: organization, promotion, design, and economic restructuring; and

WHEREAS, the City believes that the Main Street Program has benefitted the entire Fernandina Beach community by ensuring the continuity of an economically healthy downtown; and

WHEREAS, the City Commission supports expanding the Main Street Program boundaries and supports further financial support from the City through Fiscal Year 2023/2024; and

WHEREAS, the City of Fernandina Beach agrees to provide a financial match for the three more years of the Main Street program provided the remaining funds are raised by the private sector and through other means, and provided 20% of the program director’s time be spent as the City’s Community Redevelopment Area (CRA) director; and

WHEREAS, funding will be included in City Commission Professional Services account, 0011100 53100.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, THAT:

SECTION 1. The City Commission supports the expansion of the Main Street Program which new boundaries will include: Described from the Amelia River as, including all of the Community Redevelopment Area (CRA) along the waterfront from the Port of Fernandina in

the north, to Rayonier in the south. East of Front Street, between 2nd and 3rd Streets, the boundary incorporates all of the CRA properties and those with a Central Business District land use as well as the Mixed Use Block number 273 with the Amelia Community Theater and the Amelia Island Museum of History. Continuing east, the boundary aligns with the Central Business District until 8th Street, where a southernly expansion takes the district down the 8th Street corridor, which serves as the main thoroughfare into downtown, with a history unto is own. Between 8th and 14th Street, all of the Central Business District, Mixed Use, and Commercial properties that surround the City's Central Park and make up the City's core are included in the proposed district. See also attached map of the proposed Main Street Program boundaries for the City as Exhibit "A".

SECTION 2. The City Commission authorizes City financial support for the program in the amount of \$40,000 per year for three years through September 30, 2024, provided the remaining funds are raised by the private sector and through other means, and provided 20% of the program director's time be spent as the City's Community Redevelopment Area (CRA) director.

SECTION 3. This Resolution shall take effect immediately upon passage.

ADOPTED this 21st day of April, 2020.

CITY OF FERNANDINA BEACH

John A. Miller
Commissioner - Mayor

ATTEST:

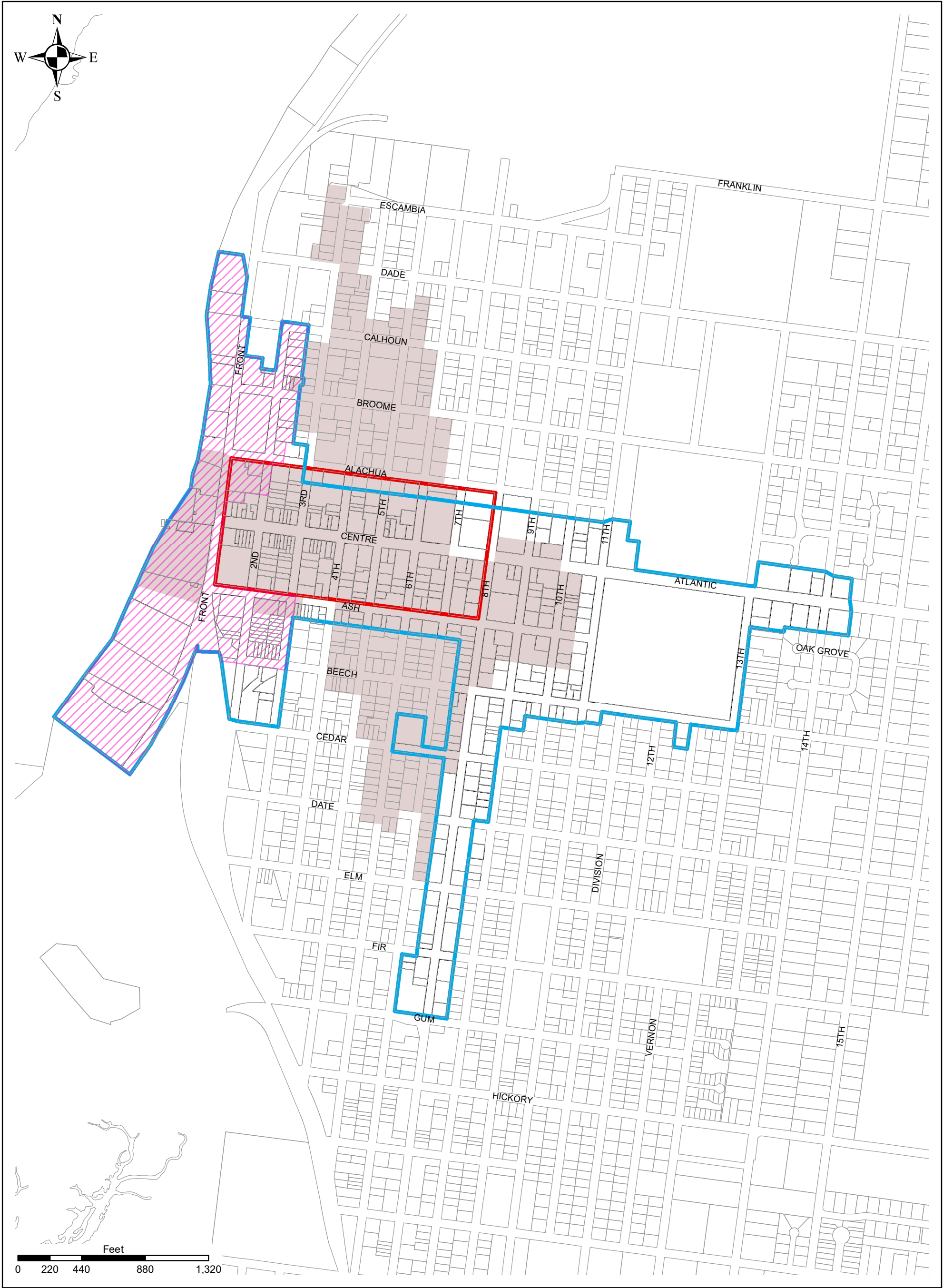
APPROVED AS TO FORM AND LEGALITY:



Caroline Best
City Clerk

Tammi E. Bach
City Attorney

Proposed Fernandina Beach Main Street District



-  Proposed District
-  CRA_Boundary
-  Existing District
-  Historic_District_Boundary



CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Resolution 2020-56
Agreement Approval - Nassau Humane Society

ITEM TYPE: Resolution (w/ fiscal impact)

REQUESTED ACTION: Consider Resolution 2020-56

SYNOPSIS: Nassau Humane Society provides animal rescue services to the City of Fernandina Beach. The five-year agreement which has consistently been renewed expires on September 30, 2020. Attached is a new 5-year agreement.

FISCAL IMPACT: Funding for Animal Rescue Services is budgeted and available in Non Departmental Contractual account, 0011910 53400.

CITY ATTORNEY COMMENTS: No additional comments.

CITY MANAGER RECOMMENDATION(S): I recommend that the City Commission adopt proposed Resolution 2020-56.

Tammi E. Bach, City Attorney	4/3/2020
Dale L. Martin, City Manager	4/13/2020
Pauline Testagrose, Comptroller	4/13/2020

Date: October 18, 2019

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION: Adopt

RESOLUTION 2020-56

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, APPROVING AN AGREEMENT BETWEEN THE CITY OF FERNANDINA BEACH AND NASSAU HUMANE SOCIETY TO PROVIDE ANIMAL RESCUE SERVICES FOR THE RESIDENTS OF THE CITY OF FERNANDINA BEACH; AUTHORIZING EXECUTION; PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Fernandina Beach and the Nassau Humane Society entered into a five-year agreement on October 1, 2015, authorizing the Nassau Humane Society to provide animal control services for City residents; and

WHEREAS, this agreement will expire on September 1, 2020, and both parties wish to enter into another five-year agreement; and

WHEREAS, funding for animal rescue services is budgeted and available in Non-Departmental Contractual account, 0011910 53400.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, THAT:

SECTION 1. The City Commission of the City of Fernandina Beach approves the agreement between the City of Fernandina Beach and the Nassau Humane Society, attached hereto as Exhibit "A".

SECTION 2. The City Manager and City Clerk are hereby authorized to execute the agreement on behalf of the City of Fernandina Beach, upon approval of the City Attorney.

SECTION 3. This Resolution shall become effective immediately upon passage.

ADOPTED this 21st day of April, 2020.

CITY OF FERNANDINA BEACH

JOHN A. MILLER
Commissioner – Mayor

ATTEST:

APPROVED AS TO FORM AND LEGALITY:



CAROLINE BEST
City Clerk

TAMMI E. BACH
City Attorney

**AGREEMENT BETWEEN THE CITY OF FERNANDINA BEACH
AND
THE NASSAU HUMANE SOCIETY**

**To Provide Animal Control Services to the Residents of
The City of Fernandina Beach**

This agreement is entered into on April 21, 2020, by and between the City of Fernandina Beach, a Florida municipal corporation, hereafter the "City" and the Nassau Humane Society, a Florida not-for-profit corporation, hereinafter "NHS."

Whereas, N.H.S. has provided animal rescue services to the City's satisfaction since approximately 1990 and is currently performing services under an agreement that terminates September 30, 2020; and

Whereas, the City and NHS wish to enter into a new five year contractual relationship that will take effect October 1, 2020 and run through September 30, 2025.

Therefore, in consideration of the promises mutually exchanged in this Agreement, the parties agree as follows:

1. **Monthly Payment to NHS:** The City will make payments to NHS on the first day of each month according to the following schedule:
 1. Year 1: October 1, 2020 through September 1, 2021: \$12,350.00 per month;
 2. Year 2: October 1, 2021 through September 1, 2022: \$12,700.00 per month;
 3. Year 3: October 1, 2022 through September 1, 2023: \$13,000.00 per month;
 4. Year 4: October 1, 2023 through September 1, 2024: \$13,350.00 per month;
 5. Year 5: October 1, 2024 through September 1, 2025: \$13,700.00 per month;
2. **Inflation Adjustment.** The parties agree that the City's payments will exceed these base amounts if annual inflation rises above three percent (3%). If inflation, as measured by the United States Consumer Price Index for All Urban Consumers (CPI-U) (the "Index"), exceeds 3.0% in Year 1, the monthly payments for Years 2-5 will be increased by the percentage by which actual inflation exceeds 3.0%. If inflation exceeds 3.0% in Year 2, the monthly payments for Years 3-5 will be increased by the percentage by which actual inflation exceeds 3.0%. A similar process will be used in Years 3 and 4. For ease of measurement, the change in the Index will be computed from July 1 to June 30. The Index on July 1, 2019 was _____.

-
1. The parties agree to the following example calculation: If the Index at June 30, 2020 is _____ (a 3.0% increase), the monthly payments would be unchanged. If the Index on June 30, 2020 is _____ (a 3.5% increase), the monthly payments beginning October 1, 2020 would be increased by 0.5% _____ in Year 2, _____ in Year 3, _____ in Year 4, _____ in Year 5).

3. *Animal Rescue Services.* NHS will provide animal rescue services to the City according to the following terms:
 - A. *Staff.* NHS will maintain a properly trained and licensed animal rescue staff to provide the services set forth in this Agreement. It is expressly agreed that NHS may meet its staffing needs with unpaid volunteers where appropriate.
 - B. *Animal Rescue Officers; Enforcement Authority.* NHS will maintain at all times a trained, licensed, certified, and equipped animal rescue officer. All NHS animal rescue officers will have the authority to enforce state and local animal rescue laws and ordinances, including full authority to issue citations, to impound animals, and to investigate and prosecute cruelty, abuse, bite, neglect, abandonment, and dangerous dog cases.
 - C. *Regular Hours and Emergency Services; Response Times.* An animal rescue officer will be on regular duty from 9:00am to 5:00pm Monday through Friday, and will be on call for emergencies at all times. "Emergencies" are dog bites and Fernandina Beach Police Department calls for vicious or injured animals. NHS will ensure that an animal rescue officer responds to animal rescue calls within one (1) hour.
 - D. *Fees and Service Charges.* The City Commission will adopt by ordinance the animal rescue fees and service charges applicable to city residents. NHS will collect and retain these charges as part of its compensation for providing animal rescue services. Any fines (not fees and service charges) provided by City ordinance shall be paid to and collected by the City.
 - E. *Care for Animals.* NHS will provide food, water, shelter, and any necessary emergency veterinary care for the animals under its control.
 - F. *Reporting.* NHS will provide monthly reports to the City Manager on bite cases, incoming animals, and animal rescue fees, fines, and charges received.
4. *Animal Rescue Facility.* NHS will use its Animal Rescue facility located at 639 Airport Road to fulfill its responsibilities under this Agreement. NHS is responsible for maintaining this facility per its separate ground lease with the City.
5. *Animal Rescue Vehicle.* NHS is responsible for maintaining a vehicle to perform the mission of this contract between the City and NHS.
6. *Insurance.*
 - A. *Certificate of Insurance.* The CITY shall be furnished proof of insurance coverage as follows:
 - The name of the insured, the name of the insurer, the number of the policy, its effective date, and its termination date;
 - Statement that the insurer will mail notice to the CITY and a copy to NHS at least thirty (30) days prior to any material changes in provisions, cancellation, renewal, or non-renewal of the policy;
 - Certificate of Insurance shall be in the form as approved by the CITY, naming the CITY as additional insured, and such Certificate shall clearly state all the coverage required in this Section;
 - If requested by the CITY, NHS shall furnish complete copies of all insurance policies, forms and endorsements; and
 - Receipt of certificates or other documentation of insurance or policies or copies of policies by the CITY or by any of its representatives which indicate less coverage than

required by this agreement does not constitute a waiver of NHS's obligations to fulfill the requirements of this Section.

- B. *Workers' Compensation Insurance.* NHS shall have in full force, during the life of this agreement, Workers' Compensation and Employer's Liability Insurance for all its employees connected with work under this agreement, and in the event any work is subcontracted, NHS shall require the subcontract similarly to provide Workers' Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by NHS. NHS may provide a workers' compensation waiver in lieu of workers' compensation insurance where such waiver is properly approved by the Florida Department of Labor and Employment Security and accepted by the CITY in writing. Such insurance or waiver shall comply with the Florida Workers' Compensation Law. In case any class of work conducted under this agreement is not protected under the Workers' Compensation statute, NHS shall provide adequate insurance, satisfactory to the CITY, for the protection of employees not otherwise protected.
- C. *Liability Insurance.* NHS shall have in full force, during the life of this agreement, Commercial General Liability and Commercial Automobile Liability Insurance that shall protect the CITY from claims for damage for bodily injury and personal injury, including accidental death, as well as claims for property damages which may arise from tasks associated with or carried out under this agreement, whether such operations are by itself or by anyone directly or indirectly employed by them, and the amount of such insurance shall be minimum limits as follows:
- Commercial General Liability:
 - Minimum Coverage is \$1,000,000 per occurrence
 - Coverage shall include premises, operations, products, completed operations, independent contractors, contractual liability covering this agreement, contracts and leases, broad form property damage coverage, personal injury and bodily injury.
 - If Umbrella or Excess liability coverage is used to satisfy the requirements of this Agreement, it shall not be more restrictive than the underlying insurance policy coverage.
 - Commercial Automobile Liability:
 - Minimum Coverage is \$1,000,000 per occurrence
 - Coverage shall include bodily injury and property damage arising out of ownership, maintenance or use of any auto, including owned, non-owned and hired automobiles and employee non-ownership use.
7. *Indemnification.* The parties recognize that NHS is an independent contractor. NHS agrees to assume liability for and indemnify, hold harmless, and defend the CITY, its commissioners, mayor, officers, employees, agents, and attorneys of, from, and against all liability and expense, including reasonable attorney's fees, in connection with any and all claims, demands, damages, actions, causes of action, and suits in equity of whatever kind or nature, including claims for personal injury, property damage, equitable relief, or loss of use, arising directly or indirectly out of or in connection with any negligent and/or deliberate act or omission of NHS, its officers, employees, agents, and representatives. NHS's liability hereunder shall include all attorney's fees and costs incurred by the CITY in the enforcement of this indemnification provision. This includes claims made by the employees of NHS against the CITY and NHS hereby waives its entitlement, if any, to immunity under Section 440.11, Florida Statutes. The

obligations contained in this provision shall survive termination of this Agreement and shall not be limited by the amount of any insurance required to be obtained or maintained under this Agreement. Nothing contained in the foregoing indemnification shall be construed to be a waiver of any immunity or limitation of liability the CITY may have under the doctrine of sovereign immunity or Section 768.28, Florida Statutes.

8. *Option to Renew/Negotiations.* If NHS is not in default on the terms and conditions of this agreement, the agreement may be extended for an additional automatic five-year renewal under the same terms. The parties agree to enter into good faith negotiations for a new agreement or extension by July 1, 2030.
9. *Termination Upon Default.* This Agreement may be terminated by the default by either party in the performance of any of the terms, covenants and conditions of this Agreement, and the failure of such defaulting party to remedy or to undertake to remedy to the other party's satisfaction such default for a period of thirty (30) days after receipt of notice from the non-defaulting party to the defaulting party to remedy same.
10. *Notices.* Notices and reports under this Agreement will be in writing, and must be sent to the following addresses:

Office of the City Manager
City of Fernandina Beach
204 Ash Street
Fernandina Beach, Florida 32034

President
Nassau Humane Society
639 Airport Road
Fernandina Beach, Florida 32034

11. *Public Records.* Within the course of its work for the City, NHS is responsible for maintaining records and producing them upon request in accordance with Chapter 119, Florida Statutes.

EXECUTED this 21st day of April, 2020:

CITY OF FERNANDINA BEACH

BY: _____

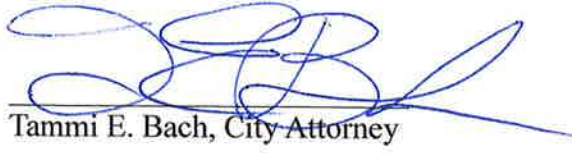
Dale L. Martin, City Manager

nhk
4/2

ATTEST:

Caroline Best, City Clerk

APPROVED AS TO FORM AND LEGALITY:



Tammi E. Bach, City Attorney

NASSAU HUMANE SOCIETY

BY:

 4/8/2020

Norm Ledwin, President



NAME, Vice President


NJ
4/8

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Resolution 2020-57
Emergency Mental Health Services Funding / Budget Amendments - Nonprofits

ITEM TYPE: Resolution (w/ fiscal impact)

REQUESTED ACTION: Consider Resolution 2020-57

SYNOPSIS: This item is on the agenda at the request of Vice Mayor Kreger.

Mental health services are vital to a healthy community, and with the Governor's directive that citizens are "Safer at Home," many citizens are adjusting to life without normal social activities and job loss. Some are placed in dangerous domestic situations because of this order. There are three mental health nonprofit institutions serving Fernandina Beach and Nassau County - Barnabas Center - Medical Services, Starting Point Behavioral Healthcare, and Micah's Place. This Resolution provides emergency funding in the amount of \$54,000 to these organizations to help citizens get the care they need during this time.

According to Code Section 2-412 and Charter Section 74, the City Commission must approve any budget transfers over \$7,500.

FISCAL IMPACT: Staff recommends a transfer of \$54,000 from the General Fund Contingency account, 0018200 59900, to: Non-Profit Nassau Mental Health account, 0015640 55606 (\$30,000); Non-Profit Barnabas account, 0015640 55604 (\$9,000); and Non Profit Micah's Place account, 0015640 55605, (\$15,000).

CITY ATTORNEY COMMENTS: No additional comments.

CITY MANAGER RECOMMENDATION(S): I recommend that the City Commission adopt proposed Resolution 2020-57.

Tammi E. Bach, City Attorney	4/14/2020
Dale L. Martin, City Manager	4/14/2020
Pauline Testagrose, Comptroller	4/14/2020

A handwritten signature in blue ink, appearing to read "Nicole Bednar", is written over a horizontal line.

Date: April 13, 2020

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION: Adopt

RESOLUTION 2020-57

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, APPROVING CONTRIBUTIONS TO BARNABAS CENTER – MEDICAL SERVICES, NASSAU COUNTY MENTAL HEALTH DBA STARTING POINT BEHAVIORAL HEALTHCARE, AND MICAH’S PLACE; APPROVING AMENDMENTS TO THE BUDGET FOR FISCAL YEAR 2019/2020; AUTHORIZING EXECUTION; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, on March 1, 2020, the State Surgeon General and State Health Officer declared a Public Health Emergency exists in the State of Florida as a result of COVID-19 Virus; and

WHEREAS, the City Commission recognizes the importance of mental health and domestic violence assistance services during this time under the “Safer at Home” directive from the Governor of the State of Florida; and

WHEREAS, there are three non-profit providers of mental health services that serve the citizens of Fernandina Beach, and

WHEREAS, Nassau County Mental Health DBA Starting Point Behavioral Healthcare provides mental health services to the residents of the City of Fernandina Beach and Nassau County; and

WHEREAS, the Barnabas Center, through their medical services programs, provides free or reduced cost mental health and medical services to City residents who might otherwise go without treatment; and

WHEREAS, Micah’s Place has long served the community as a place of refuge for victims of domestic violence and provides their clients with counseling and legal services; and

WHEREAS, funds were not budgeted for this purpose in FY 2019/2020; and

WHEREAS, according to Code Section 2-412 and Charter Section 74, the City Commission must approve any budget transfers over \$7,500; and

WHEREAS, staff recommends a transfer of \$54,000 from the General Fund Contingency account, 0018200 59900, to: Non-Profit Nassau Mental Health account, 0015640 55606 (\$30,000); Non-Profit Barnabas account, 0015640 55604 (\$9,000); and Non Profit Micah’s Place account, 0015640 55605, (\$15,000).

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, THAT:

SECTION 1. The City of Fernandina Beach immediately contribute \$10,000 to Nassau County Mental Health DBA Starting Point Behavioral Healthcare to be used to help fund their 24/7 staffed hotlines and for medication copays for clients who are residents of the City of Fernandina Beach and Nassau County.

SECTION 2. The City of Fernandina Beach immediately contribute \$3,000 to the Barnabas Center to provide for and staff a telemedical hotline for residents of the City of Fernandina Beach and Nassau County.

SECTION 3. The City of Fernandina Beach immediately contribute \$5,000 to Micah's Place to support the needs of their live-in clients and hotline requirements for the residents of the City of Fernandina Beach and Nassau County.

SECTION 4. The City of Fernandina Beach contribute \$10,000 on May 15, 2020, to Nassau County Mental Health DBA Starting Point Behavioral Healthcare to be used to help fund their 24/7 staffed hotlines and for medication copays for clients who are residents of the City of Fernandina Beach and Nassau County.

SECTION 5. The City of Fernandina Beach contribute \$3,000 on May 15, 2020, to the Barnabas Center to provide and staff a telemedical hotline for residents of the City of Fernandina Beach and Nassau County.

SECTION 6. The City of Fernandina Beach contribute \$5,000 on May 15, 2020, to Micah's Place to support the needs of their live-in clients and hotline requirements for the residents of the City of Fernandina Beach and Nassau County.

SECTION 7. The City of Fernandina Beach contribute \$10,000 on June 15, 2020, to Nassau County Mental Health DBA Starting Point Behavioral Healthcare to be used to help fund their 24/7 staffed hotlines and for medication copays for clients who are residents of the City of Fernandina Beach and Nassau County.

SECTION 8. The City of Fernandina Beach contribute \$3,000 on June 15, 2020, to the Barnabas Center to provide for and staff a telemedical hotline for residents of the City of Fernandina Beach and Nassau County.

SECTION 9. The City of Fernandina Beach contribute \$5,000 on June 15, 2020, to Micah's Place to support the needs of their live-in clients and hotline requirements for the residents of the City of Fernandina Beach and Nassau County.

SECTION 10. The City Commission hereby approves a transfer of \$54,000 from the General Fund Contingency account, 0018200 59900, to: Non-Profit Nassau Mental Health account, 0015640 55606 (\$30,000); Non-Profit Barnabas account, 0015640 55604 (\$9,000); and Non Profit Micah's Place account, 0015640 55605, (\$15,000).

SECTION 11. This Resolution shall become effective immediately upon passage.

ADOPTED this 21st day of April, 2020.

CITY OF FERNANDINA BEACH

John A. Miller
Mayor – Commissioner

ATTEST:

APPROVED AS TO FORM & LEGALITY:



Caroline Best
City Clerk

Tammi E. Bach
City Attorney

Starting Point Behavioral Healthcare

COVID-19 Response Funding

City of Fernandina Beach

April 13, 2020

I. Crisis Counseling Funding Request - \$ 15,000

- a. Description - Requesting 3 months of funding for a crisis counselor to assist in the mental health stabilization of Fernandina Beach City Residents who have additional mental health support needs due to COVID -19 and economic downturn. The Crisis Counselor will be available 24/7. Crisis calls have been on the rise in the past weeks and we expect to see an even bigger increase in the next 90 days.

- b. 3 month funding request based on annual information below

▪ Annual Salary	<u>\$ 45,000</u>
▪ Annual Fringe	<u>\$ 9,450</u>
▪ Annualized Personnel Exp	<u>\$ 5,550</u>
▪ Annual Total:	<u>\$ 60,000</u>

II. Medication and Lab Funding Request - \$ 15,000

- a. Description – Requesting 3 months of funding to cover the cost of medications and lab costs for uninsured clients who been prescribed medication and require lab testing as part of his/her course of treatment to ensure improved mental health outcomes. We are experiencing an increase in need from clients who have recently lost their jobs and health insurance. Some medications can cost upwards of several hundred dollars a month

Total Funding Requested: \$30,000



Deleted Items
Drafts
Inbox (4)
Junk E-Mail
Sent Items

[Click to view all folders](#)

[Manage Folders...](#)

Micah's Place Request

Heather Jones [hjones@micahsplace.org]

You replied on 4/13/2020 6:32 PM.

Sent: Monday, April 13, 2020 2:47 PM

To: [Len Kreger](#)

Dear Mr. Kreger,

Thank you so much for reaching out to me.

As a long time member of our incredible community, we are proudly providing continuous services to survivors of domestic violence and their children throughout this trying time. We are adjusting operations to accommodate important guidelines and finding unique and innovative ways to ensure there is no lapse in quality of service. Our shelter is still fully operational and our outreach advocates and Injunction for Protection attorney has introduced services via video or telephone formats for survivors.

However, as a result of everything that is going on, we are finding that survivors are reaching out more than ever, ending March with a 25% increase from the previous year. Our 24-hour hotline is available at any time to anyone experiencing domestic violence. In the last two years, Micah's Place has been operating as Nassau County's only 24-hour hotline, aside from emergency services. This means that our hotline fields calls covering topics like homelessness, rental assistance, utility assistance, and much more. Our hotline is our most important asset. It is the first line of communication for many survivors and sometimes the first time they have spoken to someone about their abuse. The shelter staff have been working diligently to answer the influx of calls as well as routinely sanitizing the shelter in its entirety, 24-hours a day, 7 days a week.

We are always looking to improve services and believe that the next step, especially while the world is adapting to a new and hopefully temporary way of life, is to introduce a text option in our hotline. The ability to text a hotline is key for a survivor as they may be in the home with their abuser, unable to physically speak to someone but are still looking for access to services. We also receive contact from survivors who have phones with internet but not data to call.

When a survivor enters our emergency shelter, often with nothing but the clothes they're wearing, Micah's Place steps in to fill the gaps. We happily provide them with clothing, basic hygiene items, food, transportation assistance, and more. It is imperative that we adapt with the times and provide opportunities for the survivors and their children to have all of their needs met.

A difficult, but necessary, choice we recently made was to close our Purple Dove Resale Centers (Fernandina and Callahan) temporarily. With this closing comes a loss of funds and donations as well as volunteer presence. The funds from the resale centers help sustain our programs and provide local match for our federal and state funding.

At this time, we are hopeful that you can help with funding to sustain our programs across the board as well as be able to help in funding the equipment needed to provide a text message service in the way of two iPads and a secure texting program. At this time, Micah's Place is requesting assistance in the amount of \$15,000 over the next 3 months.

The City of Fernandina Beach has been immensely supportive of our cause for many years prior and we hope to continue that partnership for many years to come. We are hopeful that you are all staying safe. Please feel free to reach out to me with any questions.

Thanks,

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Ordinance 2020-12
Code Amendment - Electrical Code

ITEM TYPE: Ordinance (w/o fiscal impact)

REQUESTED ACTION: Consider Ordinance 2020-12 at First Reading.

SYNOPSIS: This Ordinance amends the City's current Ordinance to allow the Building Official to waive certain electrical service requirements in place of the City Manager.

FISCAL IMPACT: None

CITY ATTORNEY COMMENTS: No additional comments.

CITY MANAGER RECOMMENDATION(S): I recommend that the City Commission approve proposed Ordinance 2020-12 at First Reading.

Tammi E. Bach, City Attorney	4/3/2020
Nicole Bednar, Administrative Services Manager	4/6/2020
Dale L. Martin, City Manager	4/8/2020

Date: February 20, 2020

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION: Approve

ORDINANCE 2020-12

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, AMENDING SECTION 22-30, AMENDMENTS TO THE ELECTRICAL CODE, TO ALLOW FOR THE CITY MANAGER TO DELEGATE WAIVER AUTHORITY; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Fernandina Beach regulates building standards throughout the City: and

WHEREAS, the Building Department is staffed with a professional Building Director, who is an expert in the field; and

WHEREAS, the City Manager has the authority to designate certain tasks to members of the City's professional staff.

NOW THEREFORE BE IT ENACTED BY THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, AS FOLLOWS:

SECTION 1. Section 22-30 of the City's Code of Ordinances is amended as follows:

Sec. 22-30. Amendments to electrical code.

(a) The electrical code adopted by reference in section 22-26 is hereby amended as follows:

(1) *Electrical permit fees.* Electrical permit fees shall be established by resolution of the city commission.

(2) *Section 13, subsection (b)* shall be amended to read as follows:

(b) It shall be expressly understood that the National Electrical Code as adopted in section 22-26 referred to in this section is the minimum requirement for all electrical construction and all materials and appliances used in connection with the installation, maintenance and operation of electrical wiring, apparatus or equipment for light, heat, power or advertising within the limits of the city. The following additions are hereby added for the local jurisdiction:

(1) *Electric Service Entrance.* All new service entrances shall be placed underground within a conduit system. For upgraded service entrances, the ~~City Manager~~ Building Director may waive this requirement following a written request for waiver if it is determined to be a financial burden on the applicant.

(2) *Electric meter sockets.* All meter sockets shall be aluminum or other corrosion resistant material. No steel or corrosive metal clad shall be allowed.

SECTION 2. SEVERABILITY. In the event that any word, phrase, clause, sentence or paragraph hereof shall be held invalid by any court of competent jurisdiction, such holding shall not affect any other word, clause, phrase, sentence or paragraph hereof.

SECTION 3. EFFECTIVE DATE. This Ordinance shall take effect immediately upon its enactment.

ENACTED this ____ day of _____, 2020.

ATTEST:

CITY OF FERNANDINA BEACH

Caroline Best
City Clerk

John A. Miller
Mayor-Commissioner

APPROVED AS TO FORM & LEGALITY:



Tammi E. Bach
City Attorney

CITY COMMISSION AGENDA ITEM

City of Fernandina Beach



SUBJECT: Ordinance 2020-03
Future Land Use Map Amendment - Zoning Map Conflicts

ITEM TYPE: Ordinance (w/o fiscal impact)

REQUESTED ACTION: Consider Ordinance 2020-03 at Second Reading.

SYNOPSIS: The City has provided a zoning and/or land use layer within its Comprehensive Plan dating back to 1961. Over the subsequent forty-five years, these documents were maintained by external agencies or consultants and furnished to the City as part of its statutory periodic review periods. The City began utilizing Geographic Information Systems (GIS) in 2004-2005.

In 2005-2006, the City started working towards creating its own GIS system and maintaining data layers. Staff was hired and trained on-the-job to learn how to manage this system. Parcel alignment with the data layers became technically possible however, it was not until 2007 that the City had staffing with proper training to effectively utilize the system. In 2012, staff entered into a partnership with the Nassau County Property Appraiser's (NCPA) office to share and display data for public review. Since 2014, the City's data layers have been updated by the NCPA office following the enactment of land use or zoning ordinances. Discrepancies between the Future Land Use Map and Zoning Map as witnessed in these applications are the result of the carry-over actions of prior commissions which did not evaluate any conflicts between the documents on an individual parcel level.

From time to time, staff would encounter mismatches between the zoning and land use map layers. These were either noted and corrected under staff-initiated amendments or they were disclosed to a property owner at the time of a development application and directed to make a change. At no point did staff undertake an exhaustive analysis to determine discrepancies between the Future Land Use Map (FLUM) and Zoning Map.

In March 2019, the City Commission acted under Ordinance 2019-05 to place a moratorium on future land use map and zoning map amendments until such time that the maps could be reconciled to align. Discussion of the initial findings were shared and briefly discussed with the Planning Advisory Board (PAB) in March and April 2019. Staff presented findings to the City Commission in May of 2019; staff was then directed to proceed with correction of the maps based on areas of conflict only. PAB applications 2019-14 and 2019-15 were initiated in August 2019. These applications seek to amend the maps in accordance with the direction provided by the City Commission. Staff conducted a PAB Workshop with property owners and citizens on September 9, 2019. Following the workshop the Board issued decisions at Regular Meetings held between October and December 2019.

In addition to the policies provided by the Comprehensive Plan, Land Development Code and Florida Statutes 163.3187 and 163.3184, staff relied on the following guiding principles as part of its overall consideration for determining a recommendation for the Future Land Use Map or Zoning Map Change:

Built Environment: What's on the ground (or not) today?
Surrounding Property: What is the surrounding land use and zoning? What are the surrounding area built conditions?

Environmental Features: What environmental features are contained on the site?

Pattern of Change: Are there other land use or zoning changes within the same area that should be considered?

Holistic View: How does the requested action serve to meet and further the general direction and intent of the City's policy as a whole?

The 2011 Future Land Use Map adopted as part of the EAR-based Comprehensive Plan amendments is presumed to be the principal document for consideration of all Future Land Use Map changes. The City adopted a revised Land Development Code and Zoning Map in 2006. The data provided as part of the analysis for each change includes map exhibits and digital images from the Nassau County, Florida Property Appraiser GIS mapping.

Information for each property is provided as part of this report and serve to fulfill minimum application requirements for mapping changes. Specifically, the Light Detection and Ranging (LIDAR) data of one-foot contour topography file, St. Johns River Water Management District potential wetlands, the USDA soils, and

CITY COMMISSION AGENDA ITEM

City of Fernandina Beach



FEMA flood zone data layers were utilized. Site specific, independent surveys and studies were not prepared as part of the recommended action; however, where prior plat maps exist they have been provided as back-up material to each series of properties.

Staff wishes to highlight the following properties under which the Planning Advisory Board (PAB) has recommended changes from the original application. Changes include modifications of Citrona Drive parcels for Conservation to align with the 5-foot elevation contour and including Conservation for the entirety of 526 Citrona Drive following the City acquisition in December 2019. Additionally, PAB has recommended a change to Future Land Use Map for the North Pointe PUD subdivision to Medium Density Residential in an effort to protect it from future redevelopment and avoid the allowance of resort rental.

Nassau County School Board provided a statement indicating their desire is to have the zoning district changed to R-1 to match the existing FLUM, rather than modify the FLUM to Public and Institutional. PAB issued a recommendation to modify the FLUM to Public and Institutional. Staff remains supportive of the FLUM change.

This Ordinance was approved at First Reading by the City Commission at its Regular Meeting on January 21, 2020.

FISCAL IMPACT: None

CITY ATTORNEY COMMENTS: No additional comments.

CITY MANAGER RECOMMENDATION(S): I recommend that the City Commission enact proposed Ordinance 2020-03 at Second Reading.

Kelly Gibson, AICP, Planning Director	3/16/2020
Nicole Bednar, Administrative Services Manager	4/3/2020
Dale L. Martin, City Manager	4/8/2020
Tammi E. Bach, City Attorney	4/8/2020

Date: March 16, 2020

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION: Enact

ORDINANCE 2020-03

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, AMENDING THE CITY'S FUTURE LAND USE MAP FOR VARIOUS PROPERTIES THROUGHOUT THE CITY; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Fernandina Beach has applied for mapping changes to its Future Land Use Map through PAB Case 2019-14 following the discovery of mapping errors and inaccuracies; and

WHEREAS, the City Commission enacted Ordinance 2019-05 on March 5, 2019, which placed a moratorium on Future Land Use Map amendments and Zoning map amendments until the maps were reconciled; and

WHEREAS, the City Commission adopted a unified Land Development Code (LDC) on September 5, 2006, which became effective on October 1, 2006; and

WHEREAS, the City's adopted 2030 Comprehensive Plan directs changes to the Land Development Code for consistency with State Laws and current planning methods for growth and economic development; and

WHEREAS, the Planning Advisory Board (PAB), acting as the City's Local Planning Agency, considered the application at a Public Workshop held on Tuesday, September 10, 2019, and took formal consideration of the application at the Board's Regular Meetings held on Wednesday October 9, 2019, and Wednesday, November 13, 2019, and Wednesday, December 11, 2019, and issued a recommendations as provided in Exhibit "A" herein; and

WHEREAS, notice of public hearing on such Future Land Use Map amendments was published in the News Leader, a newspaper of general circulation in Fernandina Beach, Nassau County, Florida, on September 27, 2019.

NOW, THEREFORE, BE IT ENACTED BY THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH AS FOLLOWS:

SECTION 1. PURPOSE AND INTENT. The City Commission finds that the amendments, attached hereto as Exhibit "A," amending the City's Future Land Use Map should be enacted.

SECTION 2. SEVERABILITY. If any section, sentence, clause or phrase of this Ordinance is held to be invalid or unconstitutional by any Court of competent jurisdiction, the holding shall in no way affect the validity of the remaining portions of this Ordinance.

SECTION 3. This Ordinance shall become effective immediately upon enactment.

ENACTED this 21st day of April, 2020.

CITY OF FERNANDINA BEACH

JOHN A. MILLER
Mayor - Commissioner

ATTEST:

APPROVED AS TO FORM AND LEGALITY:



CAROLINE BEST
City Clerk

TAMMI E. BACH
City Attorney

ORDINANCE 2020-03
EXHIBIT "A"

FUTURE LAND USE MAP AMENDMENTS (PAB CASE 2019-14) - CITRONA AREA ONLY-					
PARCEL ID NUMBER	EXISTING USE	STREET ADDRESS	CURREN T ZONING	CURRENT FUTURE LAND USE CATEGORY	ACTION REQUESTED: ZONING OR LAND USE MAP CHANGE
00-00-31-1616- 0001-0000	SINGLE FAMILY HOME	510 CITRONA DRIVE	R-1	CONSERVATI ON	CONSERVATION FLUM + CON ZONING TO ALIGN WITH 5- FOOT ELEVATION (FLUM AND ZONING CHANGES)
00-00-31-1616- 0002-0000	MULTI- FAMILY HOME	522 CITRONA DRIVE	R-1	LOW DENSITY RESIDENTIAL	CONSERVATION FLUM + CON ZONING TO ALIGN WITH 5- FOOT ELEVATION (FLUM AND ZONING CHANGES)
00-00-31-1616- 0003-0000	VACANT	526 CITRONA DRIVE	R-1	LOW DENSITY RESIDENTIAL	CONSERVATION/ CON (FLUM AND ZONING CHANGES)
00-00-31-1180- 0015-0000	SINGLE FAMILY HOME	420 CITRONA DRIVE	R-1	LOW DENSITY RESIDENTIAL/ CONSERVATI ON (~466 SQ FEET)	CONSERVATION FLUM + CON ZONING TO ALIGN WITH WETLANDS BOUNDARY* (PAB RECCOMENDATI ON TO REMAIN CONSERVATION FOR APPROX. 466 SQ. FT.)

FUTURE LAND USE MAP AMENDMENTS (PAB CASE 2019-14)					
PARCEL ID NUMBER	EXISTING USE	STREET ADDRESS	CURREN T ZONING	CURRENT FUTURE LAND USE CATEGORY	ACTION REQUESTED: FUTURE LAND USE MAP CHANGE
00-00-31-1800- 0261-0021	OFFICE	212 S. 14TH ST	MU-1	LOW DENSITY RESIDENTIAL	MIXED USE
00-00-31-1800- 0242-10A0	SINGLE FAMILY HOME	1316 BEECH STREET	R-2	GENERAL COMMERCIAL	MEDIUM DENSITY RESIDENTIAL
00-00-30-0600- 0001-0010	HOTEL	2707 SADLER ROAD	C-1	GENERAL COMMERCIAL	SPLIT LAND USE AS CONSERVATION CHANGE TO GENERAL COMMERCIAL
01-2N-28-0000- 0002-0000	VACANT	ROBERT OLIVER AVE	CON	MEDIUM DENSITY RESIDENTIAL	CONSERVATION
02-2N-28-0000- 0001-0010	VACANT	ROBERT OLIVER AVE	CON	MEDIUM DENSITY RESIDENTIAL	CONSERVATION
00-00-31-1600- 0153-0000	PUBLIC PARK	HICKORY STREET	PI-1	LOW DENSITY RESIDENTIAL	PUBLIC & INSTITUTIONAL



**STAFF REPORT SUMMARY
PAB 2019-14 + 2019-15**

**APPLICATION FOR FUTURE LAND USE MAP + ZONING MAP AMENDMENTS
VARIOUS MAP CORRECTIONS CITYWIDE**

*** All required application materials have been received. All fees have been paid. All required notices have been made. All copies of required materials are part of the official record and have been made available on the City's website and at the Department of Planning and Conservation. ***

SUMMARY OF REQUEST AND BACKGROUND INFORMATION:

The City has provided a zoning and/or land use layer within its Comprehensive Plan dating back to 1961. Over the subsequent 45 years, these documents were maintained by external agencies or consultants and furnished to the City as part of its statutory periodic review periods. The City began utilizing Geographic Information Systems (GIS) in 2004-2005. In 2005-2006, the City started working towards creating its own GIS system and maintaining data layers. Staff was hired and trained on-the-job to learn how to manage this system. Parcel alignment with the data layers became technically possible however, it was not until 2007 that the City had staffing with proper training to effectively utilize the system. In 2012 staff entered into a partnership with the Nassau County Property Appraiser's (NCPA) office to share and display data for public review. Since 2014 the City's data layers have been updated by the NCPA office following the enactment of land use or zoning ordinances. Discrepancies between the Future Land Use Map and Zoning Map as witnessed in these applications are the result of the carry over actions of prior commissions which did not evaluate any conflicts between the documents on an individual parcel level.

From time to time, staff would encounter mismatches between the zoning and land use map layers. These were either noted and corrected under staff-initiated amendments or they were disclosed to a property owner at them time of a development application and directed to make a change. At no point, did staff undertake an exhaustive analysis to determine discrepancies between the Future Land Use Map (FLUM) and Zoning Map.

In February 2019, the City Commission acted under Ordinance 2019-05 to place a moratorium on future land use map and zoning map amendments until such time that the maps could be reconciled to align. Discussion of the initial findings were shared and briefly discussed with the Planning Advisory Board (PAB) in March and April 2019. Staff presented findings to the City Commission in May of 2019; it was then directed to proceed with correction of the maps based on areas of conflict only. PAB applications 2019-14 and 2019-15 were initiated in August 2019. These applications seek to amend the maps in accordance with the direction provided by the City Commission. Staff conducted a PAB workshop with property owners and citizens on September 9, 2019.

The data provided as part of the analysis for each change include map exhibits and digital images from the Nassau County, Florida Property Appraiser GIS mapping. Information for each property is provided as part of this report and serve to fulfill minimum application requirements for mapping changes. Specifically, the LIDAR data of 1-foot contour topography file, St. Johns River Water Management District potential wetlands, the USDA soils, and FEMA flood zone data layers were utilized. Site specific, independent surveys and studies were not prepared as part of the recommended action; however, where prior plat maps exist they have been provided as back up material to each series of properties.



STAFF REPORT SUMMARY PAB 2019-14 + 2019-15

In addition to the policies provided by the Comprehensive Plan, Land Development Code and Florida Statutes 163.3187 and 163.3184, staff relied on the following guiding principles as part of its overall consideration for determining a recommendation for the Future Land Use Map or Zoning Map Change:

- **Built Environment:** What's on the ground (or not) today?
- **Surrounding Property:** What is the surrounding land use and zoning? What are the surrounding area built conditions?
- **Environmental Features:** What environmental features are contained on the site?
- **Pattern of Change:** Are there other land use or zoning changes within the same area that should be considered?
- **Holistic View:** How does the requested action serve to meet and further the general direction and intent of the City's policy direction as a whole?
- The 2011 Future Land Use Map adopted as part of the EAR-based Comprehensive Plan amendments is presumed to be the principal document for consideration of all Future Land Use Map changes.
- The City adopted a revised Land Development Code and Zoning Map in 2006.

CONSISTENCY WITH THE COMPREHENSIVE PLAN AND LAND DEVELOPMENT CODE:

The approval of Future Land Use Map and Zoning Amendments are generally governed under Comprehensive Plan policies which describe concurrency, level of service standards, and allocation of residential densities and non-residential intensities, and compatibility with neighboring properties. Staff has reviewed applicable policies generally and specifically as they apply to each property. The requested changes have been divided into topic areas for individual review as separate documents for the board's consideration. Analysis for each property is provided following this document.

The Land Development Code outlines policies for consideration of a Future Land Use Map Amendments and Zoning Map Amendments. Staff has determined that these sections have been sufficiently met and the requested action is found to be consistent with requirements of the Land Development Code. Further, it has determined that the requested action is consistent with the intent and direction of the Comprehensive Plan.

CONCLUSION:

The requested actions to amend the Future Land Use Map and Zoning Map have been directed under Ordinance 2019-05. Staff recommends approval of the application as provided in each parcel summary contained herein. The proposed actions are sufficiently compliant with the City's Comprehensive Plan and Land Development Code.

MOTION(S) TO CONSIDER

I move to recommend **(approval or denial)** of PAB case number 2019-14 to the City Commission requesting that a Future Land Use Map Amendment to align the City's Future Land Use Map and Zoning Map be **(approved or denied)** and that PAB case 2019-14, as presented, **(is or is not)** sufficiently compliant with the Comprehensive Plan and Land Development Code to be approved at this time.

I move to recommend **(approval or denial)** of PAB case number 2019-15 to the City Commission requesting that a Zoning Map Amendment to align the City's Future Land Use Map and Zoning Map be **(approved or denied)** and that PAB case 2019-15, as presented, **(is or is not)** sufficiently compliant with the Comprehensive Plan and Land Development Code to be approved at this time.



**MINUTES
PLANNING ADVISORY BOARD
WORKSHOP
SEPTEMBER 9, 2019
5:00 PM
CITY HALL COMMISSION CHAMBERS
204 ASH STREET
FERNANDINA BEACH, FL 32034**

1. CALL TO ORDER

ROLL CALL / DETERMINATION OF QUORUM

MEMBERS PRESENT:

Richard Clark	Mark Bennett
Frank Santry (Chair)	Genece Minshew
Jenny Schaffer (Alt 1)	Victoria Robas (Alt 2)

MEMBERS ABSENT:

Greg Roland

2. DISCUSSION

- 2.1 Staff Presentation and Board Review of PAB applications 2019-14 and 2019-15.
Information can also be obtained at: www.fbfl.us/mapcorrections
Discussion only, no action to be taken

3. BOARD BUSINESS

4. PUBLIC COMMENT

5. ADJOURNMENT

Sylvie McCann, Recording Secretary

Frank Santry, Chair



**MINUTES
PLANNING ADVISORY BOARD
REGULAR MEETING
OCTOBER 9, 2019**

1. CALL TO ORDER –

ROLL CALL / DETERMINATION OF QUORUM

MEMBERS PRESENT:

*Mark Bennett
Richard Clark
Genese Minshew*

*Frank Santry (Chair)
Greg Roland (arrived at 5:07 pm)
Victoria Robas (Alt 2)*

MEMBERS ABSENT:

Jenny Schaffer (Alt 1)

OTHERS PRESENT

*Tami Bach, City Attorney
Kelly Gibson, Planning Director
Sylvie McCann, Recording Secretary*

Member Robas was seated as a voting member.

2. APPROVAL OF MINUTES

2.1 May 22, 2019 Special Meeting

There being no objections, the minutes were approved as presented.

2.2 June 12, 2019 Regular Meeting

There being no objections, the minutes were approved as presented.

3. OLD BUSINESS

4. NEW BUSINESS

4.1 PAB Cases 2019-14 (FLUM) and 2019-15 (Zoning): Consideration of Future Land Use Map Amendments and Zoning Map Amendments where maps are in conflict.

Ms. Gibson gave presentation.

- Askins Ave – to be pulled (no motions to be made) pulled for further consideration by members – Staff to provide history documentation on how it became R3.

Public hearing opened

- 5th + Fir Street – (Miller property)

DRAFT

Matt Miller 416 Fir Street, had meeting Jake Platt + Ms. Back. Would like for Board to pull property so communication could be continued. Chair Santry noted that maps should be reconciled. Ms. Back said base on FLUM permits should not have been issued. Member Clark asked Staff about accommodate Mr. Miller desire to build a boathouse. Staff explained the LDC requirements. Member Minshew asked which permits were issued.

Closed public hearing

Member Bennett asked why Mr. Miller cannot build his structure. Staff explained.

Clark 1st

Minshew 2nd

recommend staff recommendation to commission

All ayes, carried

715 S. 6th Street

NO public input

Industrial from medium density to R2

Bennett 1st

Minshew 2nd

No public hearing

All ayes, carried

731 S. 6th Street

Chair Santry recommend this to be pulled until the next meeting.

Bennet approved FLUM from Industrial to Med Density Res (MDR)

Zoning I-1 to R2

All ayes, carried

3rd Street

Pulled the case, ordinance 2004-35 in place, map is already corrected.

1900 Amelia Trace

Zoning From MU-1 to Comm Commercial/C-1 to align to FLUM

No public input

All ayes carried

Off shore Drive/Off shore Court

Approval Zoning from Med Density Res R2 to CON

Public Hearing

Craig ? 2309 Off Shore Court – asked about impact on real estate value. Ms. Bach explained the impact.

Clark 1st

Minshew 2nd

All ayes, carried

North Pointe

Change FLUM from R3 High Density Res to R2 Med Density Res

Public Hearing

Debbie O? 925 President of HOA, present PAB minutes form a meeting in 1981

Betsy Huban, representing clients.

Arlene Filkoff 825 Tarpon Ave, character of the community

Jeff Foster 846 Mary Street, asked about height between R3 and R2, Staff explained.

Member Clark asked about the options presented to the Board.

All ayes, carried

212 S. 14th Street

Change zoning from MU1 to FLUM Low Density Res LDR

No public input

Chair Santry noted that he would rather change to zoning to match FLUM R1 Low density.

DRAFT

Bonnie Dickins, 132 S. 15th St, agrees with keeping the Low Density then MU1.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Roland, to approve

Clark 1st

Roland 2nd

Aye 3, Nay 2, carried

1316 Beech Street

Change FLUM from Gen Comm to Med Density Res R2 zoning as assigned (check this to make sure!)

No public input

All aye, carried

Sadler Road

Approved Change FLUM from CON to match zoning Gen Comm

Scott Powell, ?? Easport drive. Owns 2 lots.

???, 1003 Broome Street, commented on setting precedent on taking conservation land away.

David Falon general manager of hotel, 21600 Eatonic court, Jacksonville

David Sampson 1866 First Avenue, noted what is on the ground today

Bennet 1

Minshew 2

3 aye, 2 no, carried

Robert Oliver Avenue

Change FLUM from Med Density Res MDR to CON and amend Zoning from R2 to CON (city owned land)

No public input

Clark 1, Minshew 2 (FLUM)

Bennet 1, Minshew 2 (Zoning)

All ayes, carried

Hickory Street Park

Change FLUM to PI from Low Density Res LDR

Jeffrey Bunch, School District, opposed to the change. Had agreement with School Board.

Property Pulled to next meeting. Member Roland propose the City approach the school board to purchase property.

Citrona Drive

420 Citrona

To Leave FLUM to CON

Margaret Kirkland, 1377 Plantation Point Drive

Richard Tim, 2126 Shell Cove Cir, leave it conservaton

Ryan Conners, 2119 Park Square Place

Robert Wells, 2884 Robert Oliver -

510 Citrona Drive

FLUM from CON to Low Density Res

Zoning from R1 to CON

Jimmy Calista, 510 Citrona Drive

Robert Wells, 2884 Robert Oliver Ave

Richard Tim, 2126 Shell Cove Cir

Margaret Kirkland, 1377 Plantation Point Drive, Amelia Tree Conservancy

Ryan Conners, 2119 Park Square Place

Continued to next meeting

522 Citrona Drive

Continued to next meeting

526 Citrona Drive

No public input

To change FLUM and Zoning to CON from R1

DRAFT

Roland 1
Bennett 2
All ayes, carried

City + FDOT Properties
Zoning change to CON from Low density Res LDR
Robert Wells 2884 Robert Oliver Ave
Bennett 1
Minshew 2
All ayes, carried

Shell Cove
Amend FLUM from Low Density to CON
Amend Zoning from R2 PUD to CON
Richard Tim, 2126 Shell Cove circle
Bennett 1
Clark 2
All ayes, carried

Post Oak Buffer
Change FLUM to CON from LDR Low Density Res
Change Zoning change to CON from Low Density Res R-1
Bennett 1
Roland 2
All ayes, carried

Chair Santry suggested a sub committee to review all other pulled items before the end of the year.

We are bringing back the following to look at during the meeting of Sub-Committee:

510 Citrona
522 Citrona
Hickory Street Park
731 S. 6th Street
Askins and S. 3rd Street (Info) into Jan
School Board and City Agreement

Adjust 9:52

ACTION TAKEN: A motion was made by Member , seconded by Member , to recommend

5. BOARD BUSINESS

5.1 **Discussion of next steps for PAB Bylaw revisions.**

6. STAFF REPORT

6.1 Provide update on Planning Activities including EAR Report, EAR based Amendments (next steps), and upcoming meeting topics.

7. PUBLIC COMMENT

8. ADJOURNMENT –

Sylvie McCann, Recording Secretary

Frank Santry, Chair



**MINUTES
PLANNING ADVISORY BOARD
REGULAR MEETING
NOVEMBER 13, 2019**

1. CALL TO ORDER – 5:02 pm

ROLL CALL / DETERMINATION OF QUORUM

MEMBERS PRESENT:

*Mark Bennett
Richard Clark
Jenny Schaffer (Alt 1)*

*Victoria Robas (Alt 2)
Greg Roland (arrived at 5:31 pm)
Genece Minshew*

MEMBERS ABSENT:

OTHERS PRESENT

*Tami Bach, City Attorney
Kelly Gibson, Planning Director
Samantha Rogic, Recording Secretary*

**Alternate Member Jenny Schaffer was seated as a voting member for the entirety of the meeting.
Alternate Member Victoria Robas was seated as a voting member until Member Roland's anticipated late arrival.**

2. OLD BUSINESS

- 2.1 PAB Cases 2019-14 (FLUM) and 2019-15 (Zoning):** Consideration of Future Land Use Map Amendments and Zoning Map Amendments where maps are in conflict.

Askins Ave: Ms. Gibson presented the Staff Report and recommended no change. No members of the public wished to speak.
No action was taken.

731 S 6th Street: Ms. Gibson presented the Staff Report. Ms. Betty York, owner of the property, stated that they have ordered a survey in anticipation of applying for a minor subdivision of the subject property.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Minshew, for the western half of the property to remain as industrial zoning and the front half be residential as recommended by Staff.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

Hickory Street Park: Ms. Gibson presented the Staff Report.

The following individuals spoke in support of changing the zoning to match the FLUM of Public and Institutional: *Robin Lentz, 802 Parkview Place E; Ret Angus, 822 Parkview Place E; Carl Bazarian, 95048 Mackinas Circle.*

ACTION TAKEN: A motion was made by Member Roland, seconded by Member Clark, to amend the FLUM from Low Density Residential Future Land Use to Public and Institutional Future Land Use.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

522 Citrona Drive: Ms. Gibson presented the Staff Report.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Roland, to accept Staff recommendation to: 1) Amend Future Land Use Map for 0.23 acres of land from Low Density Residential (LDR) to Conservation (CON); 2) Amend Zoning Map for 0.47 acres of land from R-1 to CON

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

510 Citrona Drive: Ms. Gibson presented the Staff Report. No members of the public wished to speak.

ACTION TAKEN: A motion was made by Member Roland, seconded by Member Clark, to accept Staff recommendation to 1) Amend Future Land Use Map for 0.40 acres of land from Conservation (CON) to Low Density Residential (LDR); 2) Amend Zoning Map for 0.71 acres of land from R-1 to CON.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

3. BOARD BUSINESS

- 3.1** Bylaws subcommittee meeting: Thursday, November 21, 2019 at 10am.
Joint PAB and City Commission special meeting: Tuesday, December 17, 2019 at 4pm.

4. STAFF REPORT

- 4.1** Provide an update on planning activities with distribution of a returning LDC Text Amendment (2019-07) containing April PAB updates and floodplain building height changes and distribution of list with preliminary maps for Conservation Future Land Use Map and Zoning Changes.

Ms. Gibson provided the update.

5. PUBLIC COMMENT

6. ADJOURNMENT – 6:35 pm



**MINUTES
PLANNING ADVISORY BOARD
REGULAR MEETING
DECEMBER 11, 2019**

1. CALL TO ORDER – 5:02 pm

ROLL CALL / DETERMINATION OF QUORUM

MEMBERS PRESENT:

*Mark Bennett (Vice-Chair)
Richard Clark
Jenny Schaffer (Alt 1)
Peter Stevenson*

*Victoria Robas (Alt 2)
Greg Roland (arrived at 5:49 pm)
Genece Minshew*

MEMBERS ABSENT:

OTHERS PRESENT

*Tami Bach, City Attorney
Kelly Gibson, Planning Director
Samantha Rogic, Recording Secretary*

Alternate Member Schaffer was seated as a voting member until Member Roland's late arrival.

2. APPROVAL OF MEETING MINUTES

2.1 November 13, 2019

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Minshew, to approve the minutes as presented.

Motion passed by unanimous voice vote.

3. OLD BUSINESS

3.1 LAND DEVELOPMENT CODE TEXT AMENDMENTS (PAB CASE #: 2019-07): CITY OF FERNANDINA BEACH, FLORIDA REQUESTS LAND DEVELOPMENT CODE TEXT AMENDMENTS TO MODIFY STANDARDS FOR HEIGHT ENCROACHMENTS WITHIN SECTIONS 1.07.00 ADDING OR AMENDING CERTAIN DEFINITIONS; AMENDING SECTION 4.02.03 STANDARDS FOR BUILDINGS AND BUILDING PLACEMENT AND HEIGHT WITHIN SPECIAL FLOOD HAZARD AREAS; AND SECTION 10.02.01 VARIANCES TO DISALLOW GRANTING OF VARIANCES TO EXCEED MAXIMUM BUILDING HEIGHTS AND TO DEVIATE FROM REQUIRED SIDE YARD SETBACKS FOR BUILDINGS WITHIN 800 FEET OF THE MEAN HIGH WATER MARK OF THE ATLANTIC OCEAN.

Doug Roselle, 524 Tarpon Ave, spoke in support of limiting unnecessary allowable height encroachments.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Roland, to table the item to the January regular meeting.

Motion passed by unanimous voice vote.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Minshew to accept staff recommendation with regard to the yellow highlighted language and 10.02.01 Sub 11 and 12 which are additions.

Motion passed by unanimous voice vote.

4. NEW BUSINESS

4.1 PAB 2019-16: Future Land Use Map and Zoning Map Amendments to Conservation and Recreation for City Owned Properties (pursuant to Ordinance 2019-05)

The following individuals spoke to the item:

Deb Harper, 835 Allen, inquired on the notice she received in the mail.

Jeff McDowell, 2820 Mantanzas, asked for clarification on which property near him is affected.

Margarete Kirkland, 1377 Plantation Point Drive, speaking on behalf of Amelia Tree Conservancy, asked for clarification on several parcels.

Barbara Smith, 923 9th Street.

ACTION TAKEN: A motion was made by Member Roland, seconded by Member Clark, to approve PAB 2019-16 as presented.

Motion passed by unanimous voice vote.

4.2 PAB 2019-17: Future Land Use Map and Zoning Map Amendments for Non-City owned lands to Conservation and Recreation (pursuant to Ordinance 2019-05)

Marine St & Marine St:

The following individuals spoke to the item:

James O'Conner, 703 Garden Street, has a lease with CSX

Brad O'Conner, 2440 Lyndale Road, has a lease with CSX

Eric Oliver, 706 Someruelus, has a lease with CSX

Jennifer Harrison, 820 Someruelus St, spoke to the significant history of the bluff.

Member Stevenson motioned for no action to be taken on the two parcels identified to keep as industrial waterfront. Member Minshew seconded.

Upon further discussion, Member Stevenson withdrew his motion.

ACTION TAKEN: A motion was made by Member Roland, seconded by Member Clark, to postpone the CSX parcels to the March Regular meeting to give Staff time to meet with CSX.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

8th and Dade Street:

The following individuals spoke to the item:

Monica Cleveland, 2203 Belvedere Ave

Jill McCarthy, 2120 Belvedere Ave

ACTION TAKEN: A motion was made by Member Clark, Seconded by Member Stevenson, to approve Staff's recommendation of all non-city owned parcels, with the exception of the CSX properties as discussed and the parcel located on the corner of Dade and 8th Street (00-00-31-1800-0067-0050).

Vote upon passage of the motion was taken b y ayes and nays and being all ayes, carried.

5. BOARD BUSINESS

5.1 Review Draft Amendments to PAB Bylaws

Members of the Board discussed.

ACTION TAKEN: A motion was made by Member Minshew, seconded by Member Roland, to approve the bylaws as amended and presented.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

The Board then unanimously agreed by voice vote, to vote on the final approval at the January 2020 regular meeting.

6. STAFF REPORT

7. PUBLIC COMMENT

8. ADJOURNMENT – 7:54 PM

Samantha Rogic, Recording Secretary

Mark Bennett, Vice-Chair



**STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION**

**CITRONA DRIVE- CITY/FDOT/SHELLCOVE HOA – VACANT LANDS
ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	CITY OF FERNANDINA BEACH AND FLORIDA DEPARTMENT OF TRANSPORTATION AND SHELL COVE HOA AND SEALS AND ASSOCIATES (POST OAK APTS) 00-00-31-1180-0017-0050 00-00-31-1180-0017-0060 00-00-31-1180-0018-0010 00-00-31-1180-0018-0030 00-00-31-1180-0018-0040 00-00-31-1180-0022-0010 27-3N-28-1192-000C-0000 27-3N-28-1192-000D-0000 00-00-31-1180-0018-0040				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	CITRONA DR VACANT/ UNDISTURBED				
CURRENT LAND USE + ZONING:	Conservation (CON) Zoning Map: R-1				
PROPOSED LAND USE + ZONING:	Amend Zoning Map from R-1 to CON				
EXISTING USES ON SITE:	VACANT				
PROPERTY SIZE:					
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	None Noted	11 ft to -1 ft	Fine Sand/ Clay	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Vacant	N/A	R-/CON	Low Density Residential
	South	Vacant	N/A	R-1	Low Density Residential and Conservation
	East	Vacant	N/A	R-1	Conservation



STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION

	West	FB Middle School	1991	PI-1	Public & Institutional
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.04 (FLUM amendments); 1.02.09 (smooth land use transition and buffering); 1.07.15 (conservation land use category); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan				
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.20 (CON zoning district); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 4.05.00 (Landscaping, Buffers, and Tree Protection); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC				
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.				
PAB RECOMMENDATION:	Pending 10/9/19 public hearing				



STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION

SUMMARY TABLE FOR EACH PARCEL:

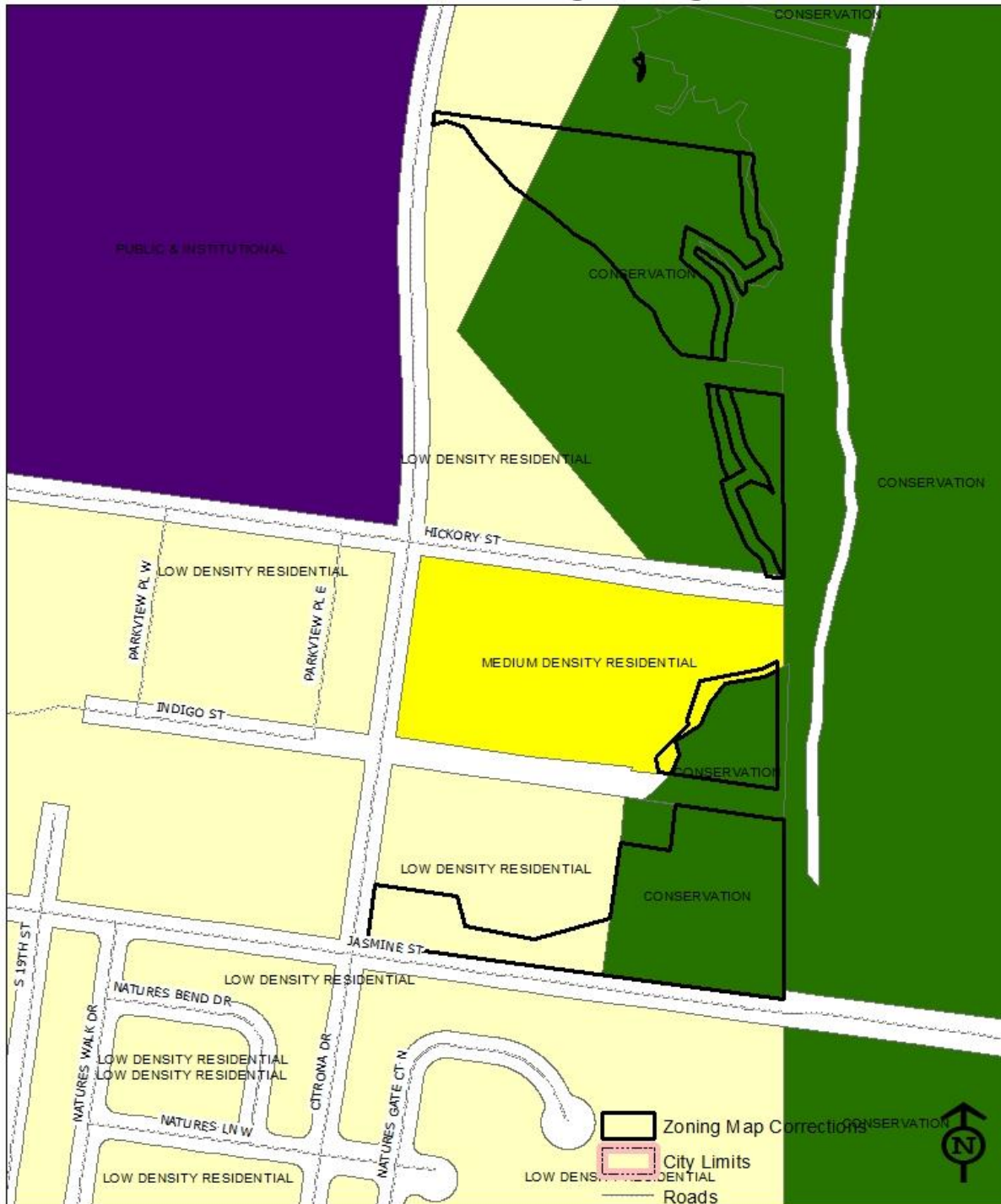
Location/ Parcel	Added Conservation FLUM (sq. ft.)	Reduced Conservation FLUM (sq. ft)	Added CON Zoning (sq. ft)	Reduced CON Zoning (sq. ft)
00-00-31-1180-0017-0060	21,000.00		158,994.00	
00-00-31-1180-0017-0050			24,393.60	
00-00-31-1180-0018-0010			27,878.40	
00-00-31-1180-0018-0030			15,681.60	
00-00-31-1180-0018-0040			6,098.40	
00-00-31-1180-0022-0010				
00-00-31-1180-0022-0010 (Post Oak Apts)	50,094.00		190,357.20	
27-3N-28-1192-000C-0000 (Shell Cove Common Tract)	9,583.20		9,583.20	
27-3N-28-1192-000D-0000 (Shell Cove Common Tract)			41,817.60	
00-00-31-1180-0018-0040			6,098.40	
TOTAL SQ. FT.:	80,677.20	-	480,902.40	-
TOTAL ACREAGE:	1.85	-	11.04	-



**STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION**

MAP EXHIBITS & PROPERTY IMAGES:

Overview Map of Zoning and Land Use Changes of vacant properties within the Citrona Drive corridor

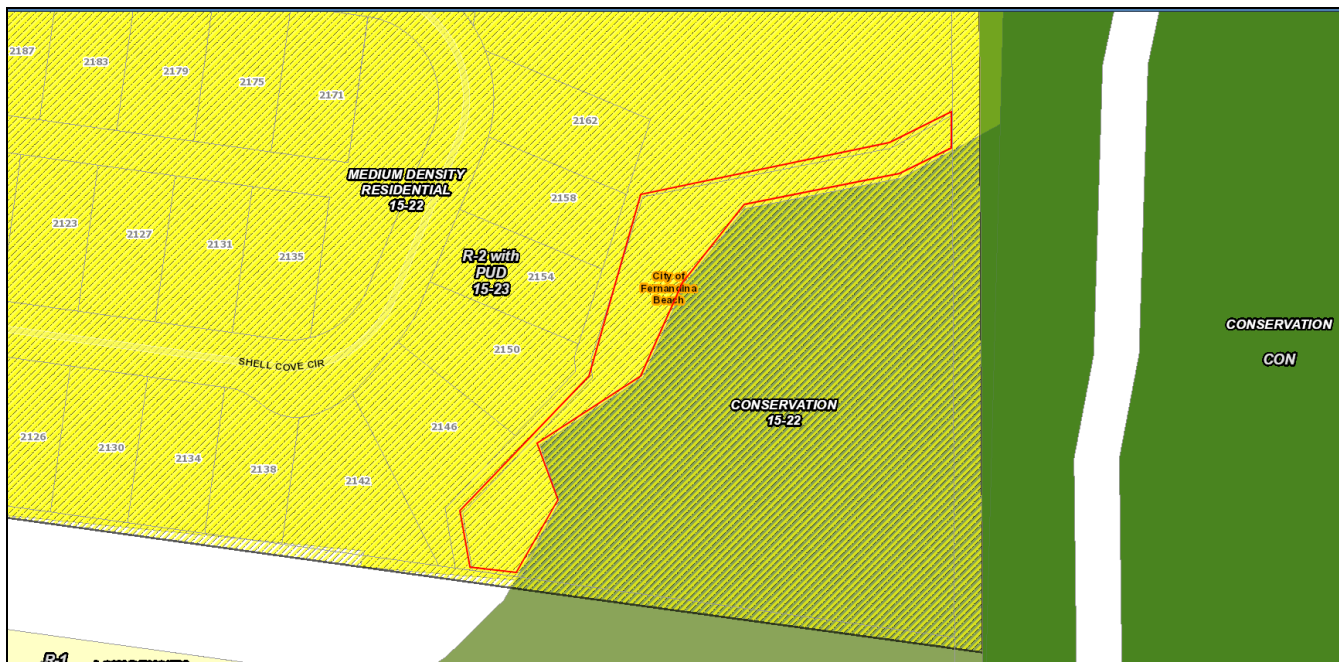




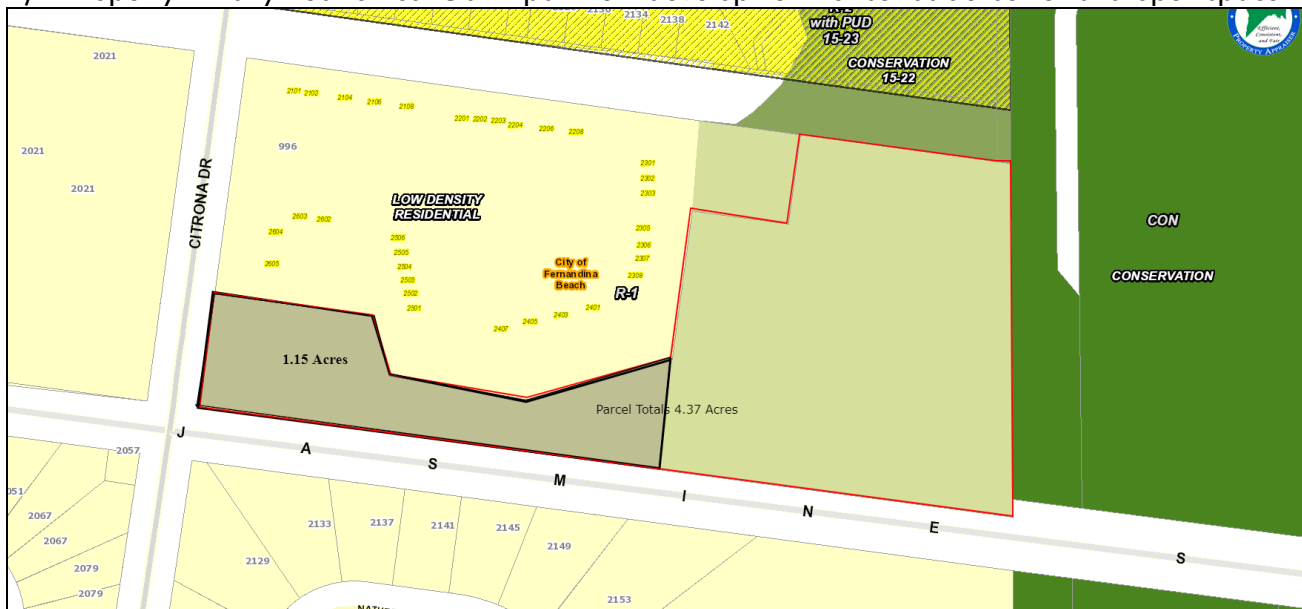
STAFF REPORT CITRONA DRIVE – CITY/ FDOT/ SHELL COVE ZONING CHANGE TO CONSERVATION

Citrona Drive - Future Land Use Map Changes

27-3N-28-1192-000C-0000: 0.22 acres (9,583.20 sq. ft.) from Low Density Residential (LDR) to Conservation (CON) Future Land Use Map and Zoning Map change



00-00-31-1180-0022-0010: 1.15 acres (50,094 sq. ft.) FLUM amendment from Low Density Residential (LDR) to Conservation (CON) and 4.37 acres (190,357.20 sq. ft.) to Conservation Zoning from Low Density Residential (R-1) – Property initially tied to Post Oak Apartment development for set aside buffer and open space





STAFF REPORT CITRONA DRIVE – CITY/ FDOT/ SHELL COVE ZONING CHANGE TO CONSERVATION

Citrona Drive – Zoning Map Changes along Citrona Drive for Vacant Properties

00-00-31-1180-0017-0050: 056 acres (24,393.60 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

00-00-31-1180-0018-0010: 0.64 acres (27,878.40 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

00-00-31-1180-0018-0040 :0.14 (6,098.4 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

00-00-31-1180-0018-0030: 0.36 acres (15,681.60 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

00-00-31-1180-0018-0040: 0.14 acres (6,098.40 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

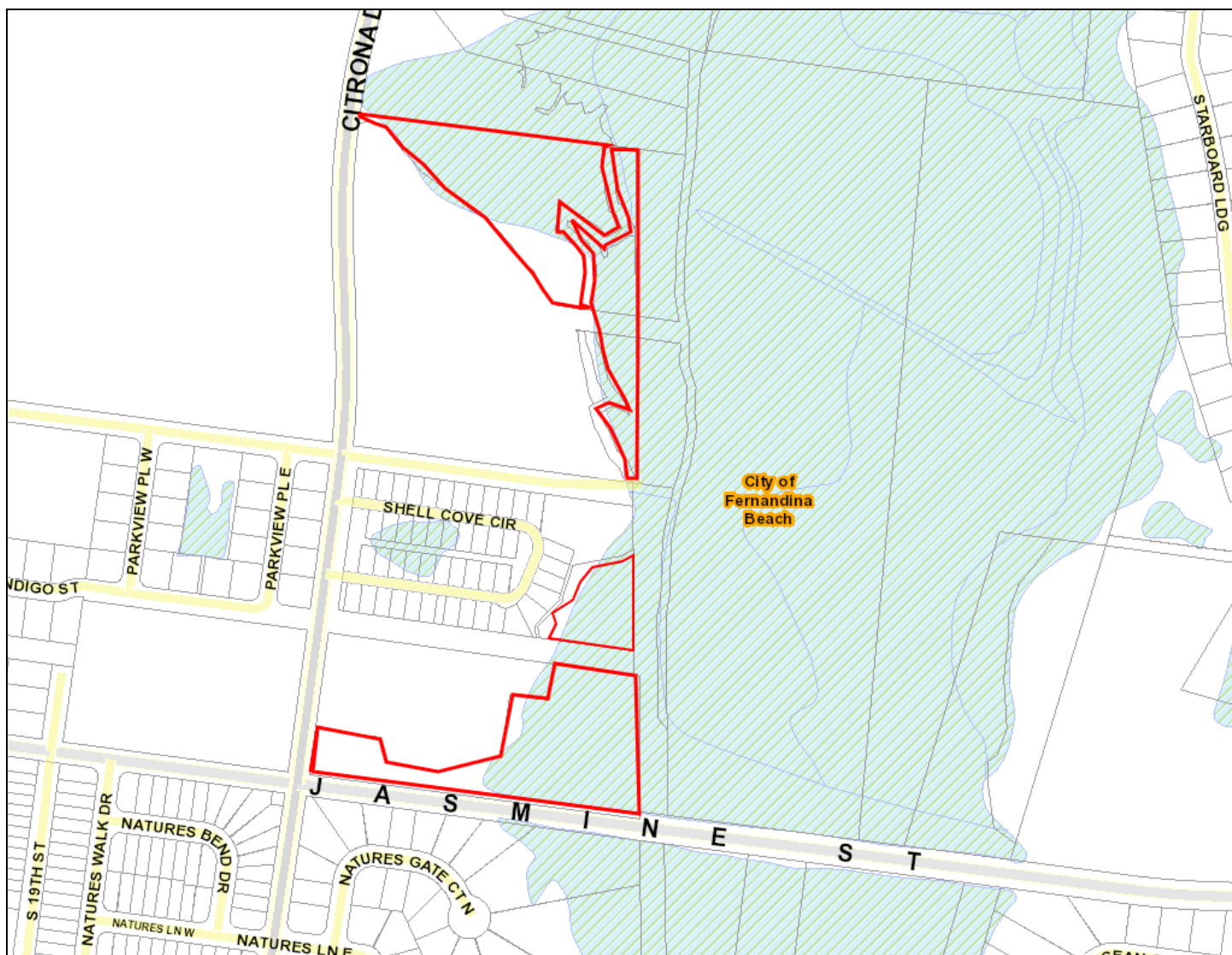
27-3N-28-1192-000D-0000: 0.96 acres (41,817.60 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change





**STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION**

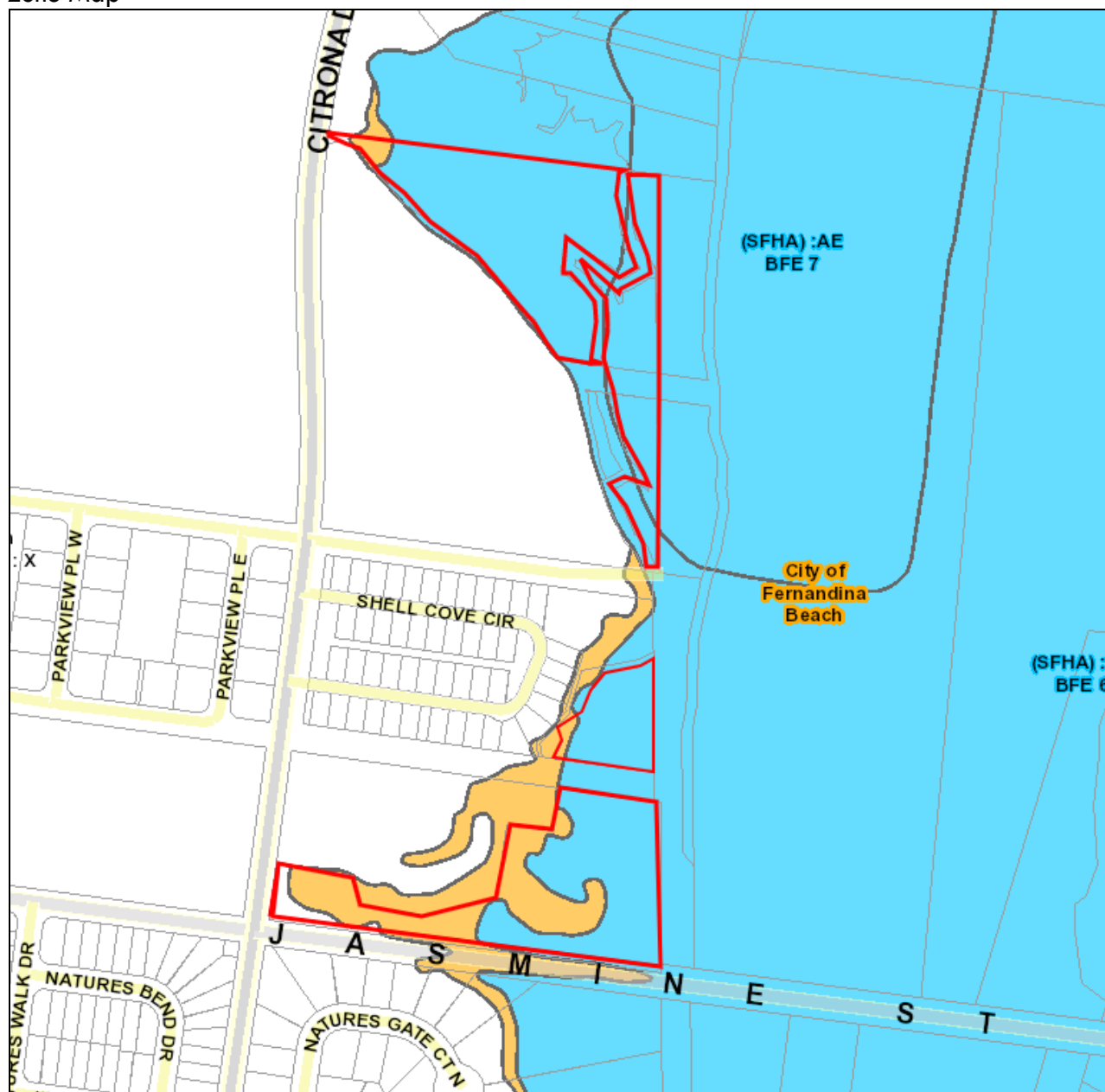
Wetlands Map





STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION

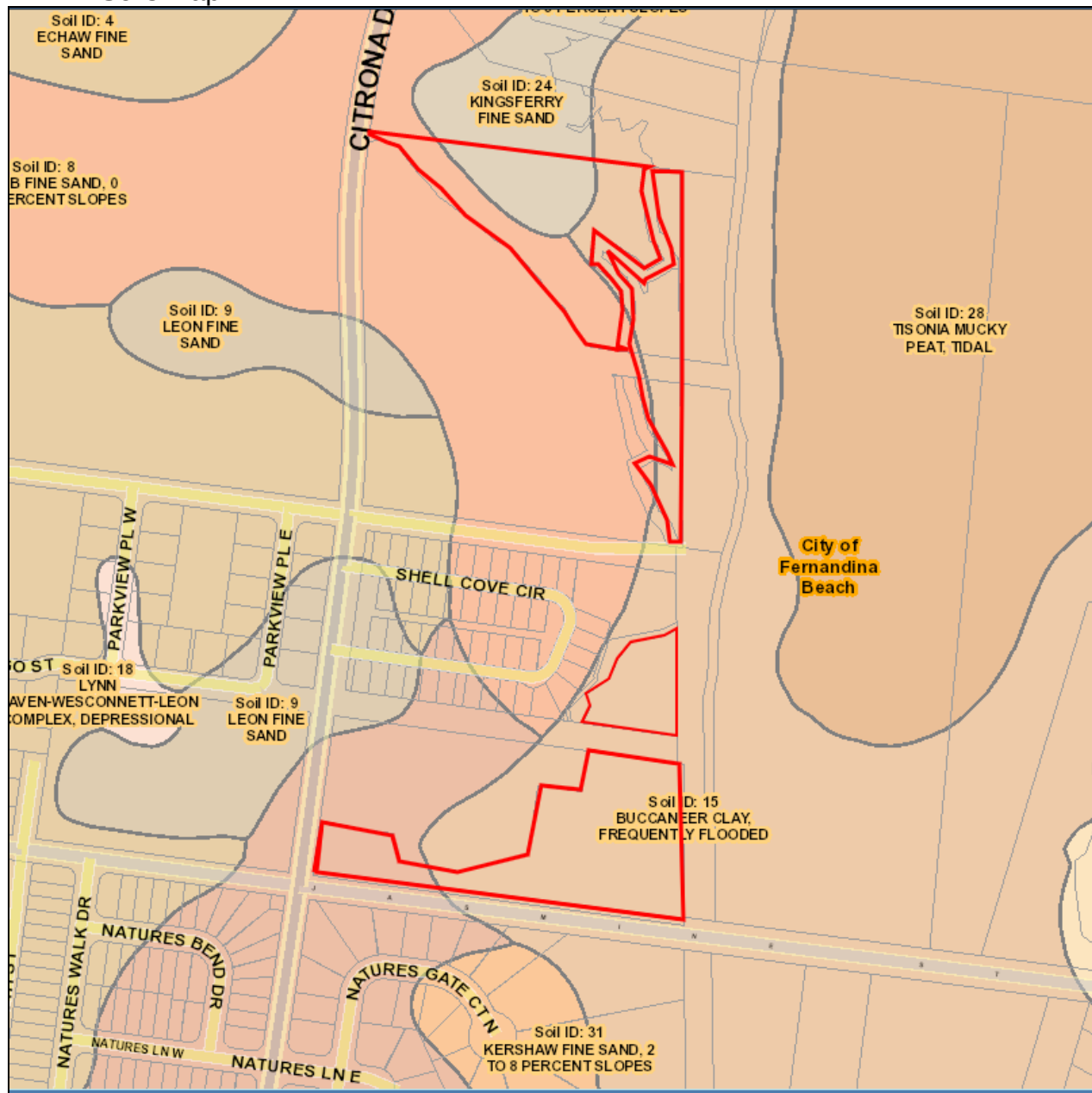
Flood Zone Map





STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION

Soils Map





City of Fernandina Beach

PLANNING DEPARTMENT

September 14, 2015

Greystone Affordable Housing Initiatives LLC
c/o Serena Kefauver
4025 Lake Boone Trail, Suite 209
Raleigh, NC 27607

RE: Post Oak Apartments – Parcel # 00-00-31-1180-0022-0000

The Planning Department is in receipt of your request for information on the above-referenced property. This property carries a Future Land Use designation of **Low Density Residential and Conservation** (Attachment A) and is zoned **R-1, Low Density Residential** (Attachment B). Currently there are six multifamily structures with a total of 42 units on this property.

This property was developed with an application for conditional use (PUD) No. PUD0189 applied for by Midland Properties Partnership. The City Commission granted the Conditional Use with Resolution Number 967 on April 4, 1989 (Attachment C). The property originally totaled 8.22 acres as presented in the Conditional Use application. Today, 996 Citrona Drive is a 3.91 acre parcel with 42 dwelling units. Your specific questions regarding this parcel will be answered as the property is today.

Zoning and Land Development Regulations:

- A. Is this site appropriately zoned for the proposed development? No.** The property is zoned R-1, Low Density Residential.
- B. Indicate zoning designation(s)** R-1, Low Density Residential
- C. Current zoning permits 4 units per acre. Existing Conditions are approximately 10 units per acre.** Net Density as defined in the City's Comprehensive Plan is, "Determined by multiplying the "maximum allowable units per acre" by the "net buildable land area" expressed in acreage. "Net buildable land area" means those contiguous land areas under common ownership proposed for residential development, minus undevelopable environmentally sensitive areas, including wetlands, transitional wetlands, floodplains and waters of the state. Lots adjoining an existing right-of-way may calculate half of the width of that right-of-way as part of the "net buildable land area" definition." I calculated the **maximum number of dwelling units for this parcel at 18 units**. Without a survey to verify the net buildable land area that is just an approximation.
- D. Total number of units in this development? 42**
- E. Is the site appropriately zoned and consistent with local land use regulations regarding density and intended use? No if no, explain.**
Low Density Residential is intended for development of low density single family detached homes on individual lots. Single family attached homes may be allowed through the PUD

process. The low density residential designation is established to protect the quality and character of existing low density single family neighborhoods.

- F. Does the current, applicable Future Land Use Map designation and associated local government Comprehensive Plan Future Land Use Element provisions permit the proposed development? No.**

Policy 1.07.04

Low Density Residential (LDR)

- a. Areas delineated on the FLUM for low density residential development shall accommodate permanent residential development and shall be comprised of single-family detached homes on individual lots. Single family attached homes may be allowed only through the PUD process.
- b. The maximum density shall not exceed four (4) dwelling units per acre. Specific densities will be determined by such factors as natural features of the land, density and/or intensity of developed and/or undeveloped land surrounding development, level of accessibility, housing supply and demand, adequacy of public facilities, consumer preference, and other factors which may be identified in the City's land development regulations.
- c. Supportive community facilities and accessory land uses may be located within areas designated for single-family low density residential uses. The land development regulations shall provide regulatory procedures for considering such uses.
- d. The low density residential designation is established to:
 1. Protect the quality and character of existing low density single family neighborhoods;
 2. Preserve open space;
 3. Prevent encroachment by commercial uses, including hotels, motels, bed and breakfast units, resort rentals, or other forms of transient accommodations, and incompatible non-residential uses;
 4. Encourage densities that are compatible with existing and anticipated future developments;
 5. Promote compatibility with natural features of the land; and,
 6. Minimize the burden on existing and projected supportive public services and facilities within the area.

Policy 1.07.14

Conservation (CON)

- a. Lands that are natural resources such as wetlands shall be included in the Conservation land use designation in order to provide for the maximum long-term protection and preservation of environmentally sensitive natural resource systems. All wetlands, as verified by jurisdictional field delineation, are designated as limited development overlays and shall be protected by policies contained within the Conservation and Coastal Management Element of this plan.
- b. Potentially allowable uses in the Conservation land use category may include: docks, boardwalks, hiking trails, and picnic areas or other passive recreation uses.
- c. Development within the conservation land use category is limited to buildings that are supportive of and accessory to the Conservation land use category, such as an interpretative center, rest rooms, or covered picnic pavilions.
- d. Potentially allowable uses are limited in location and extent, and shall avoid adverse impacts on the hydrologic functions of wetlands, natural systems, habitats, water quality, shorelines, marine life, and coastal resources. Allowable uses shall serve to protect the safety and welfare of the natural resource.



City of Fernandina Beach

PLANNING DEPARTMENT

- e. Any improvement within Conservation areas shall be developed using low impact development (LID) practices and sustainable building strategies.

Outstanding zoning and/or building violations:

- A. Are there any outstanding zoning or building violations? Yes. If yes, please list in detail.** There are three expired building permits listed below.
1. **2003-4211** Electrical Permit, 60 AMP subfeed for well pump irrigation.
Expired 5/29/2004
 2. **2010-1323** Mechanical Permit, Install one 1.5 ton HVAC unit only.
Expired 2/06/2011
 3. **2010-1944** Electrical Permit, Replace wiring & 2 fixtures due to small kitchen fire in unit #2301. Expired 5/14/2011

Rebuild ability threshold:

- A. What is the threshold to rebuild the property should it be destroyed?**

LDC Section 10.01.01(E) Nonconforming Situations

If a structure located within the city receives storm damage or other structural in excess of fifty (50%) of the appraised value of the structure, such structure may be replaced in compliance with current laws and ordinances, including those enacted since the construction of the subject structure. If the structure was non-conforming based on density or zoning, it may be re-constructed at no greater non-conformity than prior to when it was damaged. In no instance may any non-conformity be expanded.

Minimum Building Setbacks:

- A. What are the minimum setback requirements?**

- Maximum Building Height- 35 ft. (measured from approved finished grade to peak of roof)
- Front Setback – 25 ft. (measured from property line)
- Rear Setback – 20 ft. (measured from property line)
- Side Setback – 10% of lot width (Each side yard setback increases by one-half (1/2) foot for each one (1) foot, or fraction thereof, of building heights above 25 feet up to a maximum building height of 35 feet)

Parking Ratio:

- A. What are the parking requirements for the property?**

LDC Section 7.01.04(A) Parking Space Requirements

Multi-family dwellings are required to have 2 spaces per dwelling unit. There are 42 dwelling units requiring 84 parking spaces. The approved site plan shows 84 parking spaces.

Legal Conforming or Legal Non-conforming

A. Is the property a legal conforming or legal non-conforming use?

996 Citrona Drive is a legal non-conforming property. It was developed as a Conditional Use PUD, granted by Resolution 967. Legal non-conforming means a structure that was legally permitted at the time of its construction prior to subsequent changes in the code which changes would no longer permit the re-establishment of such structure, including nonconformity with current density, floor area ratio, parking, structure setback, impervious surface ratio or lot coverage. The structure being nonconforming does not restrict you from making renovations. Nonconforming structures shall not be expanded except where such expansions meet all requirements of the Land Development Code. The Land Development Code does not inhibit you from making interior or exterior renovations.

A complete version of the City's Land Development Code can be viewed online at <http://www.fbfl.us/LDC>. Please note that this zone is also governed by the City's Comprehensive Plan, found at <http://www.fbfl.us/compplan>.

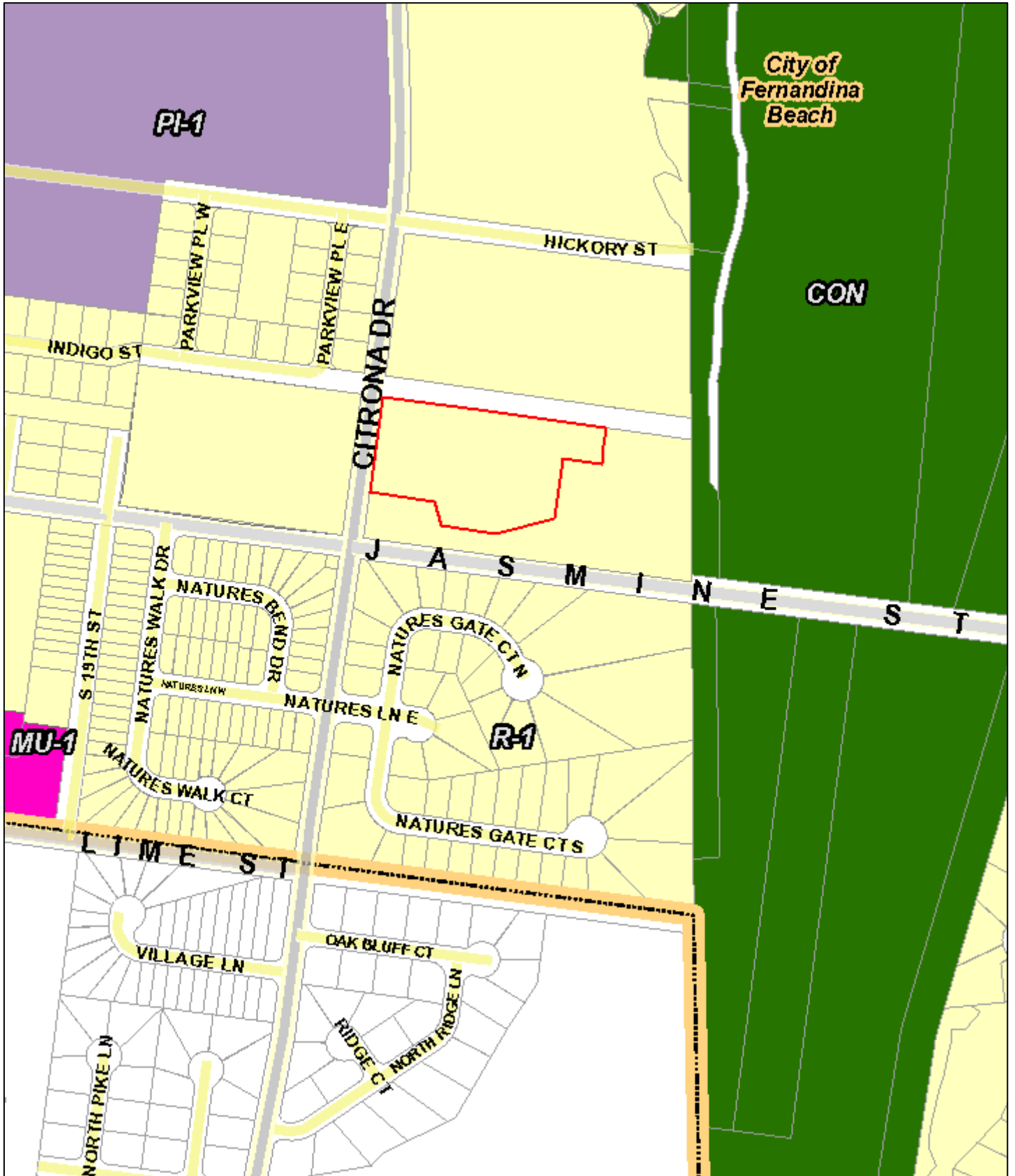
If you have any further questions regarding this due diligence report please contact the Planning Department at (904) 310-3135.

Sincerely,

A handwritten signature in blue ink, appearing to read 'J. Platt' with a stylized flourish.

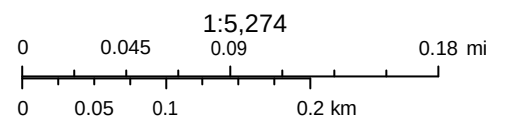
Jacob M. Platt
Planner 1 |

ZONING



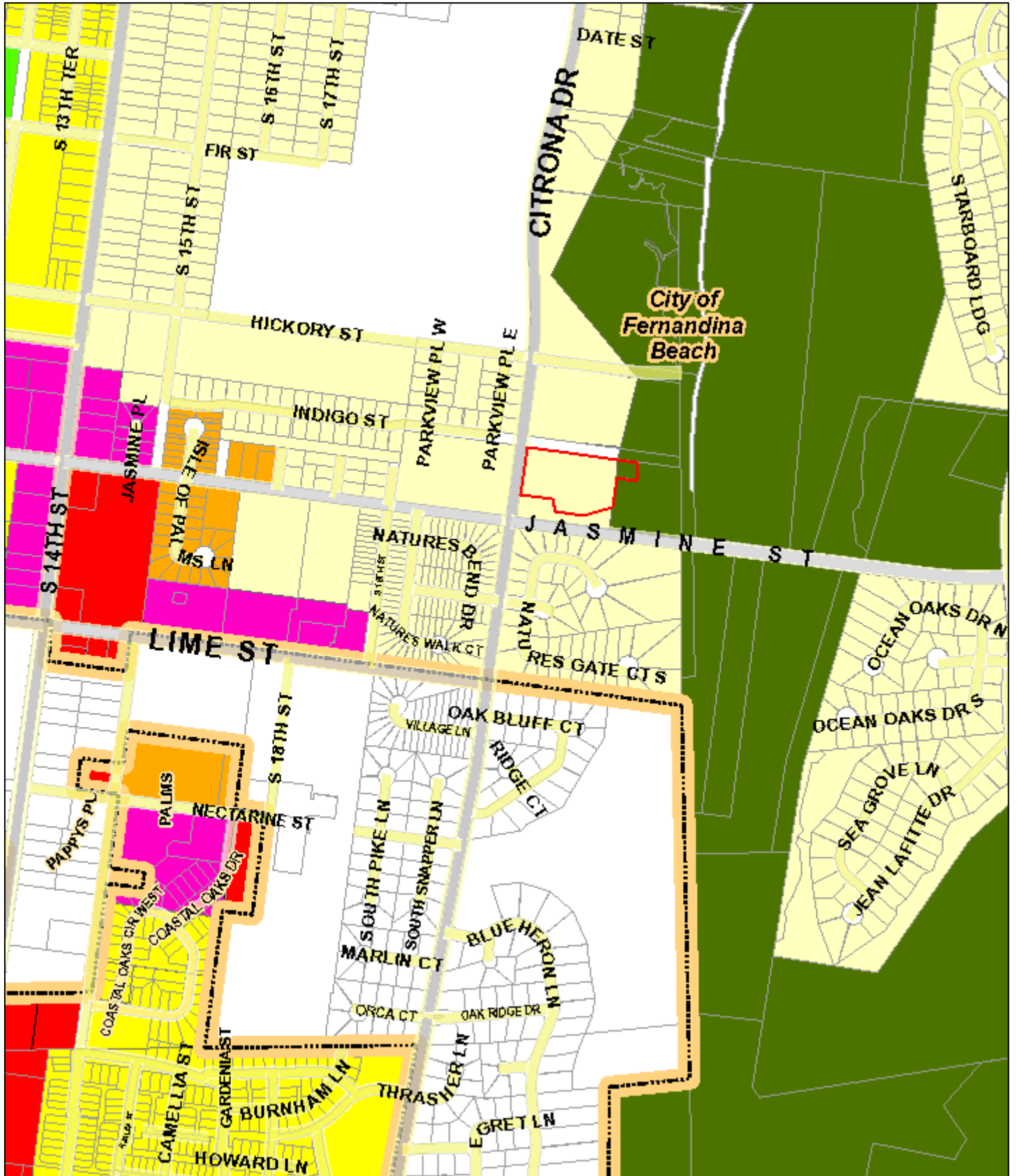
September 14, 2015

Land Parcels	R-1	OT-1	PI-1
City of F.B. Zoning	RLM	OT-2	CON
C-1	R-2	W-1	REC
C-2	R-3	IW	
C-3	RE	I-1	
MU-1	R-1G	IA	

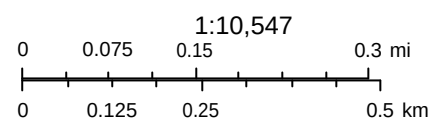
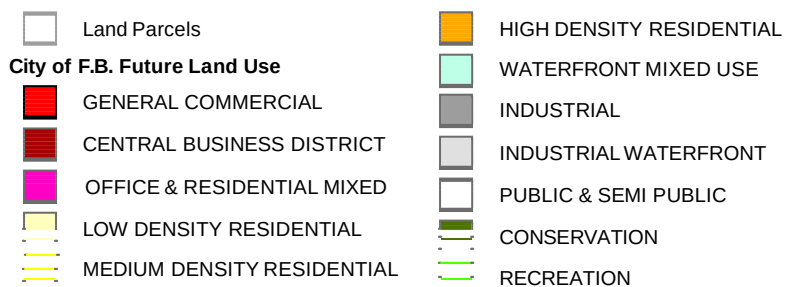


Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

FLUM



September 14, 2015



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

RESOLUTION NUMBER 967

IN RE: APPLICATION FOR CONDITIONAL USE (PUD) NO. PUD0189

WHEREAS, Midland Properties Partnership has applied for a Conditional Use, for a Planned Unit Development (PUD), under Sections 26-10.3 and 26-11 (K) of the Code of Ordinances of the City of Fernandina Beach, Florida, Application No. PUD0181 and

WHEREAS, the Planning Advisory Board has considered such application and rendered its report and recommendations on the same; and

WHEREAS, Notice of Hearing on such application was published in the News-Leader, a newspaper of general circulation in Fernandina Beach, Nassau County, Florida, on March 1, 1989 and on March 8, 1989; and also posted on the subject property; and

WHEREAS, a public hearing was held on such application by the City Commission of the City of Fernandina Beach, Florida, on April 4, 1989; and

WHEREAS, after consideration of the testimony and evidence presented on such application and at the public hearings thereon, the City Commission made the following findings:

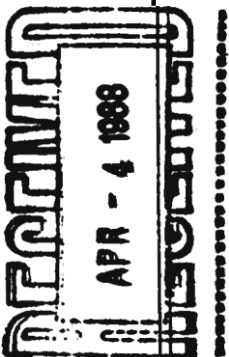
A. That the Commission is empowered under Sections 26-11 and 26-10.3 of the Zoning Code of the City of Fernandina Beach, to grant the conditional use (PUD) described in the application.

B. That the grant of the conditional use will not adversely affect the public interest of health, safety and welfare.

C. That the specific rules governing the conditional use, if any, as required by Section 26-10.3 of the Zoning Code have been met, and that satisfactory provisions and arrangements have been made concerning those certain matters specified in Section 26-11(K) (4), (a) through (h) of the Zoning Code.

NOW, THEREFORE, BE IT RESOLVED by the CITY COMMISSION of the CITY OF FERNANDINA BEACH, FLORIDA, at its meeting duly called and assembled, that Application for Conditional Use (PUD) No. PUD0189, filed by Midland Properties Partnership be and the same is hereby approved, subject to the following conditions:

1. That the property shall remain as a unified tract of 8.22 acres without any development activity in the greenbelt or landfill area.
2. A sidewalk or paved walkway from the development area to the Jasmine Street/Citrona Drive intersection will be provided.
3. The Planned Unit Development will contain the same rental criteria, for the same duration, as the FmHA project requires, and, for the duration of the provision, the project shall not be converted to condominium form of ownership.
4. Deceleration and acceleration lanes shall be provided as approved by the County Engineer.
5. The access to the development is subject to approval of the County Engineer.
6. Fencing is to be provided along Jasmine Street, but without visual interference with intersection traffic.
7. Plans for storm water and street lighting to be provided.



CITY OF FERNANDINA BEACH

RONNIE SAPP
Mayor-Commissioner

ATTEST :

VICKI P. WINGATE
City Clerk



715 S. 6TH STREET
ZONING MAP CHANGES

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1800-0288-0060 WALKER GERALDINE
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	715 S. 6 TH Street Single Family Home Built in 2000 and Accessory Structures
CURRENT LAND USE + ZONING:	Future Land Use Map: Medium Density Residential Zoning: Industrial
PROPOSED LAND USE + ZONING:	Amend the Zoning Map from Industrial (I-1) to Medium Density Residential (R-2)
EXISTING USES ON SITE:	Single-Family Home constructed in 2000 with ancillary structures (Homesteaded)
PROPERTY SIZE:	0.23 Acres of Land

DATA AND ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X	None Noted	11 ft to 12 ft	Fine Sand	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Single Family Home/ vacant lots	1900	I-1 (vacant section only)/R-2	Industrial (vacant section only) /Medium Density Residential
	South	Single Family Home	1941	I-1	Medium Density Residential/ Industrial
	East	Single Family Home	2000	R-2	Medium Density Residential
	West	Unimproved Public ROW (S.5 th Street) abutting CSX transportation building/offices	N/A	I-1	Industrial
APPLICABLE	1.02.02 (adequate public services);				



STAFF REPORT
715 S. 6th Street

COMPREHENSIVE PLAN POLICIES:	1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.05 (medium density residential land use category); 3.01.05 (provision of land use for housing); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.04 (R-2 zoning district); 2.01.20 (CON zoning district); 2.03.03 (Table of Accessory Uses); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	In order to correct the zoning conflict and ensure protection of the current use of the structure and its ancillary structures staff recommends that the board approve the following actions: 1. Amend Zoning Map for approximately 0.23 acres of land from Industrial (I-1) to Medium Density Residential (R-2) Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



STAFF REPORT
715 S. 6th Street

MAP EXHIBITS & PROPERTY IMAGES:

715 S. 6th Street Photo + 2019 Aerial



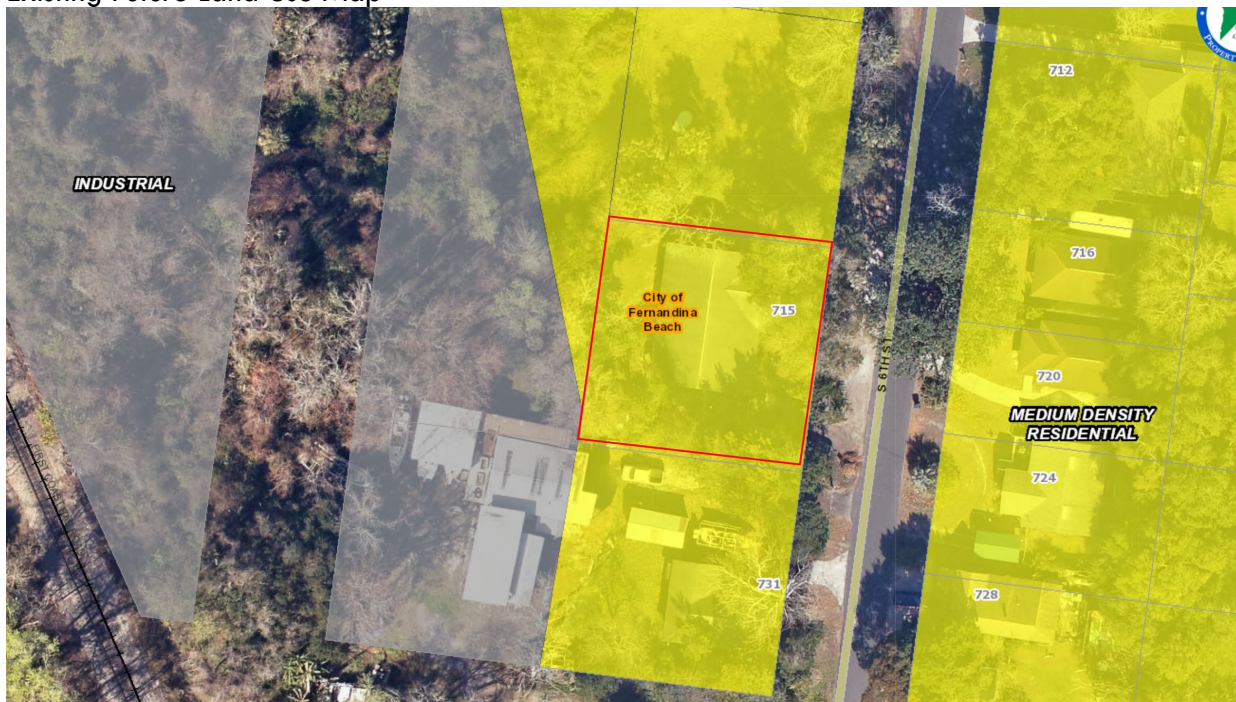


STAFF REPORT
715 S. 6th Street

Existing Zoning District I-1 (Request is to change entire parcel to R-2 to match FLUM)



Existing Future Land Use Map





STAFF REPORT 715 S. 6th Street

Approximate location of nearest wetlands:



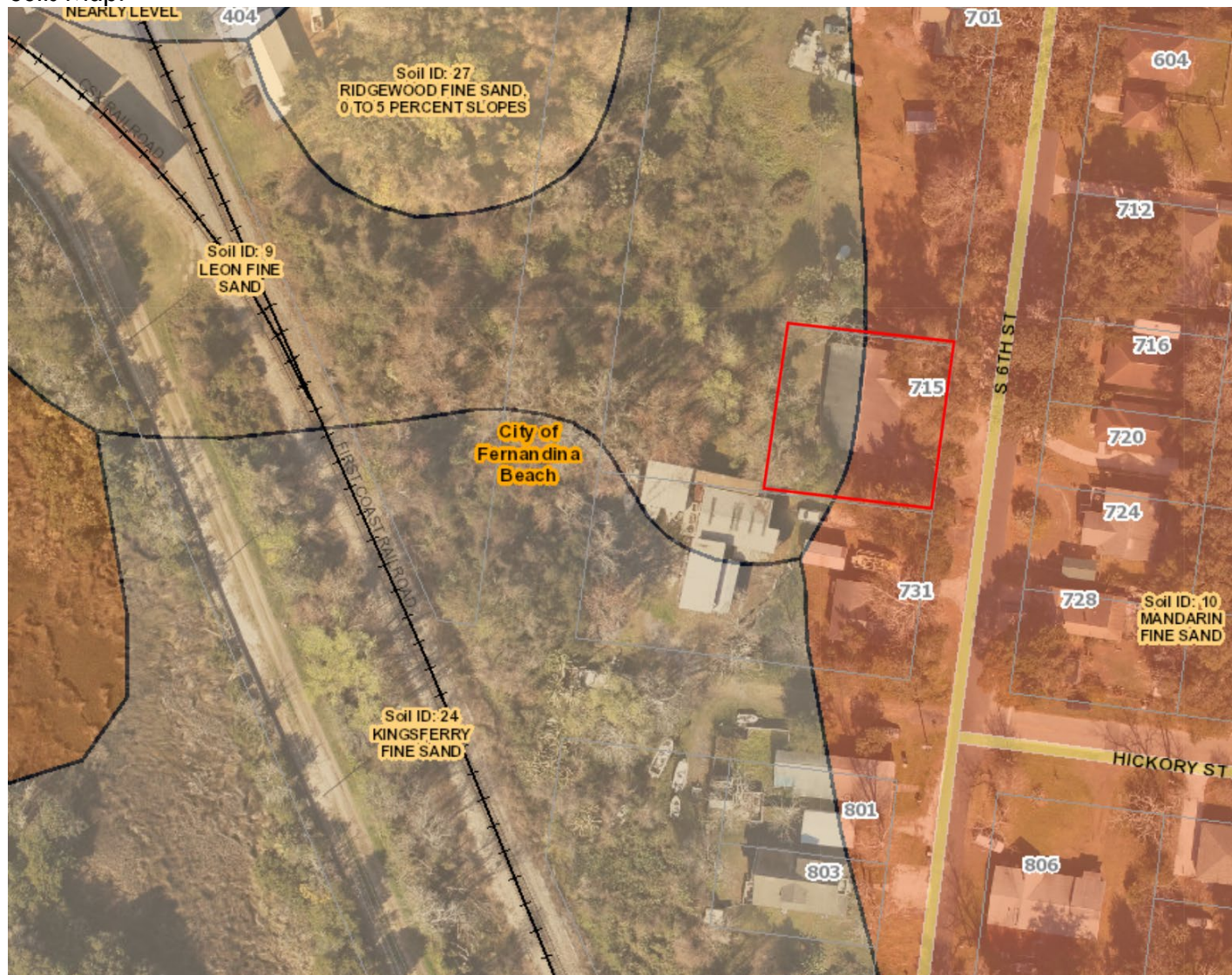
Flood Zone:





STAFF REPORT
715 S. 6th Street

Soils Map:





STAFF REPORT
715 S. 6th Street

Topography:





**731 S. 6TH STREET
FLUM AND ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1800-0288-0040 YORK WAYNE & BETTY R				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	731 S. 6 TH Street Single Family Home Built in 1941 and Accessory Structures				
CURRENT LAND USE + ZONING:	Split Future Land Use Map of Medium Density Residential (MDR) for 0.23 acres and Industrial (Ind) for 0.23 acres of Land Zoning: Industrial for 0.46 acres of land				
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map for approximately 0.23 acres of land located on the western half of the property from Industrial (IND) to Medium Density Residential (MDR) 2. Amend Zoning Map for approximately 0.46 acres of land for approximately 0.46 acres of land from Industrial (I-1) to Medium Density Residential (R-2)				
EXISTING USES ON SITE:	Single-Family Home constructed in 1941 with ancillary structures (Not Homesteaded)				
PROPERTY SIZE:	0.46 Acres of Land				
DATA AND ANALYSIS					
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	None Noted	12 ft to 8 ft	Fine Sand	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Single Family Home	2000	Industrial	Medium Density Residential
	South	Single Family Home	1925	R-2	Medium Density Residential
	East	Single Family Home	1920	R-2	Medium Density Residential
	West	Unimproved	N/A	I-1	Industrial



STAFF REPORT
731 S. 6th Street

	Public ROW (S.5 th Street) abutting CSX transportation building/offices			
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.05 (medium density residential land use category); 3.01.05 (provision of land use for housing); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan			
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.04 (R-2 zoning district); 2.01.20 (CON zoning district); 2.03.03 (Table of Accessory Uses); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC			
STAFF RECOMMENDATION:	In order to correct the current land use and zoning conflict and ensure protection of the current use of the structure and its ancillary structures staff recommends that the board approve the following actions: 1. Amend Future Land Use Map for approximately 0.23 acres of land located on the western half of the property from Industrial (IND) to Medium Density Residential (MDR) 2. Amend Zoning Map for approximately 0.46 acres of land for approximately 0.46 acres of land from Industrial (I-1) to Medium Density			



STAFF REPORT
731 S. 6th Street

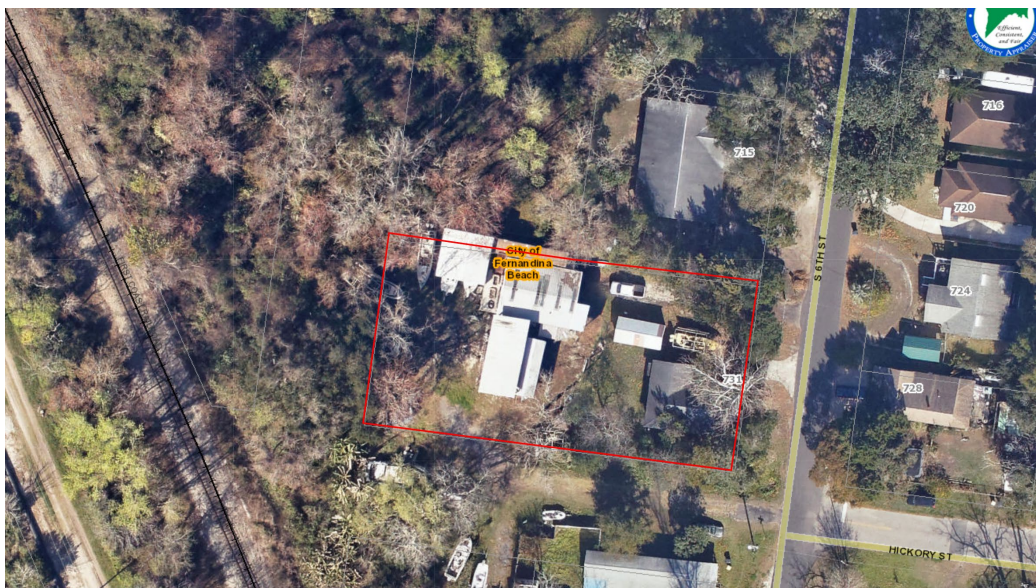
	Residential (R-2)
	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



STAFF REPORT
731 S. 6th Street

MAP EXHIBITS & PROPERTY IMAGES:

731 S. 6th Street Photo + 2019 Aerial



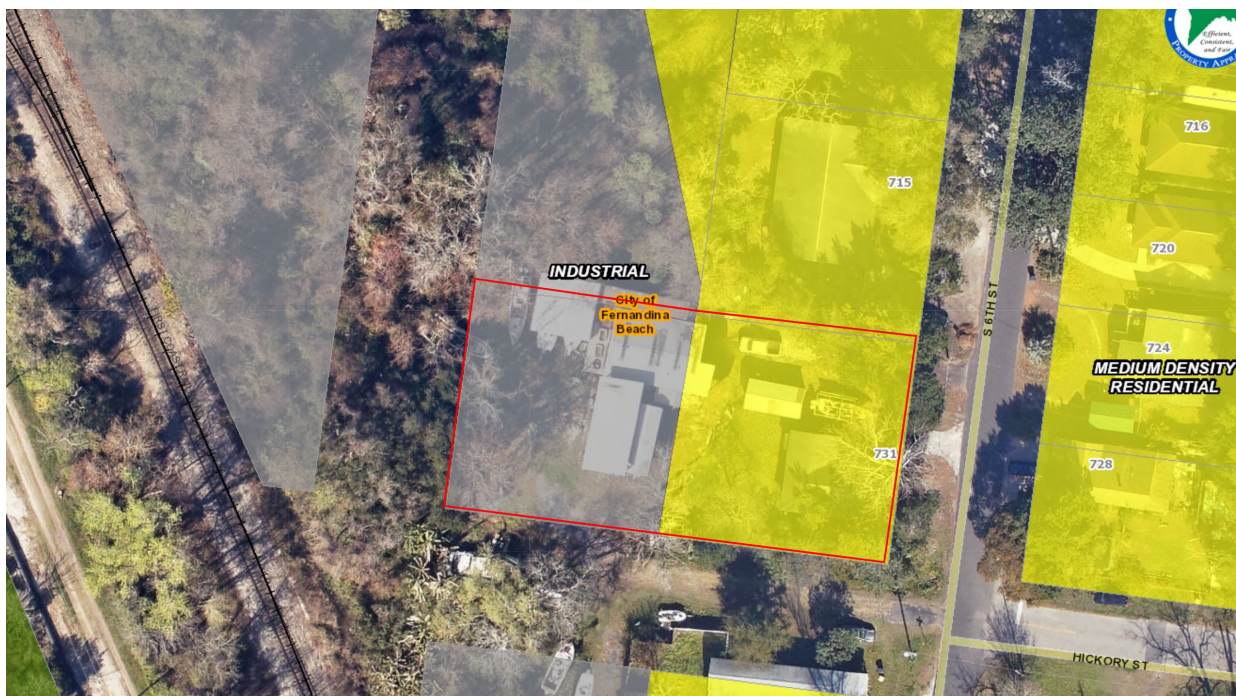


STAFF REPORT 731 S. 6th Street

Existing Zoning District



Existing Future Land Use Map



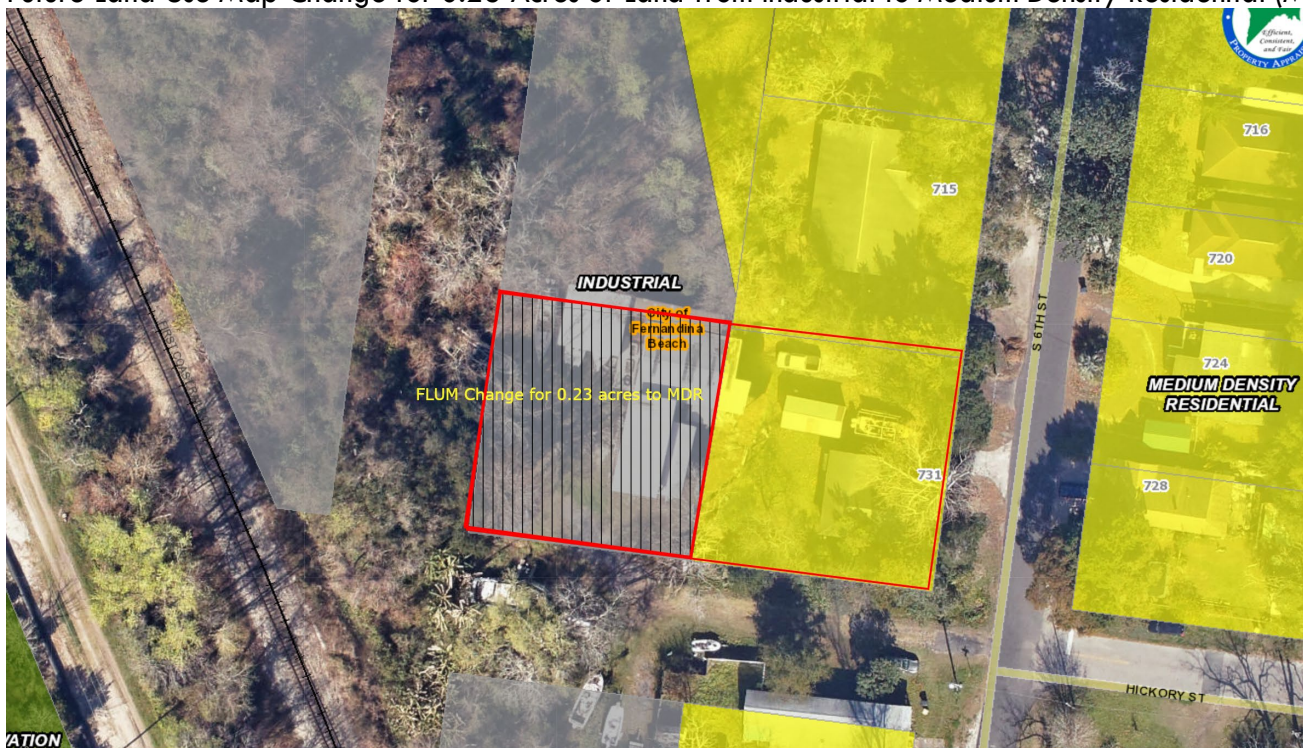


STAFF REPORT
731 S. 6th Street

Change of Zoning from I-1 to R-2 for 0.46 acres of land



Future Land Use Map Change for 0.23 Acres of Land from Industrial to Medium Density Residential (MDR)



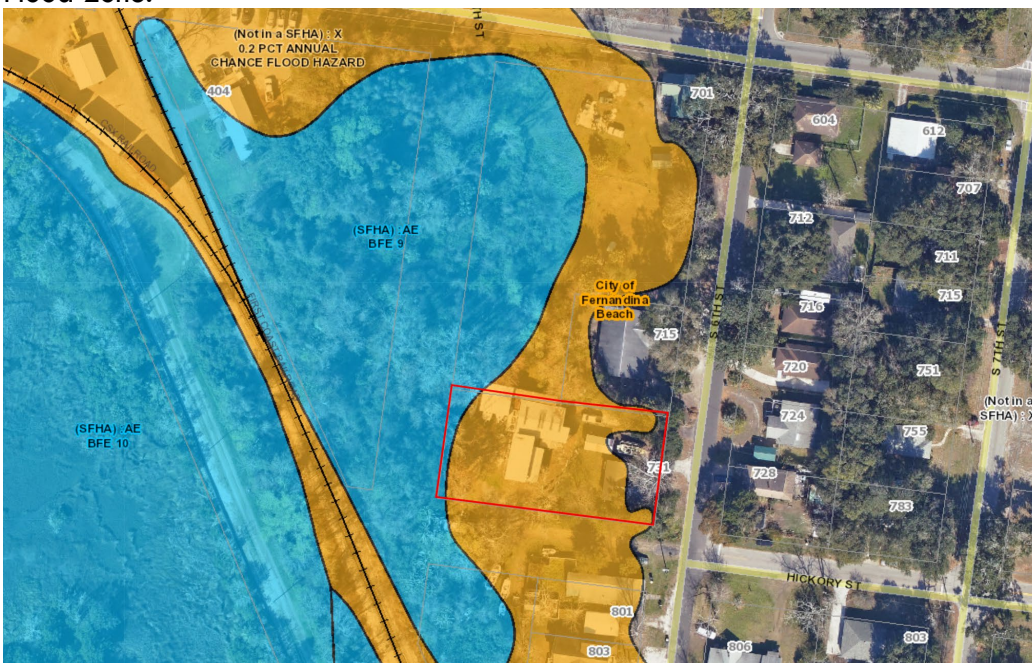


STAFF REPORT 731 S. 6th Street

Approximate location of nearest wetlands:



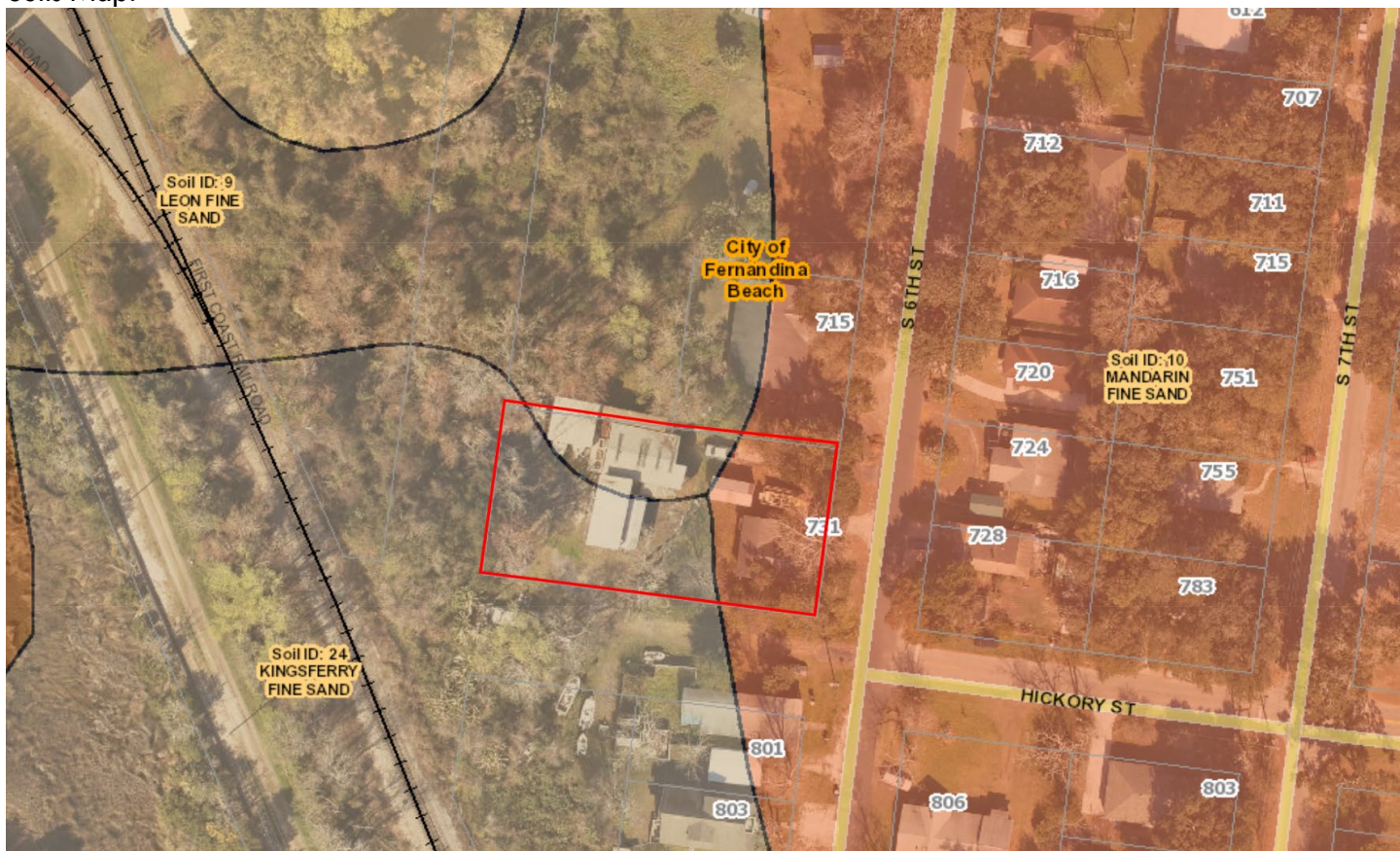
Flood Zone:





STAFF REPORT
731 S. 6th Street

Soils Map:





STAFF REPORT
731 S. 6th Street

Topography:





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

**NORTH POINTE - 925 TARPON AVE
ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1470-0001-0000
	00-00-31-1470-0002-0000
	00-00-31-1470-0003-0000
	00-00-31-1470-0004-0000
	00-00-31-1470-0005-0000
	00-00-31-1470-0006-0000
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	00-00-31-1470-000B-0000
	00-00-31-1470-0010-0000
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	00-00-31-1470-0027-0000
	00-00-31-1470-0028-0000
	00-00-31-1470-0029-0000
	00-00-31-1470-0030-0000
	00-00-31-1470-00E1-0000
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	925 TARPON AVE – NORTH POINTE CONDOS TOWNHOUSE CONDOS CONSTRUCTED IN 1982
CURRENT LAND USE + ZONING:	General Commercial FLUM and R-2 Zoning



**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

PROPOSED LAND USE + ZONING:	Amend Future Land Use Map from General Commercial to Medium Density Residential				
EXISTING USES ON SITE:	Single Family Home Constructed in 1920				
PROPERTY SIZE:	0.1 Acres of Land				
	DATA AND ANALYSIS				
ENVIRONMENTAL CHARACTERISTICS:	Flood zone	Potential Wetlands	Topography Range	Soil Type	Coastal Upland Protection Zone or Coastal High Hazard Area
	AE	NONE	7-8 FEET	SAND	IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	Direction	Existing Use(s)	Year Built	Zoning	FLUM
	North	State Park	N/A	REC	Recreation
	South	Single Family Homes	Varies	R-2	Medium Density Residential
	East	Single Family Homes	Varies	R-2	Medium Density Residential
	West	State Park	N/A	REC	Recreation
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.06 (high density residential land use category); 3.01.05 (provision of land use for housing); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan				
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.05 (R-3 zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.05.00 (Drainage and Stormwater Management);				



**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

	4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	The change is requested to align the Zoning Map with the current Future Land Use Map as directed under Ordinance 2019-05. Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



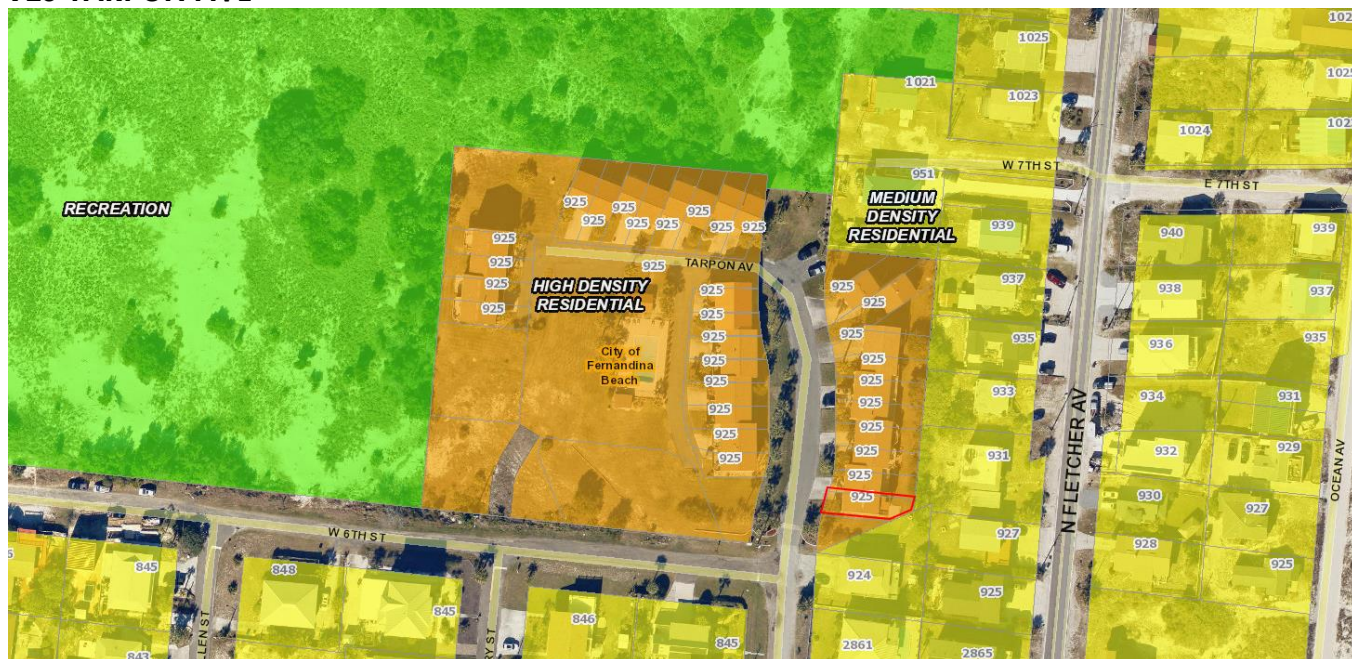
STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE
NORTH POINTE Photo + 2019 Aerial



NORTH POINTE CURRENT FLUM:



**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

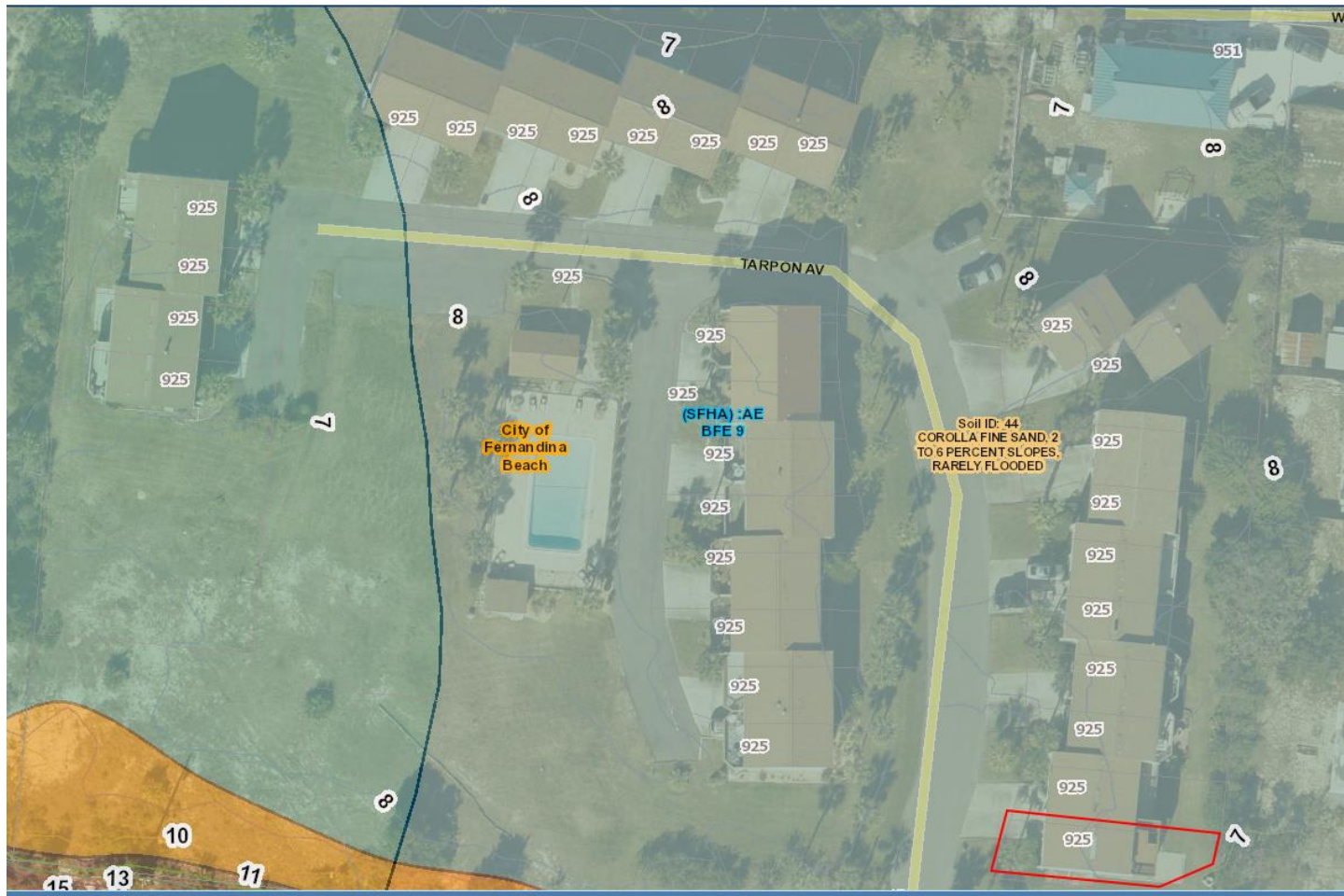






**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

NORTH POINTE- COMBINED ENVIRONMENTAL FEATURES MAP





STAFF REPORT
1900 Amelia Trace Ct

1900 AMELIA TRACE CT
ZONING MAP MAP CHANGE

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	20-3N-29-0000-0014-0150 SLM AMELIA ISLAND LLC
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	1900 Amelia Trace Court Assisted Living Facility
CURRENT LAND USE + ZONING:	General Commercial MU-1
PROPOSED LAND USE + ZONING:	General Commercial C-1
EXISTING USES ON SITE:	Assisted Living Facility Built in 1997
PROPERTY SIZE:	7.06 Acres

DATA AND ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	AE/ X	Approximately 7,300 sq. ft.	27-0 feet	Fine Sand	NOT IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Vacant	NA	CON	Conservation
	South	Offices	2004	C-1	General Commercial
	East	Hotel	1986	C-1	General Commercial
	West	Vacant	NA	CON	Conservation
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.08 (mixed use transition areas); 1.02.09 (smooth land use transition and buffering); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts);				



STAFF REPORT
1900 Amelia Trace Ct

	Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01 (C-1 zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.05.00 (Drainage and Stormwater Management); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



STAFF REPORT
1900 Amelia Trace Ct

MAP EXHIBITS & PROPERTY IMAGES:

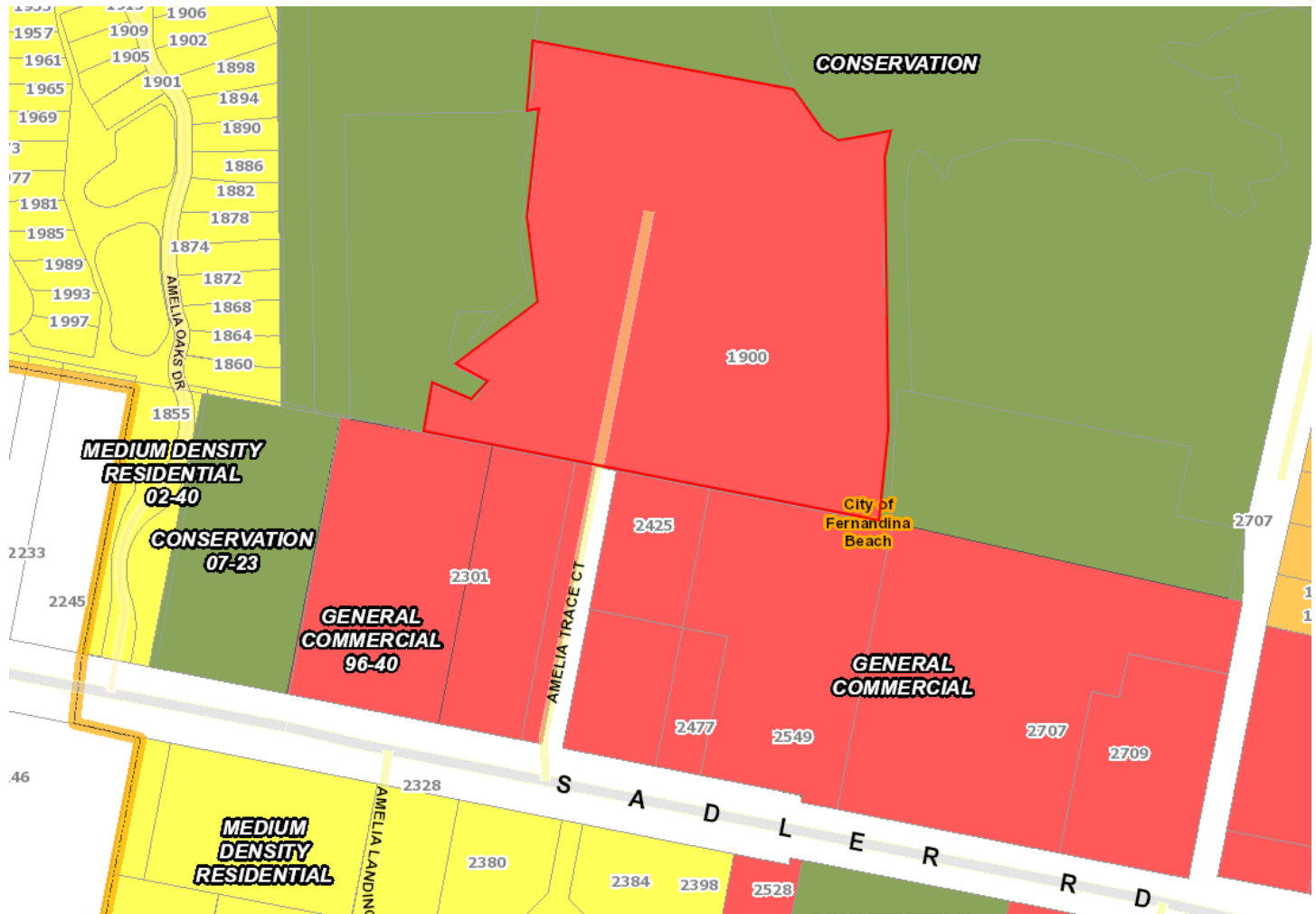
1900 Amelia Trace Court Photo + 2019 Aerial





STAFF REPORT 1900 Amelia Trace Ct

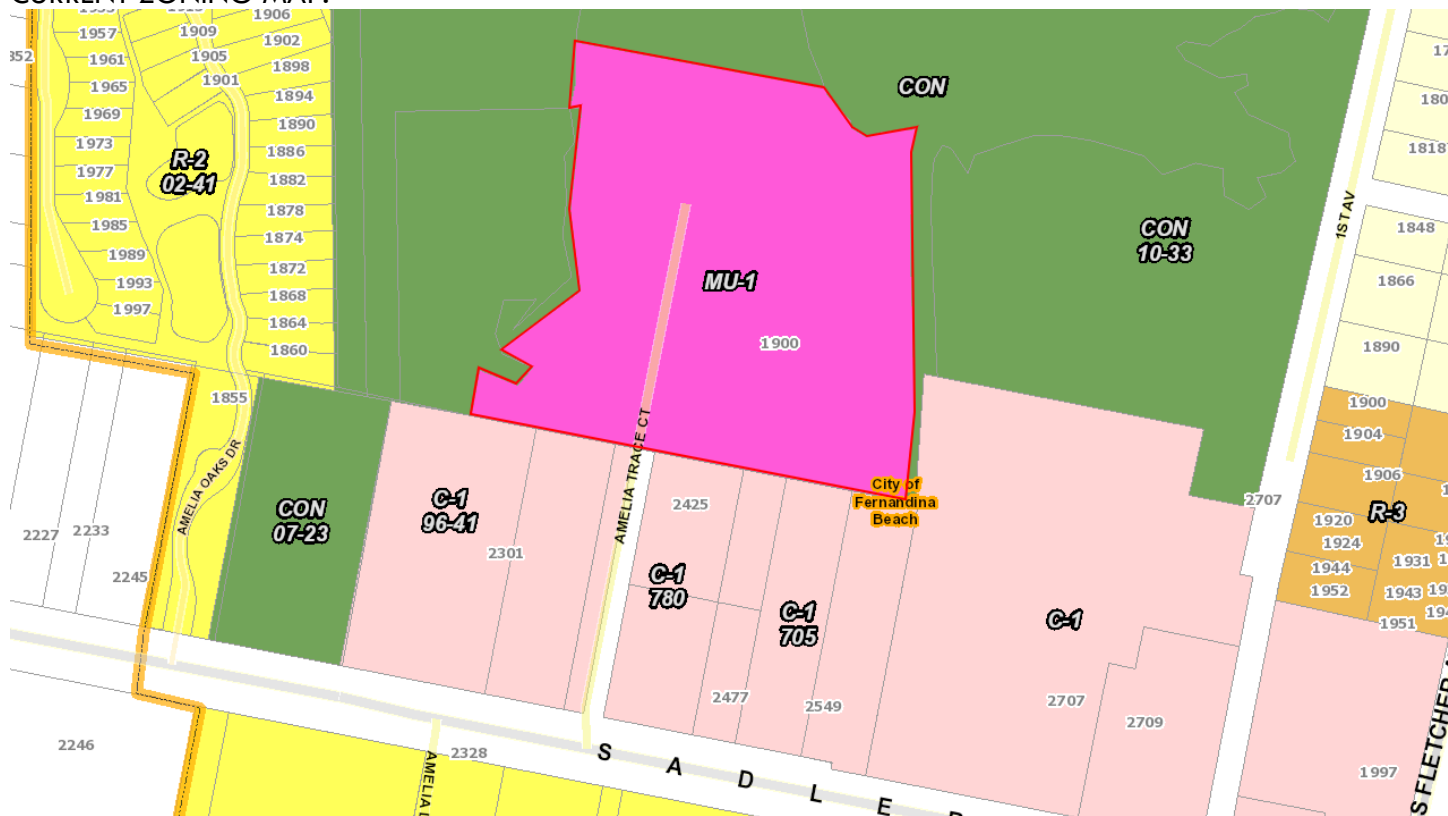
CURRENT FLUM:





STAFF REPORT 1900 Amelia Trace Ct

CURRENT ZONING MAP:





STAFF REPORT
1900 Amelia Trace Ct

Wetlands Map





STAFF REPORT
1900 Amelia Trace Ct

Flood Zone Map:





STAFF REPORT
1900 Amelia Trace Ct

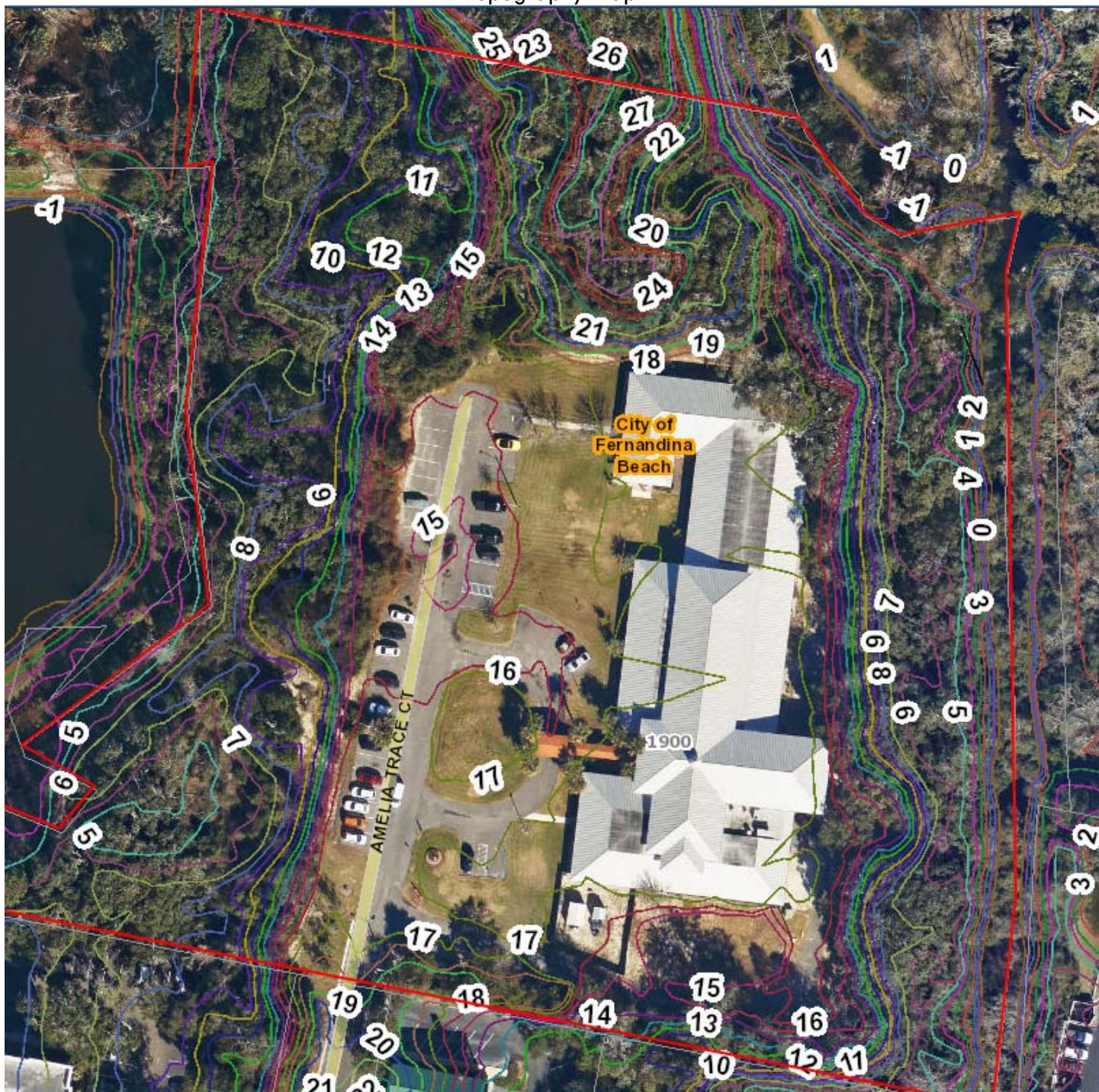
Soils Map:





STAFF REPORT
1900 Amelia Trace Ct

Topography Map:





**STAFF REPORT
212 S. 14TH STREET**

**212 S 14TH STREET
FLUM MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1800-0261-0021 PAGE DAVID P JR MD & KIMBERLY
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	212 S. 14 TH STREET DUPLEX
CURRENT LAND USE + ZONING:	LOW DENISTY RESIDENTIAL FUTURE LAND USE MAP CATEGORY AND MU-1 (MIXED USE) ZONING
PROPOSED LAND USE + ZONING:	MIXED USE FUTURE LAND USE MAP CATEGORY TO MATCH MU-1 ZONING
EXISTING USES ON SITE:	DUPLEX CONSTRUCTED IN 1966
PROPERTY SIZE:	0.21

DATA AND ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X	NONE	25 FEET	SAND	NOT IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	DUPLEX	1958	C-1	GENERAL COMMERCIAL
	South	MEDICAL OFFICE	1954	MU-1	MIXED USE
	East	VACANT	N/A	R-1	LOW DENSITY RESIDENTIAL
	West	FIRE STATION	1996	R-2	MEDIUM DENSITY RESIDENTIAL
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.08 (mixed use transition areas); 1.02.09 (smooth land use transition and buffering); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.07 (mixed use land use category); 3.01.05 (provision of land use for housing);				



STAFF REPORT
212 S. 14TH STREET

	4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01 (MU-1 zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.05.00 (Drainage and Stormwater Management); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



STAFF REPORT
212 S. 14TH STREET

MAP EXHIBITS & PROPERTY IMAGES:

212 S 14TH STREET Photo + 2019 Aerial

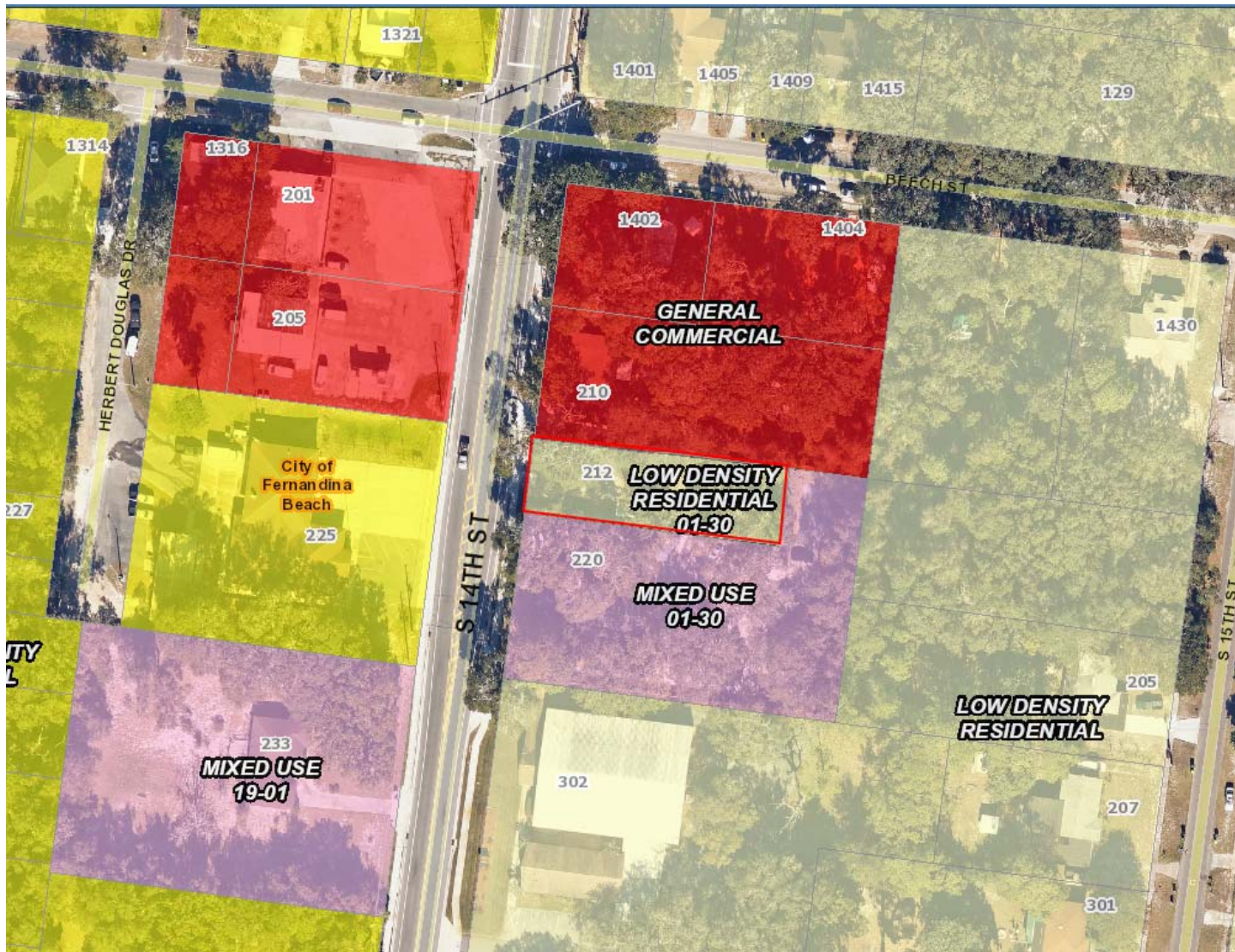
Google Street View





STAFF REPORT
212 S. 14TH STREET

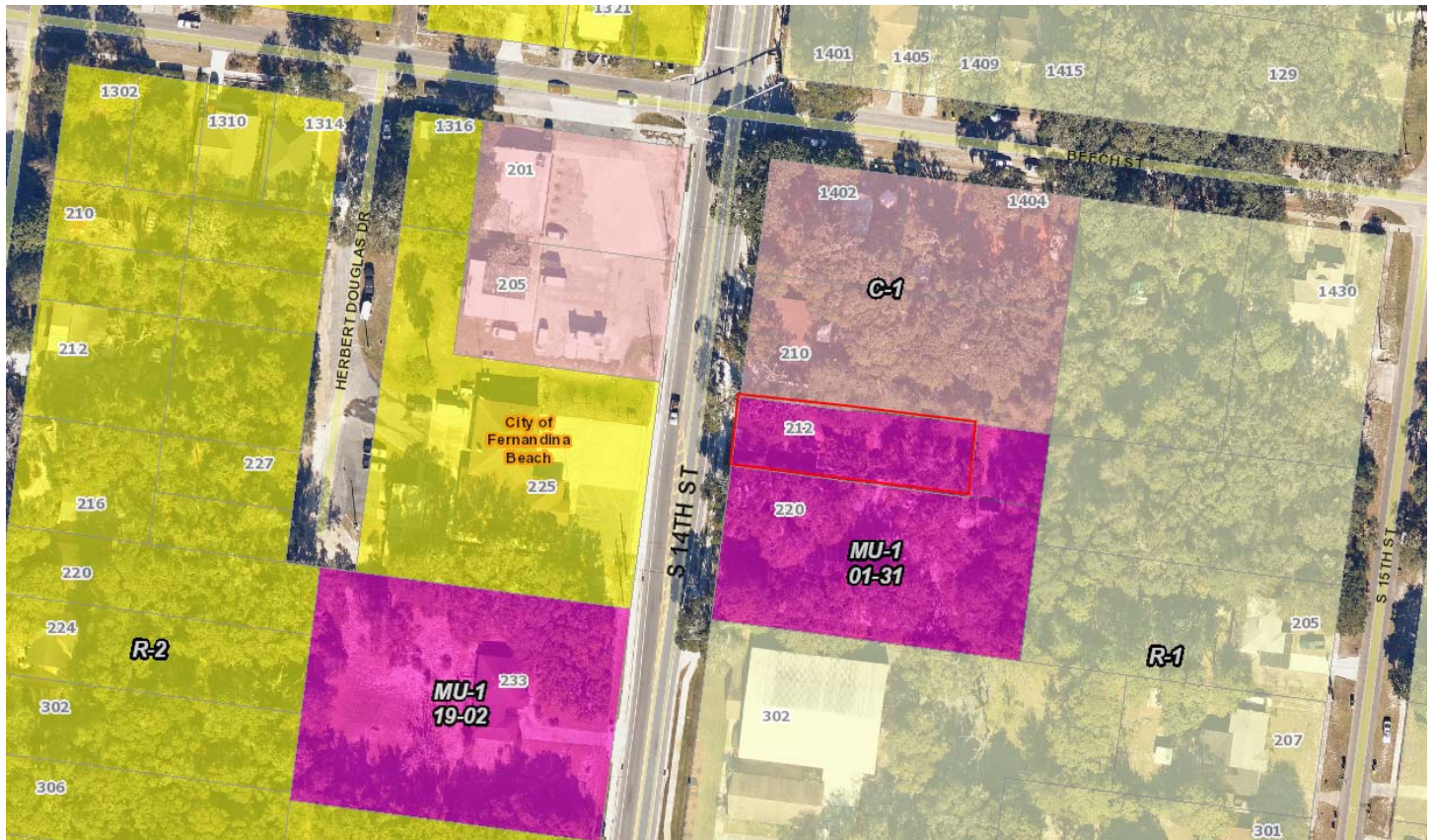
212 S 14th STREET CURRENT FLUM:





STAFF REPORT
212 S. 14TH STREET

212 S 14TH STREET CURRENT ZONING MAP:





STAFF REPORT
212 S. 14TH STREET

212 S 14TH STREET- COMBINED ENVIRONMENTAL FEATURES MAP





**STAFF REPORT
1316 BEECH STREET**

**1316 BEECH STREET
FLUM MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1800-0242-10A0 HILL SHEILA
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	1316 BEECH STREET Single Family Residential (Homesteaded)
CURRENT LAND USE + ZONING:	General Commercial FLUM and R-2 Zoning
PROPOSED LAND USE + ZONING:	Amend Future Land Use Map from General Commercial to Medium Density Residential
EXISTING USES ON SITE:	Single Family Home Constructed in 1920
PROPERTY SIZE:	0.1 Acres of Land

DATA AND ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X	NONE	23 FEET	SAND	NOT IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Single Family Home	1988	R-2	Medium Density Residential
	South	Vacant – City	N/A	C-1	General Commercial
	East	Convenience Store	1962	C-1	General Commercial
	West	Single Family Home	2018	R-2	Medium Density Residential
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods);				



STAFF REPORT
1316 BEECH STREET

	1.07.05 (medium density residential land use category); 1.07.15 (conservation land use category); 3.01.05 (provision of land use for housing); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Objective 11.08 (Non-designated Historic structures and neighborhoods) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.04 (R-2 zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.05.00 (Drainage and Stormwater Management); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



**STAFF REPORT
1316 BEECH STREET**

MAP EXHIBITS & PROPERTY IMAGES:

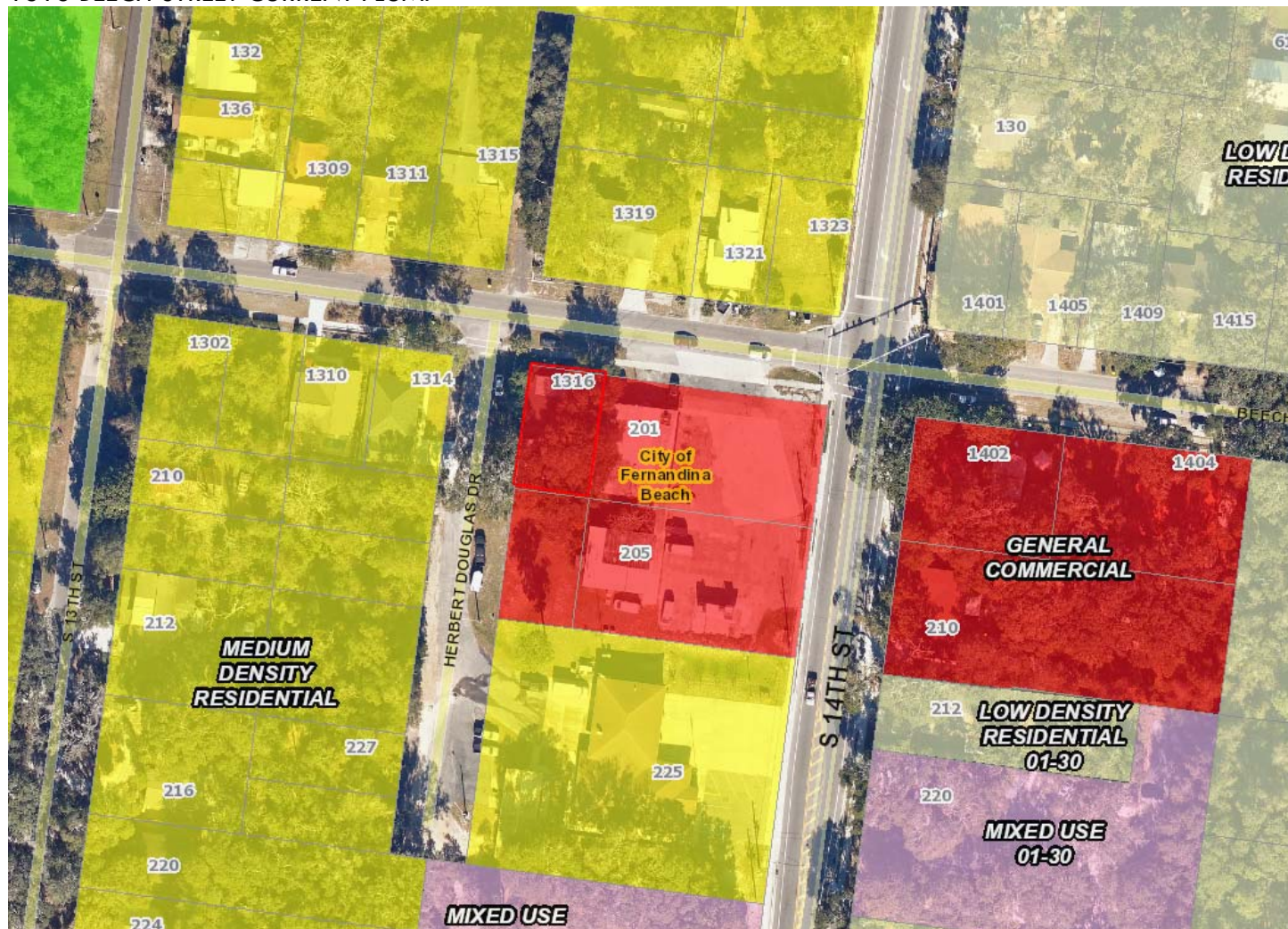
1316 BEECH STREET Photo + 2019 Aerial





STAFF REPORT 1316 BEECH STREET

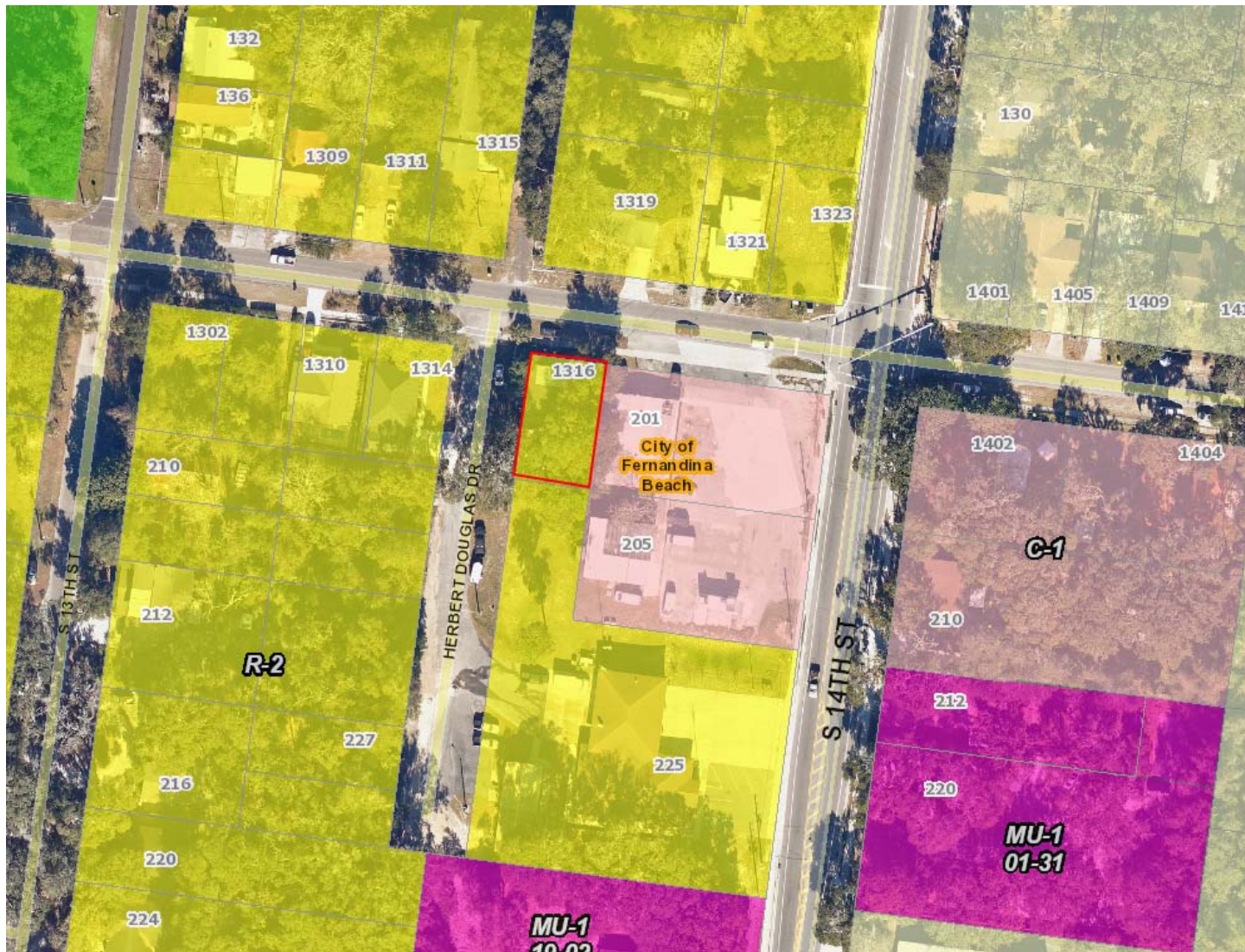
1316 BEECH STREET CURRENT FLUM:





STAFF REPORT 1316 BEECH STREET

1316 BEECH STREET CURRENT ZONING MAP:





STAFF REPORT 1316 BEECH STREET

1316 BEECH STREET- COMBINED ENVIRONMENTAL FEATURES MAP





**STAFF REPORT
ROBERT OLIVER DRIVE - CITY**

**ROBERT OLIVER DRIVE- CITY
FLUM AND ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	01-2N-28-0000-0002-0000 AND 02-2N-28-0000-0001-0010 CITY OF FERNANDINA BEACH				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	ROBERT OLIVER DRIVE VACANT/ UNDISTURBED				
CURRENT LAND USE + ZONING:	Medium Density Residential (MDR) Zoning Map Designation reflects approximately 0.66 acres as R-2/ Medium Density Residential				
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map for approximately 2.92 acres of land from Medium Density Residential (MDR) to Conservation (CON) 2. Amend Zoning Map for approximately 0.66 acres of land from R-2 to CON				
EXISTING USES ON SITE:	VACANT				
PROPERTY SIZE:	2.92 Acres of Land				
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	Entire Site	8 ft to 2 ft	Muck	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Vacant			
	South	Vacant			
	East	Forest Ridge PUD			
APPLICABLE COMPREHENSIVE PLAN POLICIES:	West	Vacant			
	1.02.04 (FLUM amendments); 1.02.09 (smooth land use transition and buffering); 1.07.15 (conservation land use category); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and				



STAFF REPORT
ROBERT OLIVER DRIVE - CITY

	conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.20 (CON zoning district); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 4.05.00 (Landscaping, Buffers, and Tree Protection); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



**STAFF REPORT
ROBERT OLIVER DRIVE - CITY**

MAP EXHIBITS & PROPERTY IMAGES:

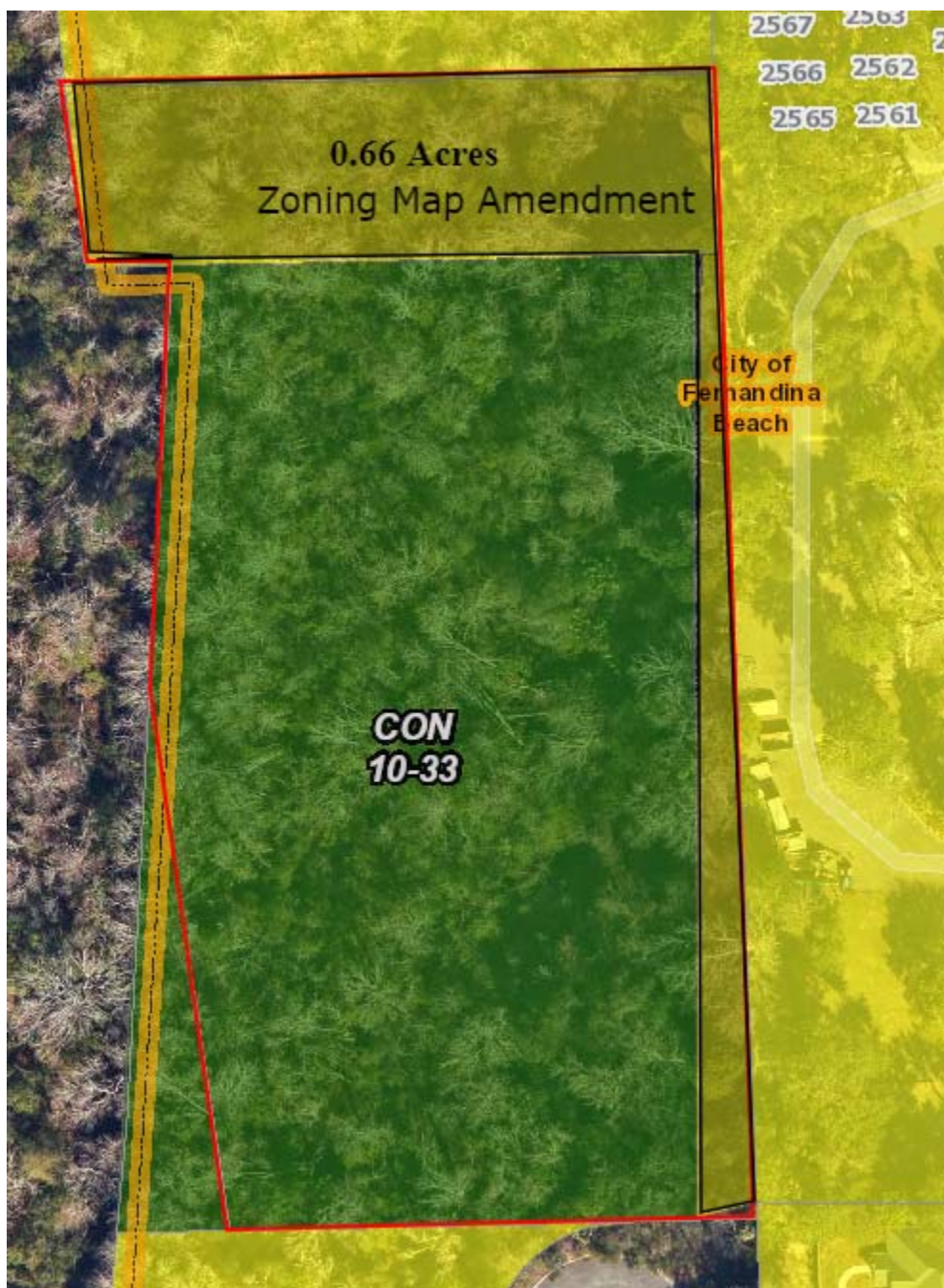
Robert Oliver Future Land Use Map Change Request for approximately 2.92 acres of land:





**STAFF REPORT
ROBERT OLIVER DRIVE - CITY**

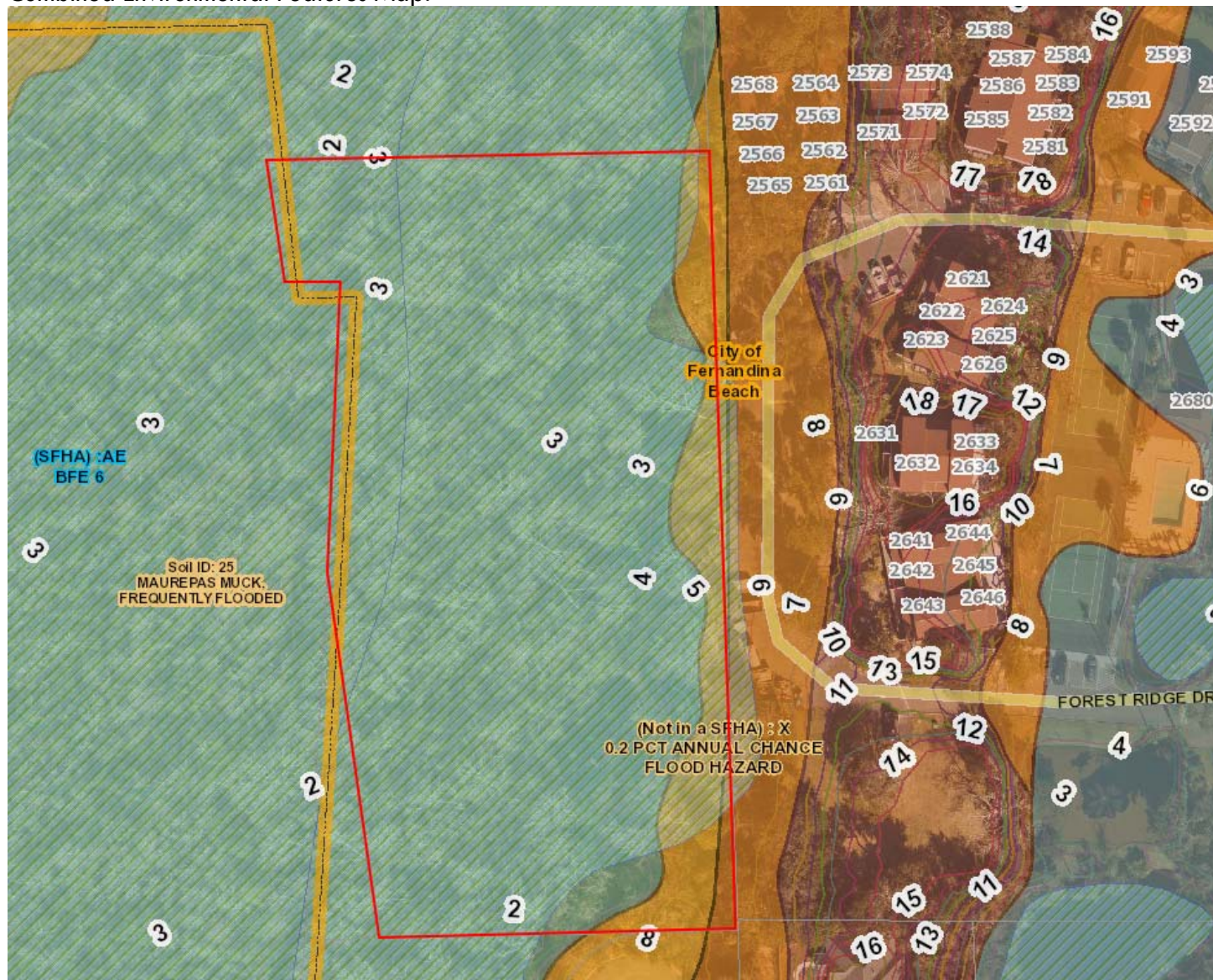
Robert Oliver Zoning Change to Conservation:





STAFF REPORT ROBERT OLIVER DRIVE - CITY

Combined Environmental Features Map:





**STAFF REPORT
HICKORY STREET PARK**

**HICKORY STREET PARK
FLUM MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1600-0153-0000 SCHOOL BOARD OF NASSAU COUNTY				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	Hickory Street at S. 15 th Street Use as recreational ball fields				
CURRENT LAND USE + ZONING:	Low Density Residential Future Land Use PI-1 Zoning				
PROPOSED LAND USE + ZONING:	Public and Institutional Future Land Use PI-1 Zoning				
EXISTING USES ON SITE:	Recreational Ball Fields				
PROPERTY SIZE:	9.76 Acres				
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X	None	21-24 FT	Sand	NOT IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Highschool Ballfields	N/A	PI-1	Public and Institutional
	South	Single Family Homes	2010-2016	R-1	Low Density Residential
	East	Single Family Homes	2010-2016	R-1	Low Density Residential
	West	Religious Facility Ancillary Uses	Misc	R-1	Low Density Residential
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.04 (FLUM amendments); 1.07.16 (public and institutional land use category); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks); 10.06.01 (level of service for public schools)				
	Reference: www.fbfl.us/Compplan				
APPLICABLE LAND DEVELOPMENT CODE	2.00.03 (Establishment of district boundary); 2.01 (PI-1 zoning district);				



STAFF REPORT HICKORY STREET PARK

SECTIONS:	2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.05.00 (Drainage and Stormwater Management); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 7.03.00 (Stormwater Management); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



STAFF REPORT HICKORY STREET PARK

MAP EXHIBITS & PROPERTY IMAGES:

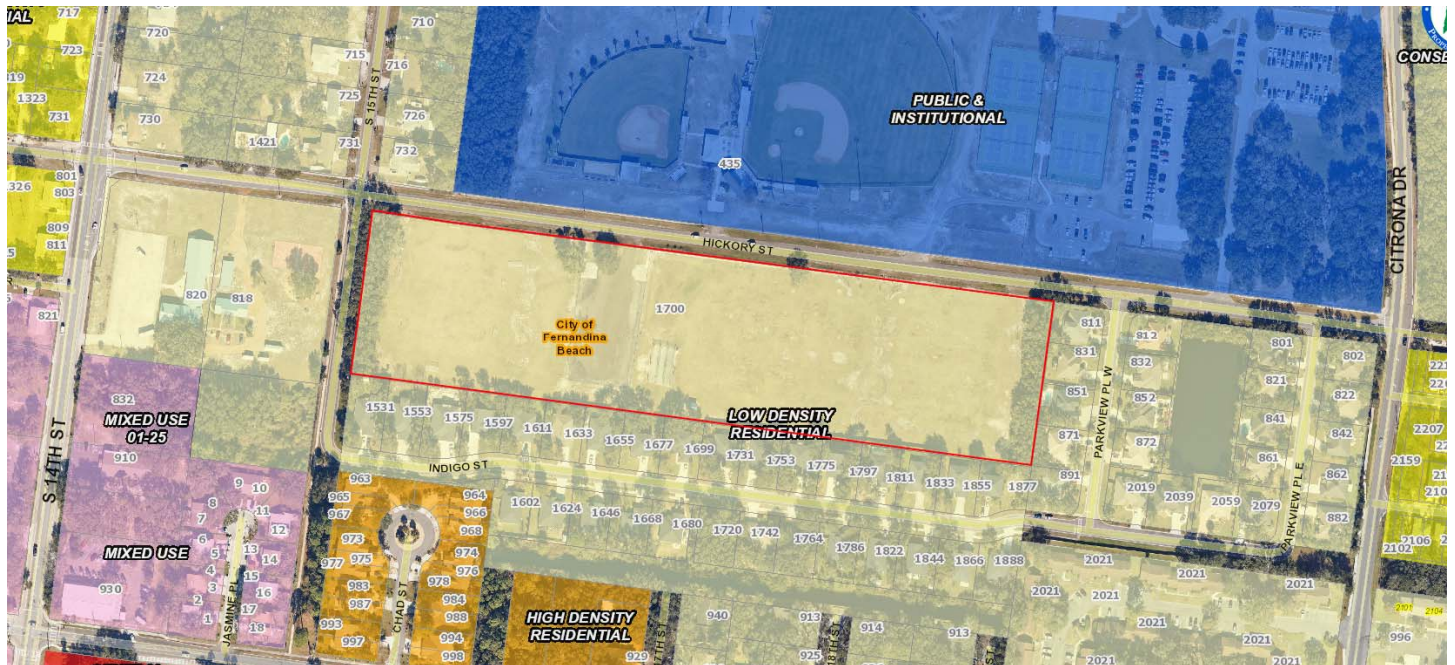
Hickory Street Park Photo + 2019 Aerial





STAFF REPORT HICKORY STREET PARK

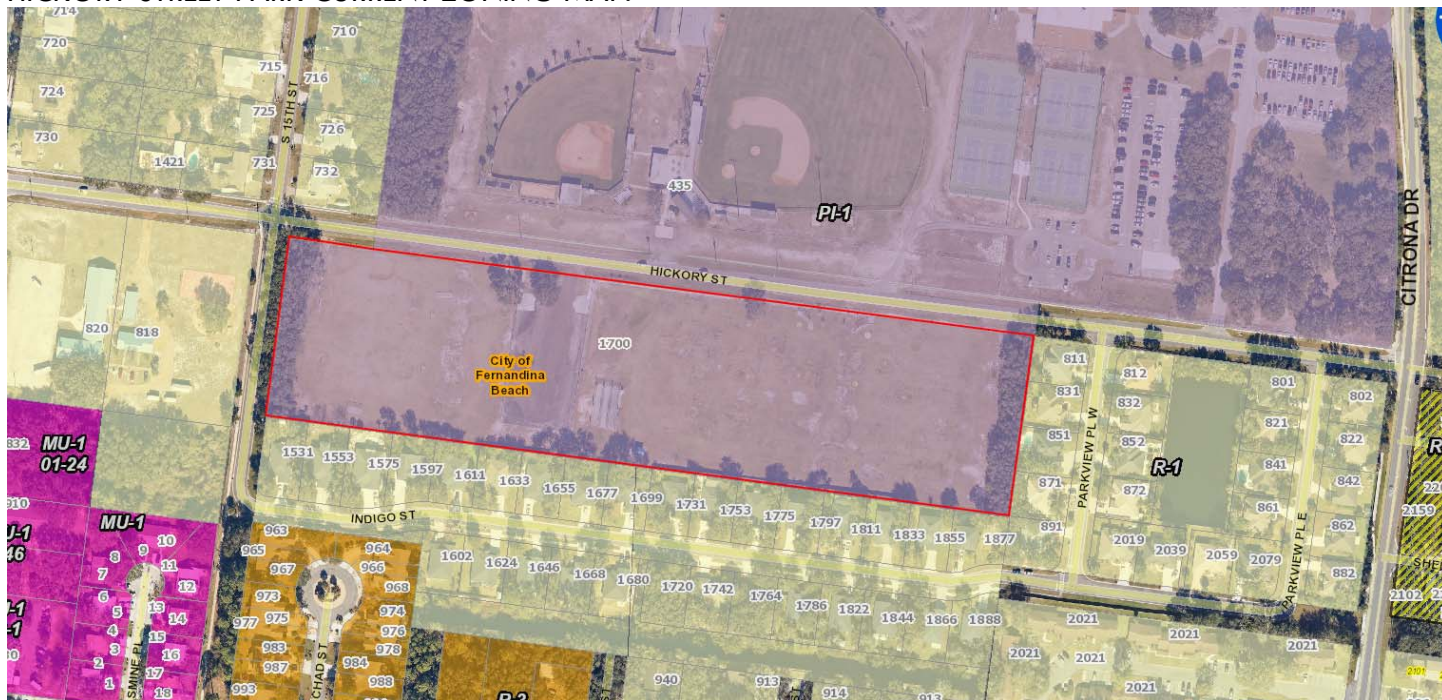
HICKORY STREET PARK CURRENT FLUM:





STAFF REPORT HICKORY STREET PARK

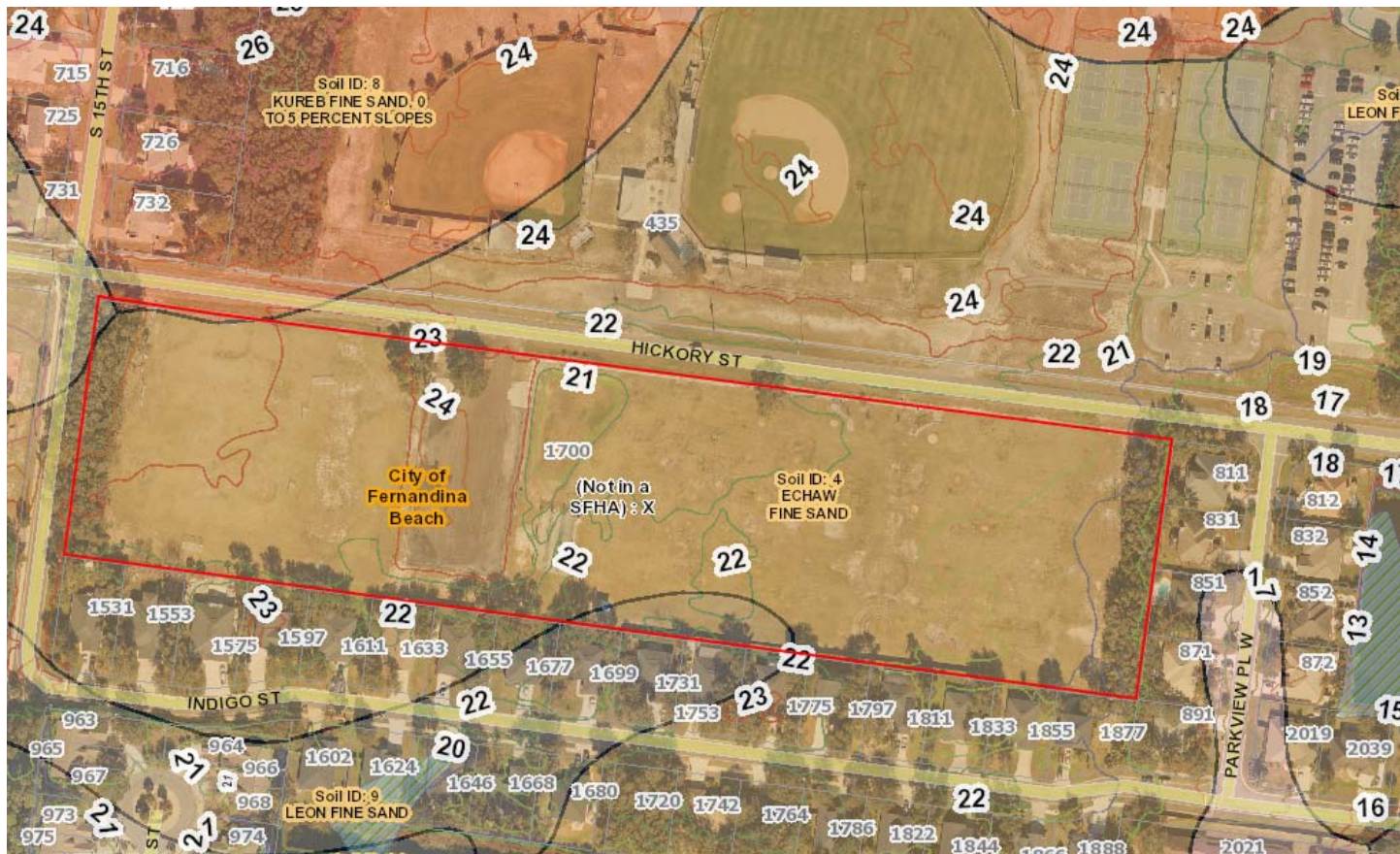
HICKORY STREET PARK CURRENT ZONING MAP:





STAFF REPORT HICKORY STREET PARK

HICKORY STREET PARK- COMBINED ENVIRONMENTAL FEATURES MAP





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

**NORTH POINTE - 925 TARPON AVE
ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1470-0001-0000
	00-00-31-1470-0002-0000
	00-00-31-1470-0003-0000
	00-00-31-1470-0004-0000
	00-00-31-1470-0005-0000
	00-00-31-1470-0006-0000
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	00-00-31-1470-000A-0000
	00-00-31-1470-000B-0000
	00-00-31-1470-0010-0000
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	00-00-31-1470-0028-0000
	00-00-31-1470-0029-0000
	00-00-31-1470-0030-0000
	00-00-31-1470-00E1-0000
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)



**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

LOCATION AND DESCRIPTION OF SITE:	925 TARPON AVE – NORTH POINTE TOWNHOMES TOWNHOUSE CONDOS CONSTRUCTED IN 1982				
CURRENT LAND USE + ZONING:	High Density Residential FLUM and R-2 Zoning				
PROPOSED LAND USE + ZONING:	Maintain the High Density Residential Future Land Use Map Category and Amend Zoning District to R-3 *PAB RECCOMENDATION: CHANGE FLUM TO MEDIUM DENSITY RESIDENTIAL *STAFF RECCOMENDATION: MAINTAIN THE CONFLICT TO AVOID CONCERN WITH DENSITY AND USE R-2 TO RESTRICT RESORT RENTAL ALLOWANCE				
EXISTING USES ON SITE:	30 Townhome Units				
PROPERTY SIZE:	3.19 Acres of Land				
DATA AND ANALYSIS					
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	AE	NONE	7-8 FEET	SAND	IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	State Park	N/A	REC	Recreation
	South	Single Family Homes	Varies	R-2	Medium Density Residential
	East	Single Family Homes	Varies	R-2	Medium Density Residential
	West	State Park	N/A	REC	Recreation
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures);				



**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

	1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.06 (high density residential land use category); 3.01.05 (provision of land use for housing); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.05 (R-3 zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.05.00 (Drainage and Stormwater Management); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION :	The change is requested to align the Zoning Map with the current Future Land Use Map as directed under Ordinance 2019-05. Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION :	<i>Pending 10/9/19 public hearing</i>



NORTH POINTE Plat Map – Book 5, Page 27 -1982





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

NORTH POINTE Photo + 2019 Aerial





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**



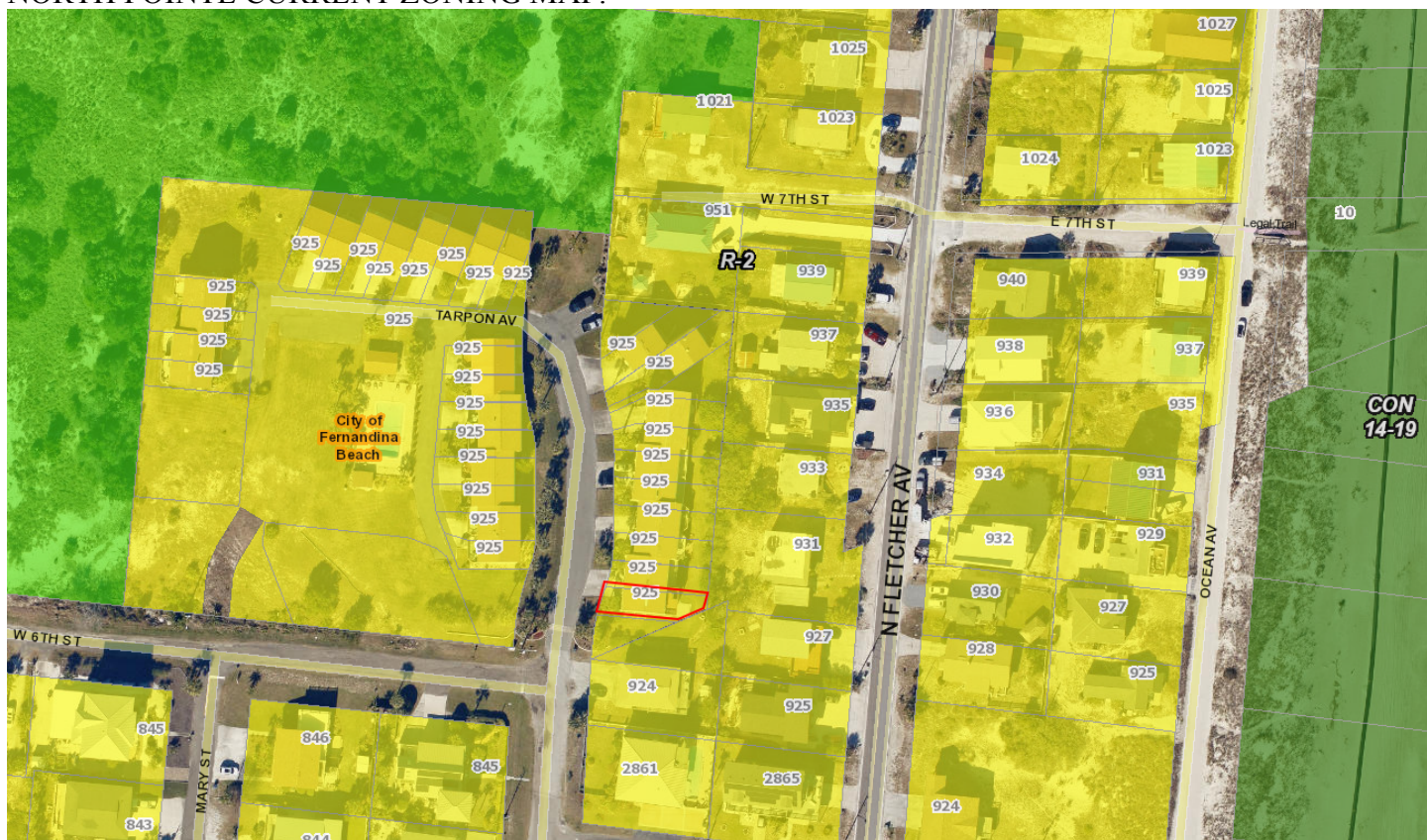
NORTH POINTE CURRENT FLUM:





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

NORTH POINTE CURRENT ZONING MAP:





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

NORTH POINTE- COMBINED ENVIRONMENTAL FEATURES MAP





STAFF REPORT
510 CITRONA DRIVE - REVISED

510 CITRONA DRIVE
FLUM AND ZONING MAP CHANGES

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1616-0001-0000 KALISTA JAMES D JR & MOFFITT LAURA JEAN (H&W)
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	510 CITRONA DR Single Family Home (Homesteaded) Built in 1995
CURRENT LAND USE + ZONING:	Split Future Land Use Map Category of Low Density Residential (LDR) = approximately 28,492.52 sq. ft. and Conservation (CON)= approximately 49,831.75 sq. ft Zoning Map Designation reflects the total parcel acreage of 1.77 acres as R-1 / Low Density Residential
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map for 0.40 acres of land from Conservation (CON) to Low Density Residential (LDR) 2. Amend Zoning Map for 0.71 acres of land from R-1 to CON
EXISTING USES ON SITE:	Single Family Home with Ancillary Uses
PROPERTY SIZE:	1.77 Acres of Land

DATA & ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	Approx. 21,881.06 sq. feet	21 ft to 0 ft	Fine Sand and Clay	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	SF Home	1953	R-1	Low Density Residential and Conservation
	South	SF Home	1995	R-1	Low Density Residential and Conservation
	East	Wetlands - FDOT	N/A	CON	Conservation
	West	FB Middle School	1991	PI-1	Public &



STAFF REPORT
510 CITRONA DRIVE - REVISED

				Institutional
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.04 (low density residential land use category); 1.07.15 (conservation land use category); 3.01.05 (provision of land use for housing); Objective 3.02 (Housing Preservation); 3.03.06 (minimize barriers to development of vacant lots); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan			
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.03 (R-1 zoning district); 2.01.20 (CON zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 3.05.00 (Drainage and Stormwater Management); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements);			



STAFF REPORT
510 CITRONA DRIVE - REVISED

	11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval. Analysis to support the recommendation is found through the available data provided by the Nassau County Property Appraiser Mapping resources. Specifically, the topography, potential wetlands, soils, and flood zone files. The requested action results in the reduction of approximately 0.40 acres from Conservation (CON) to Low Density Residential (LDR) on the FLUM. The requested action changes Zoning Map for 0.71 acres of land from R-1 to CON using the 5 foot elevation contour.
PAB RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval. <i>Pending 11/13/19 public hearing</i>



**STAFF REPORT
510 CITRONA DRIVE - REVISED**

MAP EXHIBITS & PROPERTY IMAGES:

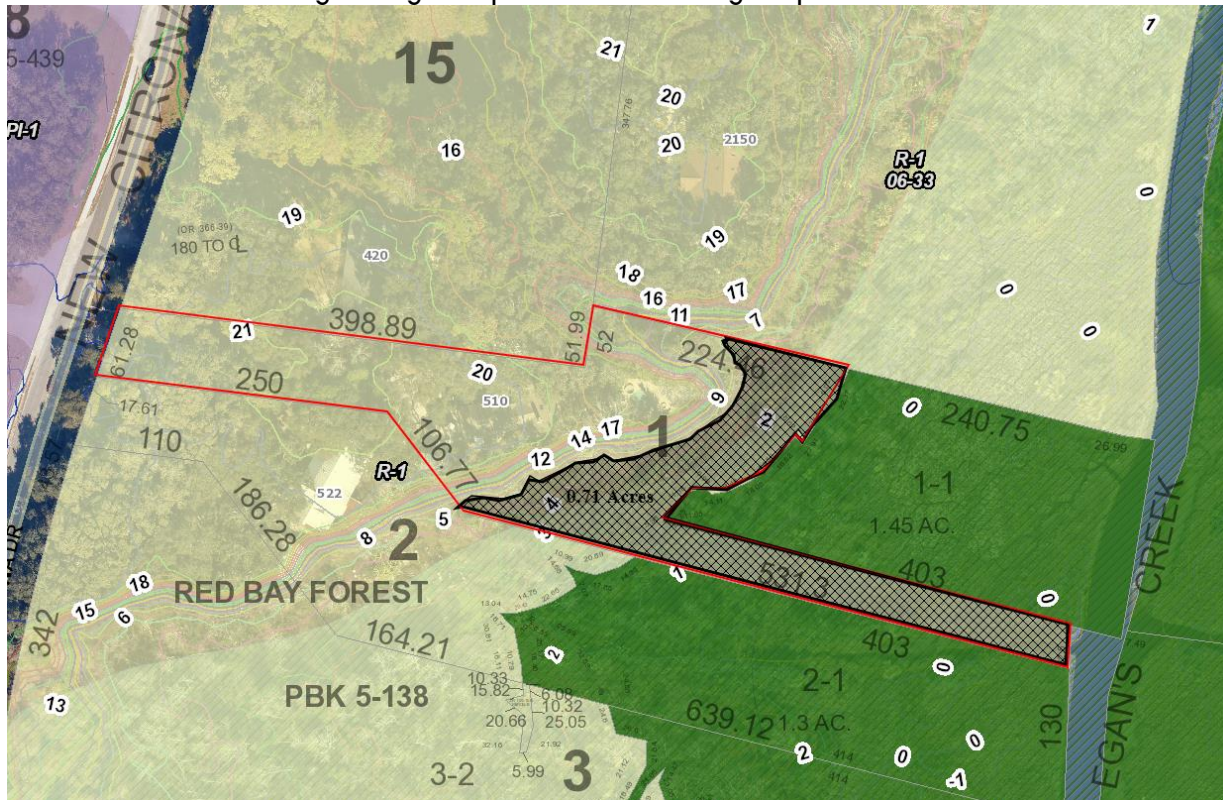
510 Citrona Drive - Photo



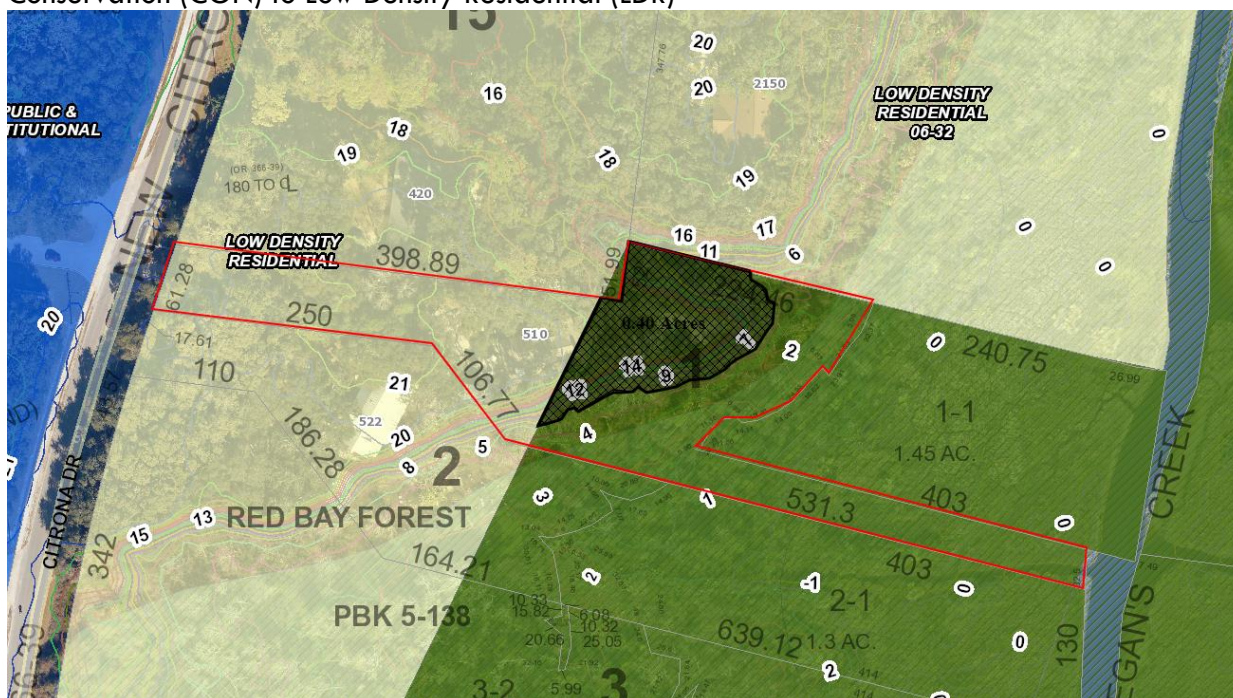


STAFF REPORT
510 CITRONA DRIVE - REVISED

510 Citrona Drive Zoning Change Request: Amend Zoning Map for 0.71 acres of land from R-1 to CON



510 Citrona Drive Future Land Use Map Change Request: Amend Future Land Use Map for 0.40 acres from Conservation (CON) to Low Density Residential (LDR)

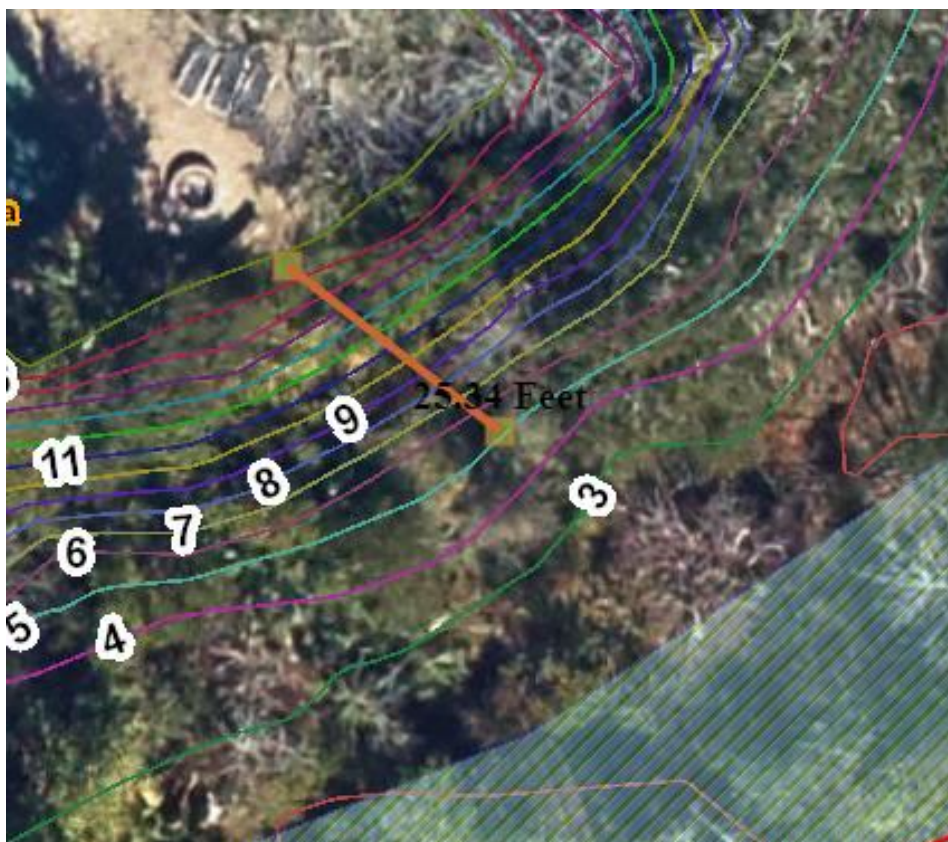




STAFF REPORT
510 CITRONA DRIVE - REVISED

WHY USE THE 5-FOOT ELEVATION CONTOUR?

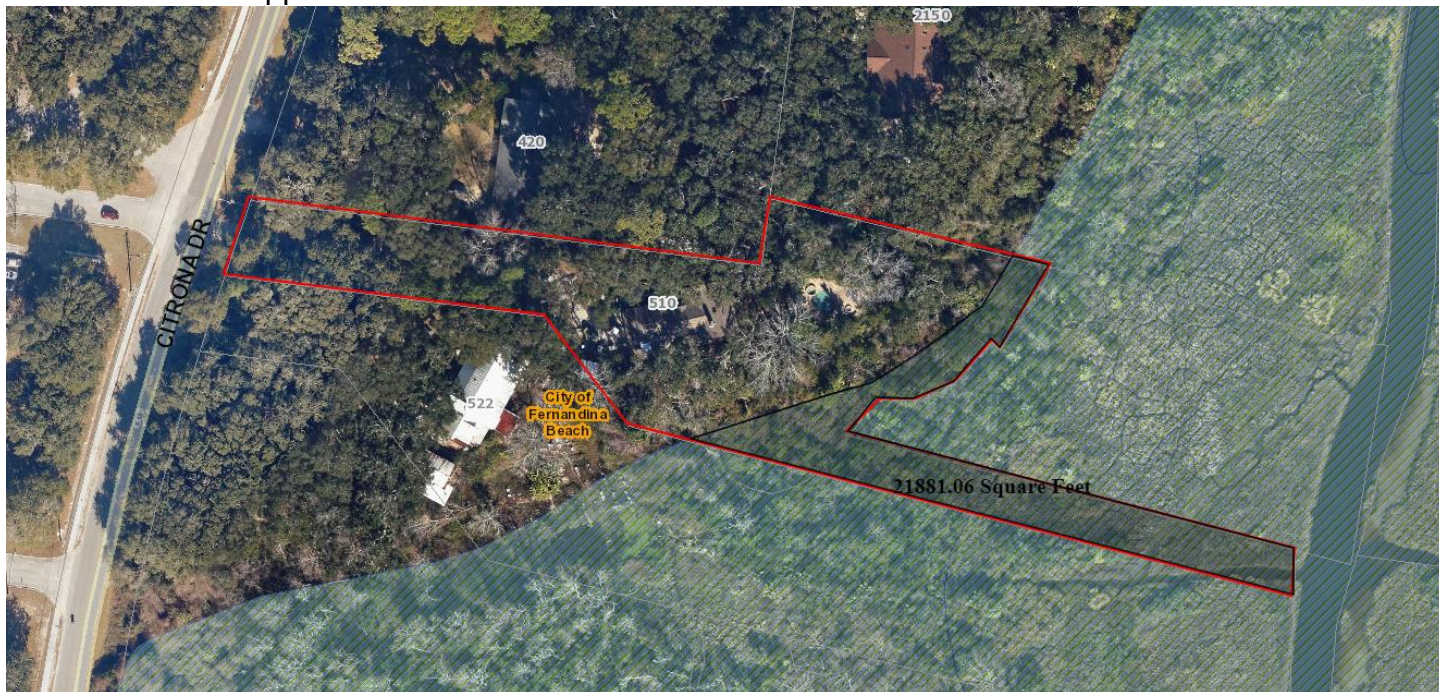
The nearest distance to the "potential wetland line" to the five-foot elevation contour is no less than 25 feet. Similarly the the approximate distance from the pool decking is 25 feet to the five-foot elevation contour.





STAFF REPORT
510 CITRONA DRIVE - REVISED

510 Citrona Drive Approximate Location of Wetlands:



510 Citrona Drive Flood Zone:





STAFF REPORT 510 CITRONA DRIVE - REVISED

510 Citrona Drive Soils Map:



510 Citrona Drive Topography:





STAFF REPORT
522 CITRONA DRIVE- REVISED

522 CITRONA DRIVE
FLUM AND ZONING MAP CHANGES

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1616-0002-0000 AUSTIN DAVID BERT				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	522 CITRONA DR Single Family Home (Homesteaded) Built in 1995 with Nassau County Property Appraiser listing as Multi-family (tri/quad)				
CURRENT LAND USE + ZONING:	Split Future Land Use Map Category of Low Density Residential (LDR) = approximately 38,835.39 sq. ft. and Conservation (CON)= approximately 10,522.18 sq. ft Zoning Map Designation reflects the total parcel acreage of 1.13 acres as R-1 / Low Density Residential				
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map for 0.23 acres of land from Low Density Residential (LDR) to Conservation (CON) 2. Amend Zoning Map for 0.47 acres of land from R-1 to CON				
EXISTING USES ON SITE:	DATA & ANALYSIS Single Family Home (listed as Tri/Quad on NCPA site) with Ancillary Uses				
PROPERTY SIZE:	1.13 Acres of Land				
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	Approx. 14,580.62 sq. ft.	20 ft to 1 ft	Fine Sand	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	SF Home	1995	R-1	Low Density Residential and Conservation
	South	Vacant	N/A	R-1	Low Density Residential and Conservation
	East	Wetlands - FDOT	N/A	CON	Conservation
	West	FB Middle School	1991	PI-1	Public & Institutional



STAFF REPORT
522 CITRONA DRIVE- REVISED

APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.04 (low density residential land use category); 1.07.15 (conservation land use category); 3.01.05 (provision of land use for housing); Objective 3.02 (Housing Preservation); 3.03.06 (minimize barriers to development of vacant lots); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools)
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	Reference: www.fbfl.us/Compplan 2.00.03 (Establishment of district boundary); 2.01.03 (R-1 zoning district); 2.01.20 (CON zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 3.05.00 (Drainage and Stormwater Management); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board)



STAFF REPORT
522 CITRONA DRIVE- REVISED

Reference: www.fbfl.us/LDC

**STAFF
RECOMMENDATION:**
**PAB
RECOMMENDATION:**

Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval. Analysis to support the recommendation is found through the available data provided by the Nassau County Property Appraiser Mapping resources. Specifically, the topography, potential wetlands, soils, and flood zone files.

The requested action results in the addition of approximately 0.23 acres of Conservation (CON) Future Land Use Category on the FLUM and in increase in the amount of Conservation (CON) zoning district by approximately 0.47 acres of land.

Pending 10/9/19 public hearing



STAFF REPORT
522 CITRONA DRIVE- REVISED

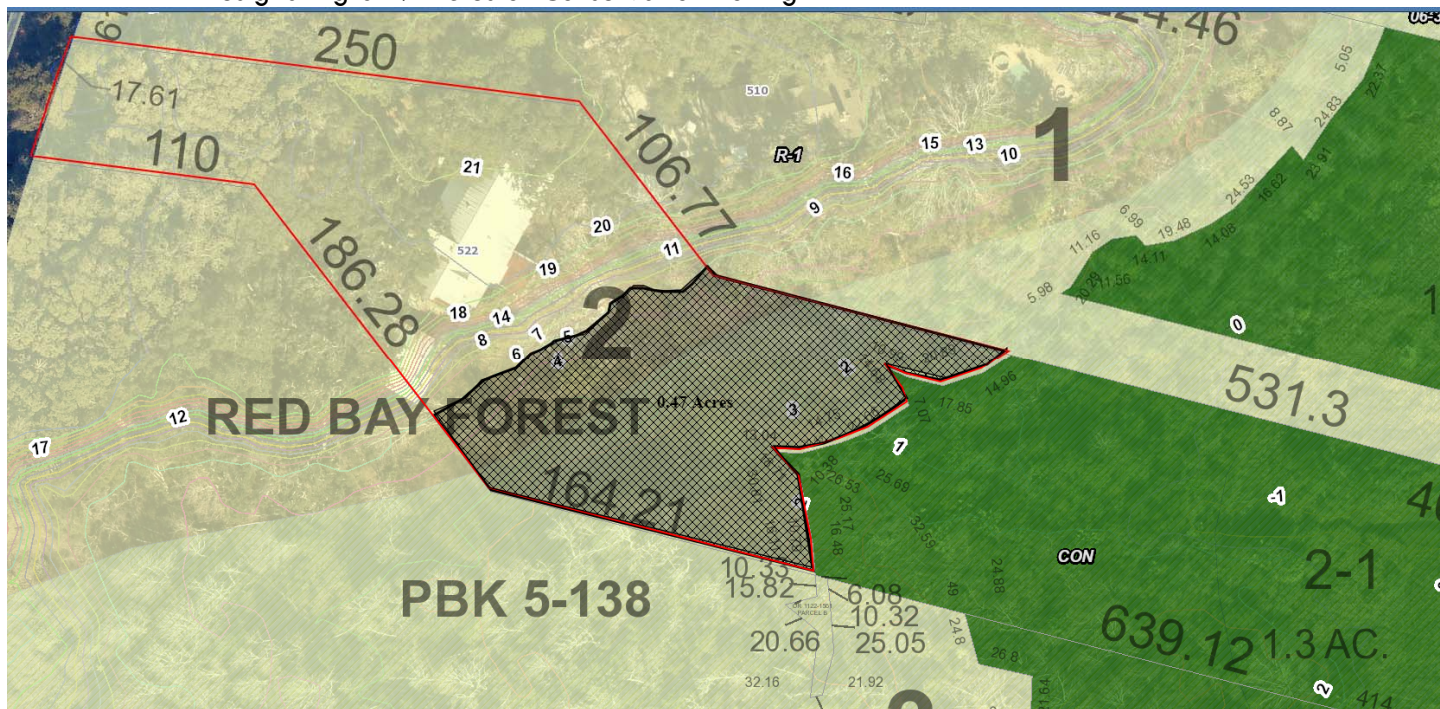
522 Citrona Drive Photo + 2019 Aerial



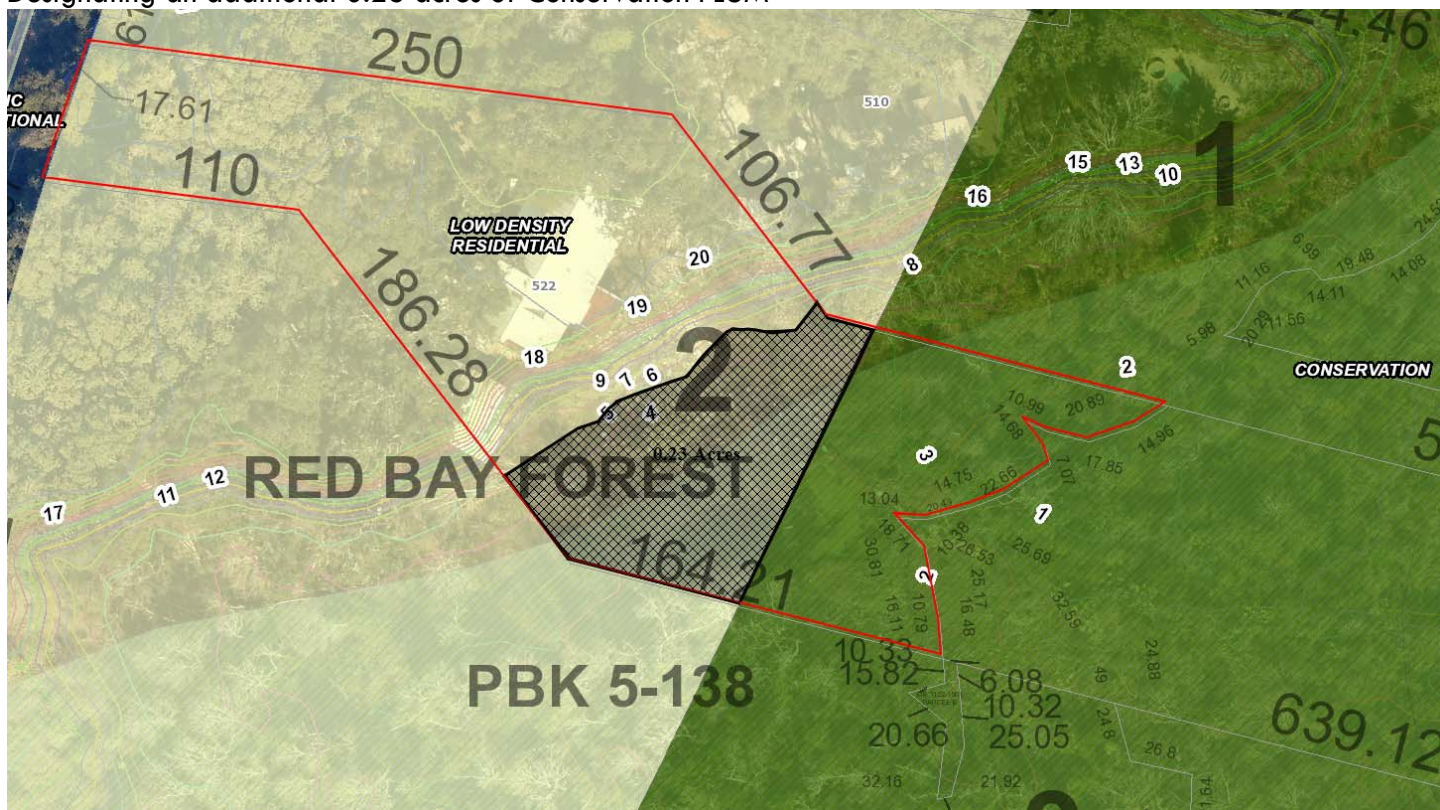


STAFF REPORT
522 CITRONA DRIVE- REVISED

522 Citrona Drive Zoning Change Request:
Designating 0.47 Acres of Conservation Zoning



522 Citrona Drive Future Land Use Map Change Request:
Designating an additional 0.23 acres of Conservation FLUM

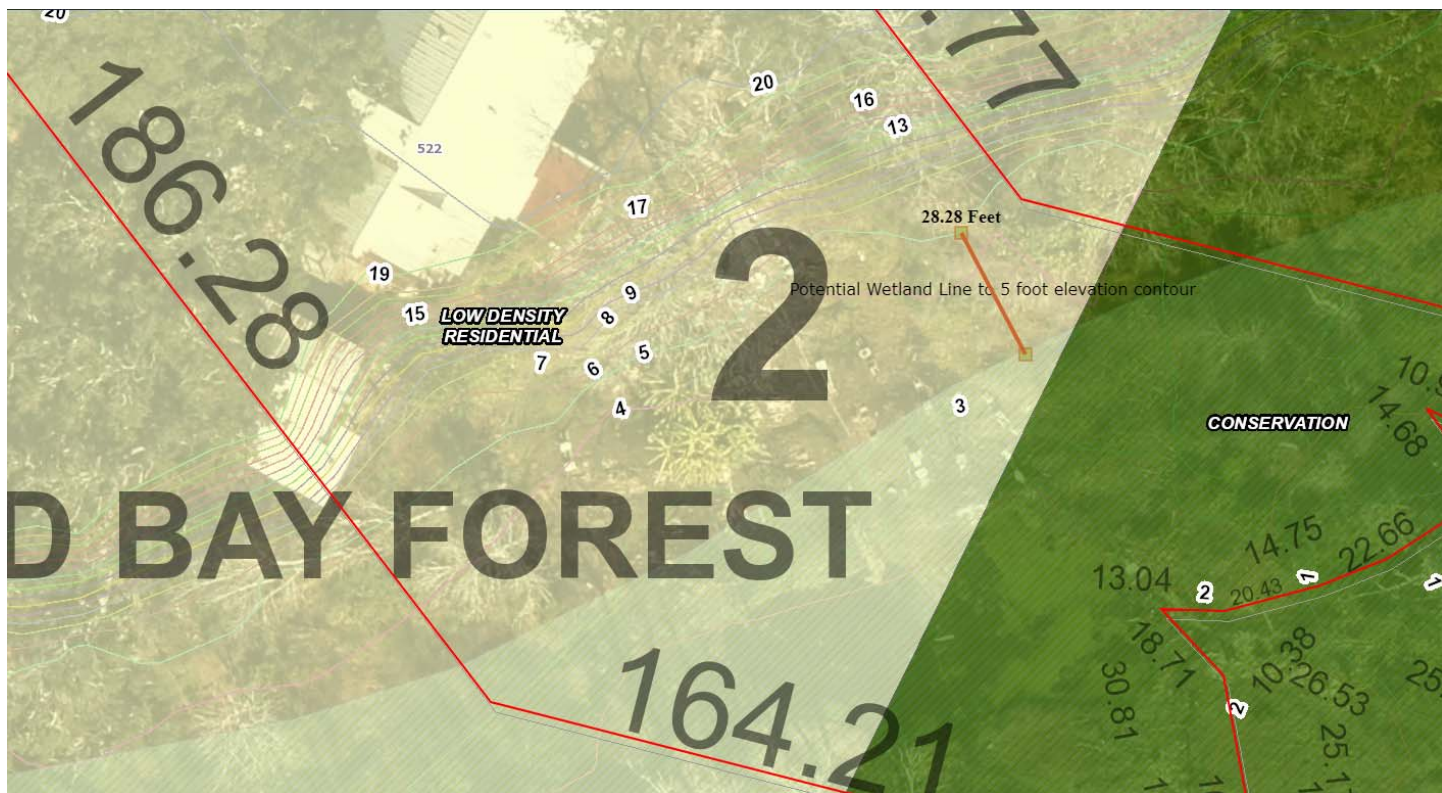




STAFF REPORT
522 CITRONA DRIVE- REVISED

WHY USE THIS BOUNDARY?

There is approximately 11.52 feet from the nearest structure and 28.28 feet from nearest point of "potential wetland boundary" to the 5 foot elevation.





STAFF REPORT
522 CITRONA DRIVE- REVISED

522 Citrona Drive Approximate Location of Wetlands:



522 Citrona Drive Flood Zone:





STAFF REPORT 522 CITRONA DRIVE- REVISED

522 Citrona Drive Soils Map:



522 Citrona Drive Topography:





**STAFF REPORT
526 CITRONA DRIVE**

**526 CITRONA DRIVE
FLUM AND ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1616-0003-0000 CITY OF FERNANDINA BEACH				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	526 CITRONA DR Vacant				
CURRENT LAND USE + ZONING:	Split Future Land Use Map Category of Low Density Residential (LDR) = approximately 86,730 sq. ft. and Conservation (CON)= approximately 56,260 sq. ft Zoning Map Designation reflects the total parcel acreage of 3.33 acres as R-1/ Low Density Residential				
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map to Conservation 2. Amend Zoning Map to CON				
EXISTING USES ON SITE:	Vacant/ Undisturbed Land				
PROPERTY SIZE:	3.33 Acres of Land				
	DATA & ANALYSIS				
ENVIRONMENTAL CHARACTERISTICS:	Flood zone	Potential Wetlands	Topography Range	Soil Type	Coastal Upland Protection Zone or Coastal High Hazard Area
	X and AE	Approx. 2.46 acres	18 ft to 0 ft	Fine Sand	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	Direction	Existing Use(s)	Year Built	Zoning	FLUM
	North	SF Home	1995	R-1	Low Density Residential and Conservation
	South	Vacant	N/A	R-1/ CON	Low Density Residential and



**STAFF REPORT
526 CITRONA DRIVE**

	East West	Wetlands FDOT FB Middle School	- 1991	N/A	CON PI-1	Conservation Conservation Public & Institutional
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.04 (low density residential land use category); 1.07.15 (conservation land use category); 3.01.05 (provision of land use for housing); 3.03.06 (minimize barriers to development of vacant lots); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan					
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.03 (R-1 zoning district); 2.01.20 (CON zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection);					



STAFF REPORT
526 CITRONA DRIVE

	3.05.00 (Drainage and Stormwater Management); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION :	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval. Analysis to support the recommendation is found through the available data provided by the Nassau County Property Appraiser Mapping resources. Specifically, the topography, potential wetlands, soils, and flood zone files. The requested action results in the addition of approximately 52,194.44 square feet of Conservation (CON) Future Land Use Category on the FLUM and in increase in the amount of Conservation (CON) zoning for approximately 107,251 square feet of land.
PAB RECOMMENDATION :	<i>Pending 10/9/19 public hearing</i>



STAFF REPORT 526 CITRONA DRIVE

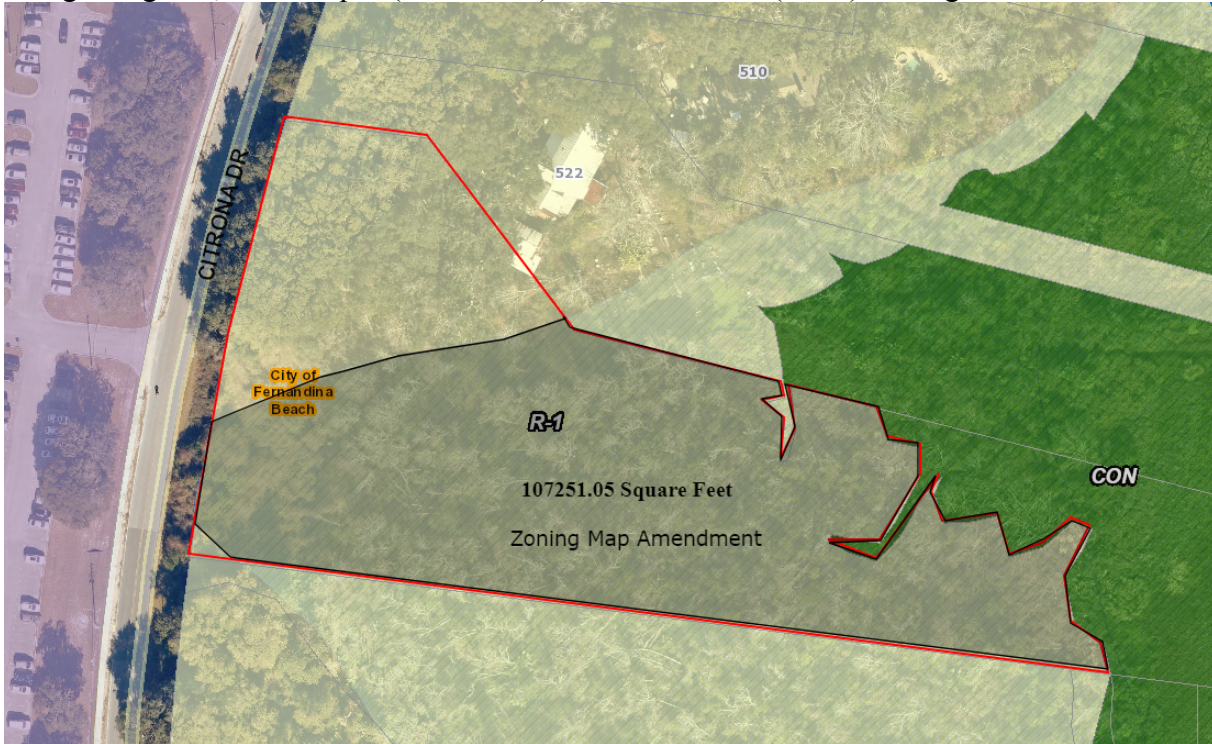
526 Citrona Drive Photo + 2019 Aerial
Google Street View





STAFF REPORT
526 CITRONA DRIVE

526 Citrona Drive Zoning Change Request:
Designating 107,251.05 sq. ft (2.46 Acres) of Conservation (CON) Zoning



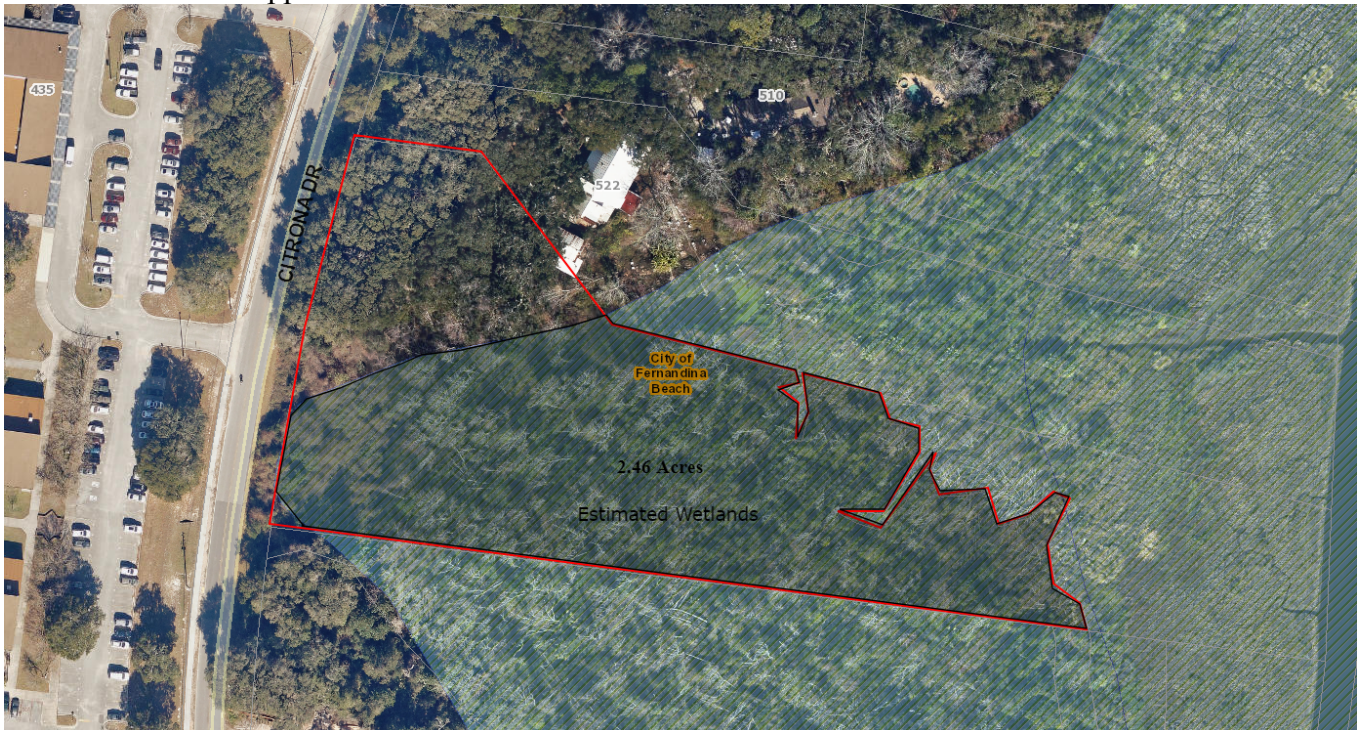
526 Citrona Drive Future Land Use Map Change Request:
Designating an additional 52,194.44 sq. feet (1.19 Acres) of Conservation FLUM



STAFF REPORT 526 CITRONA DRIVE



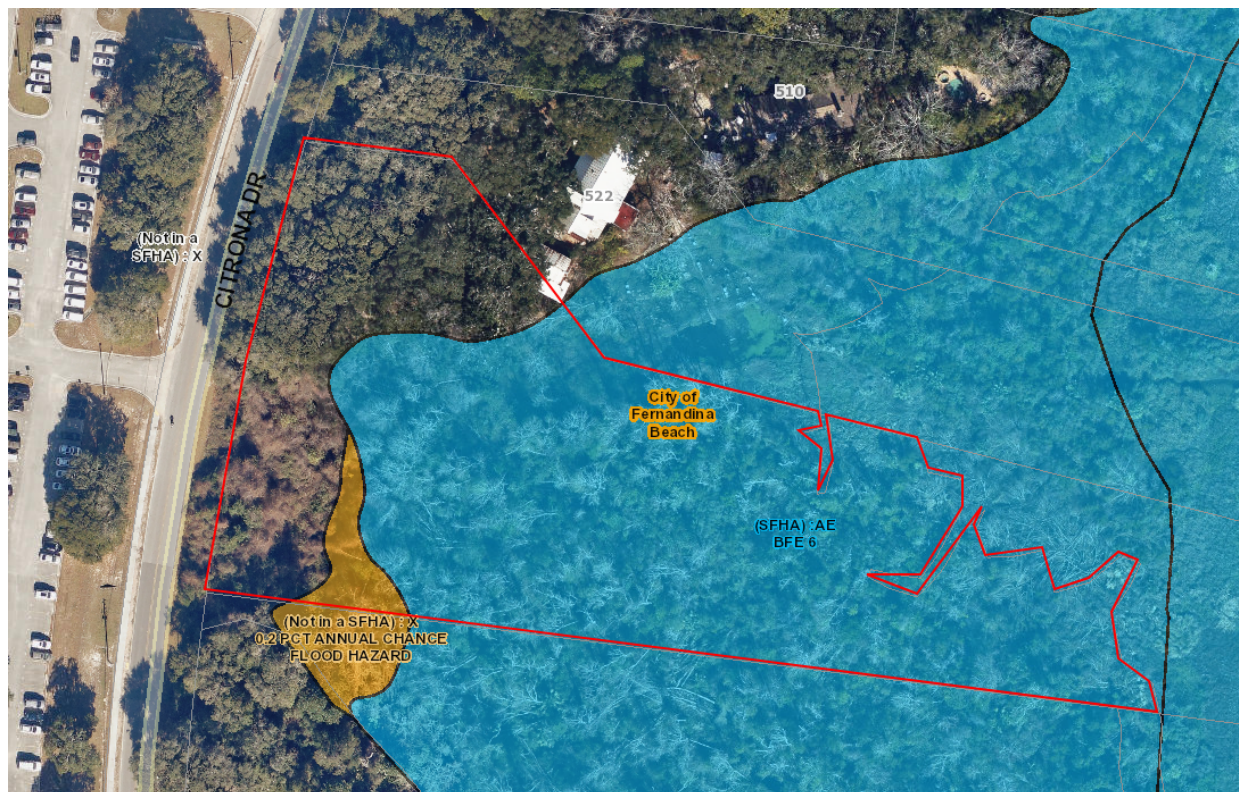
526 Citrona Drive Approximate Location of Wetlands:



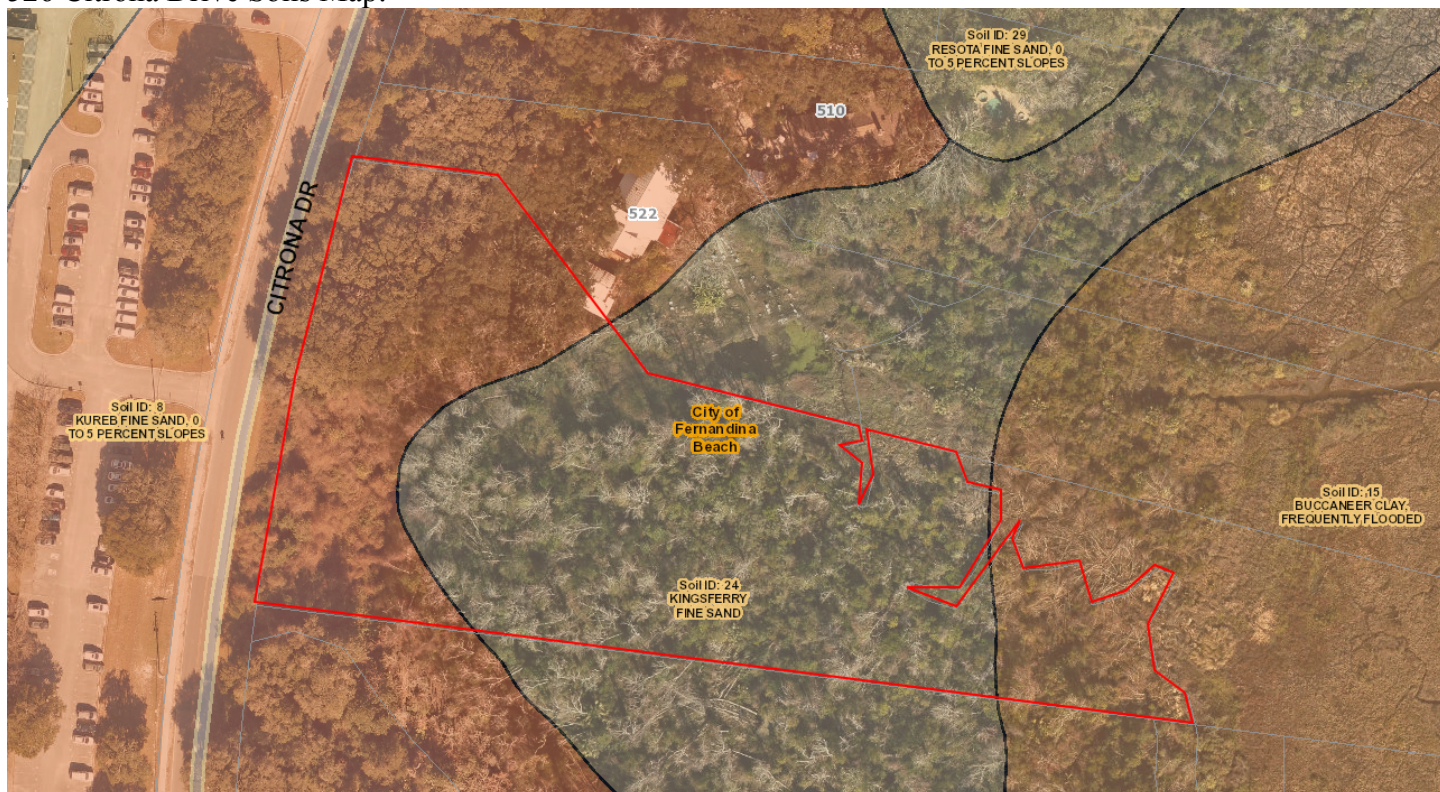
526 Citrona Drive Flood Zone:



STAFF REPORT 526 CITRONA DRIVE



526 Citrona Drive Soils Map:





STAFF REPORT 526 CITRONA DRIVE

526 Citrona Drive Topography:





STAFF REPORT
2707 SADLER ROAD - HOTEL

2707 SADLER ROAD- HOTEL
FLUM MAP CHANGES

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-30-0600-0001-0010 FERNANDINA BEACH HOTEL GROUP LLC
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	EXISTING HOTEL AND RESTAURANT WITH ANCILLARY USES INCLUDING POOL, TENNIS COURTS, ETC.
CURRENT LAND USE + ZONING:	GENERAL COMMERCIAL AND CONSERVATION FOR 2.07 ACRES WITH C-1 ZONING
PROPOSED LAND USE + ZONING:	GENERAL COMMERCIAL FUTURE LAND USE MAP CATEGORY FOR ENTIRETY OF 5.58 ACRES OF LAND CHANGE OF 2.07 ACRES FROM CONSERVATION TO GENERAL COMMERCIAL
EXISTING USES ON SITE:	HOTEL CONSTRUCTED IN 1986
PROPERTY SIZE:	5.58

DATA AND ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	None	7-2 FEET	Sand	IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	VACANT	N/A	CON	CONSERVATION
	South	VACANT	N/A	CON	CONSERVATION
	East	HOTEL	2002	C-1	GENERAL COMMERCIAL
	West	HOTEL	1997	C-1	GENERAL COMMERCIAL
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.04 (FLUM amendments); 1.07.07 (general commercial land use category); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement);				



STAFF REPORT
2707 SADLER ROAD - HOTEL

	6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01 (C-1 zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.05.00 (Drainage and Stormwater Management); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 7.03.00 (Stormwater Management); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



STAFF REPORT
2707 SADLER ROAD - HOTEL

2707 SADLER ROAD Photo + 2019 Aerial

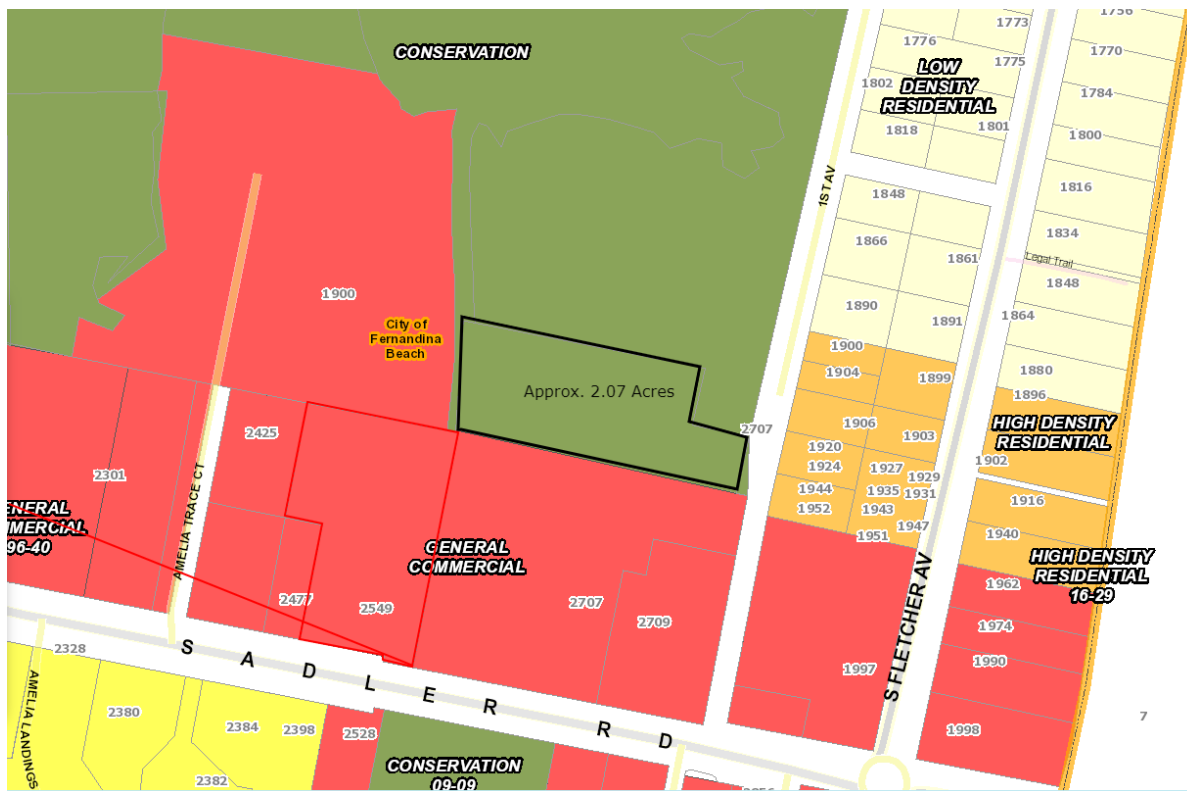
Google Street View





STAFF REPORT
2707 SADLER ROAD - HOTEL

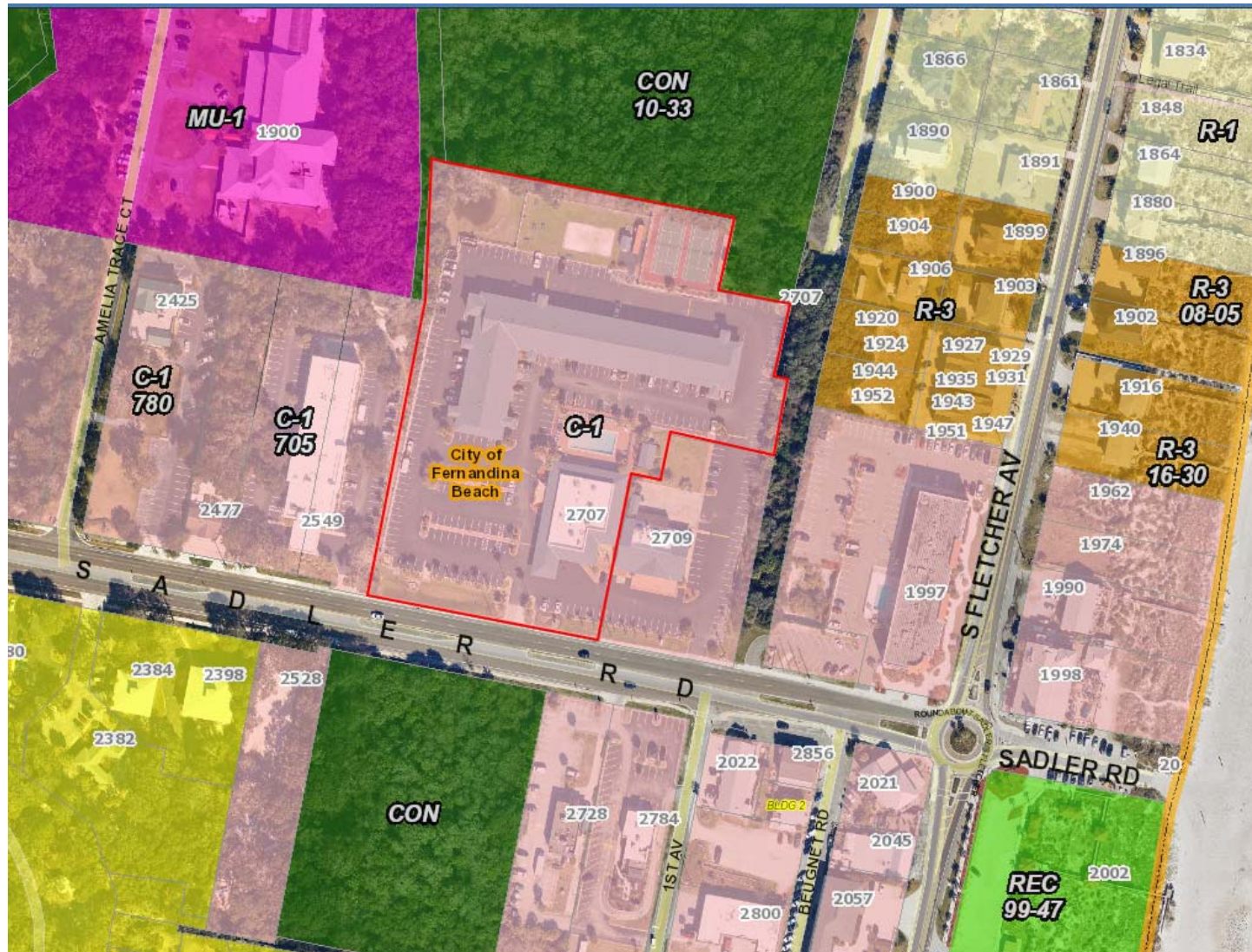
2707 SADLER ROAD CURRENT FLUM:





STAFF REPORT
2707 SADLER ROAD - HOTEL

2707 SADLER ROAD CURRENT ZONING MAP:





STAFF REPORT
2707 SADLER ROAD - HOTEL

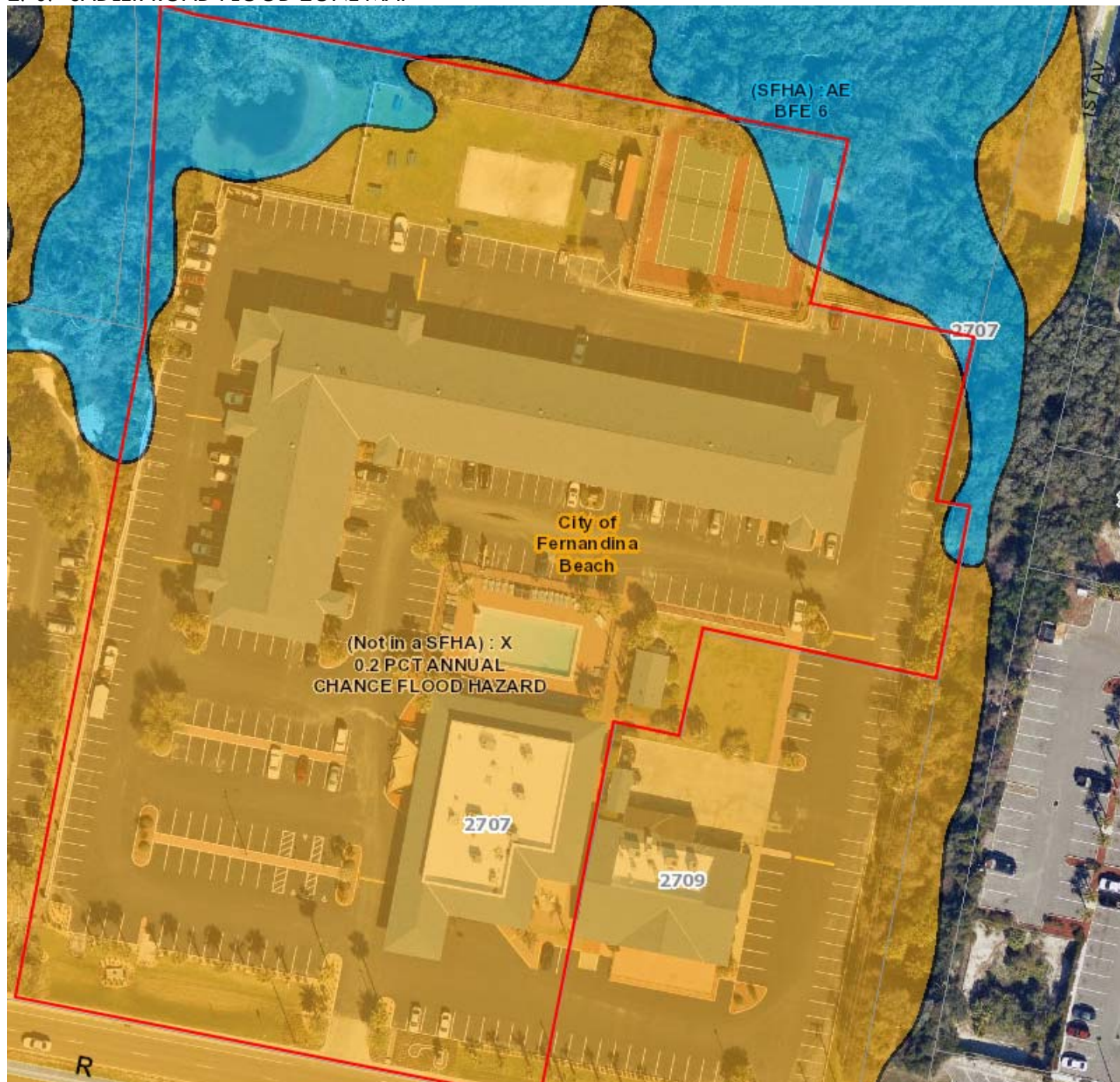
2707 SADLER ROAD POTENTIAL WETLANDS





STAFF REPORT
2707 SADLER ROAD - HOTEL

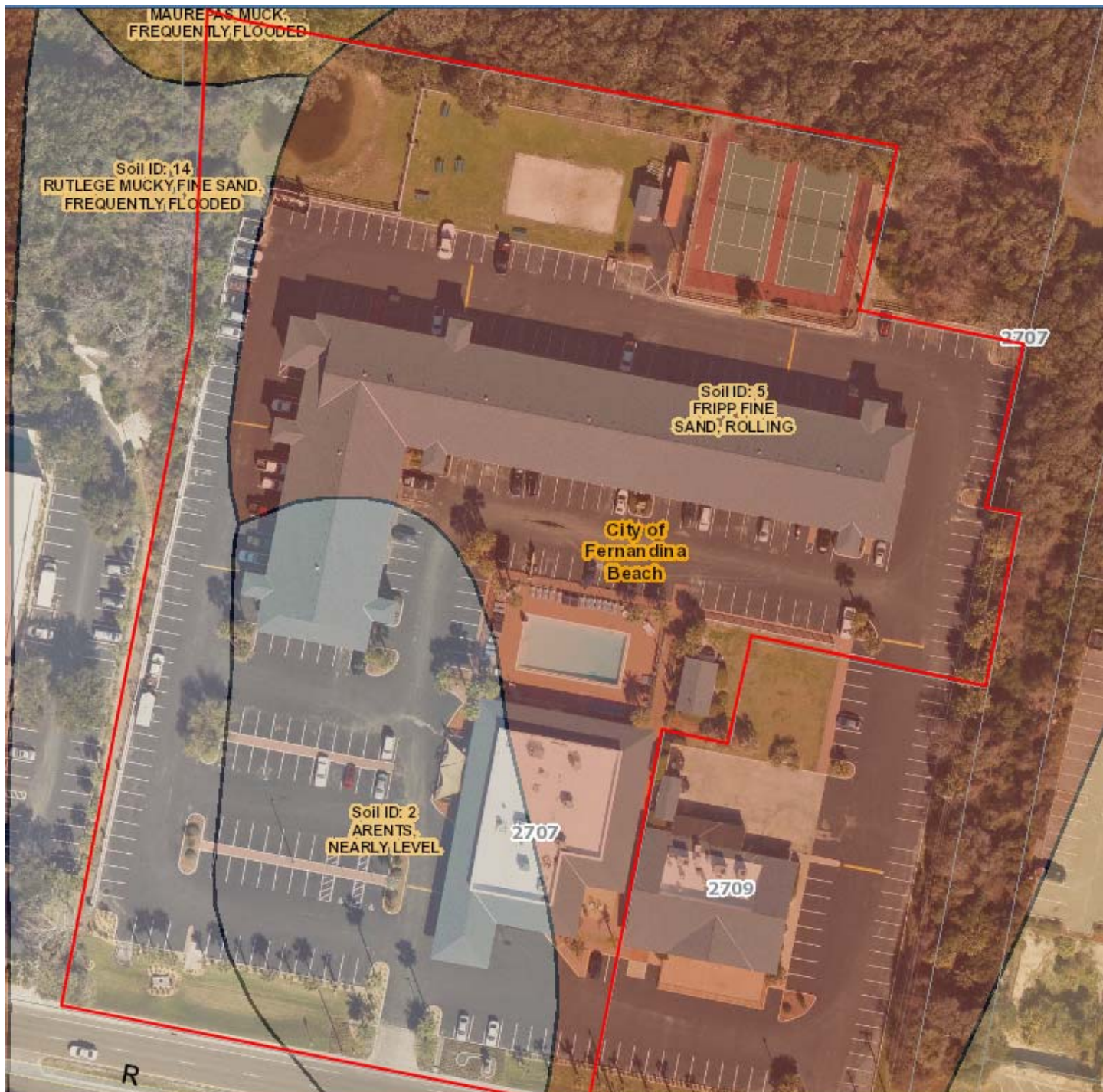
2707 SADLER ROAD FLOOD ZONE MAP





STAFF REPORT
2707 SADLER ROAD - HOTEL

2707 SADLER ROAD SOILS MAP





STAFF REPORT
2707 SADLER ROAD - HOTEL

2707 SADLER ROAD TOPOGRAPHY





The Nassau County School District

1201 Atlantic Avenue
Fernandina Beach, Florida 32034

Kathy K. Burns, Ed.D.
Superintendent of Schools

(904) 491-9900
Fax (904) 277-9042
info@nassau.k12.fl.us

November 13, 2019

To: City of Fernandina Beach Planning and Zoning

From: Kathy K. Burns, Superintendent of Schools

Re: Hickory Street Property

The Nassau County School District would like to request that the City change the zoning on the property now being used as Hickory Street Park to R-1 (low-density residential zoning) to match the City's Future Land Use Map.

The School District currently has no plans to sell the Hickory Street property and is happy to provide it as public park space for our children and communities.

Our mission is to develop each student as an inspired life-long learner and problem-solver with the strength of character to serve as a productive member of society.

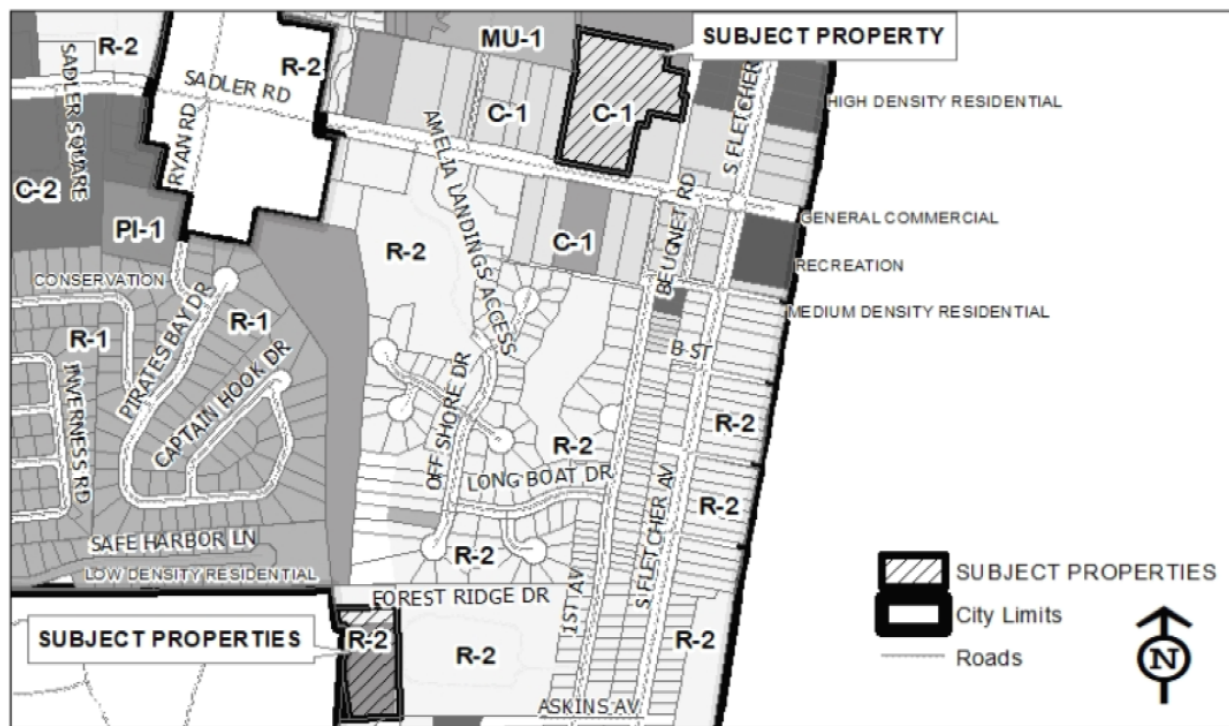
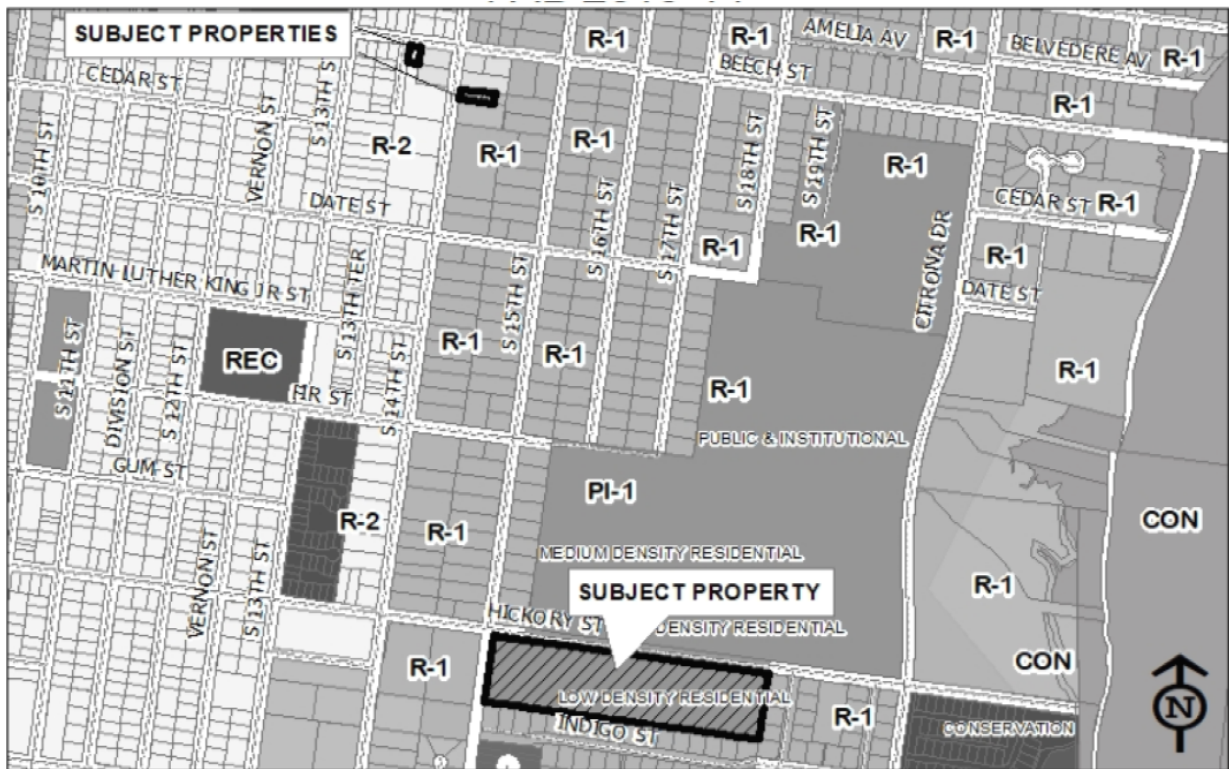
The Nassau County School District does not discriminate on the basis of race, color, national origin, gender, age, disability or marital status in its educational programs, services or activities, or in its hiring or employment practices.

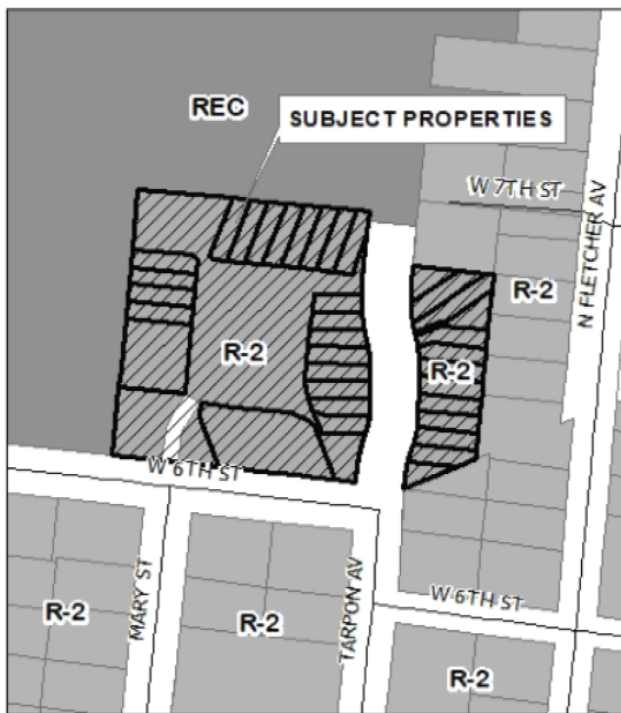
NOTICE OF PUBLIC HEARING
CITY COMMISSION
CITY OF FERNANDINA BEACH

NOTICE IS HEREBY GIVEN that a Public Hearing is scheduled for **Tuesday, March 17, 2020, at 6:00 PM** in the City Commission Chambers, 204 Ash Street Fernandina Beach, Florida to consider the following application:

ORDINANCE 2020-03

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, AMENDING THE CITY'S FUTURE LAND USE MAP FOR VARIOUS PROPERTIES THROUGHOUT THE CITY; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.





Interested parties may appear at said hearing and be heard as to the advisability of any action, which may be considered. Any persons with disabilities requiring accommodations in order to participate in this program or activity should contact 310-3115, TTY/TDD 711 or through the Florida Relay Service at 1-800-955-8771 at least 24 hours in advance to request such accommodation.

IF ANY PERSON DECIDES TO APPEAL ANY DECISION MADE BY THE BOARD/COMMISSION WITH RESPECT TO ANY MATTER CONSIDERED AT SUCH HEARING, S/HE WILL NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE, WHICH RECORD INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED.

For information, please contact the Staff of the City Clerk's Office, 204 Ash Street, between the hours of 8:00 AM – 5:00 PM, Monday through Friday, (904) 310-3115.

Note:

Please run as a DISPLAY in the March 4, 2020 edition of the News Leader.

Please send proof of publication to:

City Clerk's Office

City Hall, 204 Ash Street

Fernandina Beach, FL 32034

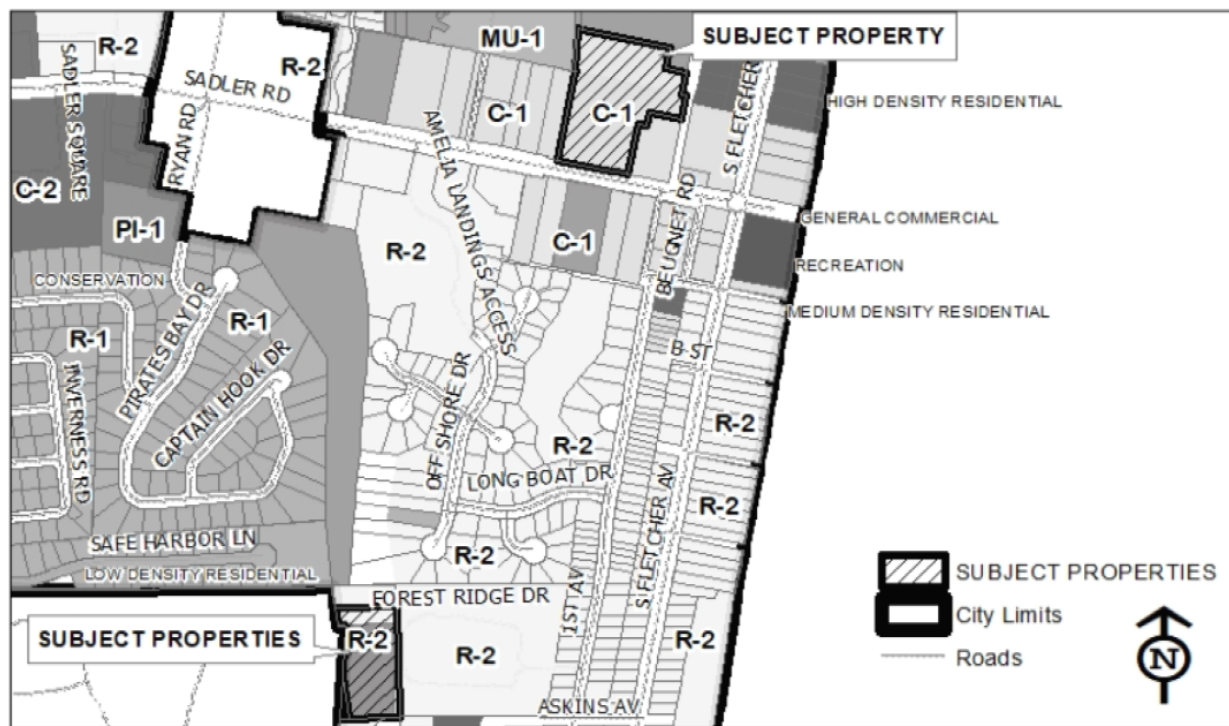
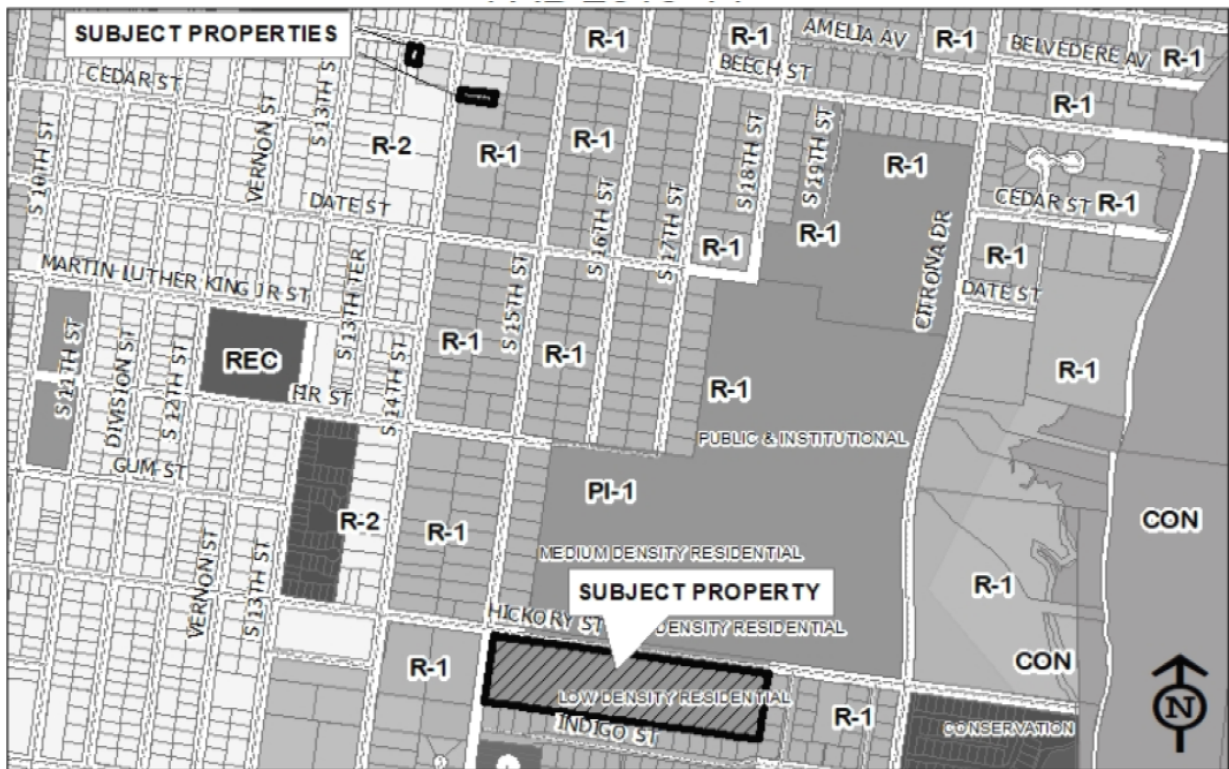
904-310-3115

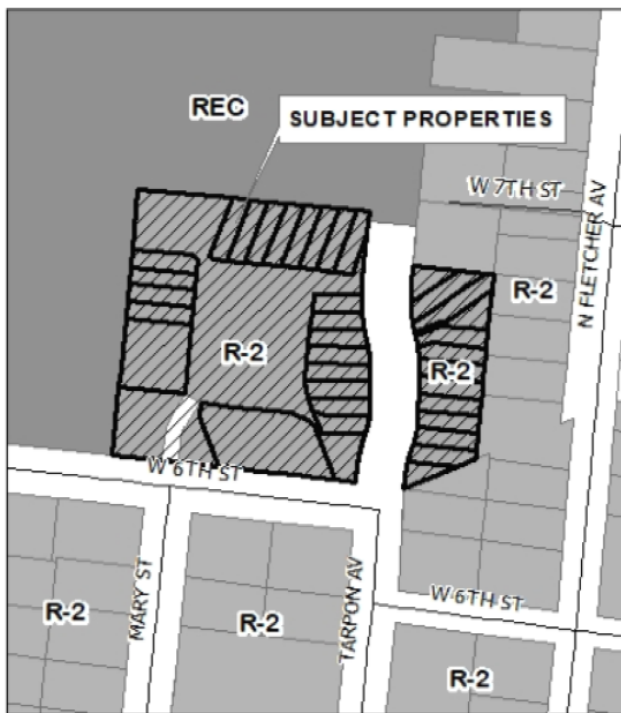
NOTICE OF PUBLIC HEARING
CITY COMMISSION
CITY OF FERNANDINA BEACH

NOTICE IS HEREBY GIVEN that a Public Hearing is scheduled for **Tuesday, April 21, 2020, at 6:00 PM** in the City Commission Chambers, 204 Ash Street Fernandina Beach, Florida to consider the following application:

ORDINANCE 2020-03

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, AMENDING THE CITY'S FUTURE LAND USE MAP FOR VARIOUS PROPERTIES THROUGHOUT THE CITY; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.





Interested parties may appear at said hearing and be heard as to the advisability of any action, which may be considered. Any persons with disabilities requiring accommodations in order to participate in this program or activity should contact 310-3115, TTY/TDD 711 or through the Florida Relay Service at 1-800-955-8771 at least 24 hours in advance to request such accommodation.

IF ANY PERSON DECIDES TO APPEAL ANY DECISION MADE BY THE BOARD/COMMISSION WITH RESPECT TO ANY MATTER CONSIDERED AT SUCH HEARING, S/HE WILL NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE, WHICH RECORD INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED.

For information, please contact the Staff of the City Clerk's Office, 204 Ash Street, between the hours of 8:00 AM – 5:00 PM, Monday through Friday, (904) 310-3115.

Note:

Please run as a DISPLAY in the April 8, 2020 edition of the News Leader.

Please send proof of publication to:

City Clerk's Office

City Hall, 204 Ash Street

Fernandina Beach, FL 32034

904-310-3115

CITY COMMISSION AGENDA ITEM

City of Fernandina Beach



SUBJECT: Ordinance 2020-04
Zoning Map Amendment - Land Use Map Conflicts

ITEM TYPE: Ordinance (w/o fiscal impact)

REQUESTED ACTION: Consider Ordinance 2020-04 at Second Reading.

SYNOPSIS: The City has provided a zoning and/or land use layer within its Comprehensive Plan dating back to 1961. Over the subsequent forty-five years, these documents were maintained by external agencies or consultants and furnished to the City as part of its statutory periodic review periods. The City began utilizing Geographic Information Systems (GIS) in 2004-2005.

In 2005-2006, the City started working towards creating its own GIS system and maintaining data layers. Staff was hired and trained on-the-job to learn how to manage this system. Parcel alignment with the data layers became technically possible however, it was not until 2007 that the City had staffing with proper training to effectively utilize the system. In 2012, staff entered into a partnership with the Nassau County Property Appraiser's (NCPA) office to share and display data for public review. Since 2014, the City's data layers have been updated by the NCPA office following the enactment of land use or zoning ordinances. Discrepancies between the Future Land Use Map and Zoning Map as witnessed in these applications are the result of the carryover actions of prior commissions which did not evaluate any conflicts between the documents on an individual parcel level.

From time to time, staff would encounter mismatches between the zoning and land use map layers. These were either noted and corrected under staff-initiated amendments or they were disclosed to a property owner at them time of a development application and directed to make a change. At no point, did staff undertake an exhaustive analysis to determine discrepancies between the Future Land Use Map (FLUM) and Zoning Map.

In March 2019, the City Commission acted under Ordinance 2019-05 to place a moratorium on future land use map and zoning map amendments until such time that the maps could be reconciled to align. Discussion of the initial findings were shared and briefly discussed with the Planning Advisory Board (PAB) in March and April 2019. Staff presented findings to the City Commission in May of 2019; it was then directed to proceed with correction of the maps based on areas of conflict only. PAB applications 2019-14 and 2019-15 were initiated in August 2019. These applications seek to amend the maps in accordance with the direction provided by the City Commission. Staff conducted a PAB workshop with property owners and citizens on September 9, 2019. Following the workshop the Board issued decisions at Regular Meetings held between October and December 2019.

In addition to the policies provided by the Comprehensive Plan, Land Development Code and Florida Statutes 163.3187 and 163.3184, staff relied on the following guiding principles as part of its overall consideration for determining a recommendation for the Future Land Use Map or Zoning Map Change:

Built Environment: What's on the ground (or not) today? Surrounding Property: What is the surrounding land use and zoning? What are the surrounding area built conditions?

Environmental Features: What environmental features are contained on the site?

Pattern of Change: Are there other land use or zoning changes within the same area that should be considered?

Holistic View: How does the requested action serve to meet and further the general direction and intent of the City's policy direction as a whole?

The 2011 Future Land Use Map adopted as part of the EAR-based Comprehensive Plan amendments is presumed to be the principal document for consideration of all Future Land Use Map changes. The City adopted a revised Land Development Code and Zoning Map in 2006. The data provided as part of the analysis for each change include map exhibits and digital images from the Nassau County, Florida Property Appraiser GIS mapping.

Information for each property is provided as part of this report and serve to fulfill minimum application

CITY COMMISSION AGENDA ITEM

City of Fernandina Beach



requirements for mapping changes. Specifically, the Light Detection and Ranging (LIDAR) data of one-foot contour topography file, St. Johns River Water Management District potential wetlands, the USDA soils, and FEMA flood zone data layers were utilized. Site specific, independent surveys and studies were not prepared as part of the recommended action; however, where prior plat maps exist they have been provided as back up material to each series of properties.

Staff wishes to highlight the following properties under which the Planning Advisory Board (PAB) has recommended changes from the original application. Changes include modifications of Citrona Drive parcels for Conservation to align with the 5-foot elevation contour and including Conservation for the entirety of 526 Citrona Drive following the City acquisition in December 2019. Additionally, PAB has recommended a change to Future Land Use Map for the North Pointe PUD subdivision to Medium Density Residential in an effort to protect it from future redevelopment and avoid the allowance of resort rental. Nassau County School Board provided a statement indicating their desire is to have the zoning district changed to R-1 to match the existing FLUM, rather than modify the FLUM to Public and Institutional. PAB issued a recommendation to modify the FLUM to Public and Institutional. Staff remains supportive of the FLUM change.

This Ordinance was approved at First Reading by the City Commission at its Regular Meeting on January 21, 2020.

FISCAL IMPACT: None

CITY ATTORNEY COMMENTS: No additional comments.

CITY MANAGER RECOMMENDATION(S): I recommend that the City Commission enact proposed Ordinance 2020-04 at Second Reading.

Kelly Gibson, AICP, Planning Director	3/16/2020
Nicole Bednar, Administrative Services Manager	4/3/2020
Dale L. Martin, City Manager	4/8/2020
Tammi E. Bach, City Attorney	4/8/2020

Date: March 16, 2020

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION: Enact

ORDINANCE 2020-04

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, AMENDING THE CITY'S ZONING MAP FOR VARIOUS PROPERTIES THROUGHOUT THE CITY; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Fernandina Beach has applied for mapping changes to its Zoning Map through PAB Case 2019-15 following the discovery of mapping errors and inaccuracies; and

WHEREAS, the City Commission enacted Ordinance 2019-05 on March 5, 2019, which placed a moratorium on Future Land Use Map amendments and Zoning map amendments until the maps were reconciled; and

WHEREAS, the City Commission adopted a unified Land Development Code (LDC) on September 5, 2006, which became effective on October 1, 2006; and

WHEREAS, the City's adopted 2030 Comprehensive Plan directs changes to the Land Development Code for consistency with State Laws and current planning methods for growth and economic development; and

WHEREAS, the Planning Advisory Board (PAB), acting as the City's Local Planning Agency, considered the application at a Public Workshop held on Tuesday, September 10, 2019, and took formal consideration of the application at the Board's Regular Meetings held on Wednesday October 9, 2019, and Wednesday, November 13, 2019, and Wednesday, December 11, 2019, and issued a recommendations as provided in Exhibit "A" herein; and

WHEREAS, notice of public hearing on such Zoning Map amendments was published in the News Leader, a newspaper of general circulation in Fernandina Beach, Nassau County, Florida, on September 27, 2019.

NOW, THEREFORE, BE IT ENACTED BY THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH AS FOLLOWS:

SECTION 1. PURPOSE AND INTENT. The City Commission finds that the amendments, attached hereto as Exhibit "A," amending the City's Zoning Map should be enacted.

SECTION 2. SEVERABILITY. If any section, sentence, clause or phrase of this Ordinance is held to be invalid or unconstitutional by any Court of competent jurisdiction, the holding shall in no way affect the validity of the remaining portions of this Ordinance.

SECTION 3. This Ordinance shall become effective 30 days following the enactment of this Ordinance.

ENACTED this 21st day of April, 2020.

CITY OF FERNANDINA BEACH

JOHN A. MILLER
Mayor - Commissioner

ATTEST:

APPROVED AS TO FORM AND LEGALITY:



CAROLINE BEST
City Clerk

TAMMI E. BACH
City Attorney

ORDINANCE 2020-04
EXHIBIT "A"

FUTURE LAND USE MAP AMENDMENTS (PAB CASE 2019-14) AND ZONING MAP AMENDMENTS (PAB CASE 2019-15)					
<u>CITRONA AREA ONLY</u>					
PARCEL ID NUMBER	EXISTING USE	STREET ADDRESS	CURREN T ZONING	CURRENT FUTURE LAND USE CATEGORY	ACTION REQUESTED: ZONING OR LAND USE MAP CHANGE
27-3N-28-1192-000C-0000	VACANT	SHELL COVE DRIVE	R-1	CONSERVATI ON	CON -ZONING ONLY
27-3N-28-1192-000D-0000	VACANT	SHELL COVE DRIVE	R-1	CONSERVATI ON	CON -ZONING ONLY
00-00-31-1180-0017-0050	VACANT	GUM STREET	R-1	CONSERVATI ON	CON -ZONING ONLY
00-00-31-1180-0017-0060	VACANT	GUM STREET	R-1	CONSERVATI ON	CON -ZONING ONLY
00-00-31-1180-0018-0010	VACANT	GUM STREET	R-1	CONSERVATI ON	CON -ZONING ONLY
00-00-31-1180-0018-0030	VACANT	GUM STREET	R-1	CONSERVATI ON	CON -ZONING ONLY
00-00-31-1180-0018-0040	VACANT	GUM STREET	R-1	CONSERVATI ON	CON -ZONING ONLY
00-00-31-1180-0022-0010	VACANT	CITRONA DRIVE	R-1	CONSERVATI ON	CON -ZONING ONLY
00-00-31-1180-0018-0040	VACANT	GUM STREET	R-1	CONSERVATI ON	CON -ZONING ONLY
00-00-31-1616-0003-0020	VACANT	CITRONA DRIVE	R-1	CONSERVATI ON	CON -ZONING ONLY
00-00-31-1616-0001-0000	SINGLE FAMILY HOME	510 CITRONA DRIVE	R-1	CONSERVATI ON	CONSERVATION FLUM + CON ZONING TO ALIGN WITH 5- FOOT ELEVATION (FLUM AND ZONING CHANGES)

00-00-31-1616-0002-0000	MULTI-FAMILY HOME	522 CITRONA DRIVE	R-1	LOW DENSITY RESIDENTIAL	CONSERVATION FLUM + CON ZONING TO ALIGN WITH 5-FOOT ELEVATION (FLUM AND ZONING CHANGES)
00-00-31-1616-0003-0000	VACANT	526 CITRONA DRIVE	R-1	LOW DENSITY RESIDENTIAL	CONSERVATION/ CON (FLUM AND ZONING CHANGES)
00-00-31-1180-0015-0000	SINGLE FAMILY HOME	420 CITRONA DRIVE	R-1	LOW DENSITY RESIDENTIAL/ CONSERVATION (~466 SQ FEET)	CONSERVATION FLUM + CON ZONING TO ALIGN WITH WETLANDS BOUNDARY* (PAB RECCOMENDATION TO REMAIN CONSERVATION FOR APPROX. 466 SQ. FT.)

ZONING MAP AMENDMENTS (PAB CASE 2019-15)					
PARCEL ID NUMBER	EXISTING USE	STREET ADDRESS	CURRENT ZONING	FUTURE LAND USE CATEGORY	ACTION REQUESTED: ZONING CHANGE
00-00-31-1800-0287-0002	VACANT	S 5TH STREET	I-1	MEDIUM DENSITY RESIDENTIAL	R-2
00-00-31-1800-0287-0130	VACANT	615 S 5TH STREET	I-1	MEDIUM DENSITY RESIDENTIAL	R-2
00-00-31-1800-0287-0150	VACANT	410 FIR STREET	I-1	MEDIUM DENSITY RESIDENTIAL	R-2

00-00-31-1800-0288-0040	SINGLE FAMILY HOME	731 S 6TH STREET	I-1	MEDIUM DENSITY RESIDENTIAL	R-2 (eastern 0.23 acres only)
00-00-31-1800-0288-0060	SINGLE FAMILY HOME	715 S 6TH STREET	I-1	MEDIUM DENSITY RESIDENTIAL	R-2
20-3N-29-0000-0014-0150	RETIREMENT	1900 AMELIA TRACE COURT	MU-1	GENERAL COMMERCIAL	C-1
00-00-31-1652-0012-0000	SINGLE FAMILY HOME	2309 OFF SHORE COURT	R-2	MEDIUM DENSITY RESIDENTIAL/CONSERVATION	CON TO ALIGN WITH WETLANDS AND PLAT MAP
00-00-31-1652-0015-0000	SINGLE FAMILY HOME	2329 OFF SHORE COURT	R-2	MEDIUM DENSITY RESIDENTIAL/CONSERVATION	CON TO ALIGN WITH WETLANDS AND PLAT MAP
00-00-31-1652-0016-0000	SINGLE FAMILY HOME	2347 OFF SHORE COURT	R-2	MEDIUM DENSITY RESIDENTIAL/CONSERVATION	CON TO ALIGN WITH WETLANDS AND PLAT MAP
00-00-31-1651-0050-0000	SINGLE FAMILY HOME	2119 OFF SHORE COURT	R-2	MEDIUM DENSITY RESIDENTIAL/CONSERVATION	CON TO ALIGN WITH WETLANDS AND PLAT MAP
00-00-31-1652-0010-0000	SINGLE FAMILY HOME	2225 OFF SHORE COURT	R-2	MEDIUM DENSITY RESIDENTIAL/CONSERVATION	CON TO ALIGN WITH WETLANDS AND PLAT MAP
00-00-31-1652-0011-0000	SINGLE FAMILY HOME	2255 OFF SHORE COURT	R-2	MEDIUM DENSITY RESIDENTIAL/CONSERVATION	CON TO ALIGN WITH WETLANDS AND PLAT MAP
00-00-31-1652-0014-0000	SINGLE FAMILY HOME	2315 OFF SHORE COURT	R-2	MEDIUM DENSITY RESIDENTIAL/CONSERVATION	CON TO ALIGN WITH WETLANDS AND PLAT MAP

PAB2019- 0015

REC'D: _____ BY: _____

INVOICE #: _____

PAYMENT: _____ TYPE: _____

BOARD MEETING DATE: OCT 2019



PLANNING ADVISORY BOARD APPLICATION

- | | |
|--|---|
| ☒ ZONING MAP AMENDMENT
(≤ 10 acres \$1,000 / > 10 acres \$2,000) | ☐ SUBDIVISION PLAT – PRELIMINARY
(≤ 20 units \$1,000 / > 20 units \$1,600) |
| ☐ LAND USE MAP AMENDMENT
(≤ 10 acres \$1,000 / > 10 acres \$2,000) | ☐ SUBDIVISION PLAT – FINAL (\$850) |
| ☐ LDC TEXT AMENDMENT (\$1,000) | ☐ VACATION OF R.O.W. (\$1,700) |
| ☐ COMP PLAN AMENDMENT (\$1,700) | ☐ VOLUNTARY ANNEXATION (\$1,500) |
| | ☐ Revision to each PAB Application
To offset additional display ad fee (\$400) |

APPLICANT INFORMATION

Owner Name: VARIES- SEE ATTACHED

Mailing Address: _____

Telephone: _____ **Fax:** _____

Email: _____

Agent Name: PLANNING AND CONSERVATION DEPARTMENT

Mailing Address: 204 ASH STREET FERNANDINA BEACH, FL 32034

Telephone: (904) 310-3480 **Fax:** _____

Email: KGIBSON@FBFL.ORG

PROPERTY INFORMATION

Street Address: VARIOUS- SEE ATTACHED LIST

Parcel Identification Number(s): _____

Lot Number: _____ **Block Number:** _____ **Subdivision:** _____

Section: _____ **Township:** _____ **Range:** _____

PROJECT INFORMATION

Total Number of Lots/Parcels: SEE ATTACHED LIST

Less than One (1) acre Sq. Footage: _____ One (1) Acre or Greater: _____

Existing Zoning Classification: VARIES - SEE ATTACHED LIST

Existing Future Land Use Classification: VARIES- SEE ATTACHED LIST

Previous Planning/Zoning Approvals: _____

Description of Request:

MODIFICATION BASED ON DIRECTION PROVIDED THROUGH THE
ADOPTION OF ORDINANCE 2019-05

SIGNATURE/NOTARY

The undersigned states the above information is true and correct as (s)he is informed and believes.

8/28/19 [Signature]
Date Signature of Applicant

STATE OF FLORIDA }
COUNTY OF NASSAU } ss

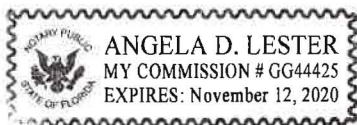
Subscribed and sworn to before me this 28 day of August, 2019.

[Signature]
Notary Public: Signature

Angela D. Lester
Printed Name

11/12/20
My Commission Expires

Personally Known X OR Produced Identification _____ ID Produced: _____



ZONING CONFLICT

PIN	Subdivisio	ZoningDist	FutureLand	OWNER_NAME	USEDESC	HOUSE_NO	STREET	ST_MD	CHANGE FLUM	CHANGE ZONING
00-00-31-1014-0001-0000	AMELIA HEIGHTS SUBDIVISION	R-3	MEDIUM DENSITY RESIDENTIAL	AMELIA COMMERCIAL PROPERTIES	VACANT		ASKINS	ST		R-2
00-00-31-1014-0002-0000	AMELIA HEIGHTS SUBDIVISION	R-3	MEDIUM DENSITY RESIDENTIAL	AMELIA COMMERCIAL PROPERTIES	VACANT		ASKINS	ST		R-2
00-00-31-1014-0003-0000	AMELIA HEIGHTS SUBDIVISION	R-3	MEDIUM DENSITY RESIDENTIAL	AMELIA COMMERCIAL PROPERTIES	VACANT		ASKINS	ST		R-2
00-00-31-1014-0004-0000	AMELIA HEIGHTS SUBDIVISION	R-3	MEDIUM DENSITY RESIDENTIAL	AMELIA COMMERCIAL PROPERTIES	VACANT		ASKINS	ST		R-2
00-00-31-1180-0017-0050	CITRONA SUB	R-1	CONSERVATION	CITY OF FERNANDINA BEACH	MUNICIPAL		GUM	ST		CON
00-00-31-1180-0017-0060	CITRONA SUB	R-1	CONSERVATION	CITY OF FERNANDINA BEACH	MUNICIPAL		GUM	ST		CON
00-00-31-1180-0018-0010	CITRONA SUB	R-1	CONSERVATION	STATE OF FLORIDA DEPARTMENT	VAC GOVERN		GUM	ST		CON
00-00-31-1180-0018-0030	CITRONA SUB	R-1	CONSERVATION	CITY OF FERNANDINA BEACH	MUNICIPAL		GUM	ST		CON
00-00-31-1180-0018-0040	CITRONA SUB	R-1	CONSERVATION	CITY OF FERNANDINA BEACH	MUNICIPAL		GUM	ST		CON
00-00-31-1180-0022-0010	CITRONA SUB	R-1	CONSERVATION	SEALS & ASSOCIATES INC	VACANT		CITRONA	DR		CON
00-00-31-1470-0001-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	CECIL BRYANT & KIMBERLY	SINGLE FAM	925	TARPON	AVE		R-3
00-00-31-1470-0002-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	LANGLOIS JOSEPH R D JR	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0003-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	WILDES JAMES L JR & MARY G	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0004-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	GERMANO DORIS B	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0005-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	TUKEVA JANICE L &	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0006-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	SHEEN MARIE L M	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0007-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	ALTA TRUST	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0008-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	DADDARIO JOSEPH E	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0009-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	HELWIG WAYNE	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-000A-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	NORTH POINTE OF FERNANDINA	COMMON S/D		TARPON	AV		R-3
00-00-31-1470-000B-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	NORTH POINTE OF FERNANDINA	COMMON S/D		TARPON	AV		R-3
00-00-31-1470-0010-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	DILEO FRANK	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0011-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	CARR HOUSTON H	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0012-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	HOLDEN SYDNEY B	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0013-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	LEWIS RITCHIE N SR & SHEILA M	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0014-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	BUTLER JEFFREY M & PAULA T	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0015-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	COSGROVE GREGORY J &	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0016-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	SCRUGGS SETH A (50%) &	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0017-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	BELLINGER JOSEPH N JR & BRENDA	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0018-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	WHITE SHIRLEY L &	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0019-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	KASUN DAVID M	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0020-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	LEE MARTHA R	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0021-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	GIBSON CLAUDIA G	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0022-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	DAVIS JAMES & RICHARD(3/9INT)&	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0023-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	CAFFEE KENNETH DAVID & DIANE M	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0024-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	DAWSON KATHY S	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0025-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	PARTUS FREDERICK PAUL TRUSTEE	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0026-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	DUCHEN RICHARD L & JEANNE P	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0027-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	WEISFELD ELINOR	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0028-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	LEMACKS STANLEY R	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0029-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	ELLIOTT CHARLES S & KATHLEEN L	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-0030-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	THUEMLING THOMAS G	SINGLE FAM	925	TARPON	AV		R-3
00-00-31-1470-00E1-0000	NORTH POINTE	R-2	HIGH DENSITY RESIDENTIAL	NORTH POINTE HOMEOWNERS	COMMON S/D		TARPON	AV		R-3
00-00-31-1616-0003-0020	RED BAY FOREST	R-1	CONSERVATION	STATE OF FLORIDA DEPARTMENT	VAC GOVERN		CITRONA	DR		CON
00-00-31-1652-0012-0000	THE RESIDENCE AT AMELIA LANDINGS		MEDIUM DENSITY RESIDENTIAL	HUTZELL CRAIG L & MARY KAY	SINGLE FAM	2309	OFF SHOR	CT		CON TO ALIGN WITH WETLANDS AND PLAT MAP
00-00-31-1652-0015-0000	THE RESIDENCE AT AMELIA LANDINGS	R-2	CONSERVATION	MCADAMS JANE	SINGLE FAM	2329	OFF SHOR	CT		CON TO ALIGN WITH WETLANDS AND PLAT MAP
00-00-31-1652-0016-0000	THE RESIDENCE AT AMELIA LANDINGS	R-2	CONSERVATION	OLIVER SHARON D	SINGLE FAM	2347	OFF SHOR	CT		CON TO ALIGN WITH WETLANDS AND PLAT MAP
00-00-31-1800-0287-0002	CITY OF FERNANDINA BEACH S/D	I-1	MEDIUM DENSITY RESIDENTIAL	MILLER MATTHEW & JOELYNN	VACANT IND		S 5TH	ST		R-2
00-00-31-1800-0287-0130	CITY OF FERNANDINA BEACH S/D	I-1	MEDIUM DENSITY RESIDENTIAL	MILLER MATTHEW & JOELYNN	VACANT IND	615	5TH	ST		R-2
00-00-31-1800-0287-0150	CITY OF FERNANDINA BEACH S/D	I-1	MEDIUM DENSITY RESIDENTIAL	MILLER MATTHEW & JOELYNN	VACANT	410	FIR	ST		R-2

ZONING CONFLICT

00-00-31-1800-0288-0040	CITY OF FERNANDINA BEACH S/D	I-1	MEDIUM DENSITY RESIDENTIAL	YORK WAYNE & BETTY R	SINGLE FAM	731	6TH	ST		R-2
00-00-31-1800-0288-0060	CITY OF FERNANDINA BEACH S/D	I-1	MEDIUM DENSITY RESIDENTIAL	WALKER GERALDINE	SINGLE FAM	715	6TH	ST		R-2
20-3N-29-0000-0014-0150	Not in a Subdivision	MU-1	GENERAL COMMERCIAL	SLM AMELIA ISLAND LLC	RETIREMENT	1900	AMELIA TR	CT		C-1
27-3N-28-1192-000C-0000	CITRONA	R-1	CONSERVATION	SHELL COVE HOMEOWNERS ASSC INC	COMMON S/D		SHELL COVE	CR		CON
27-3N-28-1192-000D-0000	CITRONA	R-1	CONSERVATION	SHELL COVE HOMEOWNERS ASSC INC	COMMON S/D		SHELL COVE	CR		CON
00-00-31-1180-0018-0040	CITRONA SUB	R-1	CONSERVATION	CITY OF FERNANDINA BEACH	MUNICIPAL		GUM	ST		CON
00-00-31-1800-0279-0011	CITY OF FERNANDINA BEACH S/D	MU-1/ R-2	MIXED USE/ MEDIUM DENSITY RESIDENTIAL	BUCHANAN DIANA L	SINGLE FAM	402	5 3RD	ST		ORDINANCE CONFLICT 04-35 - Mapping drawn incorrectly
00-00-31-1800-0279-0120	CITY OF FERNANDINA BEACH S/D	MU-1/ R-2	MIXED USE/ MEDIUM DENSITY RESIDENTIAL	KOHLMAN DOUGLAS SCOTT	SINGLE FAM	324	5 3RD	ST		ORDINANCE CONFLICT 04-35 - Mapping drawn incorrectly



PROPERTY INFORMATION

Parcel Number 00-00-31-1014-0001-0000

Owner Name AMELIA COMMERCIAL PROPERTIES
Mailing Address LLC
PO BOX 471
FERNANDINA BEACH, FL 320350471
Location Address ASKINS ST
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20 3245
Homestead No
Property Usage VACANT 000000
Deed Acres 0
Short Legal LOT 1 PT OR 2191/1014 AMELIA HEIGHTS SUB PB 5/169

2019 Preliminary Values (Subject to Change)

Land Value \$85,000
(+) Improved Value \$0
(=) Market Value \$85,000
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$85,000
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$85,000
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$85,000



Map This Parcel

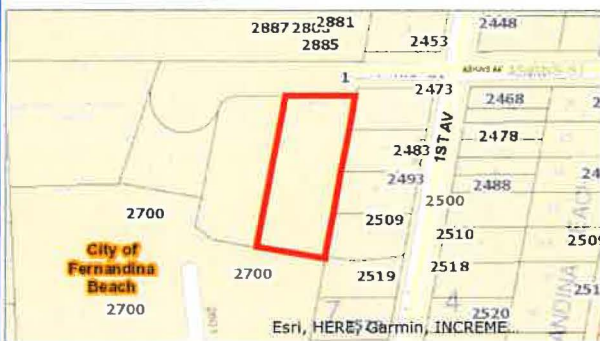
GIS Report

Property Record Card

Print Friendly Page

Note - 113% Cap does not apply to School Taxable Value

PARCEL MAP



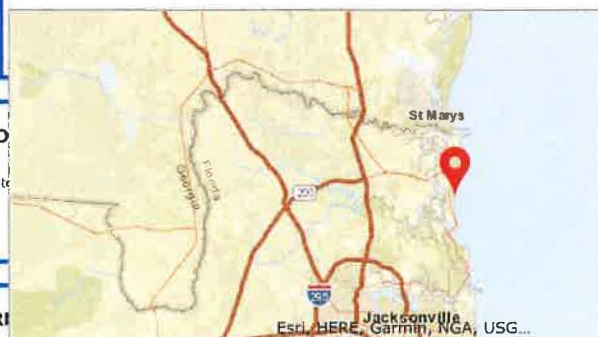
2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassaulpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2018-04-20	2191 / 1014	\$100	QC	U	N	O'CONNER JAMES PRATT ET AL	AMELIA COMMERCIAL PROPERTIES LLC



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1014-0002-0000

Owner Name AMELIA COMMERCIAL PROPERTIES
Mailing Address LLC
PO BOX 471
FERNANDINA BEACH, FL 320350471
Location Address ASKINS ST
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage VACANT 000000
Deed Acres 0
Short Legal LOT 2 PT OR 2191/1014 AMELIA HEIGHTS SUB PB 5/169

2019 Preliminary Values (Subject to Change)

Land Value \$75,000
(+) Improved Value \$0
(=) Market Value \$75,000
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$75,000
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$75,000
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$75,000



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note: *10% Cap does not apply to School Taxable Value

PARCEL MAP



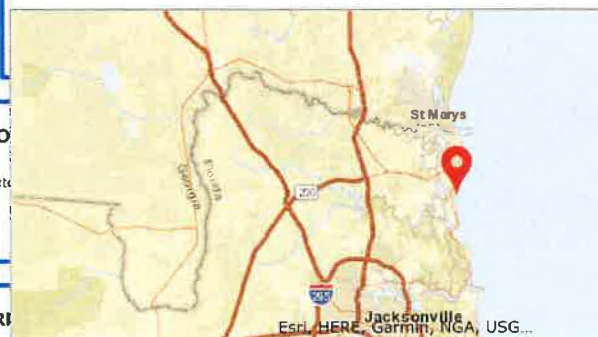
2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassaulpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2018-04-20	2191 / 1014	\$100	QC	U	N	O'CONNOR JAMES PRATT ET AL	AMELIA COMMERCIAL PROPERTIES LLC



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1014-0003-0000

Owner Name AMELIA COMMERCIAL PROPERTIES
Mailing Address LLC
PO BOX 471
FERNANDINA BEACH, FL 320350471
Location Address ASKINS ST
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage VACANT 000000
Deed Acres 0
Short Legal LOT 3 PT OR 2191/1014 AMELIA HEIGHTS SUB PB 5/169

2019 Preliminary Values (Subject to Change)

Land Value \$50,000
(+) Improved Value \$0
(=) Market Value \$50,000
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$50,000
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$50,000
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$50,000



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



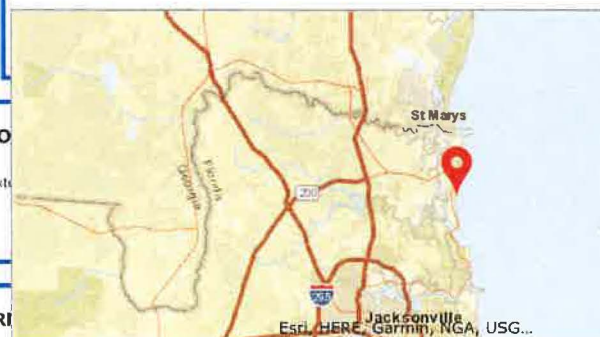
2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassaulpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
------	------------	-------------	----------	-------	-------------

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2018-04-20	2191 / 1014	\$100	QC	U	N	O'CONNER JAMES PRATT ET AL	AMELIA COMMERCIAL PROPERTIES LLC



PROPERTY INFORMATION

Parcel Number 00-00-31-1014-0004-0000

Owner Name AMELIA COMMERCIAL PROPERTIES
 Mailing Address LLC
 PO BOX 471
 FERNANDINA BEACH, FL 320350471
 Location Address ASKINS ST
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead No
 Property Usage VACANT 000000
 Deed Acres 0
 Short Legal LOT 4 PT OR 2191/1014 AMELIA HEIGHTS SUB PB 5/169

2019 Preliminary Values (Subject to Change)

Land Value \$85,000
 (+) Improved Value \$0
 (=) **Market Value** \$85,000
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$
 (=) **Assessed Value** \$85,000
 (-) Homestead \$0
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$85,000
 (-) Non-School HX & Other Exempt Value \$0
 (=) **County Taxable Value** \$85,000



Map This Parcel



GIS Report



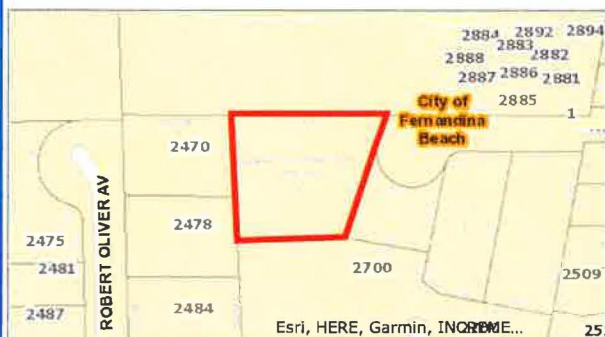
Property Record Card



Print Friendly Page

Note - 10% Cap does not apply to School Taxable Value

PARCEL MAP



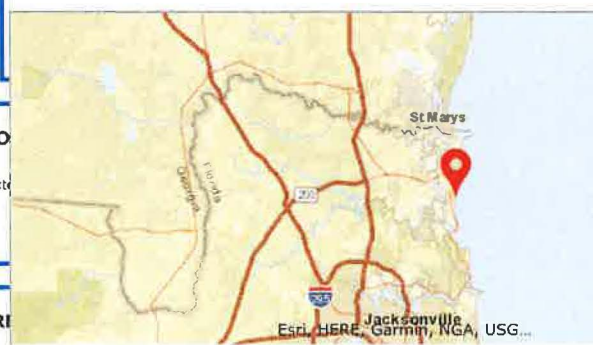
2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassaulpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2018-04-20	2191 / 1014	\$100	QC	U	N	O'CONNER JAMES PRATT ET AL	AMELIA COMMERCIAL PROPERTIES LLC



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1180-0017-0050

Owner Name CITY OF FERNANDINA BEACH
Mailing Address 204 ASH STREET
FERNANDINA BEACH, FL 32304
Location Address GUM ST
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage MUNICIPAL 008900
Deed Acres 0.56
Short Legal PT LOT 17 IN OR 2185/1437 CITRONA S/D OF SEC 28-3N-28E UNR

2019 Preliminary Values (Subject to Change)

Land Value	\$		Map This Parcel
(+) Improved Value	\$0		
(=) Market Value	\$100		GIS Report
(-) Agricultural Classification	\$0		
(-) SOH or Non-Hx* Capped Savings	\$		Property Record Card
(=) Assessed Value	\$100		
(-) Homestead	\$0		Print Friendly Page
(-) Additional Exemptions	\$		
(=) School Taxable Value	\$0		
(-) Non-School HX & Other Exempt Value	\$		
(=) County Taxable Value	\$0		

*Note: 112% Cap does not apply to School Taxable Value

PARCEL MAP



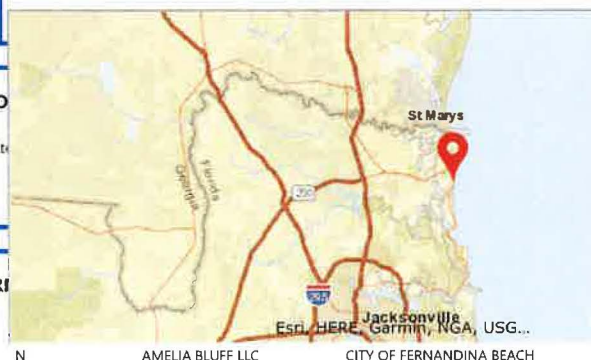
2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassaulpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2018-03-20	2185 / 1437	\$0	MS	U



PROPERTY INFORMATION

Parcel Number 00-00-31-1180-0017-0060

Owner Name CITY OF FERNANDINA BEACH

Mailing Address 204 ASH STREET

Location Address FERNANDINA BEACH, FL 32034

GUM ST

FERNANDINA BEACH 32034

Tax District FERNANDINA BEACH

Millage 20.3245

Homestead Yes

Property Usage MUNICIPAL 008900

Deed Acres 3.63

Short Legal PT LOT 17 IN OR 2185/1446 CITRONA S/D OF SEC 28-3N-28E UNR

2019 Preliminary Values (Subject to Change)

Land Value	\$	
(+) Improved Value	\$0	
(=) Market Value	\$363	
(-) Agricultural Classification	\$0	
(-) SOH or Non-Hx* Capped Savings	\$	
(=) Assessed Value	\$363	
(-) Homestead	\$0	
(-) Additional Exemptions	\$	
(=) School Taxable Value	\$0	
(-) Non-School HX & Other Exempt Value	\$	
(=) County Taxable Value	\$0	

Map This Parcel

GIS Report

Property Record Card

Print Friendly Page

Note - *13.5 Cap does not apply to School Taxable Value

PARCEL MAP



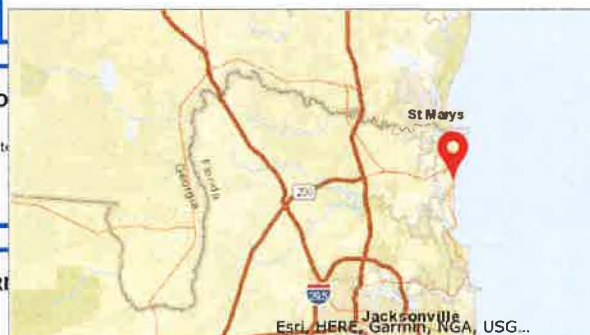
2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2018-03-20	2185 / 1446	\$0	MS	U

AMELIA BLUFF LLC CITY OF FERNANDINA BEACH



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1180-0018-0010

Owner Name STATE OF FLORIDA DEPARTMENT
Mailing Address OF TRANSPORTATION
1109 SOUTH MARION AVENUE
LAKE CITY, FL 320255874
Location Address GUM ST
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage VAC GOVERN 008000
Deed Acres 0.64
Short Legal PT LOT 18 IN OR 1128/1917 BEING PARCEL "B13-A" CITRONA S/D
UNR

2019 Preliminary Values (Subject to Change)

Land Value \$100
(+) Improved Value \$0
(=) Market Value \$100
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$100
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$0
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$0



Map This Parcel



GIS Report



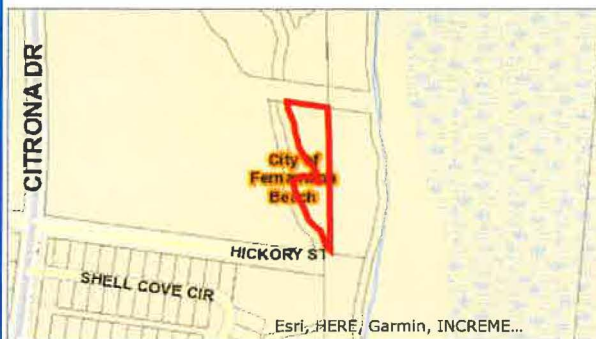
Property Record Card



Print Friendly Page

Note: *10% Cap does not apply to School Taxable Value

PARCEL MAP



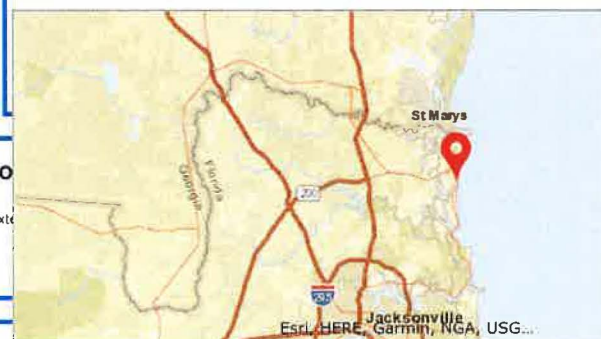
2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP

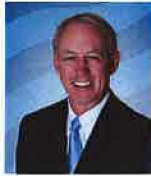


BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFORMATION

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
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A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1180-0018-0030

Owner Name CITY OF FERNANDINA BEACH
Mailing Address 204 ASH STREET
FERNANDINA BEACH, FL 32304
Location Address GUM ST
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage MUNICIPAL 008900
Deed Acres 0.36
Short Legal PT LOT 18 IN OR 2185/1437 CITRONA S/D OF SEC 28-3N-28E UNR

2019 Preliminary Values (Subject to Change)

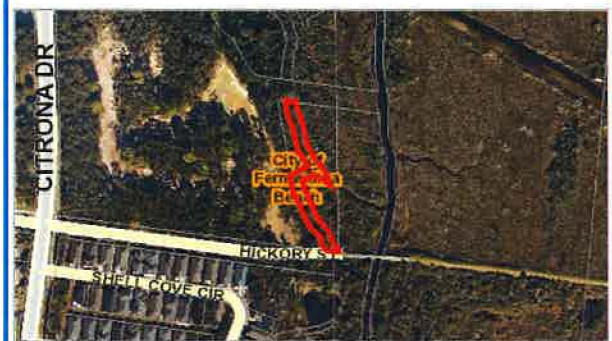
Land Value	\$	
(+) Improved Value	\$0	Map This Parcel
(=) Market Value	\$100	
(-) Agricultural Classification	\$0	GIS Report
(-) SOH or Non-Hx* Capped Savings	\$	
(=) Assessed Value	\$100	Property Record Card
(-) Homestead	\$0	
(-) Additional Exemptions	\$	Print Friendly Page
(=) School Taxable Value	\$0	
(-) Non-School HX & Other Exempt Value	\$	
(=) County Taxable Value	\$0	

Note: 11% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO

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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2018-03-20	2185 / 1437	\$0	MS	U



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1180-0018-0040

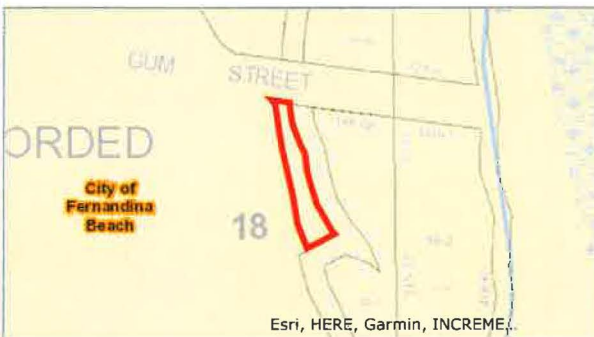
Owner Name CITY OF FERNANDINA BEACH
Mailing Address 204 ASH STREET
FERNANDINA BEACH, FL 32034
Location Address GUM ST
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage MUNICIPAL 008900
Deed Acres 0.13
Short Legal PT LOT 18 IN OR 2185/1446 CITRONA S/D OF SEC 28-3N-28E UNR

2019 Preliminary Values (Subject to Change)

Land Value	\$		Map This Parcel
(+) Improved Value	\$0		
(=) Market Value	\$100		GIS Report
(-) Agricultural Classification	\$0		
(-) SOH or Non-Hx* Capped Savings	\$		Property Record Card
(=) Assessed Value	\$100		
(-) Homestead	\$0		Print Friendly Page
(-) Additional Exemptions	\$		
(=) School Taxable Value	\$0		
(-) Non-School HX & Other Exempt Value	\$		
(=) County Taxable Value	\$0		

*Note - 12% Cap does not apply to School Taxable Value

PARCEL MAP



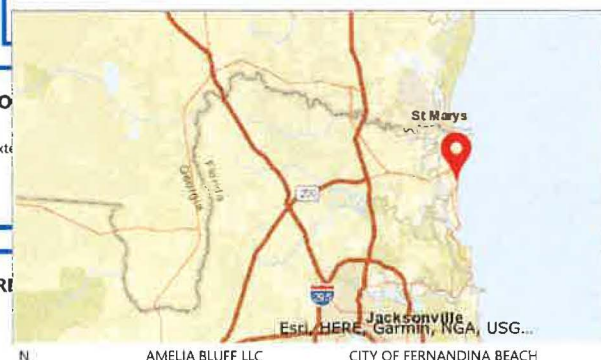
2019 AERIAL MAP



PROPERTY PHOTO

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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2018-03-20	2185 / 1446	\$0	MS	U



PROPERTY INFORMATION

Parcel Number 00-00-31-1180-0022-0010

Owner Name SEALS & ASSOCIATES INC
 Mailing Address 300 WILLOW BEND ROAD #200
 PEACHTREE CITY, GA 302693349
 Location Address CITRONA DR
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead No
 Property Usage VACANT 000000
 Deed Acres 4.34
 Short Legal PT OF LOTS 22 & 23 IN OR 2009/1932 CITRONA UNR

2019 Preliminary Values (Subject to Change)

Land Value \$134,300
 (+) Improved Value \$0
 (=) **Market Value** **\$134,300**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$
 (=) **Assessed Value** **\$59,290**
 (-) Homestead \$0
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$134,300
 (-) Non-School HX & Other Exempt Value \$0
 (=) **County Taxable Value** **\$59,290**



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note - *13% Cap does not apply to School Taxable Value

PARCEL MAP



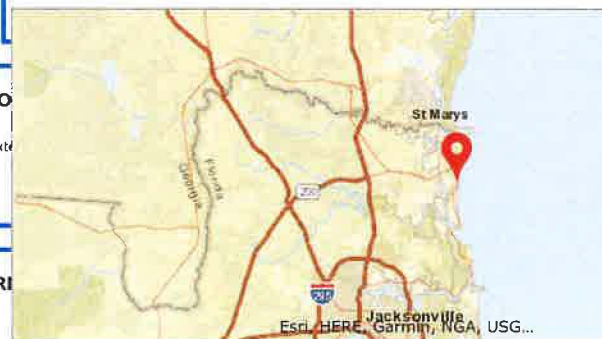
2019 AERIAL MAP



PROPERTY PHOTO

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LOCATION MAP



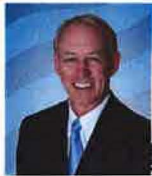
BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFO

Sale Date	Book Page	Price	Instr	Qual		
2015-08-30	2009 / 1932	\$100	WD	U	N	
1990-12-28	615 / 745	\$100	WD	U	N	

OCEAN VIEW APARTMENTS LIMITED
 PARTNERSHIP
 OCEAN VIEW APTS
 SEALS & ASSOCIATES INC
 SEALS & ASSOCIATES



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY

PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0001-0000

Owner Name CECIL BRYANT & KIMBERLY

Mailing Address 126 SASSER RD

Location Address WAYCROSS, GA 31503

925 TARPON AVE (UNIT) 1

FERNANDINA BEACH 32034

Tax District FERNANDINA BEACH

Millage 20.3245

Homestead No

Property Usage SINGLE FAM 000100

Deed Acres 0

Short Legal LOT 1 IN OR 2031/1741 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000

(+) Improved Value \$107,548

(=) **Market Value** \$177,548

(-) Agricultural Classification \$0

(-) SOH or Non-Hx* Capped Savings \$

(=) **Assessed Value** \$174,187

(-) Homestead \$0

(-) Additional Exemptions \$0

(=) School Taxable Value \$177,548

(-) Non-School HX & Other Exempt Value \$0

(=) **County Taxable Value** \$174,187

Note - *13% Cap does not apply to School Taxable Value



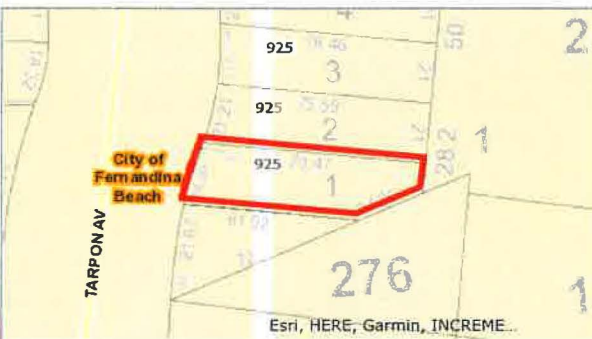
Map This Parcel

GIS Report

Property Record Card

Print Friendly Page

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	2331	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual		
2016-03-01	2031 / 1741	\$177,500	WD	Q	Y	BESSELMAN JOHN P & TRISHA CECIL BRYANT & KIMBERLY
2005-02-28	1298 / 1107	\$191,000	WD	Q	Y	SURRENCY NANCY A COCHRAN BESSELMAN JOHN P & TRISHA
1998-04-20	830 / 928	\$51,000	WD	Q	Y	PAGE KIMBERLY COCHRAN NANCY A



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0002-0000

Owner Name LANGLOIS JOSEPH R D JR
 Mailing Address 925 TARPON AVE #2
 Location Address FERNANDINA BEACH, FL 32034
 925 TARPON AV (UNIT) 2
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead Yes
 Property Usage SINGLE FAM 000100
 Deed Acres 0
 Short Legal LOT 2 IN OR 2062/1828 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
 (+) Improved Value \$102,516
 (=) **Market Value** **\$172,516**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$48,326
 (=) **Assessed Value** **\$124,190**
 (-) Homestead \$25,000
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$99,190
 (-) Non-School HX & Other Exempt Value \$25,000
 (=) **County Taxable Value** **\$74,190**



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

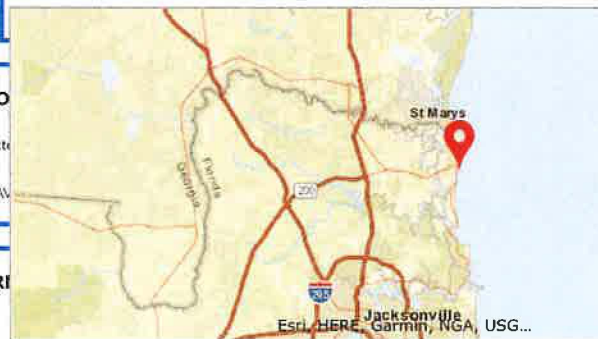


PROPERTY PHOTO



If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2016-07-29	2062 / 1828	\$185,000	WD	Q
2004-05-28	1234 / 747	\$156,000	WD	Q
1993-07-20	685 / 315	\$44,600	WD	Q

Seller	Buyer
HARRIS ROBERT P & BRITTA S	LANGLOIS JOSEPH R D JR
CHANCEY JAMES H & MARIA	HARRIS ROBERT P & BRITTA S
FUDGE GERALD & SUE	CHANCEY JAMES & M



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0003-0000

Owner Name WILDES JAMES L JR & MARY G
 Mailing Address 925 TARPON AVE #3
 Location Address FERNANDINA BEACH, FL 32034
 925 TARPON AV (UNIT) 3
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead Yes
 Property Usage SINGLE FAM 000100
 Deed Acres 0
 Short Legal LOT 3 IN OR 1871/1090 NORTH POINTE PB 5/26

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
 (+) Improved Value \$102,814
 (=) **Market Value** **\$172,814**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$15,765
 (=) **Assessed Value** **\$157,049**
 (-) Homestead \$25,000
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$132,049
 (-) Non-School HX & Other Exempt Value \$25,000
 (=) **County Taxable Value** **\$107,049**



Map This Parcel



GIS Report



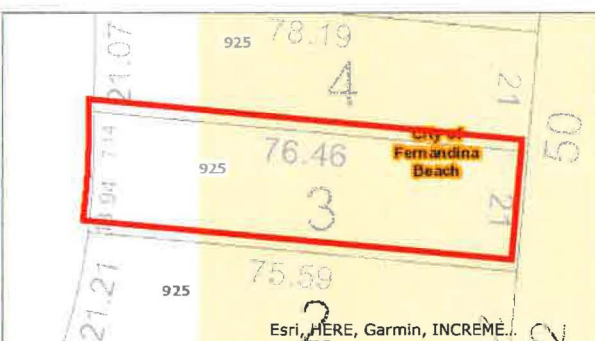
Property Record Card



Print Friendly Page

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

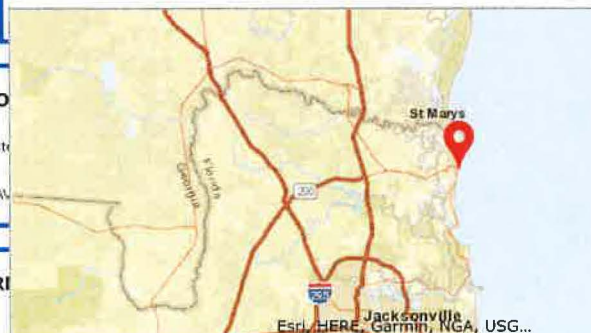


PROPERTY PHOTO



If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2013-07-19	1871 / 1090	\$142,000	WD	Q

HEGGENSTALLER BRUCE W & BARBARA S
 WILDES JAMES L JR & MARY G



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0005-0000

Owner Name TUKEVA JANICE L &
Mailing Address EMRICK GARY J (W&H)
3452 SW 52ND AVE
BUSHNELL, FL 33513
Location Address 925 TARPON AV (UNIT) 5
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 5 IN OR 2207/29 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$102,555
(=) Market Value \$172,555
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$172,555
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$172,555
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$172,555



Map This Parcel



GIS Report



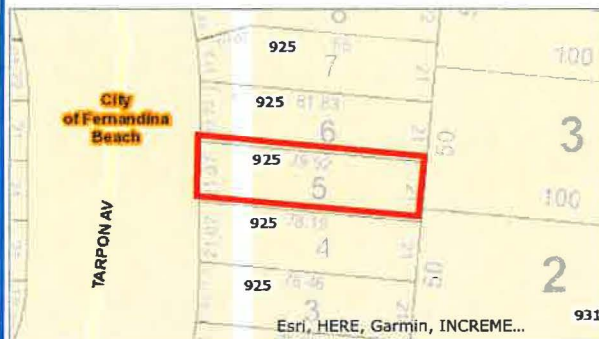
Property Record Card



Print Friendly Page

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2018-06-27	2207 / 29	\$235,000	WD	Q	Y	TOZZI GINO & KIM	TUKEVA JANICE L & GARY J EMRICK (W&H)



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY

PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0006-0000

Owner Name SHEEN MARIE L M
Mailing Address 51 CENTER RD
SHIRLEY, MA 01464
Location Address 925 TARPON AV (UNIT) 6
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 6 IN OR 652 PG 365 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$103,107
(=) Market Value \$173,107
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$169,854
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$173,107
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$169,854



Map This Parcel



GIS Report



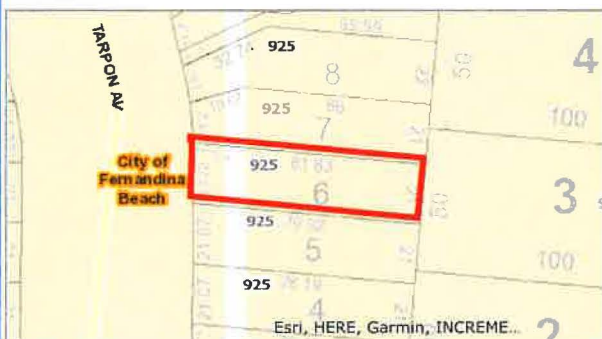
Property Record Card



Print Friendly Page

Note - *12% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	
1992-03-19	652 / 365	\$42,500	WD	Q	Y
1982-04-01	357 / 597	\$40,000	WD	Q	Y
1981-02-01	411 / 571	\$5,300	WD	U	Y

GODFREY WILLIAM E

SHEEN MARIE L M



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0008-0000

Owner Name DADDARIO JOSEPH E

Mailing Address 925 TARPON AV #8

Location Address FERNANDINA BEACH, FL 32034

925 TARPON AV (UNIT) 8

FERNANDINA BEACH 32034

Tax District FERNANDINA BEACH

Millage 20.3245

Homestead Yes

Property Usage SINGLE FAM 000100

Deed Acres 0

Short Legal LOT 8 IN OR 1239/344 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value	\$70,000
(+) Improved Value	\$102,244
(=) Market Value	\$172,244
(-) Agricultural Classification	\$0
(-) SOH or Non-Hx* Capped Savings	\$49,022
(=) Assessed Value	\$123,222
(-) Homestead	\$25,000
(-) Additional Exemptions	\$500
(=) School Taxable Value	\$97,722
(-) Non-School HX & Other Exempt Value	\$25,000
(=) County Taxable Value	\$72,722

Note - *10% Cap does not apply to School Taxable Value



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2004-06-18	1239 / 344	\$152,800	WD	Q
1999-11-15	907 / 1902	\$84,000	WD	Q

ARTHUR JESSICA L DADDARIO JOSEPH E
NEAGLE JOSEPH LEE & DOROTHY E ARTHUR JESSICA L



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0009-0000

Owner Name: HELWIG WAYNE
 Mailing Address: 925 TARPON AVE #9
 Location Address: FERNANDINA BEACH, FL 32034
 Location Address: 925 TARPON AV (UNIT) 9
 Location Address: FERNANDINA BEACH 32034
 Tax District: FERNANDINA BEACH
 Millage: 20.3245
 Homestead: Yes
 Property Usage: SINGLE FAM 000100
 Deed Acres: 0
 Short Legal: LOT 9 IN OR 1890/802 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value: \$70,000
 (+) Improved Value: \$102,971
 (=) **Market Value**: **\$172,971**
 (-) Agricultural Classification: \$0
 (-) SOH or Non-Hx* Capped Savings: \$15,770
 (=) **Assessed Value**: **\$157,201**
 (-) Homestead: \$25,000
 (-) Additional Exemptions: \$0
 (=) School Taxable Value: \$132,201
 (-) Non-School HX & Other Exempt Value: \$25,000
 (=) **County Taxable Value**: **\$107,201**



Map This Parcel



GIS Report



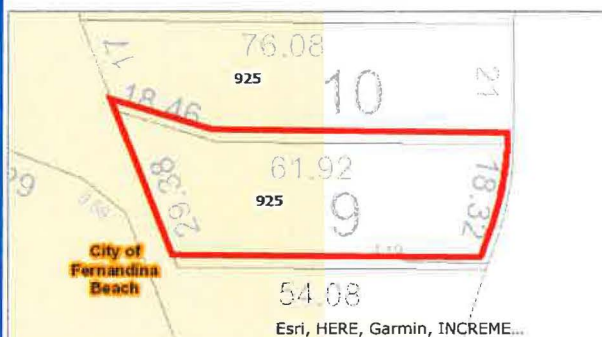
Property Record Card



Print Friendly Page

Note: *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

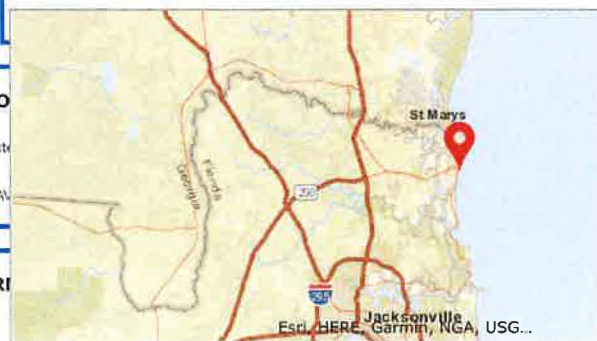


PROPERTY PHOTO



If this picture is incorrect, please email info@nassaulpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2013-10-23	1890 / 802	\$138,000	WD	Q

FEDERAL HOME LOAN MORTGAGE CORPORATION

HELWIG WAYNE



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-000A-0000

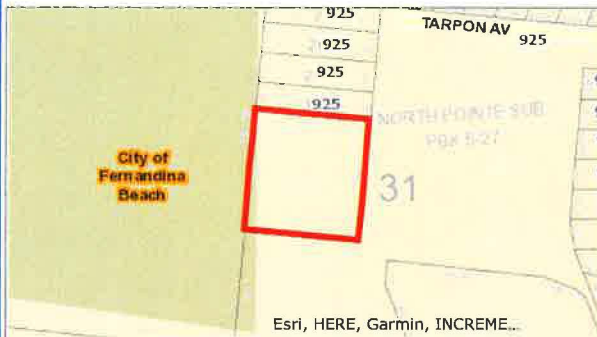
Owner Name NORTH POINTE OF FERNANDINA
Mailing Address BEACH HOMEOWNERS ASSOC INC
13609 N MAIN STREET
JACKSONVILLE, FL 32218
Location Address TARPON AV
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage COMMON S/D 000005
Deed Acres 0
Short Legal TRACT A COMMON AREA NORTH POINTE REPLAT

2019 Preliminary Values (Subject to Change)

Land Value	\$		Map This Parcel
(+) Improved Value	\$0		
(=) Market Value	\$100		GIS Report
(-) Agricultural Classification	\$0		
(-) SOH or Non-Hx* Capped Savings	\$		Property Record Card
(=) Assessed Value	\$100		
(-) Homestead	\$0		Print Friendly Page
(-) Additional Exemptions	\$		
(=) School Taxable Value	\$100		
(-) Non-School HX & Other Exempt Value	\$		
(=) County Taxable Value	\$100		

Note: *12% Cap does not apply to School Taxable Value

PARCEL MAP



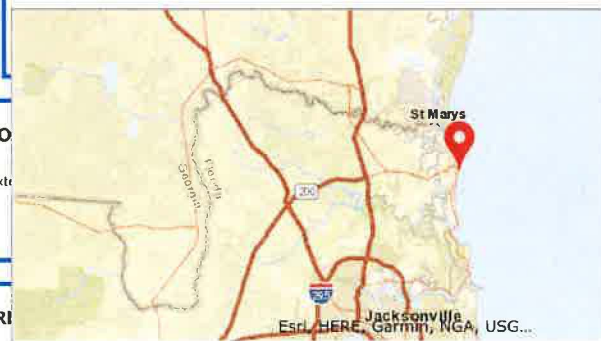
2019 AERIAL MAP



PROPERTY PHOTO

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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
------	------------	-------------	----------	-------	-------------

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
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A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-000B-0000

Owner Name NORTH POINTE OF FERNANDINA
Mailing Address BEACH HOMEOWNERS ASSOC INC
13609 N MAIN STREET
JACKSONVILLE, FL 32218
Location Address TARPON AV
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage COMMON S/D 000005
Deed Acres 0
Short Legal TRACT B COMMON AREA NORTH POINTE REPLAT

2019 Preliminary Values (Subject to Change)

Land Value	\$	
(+) Improved Value	\$0	
(=) Market Value	\$100	
(-) Agricultural Classification	\$0	
(-) SOH or Non-Hx* Capped Savings	\$	
(=) Assessed Value	\$100	
(-) Homestead	\$0	
(-) Additional Exemptions	\$	
(=) School Taxable Value	\$100	
(-) Non-School HX & Other Exempt Value	\$	
(=) County Taxable Value	\$100	

Note: *13% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO

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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
------	------------	-------------	----------	-------	-------------

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
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NASSAU COUNTY

PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0010-0000

Owner Name DILEO FRANK
Mailing Address 925 TARPON AVE #10
Location Address 925 TARPON AV (UNIT) 10
FERNANDINA BEACH, FL 32034
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 10 IN OR 2145/1895 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$102,859
(=) Market Value \$172,859
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$34,508
(=) Assessed Value \$138,351
(-) Homestead \$25,000
(-) Additional Exemptions \$0
(=) School Taxable Value \$113,351
(-) Non-School HX & Other Exempt Value \$25,000
(=) County Taxable Value \$88,351



Map This Parcel



GIS Report



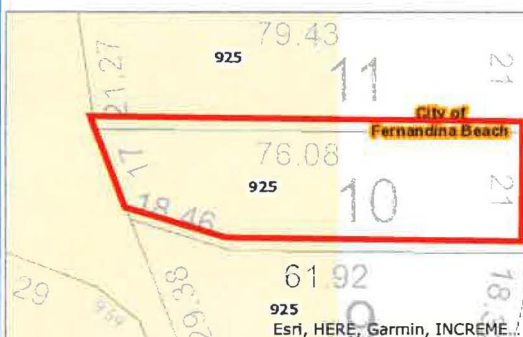
Property Record Card



Print Friendly Page

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

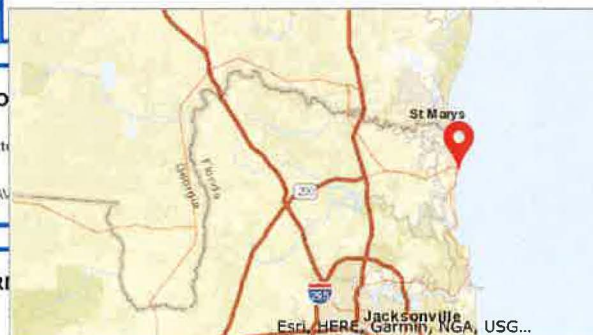


PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2017-09-18	2145 / 1895	\$145,100	CT	U
1997-04-03	789 / 528	\$14,500	WD	U
1989-09-06	578 / 529	\$48,000	WD	Q

CLERK OF COURT	DILEO FRANK
STAFFORD MARGUERITE S	STAFFORD MARTIN J
QUINN FRANCIS & S	STAFFORD MARTIN & M



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0011-0000

Owner Name CARR HOUSTON H
Mailing Address 925 TARPON AV #11
FERNANDINA BEACH, FL 32034
Location Address 925 TARPON AV (UNIT) 11
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 11 IN OR 1830/1137 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$102,624
(=) Market Value \$172,624
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$48,680
(=) Assessed Value \$123,944
(-) Homestead \$25,000
(-) Additional Exemptions \$0
(=) School Taxable Value \$98,944
(-) Non-School HX & Other Exempt Value \$25,000
(=) County Taxable Value \$73,944



Map This Parcel



GIS Report



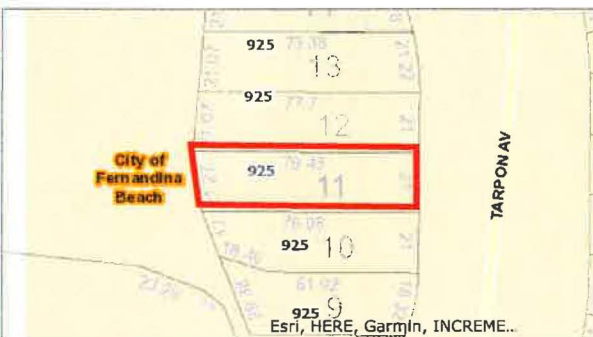
Property Record Card



Print Friendly Page

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

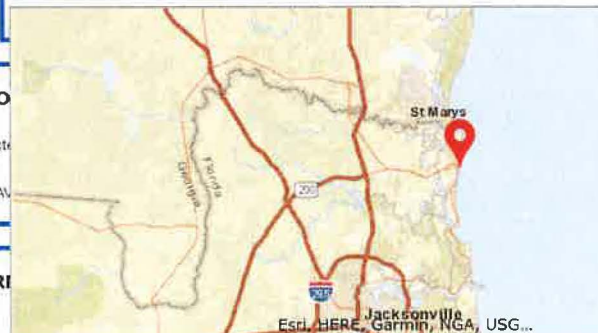


PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual		
2012-12-17	1830 / 1137	\$125,000	WD	Q	Y	HIGHTMAN PHILIP C TRUSTEE CARR HOUSTON H
2000-12-13	961 / 1925	\$100	WD	U	Y	HIGHTMAN PHILIP C HIGHTMAN PHILIP C TRUSTEE
1986-11-01	502 / 1246	\$39,000	WD	Q	Y	



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Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0012-0000

Owner Name HOLDEN SYDNEY B
Mailing Address PO BOX 626
FERNANDINA BEACH, FL 320350626
Location Address 925 TARPON AV (UNIT) 12
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 12 IN OR 987/138 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$106,139
(=) Market Value \$176,139
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$68,562
(=) Assessed Value \$107,577
(-) Homestead \$25,000
(-) Additional Exemptions \$0
(=) School Taxable Value \$82,577
(-) Non-School HX & Other Exempt Value \$25,000
(=) County Taxable Value \$57,577



Map This Parcel



GIS Report



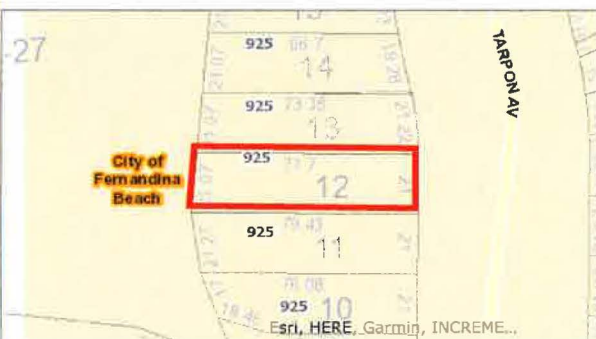
Property Record Card



Print Friendly Page

Note: *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

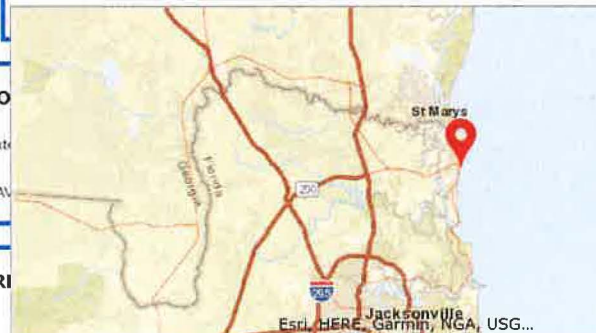


PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1218	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual		
2001-05-17	987 / 138	\$75,000	WD	Q	Y	HIGHSMITH RAMON E & JACKIE I HOLDEN SYDNEY B
1996-12-11	779 / 217	\$49,500	WD	Q	Y	SHARMA KAPIL HIGHSMITH RAMON E & JACKIE I
1989-01-04	560 / 358	\$45,900	WD	Q	Y	PROCTOR RALPH M SHARMA LEELA



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NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0013-0000

Owner Name SANDUSKY CHARLES E & CAROL S
Mailing Address 1501 PLUNKETTS ROAD
BUFORD, GA 30519
Location Address 925 TARPON AV (UNIT) 13
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 13 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$108,275
(=) Market Value \$178,275
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$178,275
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$178,275
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$178,275



Map This Parcel



GIS Report



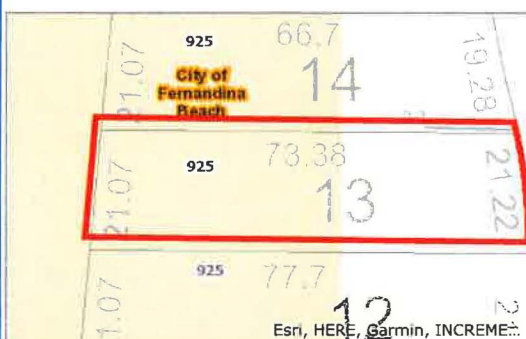
Property Record Card



Print Friendly Page

Note - *12% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

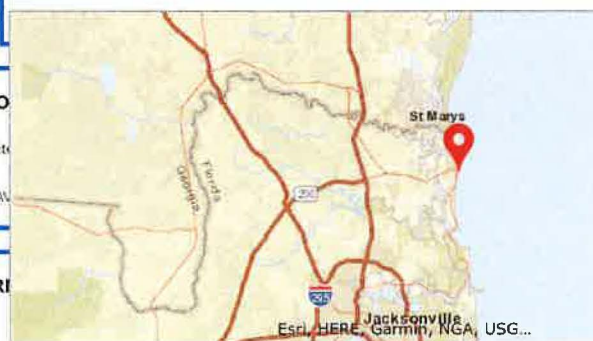


PROPERTY PHOTO



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LOCATION MAP

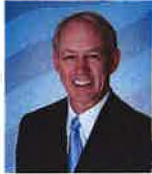


BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual		
2019-03-20	2263 / 107	\$270,000	WD	Q	Y	LEWIS RITCHIE N SR & SHEILA M SANDUSKY CHARLES E & CAROL S (H&W)
2017-03-27	2109 / 1671	\$170,000	PR	U	Y	MILLS JOHN A JR & DELAMA LEWIS RITCHIE N SR & SHEILA M



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NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0015-0000

Owner Name COSGROVE GREGORY J &
Mailing Address JAMES KIM M (H&W)
P O BOX 16145
FERNANDINA BEACH, FL 32035
Location Address 925 TARPON AV (UNIT) 15
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 15 IN OR 1779/732 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$110,498
(=) Market Value \$180,498
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$16,385
(=) Assessed Value \$164,113
(-) Homestead \$25,000
(-) Additional Exemptions \$5,000
(=) School Taxable Value \$134,113
(-) Non-School HX & Other Exempt Value \$25,000
(=) County Taxable Value \$109,113

Note: *10% Cap does not apply to School Taxable Value



Map This Parcel



GIS Report

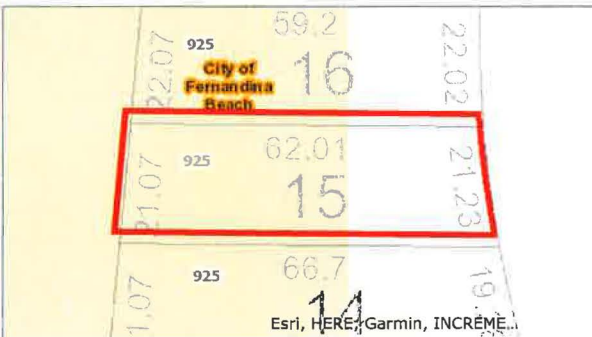


Property Record Card



Print Friendly Page

PARCEL MAP



2019 AERIAL MAP

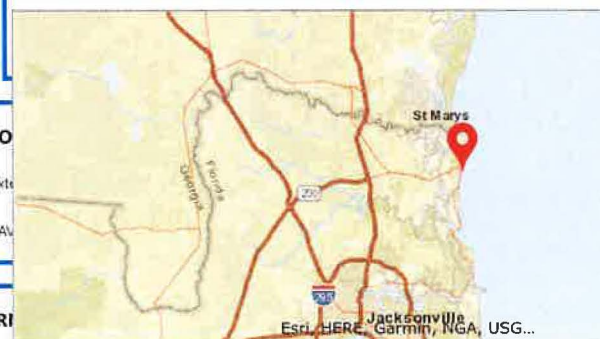


PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Exte
TOWNHOUSE	1986	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2012-02-13	1779 / 732	\$133,000	WD	Q	Y	SCOTT'S USA INC	COSGROVE GREGORY J & KIM M JAMES



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY

PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0016-0000

Owner Name SCRUGGS SETH A & CARRIE

Mailing Address 1512 HUCKBERRY CT

ST JOHNS, FL 32259

Location Address 925 TARPON AV (UNIT) 16
FERNANDINA BEACH 32034

Tax District FERNANDINA BEACH

Millage 20.3245

Homestead No

Property Usage SINGLE FAM 000100

Deed Acres 0

Short Legal LOT 16 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value	\$70,000
(+) Improved Value	\$105,510
(=) Market Value	\$175,510
(-) Agricultural Classification	\$0
(-) SOH or Non-Hx* Capped Savings	\$
(=) Assessed Value	\$172,256
(-) Homestead	\$0
(-) Additional Exemptions	\$0
(=) School Taxable Value	\$175,510
(-) Non-School HX & Other Exempt Value	\$0
(=) County Taxable Value	\$172,256



Map This Parcel



GIS Report



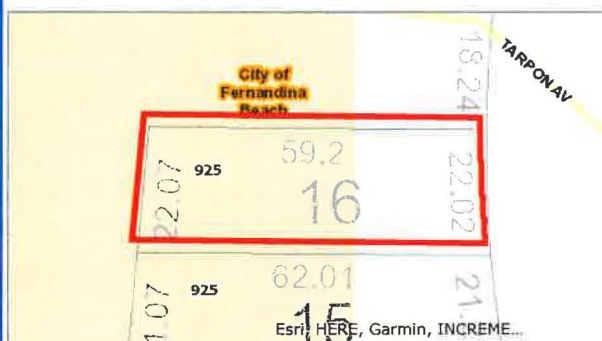
Property Record Card



Print Friendly Page

Note - 10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFOR

Sale Date	Book Page	Price	Instr	Qual	
2019-04-17	2369 / 580	\$100	QC	U	Y
2012-11-02	1822 / 1767	\$80,000	WD	U	Y

SCRUGGS SETH A & FOREST &
DEBORAH STEVENS
SCRUGGS SETH A & CARRIE (H&W)
STEVENS FOREST L & DEBORAH L



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Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0017-0000

Owner Name BELLINGER JOSEPH N JR & BRENDA

Mailing Address 925 TARPON AVE #17

Location Address FERNANDINA BEACH, FL 32034

925 TARPON AV (UNIT) 17

FERNANDINA BEACH 32034

Tax District FERNANDINA BEACH

Millage 20.3245

Homestead Yes

Property Usage SINGLE FAM 000100

Deed Acres 0

Short Legal LOT 17 IN OR 682/272 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value	\$70,000
(+) Improved Value	\$104,478
(=) Market Value	\$174,478
(-) Agricultural Classification	\$0
(-) SOH or Non-HX* Capped Savings	\$48,410
(=) Assessed Value	\$126,068
(-) Homestead	\$25,000
(-) Additional Exemptions	\$0
(=) School Taxable Value	\$101,068
(-) Non-School HX & Other Exempt Value	\$25,000
(=) County Taxable Value	\$76,068



Map This Parcel



GIS Report



Property Record Card



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Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
1993-06-03	682 / 272	\$52,500	WD	Q
1991-08-23	634 / 528	\$52,500	WD	Q
1983-05-01	388 / 142	\$100	WD	U

ZABOREK FRANK & P

COUCH CHARLES A

BELLINGER JOSEPH JR

ZABOREK E FRANK & P



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0018-0000

Owner Name WHITE SHIRLEY L &
 Mailing Address HAMMITT NORMAN JEFFREY
 4850 SE DEVENWOOD WAY
 STUART, FL 34997
 Location Address 925 TARPON AV (UNIT) 18
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead No
 Property Usage SINGLE FAM 000100
 Deed Acres 0
 Short Legal LOT 18 IN OR 2042/1723 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
 (+) Improved Value \$109,767
 (=) **Market Value** **\$179,767**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$
 (=) **Assessed Value** **\$176,503**
 (-) Homestead \$0
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$179,767
 (-) Non-School HX & Other Exempt Value \$0
 (=) **County Taxable Value** **\$176,503**



Map This Parcel



GIS Report



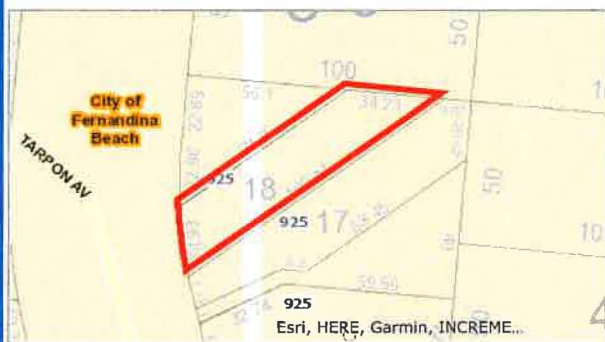
Property Record Card



Print Friendly Page

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2016-04-25	2042 / 1723	\$100	WD	U	Y	WHITE BRIAN C	HAMMITT NORMAN JEFFREY
2006-08-10	1436 / 596	\$230,000	WD	Q	Y	LINDSAY WILLIAM D & LOLA JANE	WHITE BRIAN C



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0019-0000

Owner Name KASUN DAVID M
 Mailing Address 925 TARPON AVE #19
 Location Address 925 TARPON AV (UNIT) 19
 FERNANDINA BEACH, FL 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead Yes
 Property Usage SINGLE FAM 000100
 Deed Acres 0
 Short Legal LOT 19 IN OR 981/655 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
 (+) Improved Value \$102,560
 (=) **Market Value** **\$172,560**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$66,055
 (=) **Assessed Value** **\$106,505**
 (-) Homestead \$25,000
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$81,505
 (-) Non-School HX & Other Exempt Value \$25,000
 (=) **County Taxable Value** **\$56,505**



Map This Parcel



GIS Report



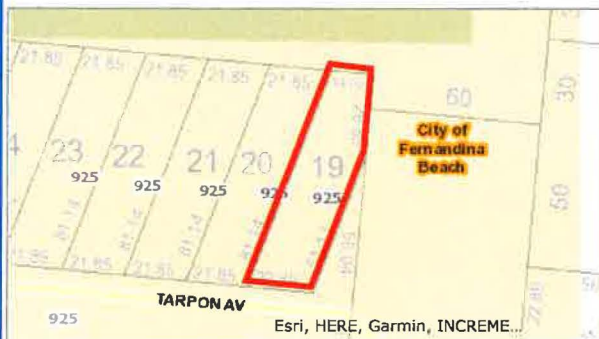
Property Record Card



Print Friendly Page

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Y
2001-04-12	981 / 655	\$93,000	WD	Q	Y
1988-06-30	546 / 903	\$43,500	WD	Q	Y
1982-09-01	369 / 267	\$45,500	WD	U	Y

WILLARD JAMES E & BARBARA G KASUN DAVID M
 STEVENSON LESLIE & H WILLARD JAMES & B G



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0020-0000

Owner Name LEE MARTHA R &
 Mailing Address ABERNATHY JAMES C
 925 TARPON AV UNIT #20
 FERNANDINA BEACH, FL 32034
 Location Address 925 TARPON AV (UNIT) 20
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead Yes
 Property Usage SINGLE FAM 000100
 Deed Acres 0
 Short Legal LOT 20 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
 (+) Improved Value \$102,560
 (=) **Market Value** **\$172,560**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$112,903
 (=) **Assessed Value** **\$59,657**
 (-) Homestead \$25,000
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$34,657
 (-) Non-School HX & Other Exempt Value \$9,657
 (=) **County Taxable Value** **\$25,000**



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

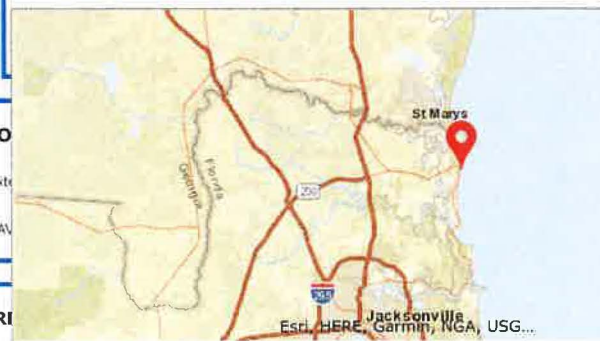


PROPERTY PHOTO



If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2019-06-12	2281 / 813	\$100	QC	U	Y	LEE MARTHA R	LEE MARTHA R & JAMES C ABERNATHY



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0021-0000

Owner Name GIBSON CLAUDIA G
Mailing Address 228 SOUTH VIEW TRAIL #20158
JASPER, GA 30143
Location Address 925 TARPON AV (UNIT) 21
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 21 IN OR 1764/887 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$110,459
(=) Market Value \$180,459
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$177,121
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$180,459
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$177,121



Map This Parcel



GIS Report



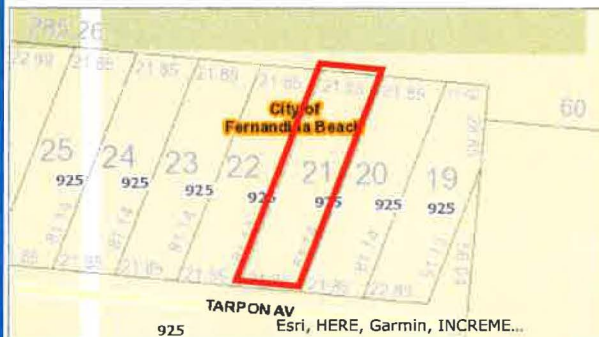
Property Record Card



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Note - *12% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1991	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2011-11-07	1764 / 887	\$142,000	WD	Q
2005-06-09	1324 / 481	\$205,000	WD	Q
1995-05-15	729 / 1234	\$48,500	WD	Q

PARKER GREGORY S & ALICIA

GIBSON CLAUDIA G

MINOR LAURA A

PARKER GREGORY S & ALICIA

NERMOR PETER J

MINOR LAURA A



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0022-0000

Owner Name DAVIS JAMES & RICHARD(3/9INT)&
 Mailing Address DAVIS THOMAS F & JAMES W &
 RICHARD T (2/9 INT EACH)
 566 WEST MAIN STREET
 FOREST CITY, NC 28043
 Location Address 925 TARPON AV (UNIT) 22
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead No
 Property Usage SINGLE FAM 000100
 Deed Acres 0
 Short Legal LOT 22 IN OR 491/224 & OR 1699/431 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
 (+) Improved Value \$102,552
 (=) **Market Value** **\$172,552**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$
 (=) **Assessed Value** **\$169,223**
 (-) Homestead \$0
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$172,552
 (-) Non-School HX & Other Exempt Value \$0
 (=) **County Taxable Value** **\$169,223**



Map This Parcel



GIS Report



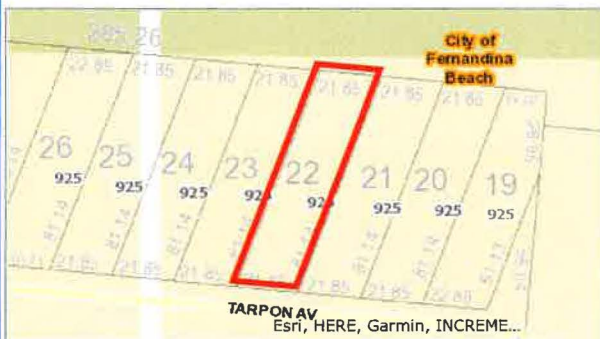
Property Record Card



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Note: +10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2010-08-26	1699 / 431	\$25,000	WD	U	Y	JOLLEY LAVONNE B & LEWIS ETAL	DAVIS JAMES W & RICHARD T DAVIS (3/9 INT)



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY

PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0023-0000

Owner Name CAFFEE KENNETH DAVID & DIANE M
Mailing Address TRUSTEES OF KENNETH & DIANE
CAFFEE REVOCABLE LIVING TRUST
8960 WATER TUPELO RD
FORT MYERS, FL 32912
Location Address 925 TARPON AV (UNIT) 23
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 23 IN OR 1453/1989 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$106,855
(=) Market Value \$176,855
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$176,855
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$176,855
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$176,855



Map This Parcel



GIS Report



Property Record Card



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Note - *12% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1992	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2006-10-23	1:53 / 1989	\$100	WD	U	Y	CAFFEE KENNETH DAVID & DIANE M	CAFFEE KENNETH D SR & DIANE M TRUSTEES



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY

PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0024-0000

Owner Name DAWSON KATHY S
Mailing Address PO BOX 392

HAWKINSVILLE, GA 31036
Location Address 925 TARPON AV (UNIT) 24
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 24 IN OR 1633/64 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$106,614
(=) Market Value \$176,614
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$173,250
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$176,614
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$173,250



Map This Parcel



GIS Report



Property Record Card



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Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Y
2009-07-31	1633 / 64	\$131,000	WD	U	Y
1995-07-21	734 / 1114	\$48,000	WD	Q	Y

BEALE ELAINE
COTTRELL LEONARD F & KATHRYN
M

DAWSON KATHY S
BEALE ELAINE



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY

PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0025-0000

Owner Name PARTUS FREDERICK PAUL TRUSTEE
Mailing Address FREDERICK PAUL PARTUS TRUST
7180 BRANDON MILL ROAD
ATLANTA, GA 30328
Location Address 925 TARPON AV (UNIT) 25
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 25 IN OR 814/1981 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$102,657
(=) Market Value \$172,657
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$169,344
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$172,657
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$169,344

Note - *13% Cap does not apply to School Taxable Value



Map This Parcel



GIS Report



Property Record Card



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PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
1997-11-26	814 / 1981	\$100	WD	U	Y	PARTUS FREDERICK PAUL	PATRUS FREDERICK PAUL TRUSTEE
1983-07-01	392 / 693	\$52,400	WD	Q	Y		



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0026-0000

Owner Name DUCHEN RICHARD L & JEANNE P
Mailing Address 3382 STONECREST CT

ATLANTA, GA 30341
Location Address 925 TARPON AV (UNIT) 26
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 26 IN OR 1084/1381 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$102,345
(=) Market Value \$172,345
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$168,955
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$172,345
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$168,955

Note: *12% Cap does not apply to School Taxable Value



Map This Parcel



GIS Report

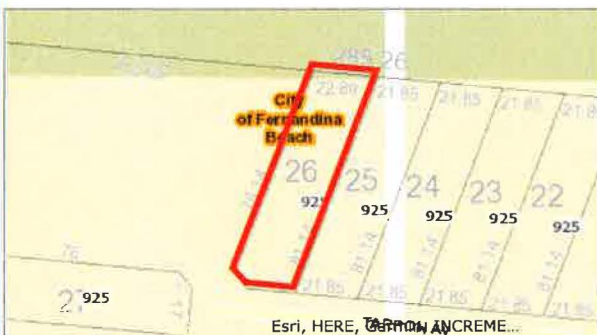


Property Record Card



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PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2002-10-03	1084 / 1381	\$130,000	WD	Q
1996-02-08	750 / 1896	\$51,500	WD	Q
1982-09-01	369 / 623	\$45,500	WD	U

PETTINGILL MICHAEL R DUCHEN RICHARD L & JEANNE P
LAMB RONALD G PETTINGILL MICHAEL R



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0027-0000

Owner Name WEISFELD ELINOR
Mailing Address 925 TARPON AVE APT 27
FERNANDINA BEACH, FL 32034
Location Address 925 TARPON AV (UNIT) 27
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 27 IN OR 2133/339 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$105,383
(=) Market Value \$175,383
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$50,573
(=) Assessed Value \$124,810
(-) Homestead \$25,000
(-) Additional Exemptions \$0
(=) School Taxable Value \$99,810
(-) Non-School HX & Other Exempt Value \$25,000
(=) County Taxable Value \$74,810

Note - *13% Cap does not apply to School Taxable Value



Map This Parcel



GIS Report

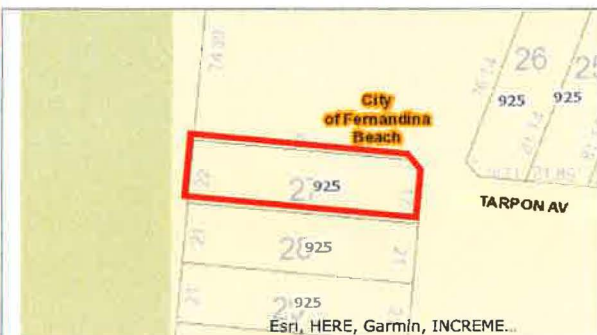


Property Record Card



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PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	2124	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual		
2017-05-15	2133 / 339	\$100	QC	U	Y	WEISFELD JEFFREY M WEISFELD ELINOR
2009-06-09	1624 / 914	\$210,000	WD	Q	Y	FOLEY LINDA WEISFELD JEFFREY M & ELINOR
2004-05-19	1231 / 1199	\$152,000	WD	Q	Y	PALMISANO PAUL A & LAURA J FOLEY LINDA



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0028-0000

Owner Name LEMACKS STANLEY R
Mailing Address 925 TARPON AVE # 28
Location Address FERNANDINA BEACH, FL 32034
925 TARPON AV (UNIT) 28
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 28 IN OR 562 PG 736 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$101,971
(=) Market Value \$171,971
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$112,314
(=) Assessed Value \$59,657
(-) Homestead \$25,000
(-) Additional Exemptions \$0
(=) School Taxable Value \$34,657
(-) Non-School HX & Other Exempt Value \$9,657
(=) County Taxable Value \$25,000



Map This Parcel



GIS Report



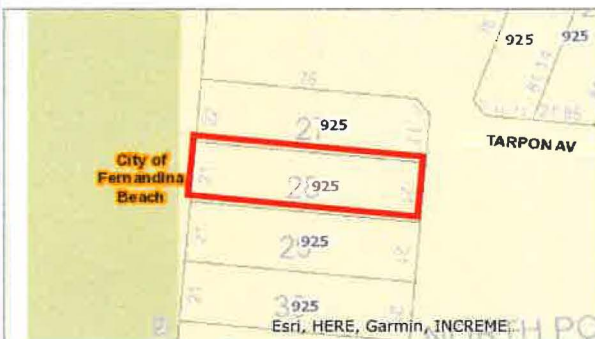
Property Record Card



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Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	
1989-02-03	562 / 736	\$43,000	WD	Q	Y
1984-05-01	419 / 701	\$43,000	WD	Q	Y
1983-04-01	385 / 310	\$47,900	WD	Q	Y

HERBERT WM & LESLIE

LEMACKS STANLEY R



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0029-0000

Owner Name ELLIOTT CHARLES S & KATHLEEN L
Mailing Address ELLIOTT IAN MATTHEW (JT/RS)
18 LAKEWOOD RD
MANASQUAN, NJ 08736
Location Address 925 TARPON AV (UNIT) 29
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 29 IN OR 1966/1902 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
(+) Improved Value \$102,255
(=) Market Value \$172,255
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$168,860
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$172,255
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$168,860

Note - *10% Cap does not apply to School Taxable Value



Map This Parcel



GIS Report

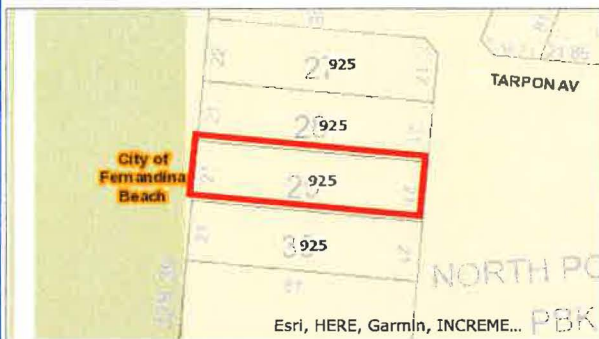


Property Record Card



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PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Extr
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2015-03-06	1966 / 1902	\$185,000	WD	Q	Y	RABINOWE WILLIAM B & CARMEN C	ELLIOTT CHARLES S & KATHLEEN L ET AL



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-0030-0000

Owner Name THUENLING THOMAS G
 Mailing Address 925 TARPON AVE UNIT #30
 Location Address FERNANDINA BEACH, FL 32034
 925 TARPON AV (UNIT) 30
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead Yes
 Property Usage SINGLE FAM 000100
 Deed Acres 0
 Short Legal LOT 30 IN OR 722 PG 1626 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$70,000
 (+) Improved Value \$102,753
 (=) **Market Value** **\$172,753**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$113,096
 (=) **Assessed Value** **\$59,657**
 (-) Homestead \$25,000
 (-) Additional Exemptions \$500
 (=) School Taxable Value \$34,157
 (-) Non-School HX & Other Exempt Value \$9,657
 (=) **County Taxable Value** **\$24,500**



Map This Parcel



GIS Report



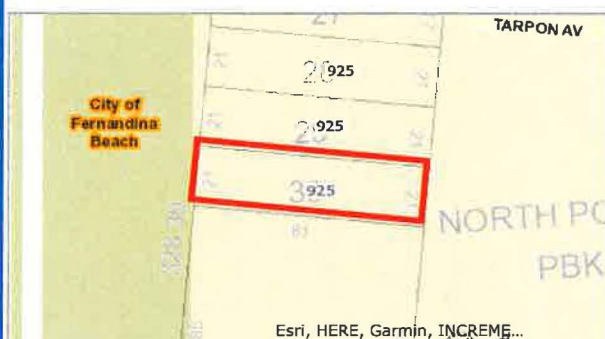
Property Record Card



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Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
TOWNHOUSE	1827	1150	2	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
1995-01-27	722 / 1626	\$46,200	WD	Q
1983-12-01	407 / 564	\$49,900	WD	Q
1983-06-01	390 / 208	\$39,900	WD	Q



PROPERTY INFORMATION

Parcel Number 00-00-31-1470-00E1-0000

Owner Name NORTH POINTE HOMEOWNERS
 Mailing Address ASSOCIATION INC
 PO BOX 1312
 FERNANDINA BEACH, FL 320351312
 Location Address TARPON AV
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead No
 Property Usage COMMON S/D 000005
 Deed Acres 0
 Short Legal IN OR 521 PG 483 ESMTS 1 2 & 3 NORTH POINTE PB 5/27

2019 Preliminary Values (Subject to Change)

Land Value \$100
 (+) Improved Value \$0
 (=) **Market Value** \$100
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$
 (=) **Assessed Value** \$100
 (-) Homestead \$0
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$100
 (-) Non-School HX & Other Exempt Value \$0
 (=) **County Taxable Value** \$100



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note - HOS Tax does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO

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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
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A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1652-0012-0000

Owner Name HUTZELL CRAIG L & MARY KAY
Mailing Address 2309 OFF SHORE COURT
FERNANDINA BEACH, FL 32034
Location Address 2309 OFF SHORE CT
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOTS 12 & 13 IN OR 2031/33 THE RESIDENCE @ AMELIA

2019 Preliminary Values (Subject to Change)

Land Value \$250,000
(+) Improved Value \$390,093
(=) Market Value \$640,093
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$7,092
(=) Assessed Value \$633,001
(-) Homestead \$25,000
(-) Additional Exemptions \$0
(=) School Taxable Value \$608,001
(-) Non-School HX & Other Exempt Value \$25,000
(=) County Taxable Value \$583,001



Map This Parcel



GIS Report



Property Record Card



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Note: -15% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

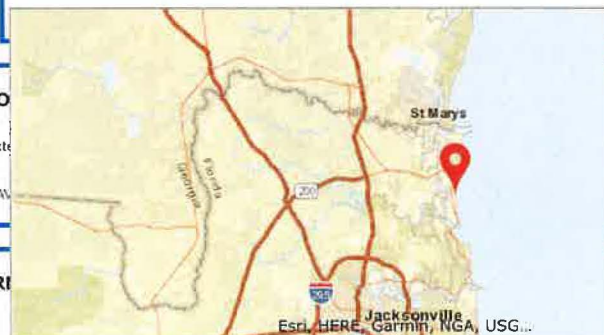


PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
SNGL FAM	4844	3125	4	3.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual		
2016-02-29	2031 / 33	\$725,000	WD	Q	Y	SPANGLER DAVID A & REBECCA A HUTZELL CRAIG L & MARY KAY
2008-03-25	1557 / 639	\$684,500	WD	U	Y	KING GEOFFREY D W & KIM SPANGLER DAVID A & REBECCA A
2003-10-15	1180 / 1442	\$565,000	WD	Q	Y	HINDS ALISON R KING GEOFFREY D W & KIM



PROPERTY INFORMATION

Parcel Number 00-00-31-1652-0015-0000

Owner Name MCADAMS JANE
 Mailing Address 2329 OFF SHORE COURT
 FERNANDINA BEACH, FL 32034
 Location Address 2329 OFF SHORE CT
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead Yes
 Property Usage SINGLE FAM 000100
 Deed Acres 0
 Short Legal LOT 15 IN OR 1410/171 THE RESIDENCE @ AMELIA

2019 Preliminary Values (Subject to Change)

Land Value \$125,000
 (+) Improved Value \$227,189
 (=) **Market Value** **\$352,189**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$144,965
 (=) **Assessed Value** **\$207,224**
 (-) Homestead \$25,000
 (-) Additional Exemptions \$500
 (=) School Taxable Value \$181,724
 (-) Non-School HX & Other Exempt Value \$25,000
 (=) **County Taxable Value** **\$156,724**



Map This Parcel



GIS Report



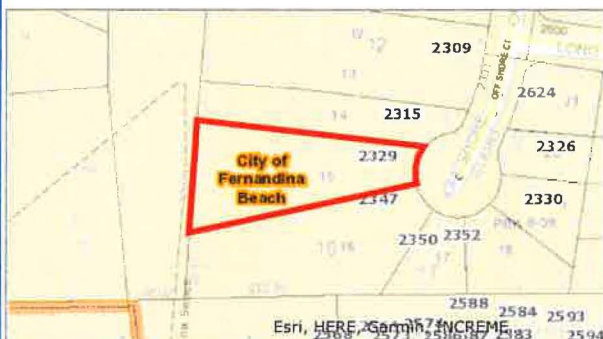
Property Record Card



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Note: *12% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

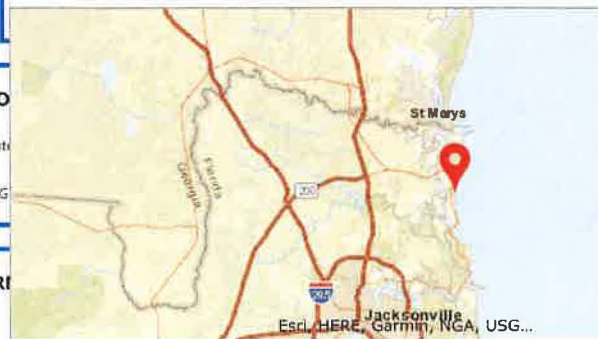


PROPERTY PHOTO



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LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
SNGL FAM	3349	2293	3	2	AVERAG

SALES INFO

Sale Date	Book Page	Price	Instr	Qual		
2006-05-05	1410 / 171	\$100	QC	U	Y	MCADAMS JANE MCADAMS KENNETH J & KEVIN SCOTT
1996-02-12	784 / 1270	\$40,400	WD	Q	N	AMELIA LANDINGS PARTNERSHIP MCADAMS KENNETH & JANE



PROPERTY INFORMATION

Parcel Number 00-00-31-1652-0016-0000

Owner Name OLIVER SHARON D
Mailing Address PO BOX 1001
VALDESE, NC 28690
Location Address 2347 OFF SHORE CT
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal LOT 16 & S-1 OF LOT 17 IN OR 2014/337 THE RESIDENCE @ AMELIA

2019 Preliminary Values (Subject to Change)

Land Value \$125,000
(+) Improved Value \$254,581
(=) Market Value \$379,581
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$51,767
(=) Assessed Value \$327,814
(-) Homestead \$25,000
(-) Additional Exemptions \$0
(=) School Taxable Value \$302,814
(-) Non-School HX & Other Exempt Value \$25,000
(=) County Taxable Value \$277,814



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note: *12% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

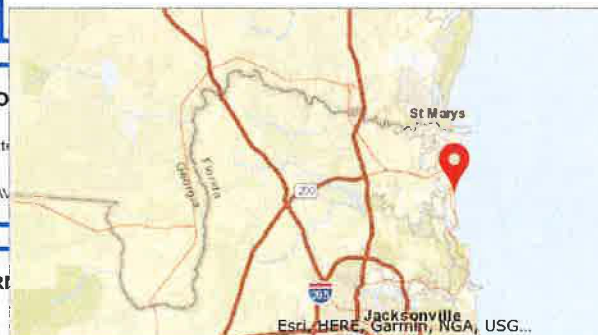


PROPERTY PHOTO



If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



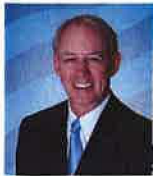
BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ex
SNGL FAM	3827	2664	3	2.5	ABOVE AV

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2015-11-11	2014 / 337	\$415,000	WD	Q
2013-06-26	1868 / 541	\$355,000	WD	Q

WOLLETT RONALD L & CYLESTE A OLIVER SHARON D
GENTRY JAMES L & CAROL K ETAL WOLLETT RONALD L & CYLESTE A



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1800-0287-0002

Owner Name MILLER MATTHEW & JOELYNN
Mailing Address 416 FIR ST
Location Address FERNANDINA BEACH, FL 32034
S 5TH ST
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage VACANT IND 004000
Deed Acres 0.34
Short Legal BLOCK 287 LOT 12 IN OR 1971/906 CITY OF FDNA BEACH

2019 Preliminary Values (Subject to Change)

Land Value \$35,000
(+) Improved Value \$0
(=) Market Value \$35,000
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$30,250
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$35,000
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$30,250



Map This Parcel



GIS Report



Property Record Card



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Note - 112% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFO

Sale Date	Book Page	Price	Instr	Qual			
2015-03-25	1971 / 902	\$7,100	SW	U	N	AMERIS BANK	MILLER MATTHEW & JOELYNN
2015-03-25	1971 / 904	\$7,100	SW	U	N	AMERIS BANK	MILLER MATTHEW & JOELYNN
2015-03-25	1971 / 906	\$7,100	SW	U	N	AMERIS BANK	MILLER MATTHEW & JOELYNN



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1800-0287-0130

Owner Name MILLER MATTHEW & JOEYNN
Mailing Address 416 FIR ST
Location Address FERNANDINA BEACH, FL 32034
615 5TH ST S
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage VACANT IND 004000
Deed Acres 0
Short Legal BLOCK 287 LOT 13 IN OR 1917/1203 CITY OF FDNA BEACH

2019 Preliminary Values (Subject to Change)

Land Value \$35,000
(+) Improved Value \$0
(=) Market Value \$35,000
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$30,250
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$35,000
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$30,250



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note - *13% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassaufpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
------	------------	-------------	----------	-------	-------------

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2014-05-08	1917 / 1203	\$9,000	SW	U

AMERIS BANK MILLER MATTHEW & JOEYNN



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY

PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1800-0287-0150

Owner Name MILLER MATTHEW & JOELYN
Mailing Address 416 FIR ST
Location Address 410 FIR ST
FERNANDINA BEACH, FL 32034
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage VACANT 000000
Deed Acres 0.11
Short Legal BLOCK 287 LOT 15 IN OR 1895/1830 CITY OF FDNA BEACH

2019 Preliminary Values (Subject to Change)

Land Value	\$45,000	
(+) Improved Value	\$0	
(=) Market Value	\$45,000	
(-) Agricultural Classification	\$0	
(-) SOH or Non-Hx* Capped Savings	\$	
(=) Assessed Value	\$12,884	
(-) Homestead	\$0	
(-) Additional Exemptions	\$0	
(=) School Taxable Value	\$45,000	
(-) Non-School HX & Other Exempt Value	\$0	
(=) County Taxable Value	\$12,884	

Note - *10% Cap does not apply to School Taxable Value

PARCEL MAP



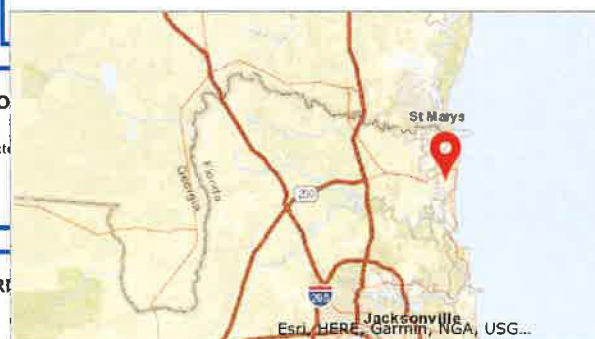
2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2013-12-20	1895 / 1830	\$9,000	SW	U

N



PROPERTY INFORMATION

Parcel Number 00-00-31-1800-0288-0040

Owner Name YORK WAYNE & BETTY R
 Mailing Address 731 S 6TH ST
 Location Address FERNANDINA BEACH, FL 32034
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead No
 Property Usage SINGLE FAM 000100
 Deed Acres 0
 Short Legal BLOCK 288 LOTS 4 & 5 L/E OR 1527/1412 CITY OF FDNA BEACH

2019 Preliminary Values (Subject to Change)

Land Value	\$136,640	
(+) Improved Value	\$72,385	
(=) Market Value	\$209,025	
(-) Agricultural Classification	\$0	
(-) SOH or Non-Hx* Capped Savings	\$	
(=) Assessed Value	\$163,790	
(-) Homestead	\$0	
(-) Additional Exemptions	\$0	
(=) School Taxable Value	\$209,025	
(-) Non-School HX & Other Exempt Value	\$0	
(=) County Taxable Value	\$163,790	

Note - *13% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

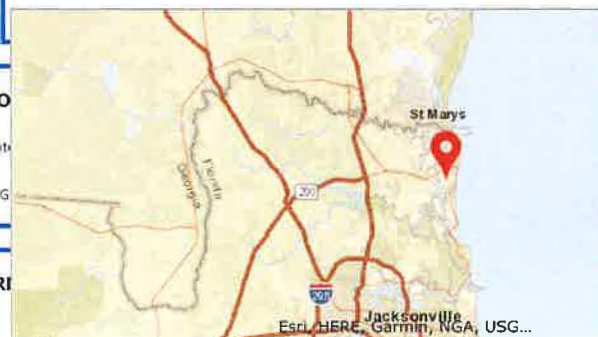


PROPERTY PHOTO



If this picture is incorrect, please email info@nassaulpa.com

LOCATION MAP



BUILDING INFO

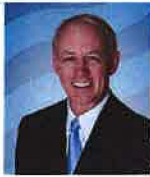
Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
SINGLE FAM	1301	1185	3	1	AVERAG

SALES INFOR

Sale Date	Book Page	Price	Instr	Qual	
2007-09-28	1527 / 1412	\$125,000	WD	U	Y
1978-01-01	257 / 82	\$3,800	WD	Q	Y

JONES FREDERICK J

YORK WAYNE & BETTY R



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY

PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1800-0288-0060

Owner Name WALKER GERALDINE
Mailing Address 715 S 6TH ST
Location Address FERNANDINA BEACH, FL 32034
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal BLOCK 288 LOT 6 OR 99 PG 480 CITY OF FDNA BEACH

2019 Preliminary Values (Subject to Change)

Land Value \$112,000
(+) Improved Value \$130,044
(=) Market Value \$242,044
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$96,994
(=) Assessed Value \$145,050
(-) Homestead \$25,000
(-) Additional Exemptions \$500
(=) School Taxable Value \$119,550
(-) Non-School HX & Other Exempt Value \$25,000
(=) County Taxable Value \$94,550



Map This Parcel



GIS Report



Property Record Card



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Note - *12% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

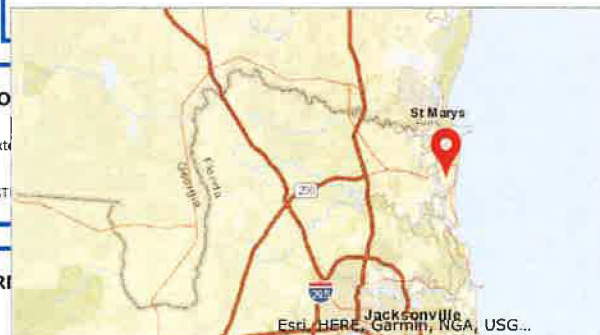


PROPERTY PHOTO



If this picture is incorrect, please email info@nassaulpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
SINGLE FAM	2676	2073	0	1	WD FR ST

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
1970-01-01	99 / 480	\$8,700	TA	Q



PROPERTY INFORMATION

Parcel Number 20-3N-29-0000-0014-0150

Owner Name SLM AMELIA ISLAND LLC
 Mailing Address 4611 JOHNSTON RD
 COCONUT CREEK, FL 33073
 Location Address 1900 AMELIA TRACE CT
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead No
 Property Usage RETIREMENT 000600
 Deed Acres 7.06
 Short Legal PT OF GOVT LOTS 1 & 2 IN OR 2095/816 EX 14-25

2019 Preliminary Values (Subject to Change)

Land Value \$1,059,000
 (+) Improved Value \$3,622,661
 (=) **Market Value** **\$4,681,661**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$
 (=) **Assessed Value** **\$4,681,661**
 (-) Homestead \$0
 (-) Additional Exemptions \$0
 (=) School Taxable Value \$4,681,661
 (-) Non-School HX & Other Exempt Value \$0
 (=) **County Taxable Value** **\$4,681,661**

Note: -13% Cap does not apply to School Taxable Value



Map This Parcel



GIS Report

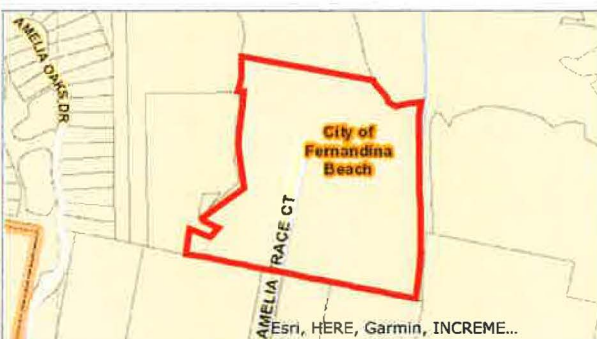


Property Record Card



Print Friendly Page

PARCEL MAP



2019 AERIAL MAP

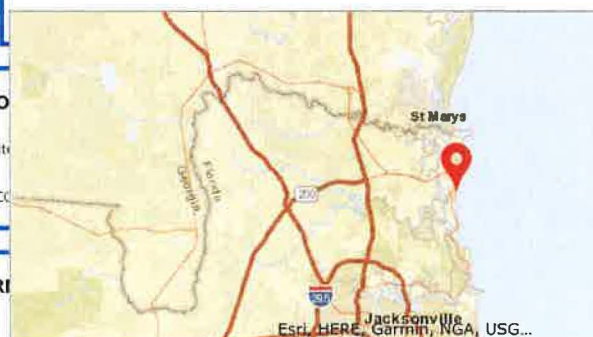


PROPERTY PHOTO



If this picture is incorrect, please email info@nassaulpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
NURS HOME	21988	21586	0	0	CB STUCCO

SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2017-01-17	2095 / 816	\$8,500,000	SW	U

CR INVESTMENTS OF AMELIA ISLAND LLC
 SLM AMELIA ISLAND LLC



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 27-3N-28-1192-000C-0000

Owner Name SHELL COVE HOMEOWNERS ASSC INC
Mailing Address 1880 S 14TH STREET STE # 103
Location Address FERNANDINA BEACH, FL 32034
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage COMMON S/D 000005
Deed Acres 0.22
Short Legal TRACT C VEGETATIVE NATURAL BUFFER SHELL COVE PBK 8/150

2019 Preliminary Values (Subject to Change)

Land Value \$100
(+) Improved Value \$0
(=) Market Value \$100
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$
(=) Assessed Value \$100
(-) Homestead \$0
(-) Additional Exemptions \$0
(=) School Taxable Value \$100
(-) Non-School HX & Other Exempt Value \$0
(=) County Taxable Value \$100



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note: 11.7% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext

SALES INFO

Sale Date	Book Page	Price	Instr	Qual



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER





PROPERTY INFORMATION

Parcel Number 27-3N-28-1192-000D-0000

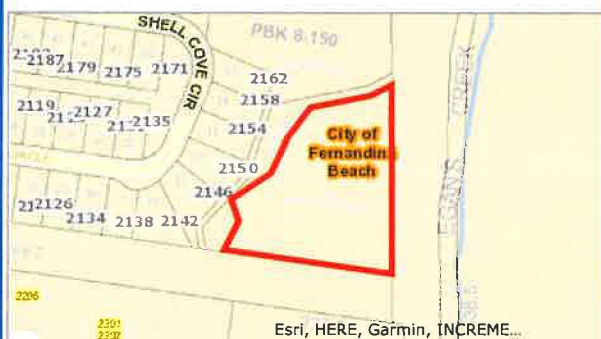
Owner Name SHELL COVE HOMEOWNERS ASSC INC
Mailing Address 1880 S 14TH STREET STE # 103
Location Address FERNANDINA BEACH, FL 32034
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead No
Property Usage COMMON S/D 000005
Deed Acres 0.96
Short Legal TRACT D JURISDICTIONAL WETLAND TRACT SHELL COVE PBK 8/150

2019 Preliminary Values (Subject to Change)

Land Value	\$100	
(+) Improved Value	\$0	
(=) Market Value	\$100	
(-) Agricultural Classification	\$0	
(-) SOH or Non-Hx* Capped Savings	\$	
(=) Assessed Value	\$100	
(-) Homestead	\$0	
(-) Additional Exemptions	\$0	
(=) School Taxable Value	\$100	
(-) Non-School HX & Other Exempt Value	\$0	
(=) County Taxable Value	\$100	

Note: *13% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFOR

Sale Date	Book Page	Price	Instr	Qual
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PROPERTY INFORMATION

Parcel Number 00-00-31-1180-0018-0040

Owner Name CITY OF FERNANDINA BEACH
 Mailing Address 204 ASH STREET
 Location Address FERNANDINA BEACH, FL 32034
 FERNANDINA BEACH 32034
 Tax District FERNANDINA BEACH
 Millage 20.3245
 Homestead Yes
 Property Usage MUNICIPAL 008900
 Deed Acres 0.13
 Short Legal PT LOT 18 IN OR 2185/1446 CITRONA S/D OF SEC 28-3N-28E UNR

2019 Preliminary Values (Subject to Change)

Land Value \$
 (+) Improved Value \$0
 (=) **Market Value** **\$100**
 (-) Agricultural Classification \$0
 (-) SOH or Non-Hx* Capped Savings \$
 (=) **Assessed Value** **\$100**
 (-) Homestead \$0
 (-) Additional Exemptions \$
 (=) School Taxable Value \$0
 (-) Non-School HX & Other Exempt Value \$
 (=) **County Taxable Value** **\$0**

Note - *10% Cap does not apply to School Taxable Value



Map This Parcel



GIS Report

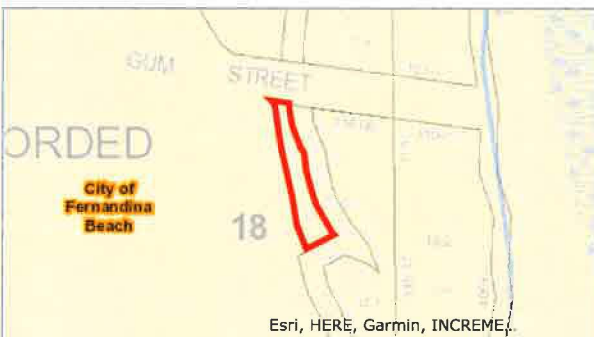


Property Record Card



Print Friendly Page

PARCEL MAP



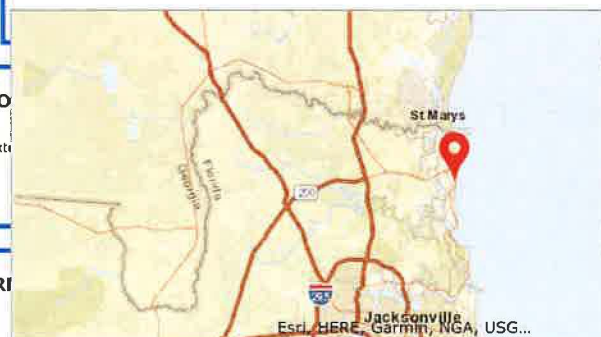
2019 AERIAL MAP



PROPERTY PHOTO

If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



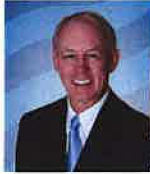
BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
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SALES INFO

Sale Date	Book Page	Price	Instr	Qual
2018-03-20	2185 / 1446	\$0	MS	U

AMELIA BLUFF LLC CITY OF FERNANDINA BEACH



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1800-0279-0011

Owner Name BUCHANAN DIANA L
Mailing Address 402 S 3RD ST
FERNANDINA BEACH, FL 32034
Location Address 402 3RD ST S
FERNANDINA BEACH 32034
Tax District FERNANDINA BEACH
Millage 20.3245
Homestead Yes
Property Usage SINGLE FAM 000100
Deed Acres 0
Short Legal BLOCK 279 LOT N1/2 OF 1 31-34 & N1/2 OF LOTS 27-30 OR 332/327 & OR 727/1871

2019 Preliminary Values (Subject to Change)

Land Value \$102,410
(+) Improved Value \$63,939
(=) Market Value \$166,349
(-) Agricultural Classification \$0
(-) SOH or Non-Hx* Capped Savings \$86,455
(=) Assessed Value \$79,894
(-) Homestead \$25,000
(-) Additional Exemptions \$500
(=) School Taxable Value \$54,394
(-) Non-School HX & Other Exempt Value \$54,394
(=) County Taxable Value \$0



Map This Parcel



GIS Report



Property Record Card



Print Friendly Page

Note - *12% Cap does not apply to School Taxable Value

PARCEL MAP



2019 AERIAL MAP

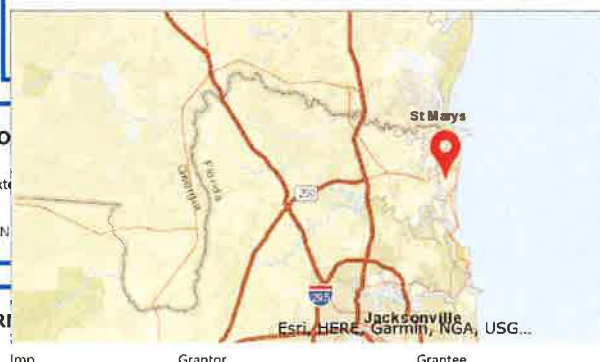


PROPERTY PHOTO



If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext
SINGLE FAM	1616	1106	4	1	AL SIDIN

SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp
1995-04-20	727 / 1871	\$100	WD	U	Y

Grantor BUCHANAN FARLEY T L & DIANA L Grantee BUCHANAN FARLEY T L & DIANA L



A. Michael Hickox, CFA
Cert. Res. RD1941

NASSAU COUNTY
PROPERTY APPRAISER



PROPERTY INFORMATION

Parcel Number 00-00-31-1800-0279-0120

Owner Name KOHLMAN DOUGLAS SCOTT

Mailing Address 324 ELM ST

FERNANDINA BEACH, FL 32034

Location Address 324 ELM ST

FERNANDINA BEACH 32034

Tax District FERNANDINA BEACH

Millage 20.3245

Homestead Yes

Property Usage SINGLE FAM 000100

Deed Acres 0

Short Legal BLOCK 279 LOTS 12 13 14 E OF SAL RR PT OR 1297/439 & PT OR

2167/1156

2019 Preliminary Values (Subject to Change)

Land Value \$

(+) Improved Value \$66,279

(=) **Market Value** **\$145,029**

(-) Agricultural Classification \$0

(-) SOH or Non-Hx* Capped Savings \$

(=) **Assessed Value** **\$115,526**

(-) Homestead \$0

(-) Additional Exemptions \$

(=) School Taxable Value \$90,526

(-) Non-School HX & Other Exempt Value \$

(=) **County Taxable Value** **\$65,526**

Note - *10% Cap does not apply to School Taxable Value



Map This Parcel



GIS Report



Property Record Card



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PARCEL MAP



2019 AERIAL MAP

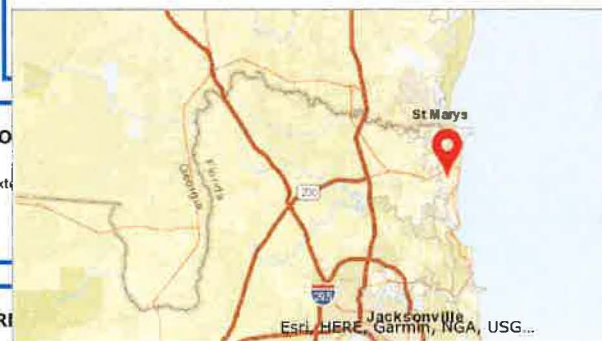


PROPERTY PHOTO



If this picture is incorrect, please email info@nassauflpa.com

LOCATION MAP



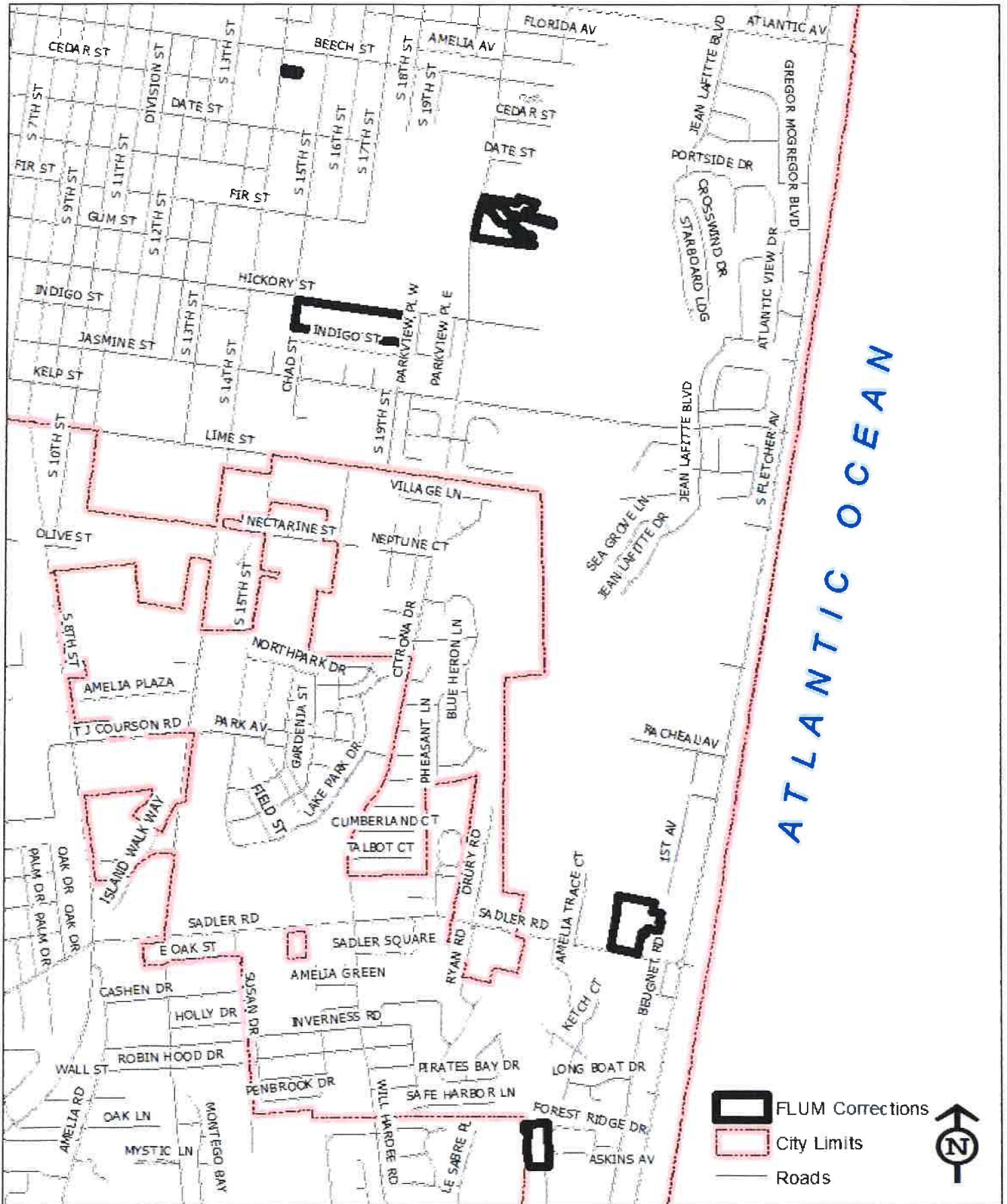
BUILDING INFO

Type	Total Area	Heated Area	Bedrooms	Baths	Primary Ext

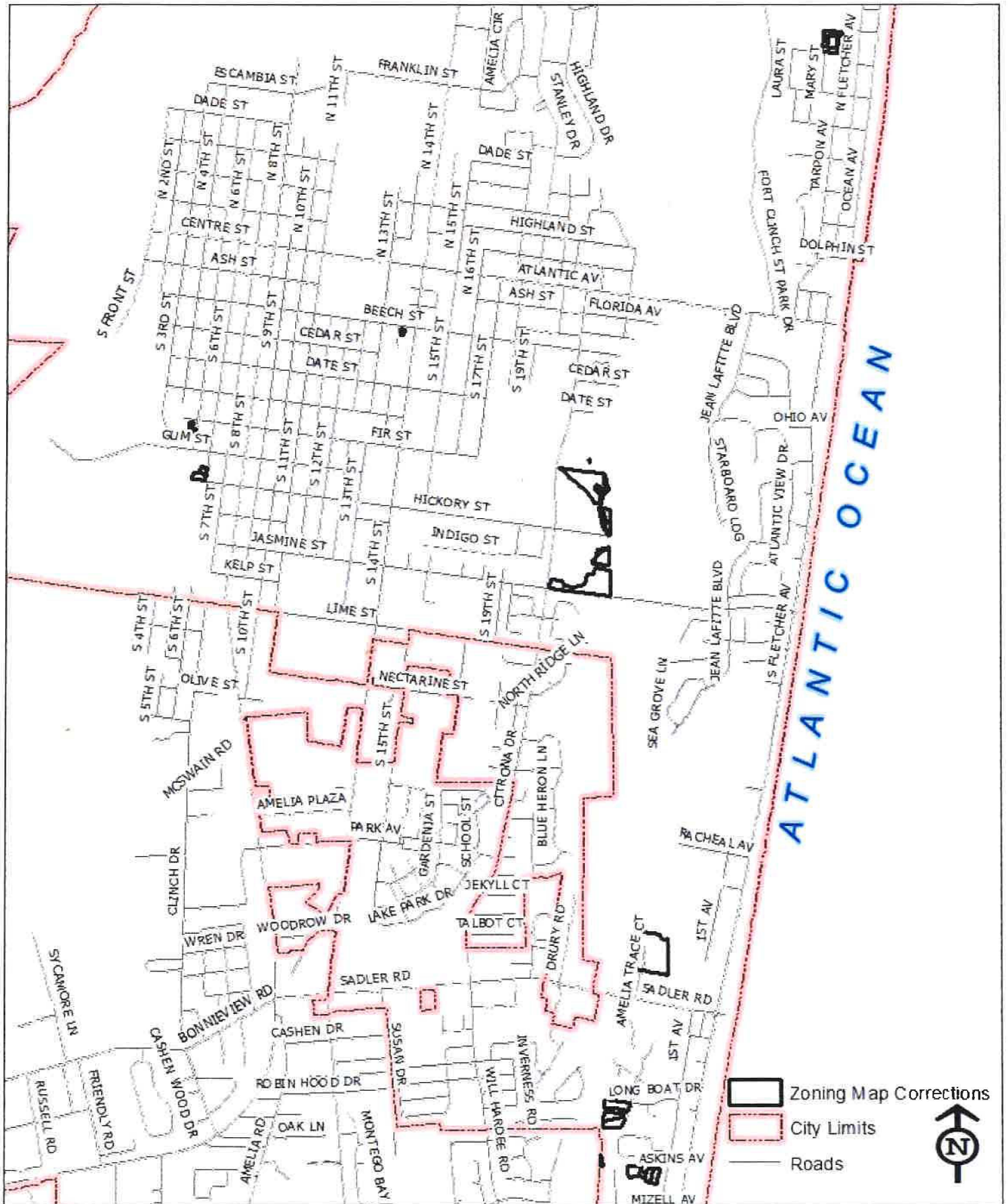
SALES INFO

Sale Date	Book Page	Price	Instr	Qual	Imp	Grantor	Grantee
2017-12-27	2167 / 1156	\$20,000	WD	U	N	RICHARDSON MICHAEL	KOHLMAN DOUGLAS S
2005-02-23	1297 / 439	\$248,000	WD	Q	Y	CRYDER DAPHNE LOVELL L/E	KOHLMAN DOUGLAS SCOTT

FUTURE LAND USE MAP AMENDMENTS CONFLICTS ONLY



ZONING MAP AMENDMENTS CONFLICTS ONLY





**STAFF REPORT SUMMARY
PAB 2019-14 + 2019-15**

**APPLICATION FOR FUTURE LAND USE MAP + ZONING MAP AMENDMENTS
VARIOUS MAP CORRECTIONS CITYWIDE**

*** All required application materials have been received. All fees have been paid. All required notices have been made. All copies of required materials are part of the official record and have been made available on the City's website and at the Department of Planning and Conservation. ***

SUMMARY OF REQUEST AND BACKGROUND INFORMATION:

The City has provided a zoning and/or land use layer within its Comprehensive Plan dating back to 1961. Over the subsequent 45 years, these documents were maintained by external agencies or consultants and furnished to the City as part of its statutory periodic review periods. The City began utilizing Geographic Information Systems (GIS) in 2004-2005. In 2005-2006, the City started working towards creating its own GIS system and maintaining data layers. Staff was hired and trained on-the-job to learn how to manage this system. Parcel alignment with the data layers became technically possible however, it was not until 2007 that the City had staffing with proper training to effectively utilize the system. In 2012 staff entered into a partnership with the Nassau County Property Appraiser's (NCPA) office to share and display data for public review. Since 2014 the City's data layers have been updated by the NCPA office following the enactment of land use or zoning ordinances. Discrepancies between the Future Land Use Map and Zoning Map as witnessed in these applications are the result of the carry over actions of prior commissions which did not evaluate any conflicts between the documents on an individual parcel level.

From time to time, staff would encounter mismatches between the zoning and land use map layers. These were either noted and corrected under staff-initiated amendments or they were disclosed to a property owner at them time of a development application and directed to make a change. At no point, did staff undertake an exhaustive analysis to determine discrepancies between the Future Land Use Map (FLUM) and Zoning Map.

In February 2019, the City Commission acted under Ordinance 2019-05 to place a moratorium on future land use map and zoning map amendments until such time that the maps could be reconciled to align. Discussion of the initial findings were shared and briefly discussed with the Planning Advisory Board (PAB) in March and April 2019. Staff presented findings to the City Commission in May of 2019; it was then directed to proceed with correction of the maps based on areas of conflict only. PAB applications 2019-14 and 2019-15 were initiated in August 2019. These applications seek to amend the maps in accordance with the direction provided by the City Commission. Staff conducted a PAB workshop with property owners and citizens on September 9, 2019.

The data provided as part of the analysis for each change include map exhibits and digital images from the Nassau County, Florida Property Appraiser GIS mapping. Information for each property is provided as part of this report and serve to fulfill minimum application requirements for mapping changes. Specifically, the LIDAR data of 1-foot contour topography file, St. Johns River Water Management District potential wetlands, the USDA soils, and FEMA flood zone data layers were utilized. Site specific, independent surveys and studies were not prepared as part of the recommended action; however, where prior plat maps exist they have been provided as back up material to each series of properties.



STAFF REPORT SUMMARY PAB 2019-14 + 2019-15

In addition to the policies provided by the Comprehensive Plan, Land Development Code and Florida Statutes 163.3187 and 163.3184, staff relied on the following guiding principles as part of its overall consideration for determining a recommendation for the Future Land Use Map or Zoning Map Change:

- **Built Environment:** What's on the ground (or not) today?
- **Surrounding Property:** What is the surrounding land use and zoning? What are the surrounding area built conditions?
- **Environmental Features:** What environmental features are contained on the site?
- **Pattern of Change:** Are there other land use or zoning changes within the same area that should be considered?
- **Holistic View:** How does the requested action serve to meet and further the general direction and intent of the City's policy direction as a whole?
- The 2011 Future Land Use Map adopted as part of the EAR-based Comprehensive Plan amendments is presumed to be the principal document for consideration of all Future Land Use Map changes.
- The City adopted a revised Land Development Code and Zoning Map in 2006.

CONSISTENCY WITH THE COMPREHENSIVE PLAN AND LAND DEVELOPMENT CODE:

The approval of Future Land Use Map and Zoning Amendments are generally governed under Comprehensive Plan policies which describe concurrency, level of service standards, and allocation of residential densities and non-residential intensities, and compatibility with neighboring properties. Staff has reviewed applicable policies generally and specifically as they apply to each property. The requested changes have been divided into topic areas for individual review as separate documents for the board's consideration. Analysis for each property is provided following this document.

The Land Development Code outlines policies for consideration of a Future Land Use Map Amendments and Zoning Map Amendments. Staff has determined that these sections have been sufficiently met and the requested action is found to be consistent with requirements of the Land Development Code. Further, it has determined that the requested action is consistent with the intent and direction of the Comprehensive Plan.

CONCLUSION:

The requested actions to amend the Future Land Use Map and Zoning Map have been directed under Ordinance 2019-05. Staff recommends approval of the application as provided in each parcel summary contained herein. The proposed actions are sufficiently compliant with the City's Comprehensive Plan and Land Development Code.

MOTION(S) TO CONSIDER

I move to recommend **(approval or denial)** of PAB case number 2019-14 to the City Commission requesting that a Future Land Use Map Amendment to align the City's Future Land Use Map and Zoning Map be **(approved or denied)** and that PAB case 2019-14, as presented, **(is or is not)** sufficiently compliant with the Comprehensive Plan and Land Development Code to be approved at this time.

I move to recommend **(approval or denial)** of PAB case number 2019-15 to the City Commission requesting that a Zoning Map Amendment to align the City's Future Land Use Map and Zoning Map be **(approved or denied)** and that PAB case 2019-15, as presented, **(is or is not)** sufficiently compliant with the Comprehensive Plan and Land Development Code to be approved at this time.



**MINUTES
PLANNING ADVISORY BOARD
WORKSHOP
SEPTEMBER 9, 2019
5:00 PM
CITY HALL COMMISSION CHAMBERS
204 ASH STREET
FERNANDINA BEACH, FL 32034**

1. CALL TO ORDER

ROLL CALL / DETERMINATION OF QUORUM

MEMBERS PRESENT:

Richard Clark	Mark Bennett
Frank Santry (Chair)	Genece Minshew
Jenny Schaffer (Alt 1)	Victoria Robas (Alt 2)

MEMBERS ABSENT:

Greg Roland

2. DISCUSSION

- 2.1 Staff Presentation and Board Review of PAB applications 2019-14 and 2019-15.
Information can also be obtained at: www.fbfl.us/mapcorrections
Discussion only, no action to be taken

3. BOARD BUSINESS

4. PUBLIC COMMENT

5. ADJOURNMENT

Sylvie McCann, Recording Secretary

Frank Santry, Chair



**MINUTES
PLANNING ADVISORY BOARD
REGULAR MEETING
OCTOBER 9, 2019**

1. CALL TO ORDER –

ROLL CALL / DETERMINATION OF QUORUM

MEMBERS PRESENT:

*Mark Bennett
Richard Clark
Genese Minshew*

*Frank Santry (Chair)
Greg Roland (arrived at 5:07 pm)
Victoria Robas (Alt 2)*

MEMBERS ABSENT:

Jenny Schaffer (Alt 1)

OTHERS PRESENT

*Tami Bach, City Attorney
Kelly Gibson, Planning Director
Sylvie McCann, Recording Secretary*

Member Robas was seated as a voting member.

2. APPROVAL OF MINUTES

2.1 May 22, 2019 Special Meeting

There being no objections, the minutes were approved as presented.

2.2 June 12, 2019 Regular Meeting

There being no objections, the minutes were approved as presented.

3. OLD BUSINESS

4. NEW BUSINESS

4.1 PAB Cases 2019-14 (FLUM) and 2019-15 (Zoning): Consideration of Future Land Use Map Amendments and Zoning Map Amendments where maps are in conflict.

Ms. Gibson gave presentation.

- Askins Ave – to be pulled (no motions to be made) pulled for further consideration by members – Staff to provide history documentation on how it became R3.

Public hearing opened

- 5th + Fir Street – (Miller property)

DRAFT

Matt Miller 416 Fir Street, had meeting Jake Platt + Ms. Back. Would like for Board to pull property so communication could be continued. Chair Santry noted that maps should be reconciled. Ms. Back said base on FLUM permits should not have been issued. Member Clark asked Staff about accommodate Mr. Miller desire to build a boathouse. Staff explained the LDC requirements. Member Minshew asked which permits were issued.

Closed public hearing

Member Bennett asked why Mr. Miller cannot build his structure. Staff explained.

Clark 1st

Minshew 2nd

recommend staff recommendation to commission

All ayes, carried

715 S. 6th Street

NO public input

Industrial from medium density to R2

Bennett 1st

Minshew 2nd

No public hearing

All ayes, carried

731 S. 6th Street

Chair Santry recommend this to be pulled until the next meeting.

Bennet approved FLUM from Industrial to Med Density Res (MDR)

Zoning I-1 to R2

All ayes, carried

3rd Street

Pulled the case, ordinance 2004-35 in place, map is already corrected.

1900 Amelia Trace

Zoning From MU-1 to Comm Commercial/C-1 to align to FLUM

No public input

All ayes carried

Off shore Drive/Off shore Court

Approval Zoning from Med Density Res R2 to CON

Public Hearing

Craig ? 2309 Off Shore Court – asked about impact on real estate value. Ms. Bach explained the impact.

Clark 1st

Minshew 2nd

All ayes, carried

North Pointe

Change FLUM from R3 High Density Res to R2 Med Density Res

Public Hearing

Debbie O? 925 President of HOA, present PAB minutes form a meeting in 1981

Betsy Huban, representing clients.

Arlene Filkoff 825 Tarpon Ave, character of the community

Jeff Foster 846 Mary Street, asked about height between R3 and R2, Staff explained.

Member Clark asked about the options presented to the Board.

All ayes, carried

212 S. 14th Street

Change zoning from MU1 to FLUM Low Density Res LDR

No public input

Chair Santry noted that he would rather change to zoning to match FLUM R1 Low density.

DRAFT

Bonnie Dickins, 132 S. 15th St, agrees with keeping the Low Density then MU1.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Roland, to approve

Clark 1st

Roland 2nd

Aye 3, Nay 2, carried

1316 Beech Street

Change FLUM from Gen Comm to Med Density Res R2 zoning as assigned (check this to make sure!)

No public input

All aye, carried

Sadler Road

Approved Change FLUM from CON to match zoning Gen Comm

Scott Powell , ?? Easport drive. Owns 2 lots.

???, 1003 Broome Street, commented on setting precedent on taking conservation land away.

David Falon general manager of hotel, 21600 Eatonic court , Jacksonville

David Sampson 1866 First Avenue, noted what is on the grown today

Bennet 1

Minshew 2

3 aye, 2 no, carried

Robert Oliver Avenue

Change FLUM from Med Density Res MDR to CON and amend Zoning from R2 to CON (city owned land)

No public input

Clark 1, Minshew 2 (FLUM)

Bennet 1, Minshew 2 (Zoning)

All ayes, carried

Hickory Street Park

Change FLUM to PI from Low Density Res LDR

Jeffrey Bunch, School District, opposed to the change. Had agreement with School Board.

Property Pulled to next meeting. Member Roland propose the City approach the school board to purchase property.

Citrona Drive

420 Citrona

To Leave FLUM to CON

Margaret Kirkland, 1377 Plantation Point Drive

Richard Tim, 2126 Shell Cove Cir, leave it conservaton

Ryan Conners, 2119 Park Square Place

Robert Wells, 2884 Robert Oliver -

510 Citrona Drive

FLUM from CON to Low Density Res

Zoning from R1 to CON

Jimmy Calista, 510 Citrona Drive

Robert Wells, 2884 Robert Oliver Ave

Richard Tim, 2126 Shell Cove Cir

Margaret Kirkland, 1377 Plantation Point Drive, Amelia Tree Conservancy

Ryan Conners, 2119 Park Square Place

Continued to next meeting

522 Citrona Drive

Continued to next meeting

526 Citrona Drive

No public input

To change FLUM and Zoning to CON from R1

DRAFT

Roland 1
Bennett 2
All ayes, carried

City + FDOT Properties
Zoning change to CON from Low density Res LDR
Robert Wells 2884 Robert Oliver Ave
Bennett 1
Minshew 2
All ayes, carried

Shell Cove
Amend FLUM from Low Density to CON
Amend Zoning from R2 PUD to CON
Richard Tim, 2126 Shell Cove circle
Bennett 1
Clark 2
All ayes, carried

Post Oak Buffer
Change FLUM to CON from LDR Low Density Res
Change Zoning change to CON from Low Density Res R-1
Bennett 1
Roland 2
All ayes, carried

Chair Santry suggested a sub committee to review all other pulled items before the end of the year.

We are bringing back the following to look at during the meeting of Sub-Committee:

510 Citrona
522 Citrona
Hickory Street Park
731 S. 6th Street
Askins and S. 3rd Street (Info) into Jan
School Board and City Agreement

Adjust 9:52

ACTION TAKEN: A motion was made by Member , seconded by Member , to recommend

5. BOARD BUSINESS

5.1 **Discussion of next steps for PAB Bylaw revisions.**

6. STAFF REPORT

6.1 Provide update on Planning Activities including EAR Report, EAR based Amendments (next steps), and upcoming meeting topics.

7. PUBLIC COMMENT

8. ADJOURNMENT –

Sylvie McCann, Recording Secretary

Frank Santry, Chair

APPROVED



MINUTES
PLANNING ADVISORY BOARD
REGULAR MEETING
NOVEMBER 13, 2019

1. CALL TO ORDER – 5:02 pm

ROLL CALL / DETERMINATION OF QUORUM

MEMBERS PRESENT:

Mark Bennett
Richard Clark
Jenny Schaffer (Alt 1)

Victoria Robas (Alt 2)
Greg Roland (arrived at 5:31 pm)
Genece Minshew

MEMBERS ABSENT:

OTHERS PRESENT

Tami Bach, City Attorney
Kelly Gibson, Planning Director
Samantha Rogic, Recording Secretary

Alternate Member Jenny Schaffer was seated as a voting member for the entirety of the meeting.
Alternate Member Victoria Robas was seated as a voting member until Member Roland's anticipated late arrival.

2. OLD BUSINESS

- 2.1 **PAB Cases 2019-14 (FLUM) and 2019-15 (Zoning):** Consideration of Future Land Use Map Amendments and Zoning Map Amendments where maps are in conflict.

Askins Ave: Ms. Gibson presented the Staff Report and recommended no change. No members of the public wished to speak.
No action was taken.

731 S 6th Street: Ms. Gibson presented the Staff Report. Ms. Betty York, owner of the property, stated that they have ordered a survey in anticipation of applying for a minor subdivision of the subject property.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Minshew, for the western half of the property to remain as industrial zoning and the front half be residential as recommended by Staff.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

Hickory Street Park: Ms. Gibson presented the Staff Report.

The following individuals spoke in support of changing the zoning to match the FLUM of Public and Institutional: *Robin Lentz, 802 Parkview Place E; Ret Angus, 822 Parkview Place E; Carl Bazarian, 95048 Mackinas Circle.*

ACTION TAKEN: A motion was made by Member Roland, seconded by Member Clark, to amend the FLUM from Low Density Residential Future Land Use to Public and Institutional Future Land Use.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

522 Citrona Drive: Ms. Gibson presented the Staff Report.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Roland, to accept Staff recommendation to: 1) Amend Future Land Use Map for 0.23 acres of land from Low Density Residential (LDR) to Conservation (CON); 2) Amend Zoning Map for 0.47 acres of land from R-1 to CON

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

510 Citrona Drive: Ms. Gibson presented the Staff Report. No members of the public wished to speak.

ACTION TAKEN: A motion was made by Member Roland, seconded by Member Clark, to accept Staff recommendation to 1) Amend Future Land Use Map for 0.40 acres of land from Conservation (CON) to Low Density Residential (LDR); 2) Amend Zoning Map for 0.71 acres of land from R-1 to CON.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

3. BOARD BUSINESS

- 3.1** Bylaws subcommittee meeting: Thursday, November 21, 2019 at 10am.
Joint PAB and City Commission special meeting: Tuesday, December 17, 2019 at 4pm.

4. STAFF REPORT

- 4.1** Provide an update on planning activities with distribution of a returning LDC Text Amendment (2019-07) containing April PAB updates and floodplain building height changes and distribution of list with preliminary maps for Conservation Future Land Use Map and Zoning Changes.

Ms. Gibson provided the update.

5. PUBLIC COMMENT

6. ADJOURNMENT – 6:35 pm


Samantha Rogie, Recording Secretary


Mark Bennett, Vice-Chair



**MINUTES
PLANNING ADVISORY BOARD
REGULAR MEETING
DECEMBER 11, 2019**

1. CALL TO ORDER – 5:02 pm

ROLL CALL / DETERMINATION OF QUORUM

MEMBERS PRESENT:

*Mark Bennett (Vice-Chair)
Richard Clark
Jenny Schaffer (Alt 1)
Peter Stevenson*

*Victoria Robas (Alt 2)
Greg Roland (arrived at 5:49 pm)
Genece Minshew*

MEMBERS ABSENT:

OTHERS PRESENT

*Tami Bach, City Attorney
Kelly Gibson, Planning Director
Samantha Rogic, Recording Secretary*

Alternate Member Schaffer was seated as a voting member until Member Roland's late arrival.

2. APPROVAL OF MEETING MINUTES

2.1 November 13, 2019

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Minshew, to approve the minutes as presented.

Motion passed by unanimous voice vote.

3. OLD BUSINESS

3.1 LAND DEVELOPMENT CODE TEXT AMENDMENTS (PAB CASE #: 2019-07): CITY OF FERNANDINA BEACH, FLORIDA REQUESTS LAND DEVELOPMENT CODE TEXT AMENDMENTS TO MODIFY STANDARDS FOR HEIGHT ENCROACHMENTS WITHIN SECTIONS 1.07.00 ADDING OR AMENDING CERTAIN DEFINITIONS; AMENDING SECTION 4.02.03 STANDARDS FOR BUILDINGS AND BUILDING PLACEMENT AND HEIGHT WITHIN SPECIAL FLOOD HAZARD AREAS; AND SECTION 10.02.01 VARIANCES TO DISALLOW GRANTING OF VARIANCES TO EXCEED MAXIMUM BUILDING HEIGHTS AND TO DEVIATE FROM REQUIRED SIDE YARD SETBACKS FOR BUILDINGS WITHIN 800 FEET OF THE MEAN HIGH WATER MARK OF THE ATLANTIC OCEAN.

Doug Roselle, 524 Tarpon Ave, spoke in support of limiting unnecessary allowable height encroachments.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Roland, to table the item to the January regular meeting.

Motion passed by unanimous voice vote.

ACTION TAKEN: A motion was made by Member Clark, seconded by Member Minshew to accept staff recommendation with regard to the yellow highlighted language and 10.02.01 Sub 11 and 12 which are additions.

Motion passed by unanimous voice vote.

4. NEW BUSINESS

4.1 PAB 2019-16: Future Land Use Map and Zoning Map Amendments to Conservation and Recreation for City Owned Properties (pursuant to Ordinance 2019-05)

The following individuals spoke to the item:

Deb Harper, 835 Allen, inquired on the notice she received in the mail.

Jeff McDowell, 2820 Mantanzas, asked for clarification on which property near him is affected.

Margarete Kirkland, 1377 Plantation Point Drive, speaking on behalf of Amelia Tree Conservancy, asked for clarification on several parcels.

Barbara Smith, 923 9th Street.

ACTION TAKEN: A motion was made by Member Roland, seconded by Member Clark, to approve PAB 2019-16 as presented.

Motion passed by unanimous voice vote.

4.2 PAB 2019-17: Future Land Use Map and Zoning Map Amendments for Non-City owned lands to Conservation and Recreation (pursuant to Ordinance 2019-05)

Marine St & Marine St:

The following individuals spoke to the item:

James O'Conner, 703 Garden Street, has a lease with CSX

Brad O'Conner, 2440 Lyndale Road, has a lease with CSX

Eric Oliver, 706 Someruelus, has a lease with CSX

Jennifer Harrison, 820 Someruelus St, spoke to the significant history of the bluff.

Member Stevenson motioned for no action to be taken on the two parcels identified to keep as industrial waterfront. Member Minshew seconded.

Upon further discussion, Member Stevenson withdrew his motion.

ACTION TAKEN: A motion was made by Member Roland, seconded by Member Clark, to postpone the CSX parcels to the March Regular meeting to give Staff time to meet with CSX.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

8th and Dade Street:

The following individuals spoke to the item:

Monica Cleveland, 2203 Belvedere Ave

Jill McCarthy, 2120 Belvedere Ave

ACTION TAKEN: A motion was made by Member Clark, Seconded by Member Stevenson, to approve Staff's recommendation of all non-city owned parcels, with the exception of the CSX properties as discussed and the parcel located on the corner of Dade and 8th Street (00-00-31-1800-0067-0050).

Vote upon passage of the motion was taken b y ayes and nays and being all ayes, carried.

5. BOARD BUSINESS

5.1 Review Draft Amendments to PAB Bylaws

Members of the Board discussed.

ACTION TAKEN: A motion was made by Member Minshew, seconded by Member Roland, to approve the bylaws as amended and presented.

Vote upon passage of the motion was taken by ayes and nays and being all ayes, carried.

The Board then unanimously agreed by voice vote, to vote on the final approval at the January 2020 regular meeting.

6. STAFF REPORT

7. PUBLIC COMMENT

8. ADJOURNMENT – 7:54 PM

Samantha Rogic, Recording Secretary

Mark Bennett, Vice-Chair



**STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION**

**CITRONA DRIVE- CITY/FDOT/SHELLCOVE HOA – VACANT LANDS
ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	CITY OF FERNANDINA BEACH AND FLORIDA DEPARTMENT OF TRANSPORTATION AND SHELL COVE HOA AND SEALS AND ASSOCIATES (POST OAK APTS) 00-00-31-1180-0017-0050 00-00-31-1180-0017-0060 00-00-31-1180-0018-0010 00-00-31-1180-0018-0030 00-00-31-1180-0018-0040 00-00-31-1180-0022-0010 27-3N-28-1192-000C-0000 27-3N-28-1192-000D-0000 00-00-31-1180-0018-0040				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	CITRONA DR VACANT/ UNDISTURBED				
CURRENT LAND USE + ZONING:	Conservation (CON) Zoning Map: R-1				
PROPOSED LAND USE + ZONING:	Amend Zoning Map from R-1 to CON				
EXISTING USES ON SITE:	VACANT				
PROPERTY SIZE:					
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	None Noted	11 ft to -1 ft	Fine Sand/ Clay	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Vacant	N/A	R-/CON	Low Density Residential
	South	Vacant	N/A	R-1	Low Density Residential and Conservation
	East	Vacant	N/A	R-1	Conservation



STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION

	West	FB Middle School	1991	PI-1	Public & Institutional
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.04 (FLUM amendments); 1.02.09 (smooth land use transition and buffering); 1.07.15 (conservation land use category); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan				
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.20 (CON zoning district); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 4.05.00 (Landscaping, Buffers, and Tree Protection); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC				
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.				
PAB RECOMMENDATION:	Pending 10/9/19 public hearing				



STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION

SUMMARY TABLE FOR EACH PARCEL:

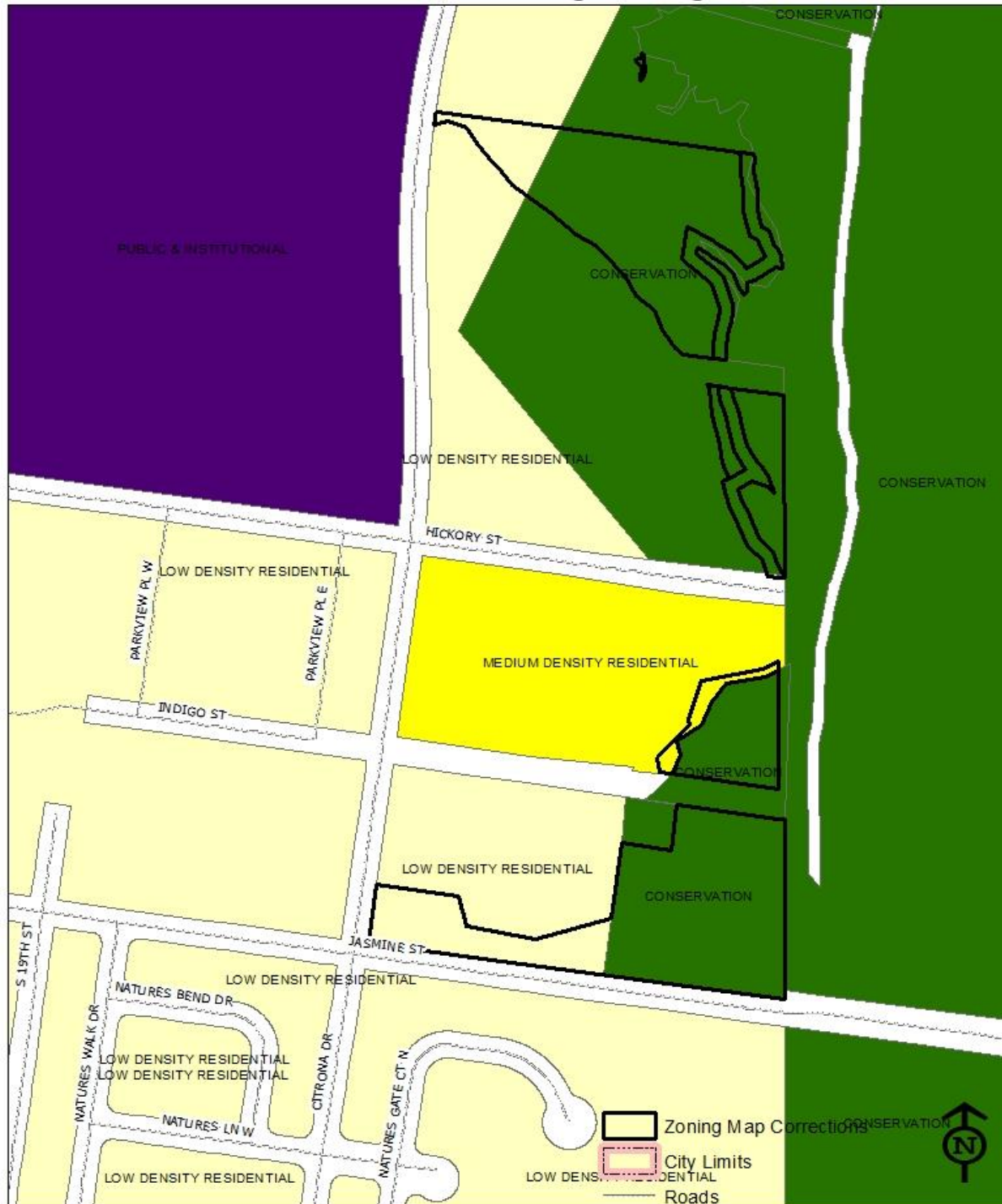
Location/ Parcel	Added Conservation FLUM (sq. ft.)	Reduced Conservation FLUM (sq. ft)	Added CON Zoning (sq. ft)	Reduced CON Zoning (sq. ft)
00-00-31-1180-0017-0060	21,000.00		158,994.00	
00-00-31-1180-0017-0050			24,393.60	
00-00-31-1180-0018-0010			27,878.40	
00-00-31-1180-0018-0030			15,681.60	
00-00-31-1180-0018-0040			6,098.40	
00-00-31-1180-0022-0010				
00-00-31-1180-0022-0010 (Post Oak Apts)	50,094.00		190,357.20	
27-3N-28-1192-000C- 0000 (Shell Cove Common Tract)	9,583.20		9,583.20	
27-3N-28-1192-000D- 0000 (Shell Cove Common Tract)			41,817.60	
00-00-31-1180-0018-0040			6,098.40	
TOTAL SQ. FT.:	80,677.20	-	480,902.40	-
TOTAL ACREAGE:	1.85	-	11.04	-



**STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION**

MAP EXHIBITS & PROPERTY IMAGES:

Overview Map of Zoning and Land Use Changes of vacant properties within the Citrona Drive corridor

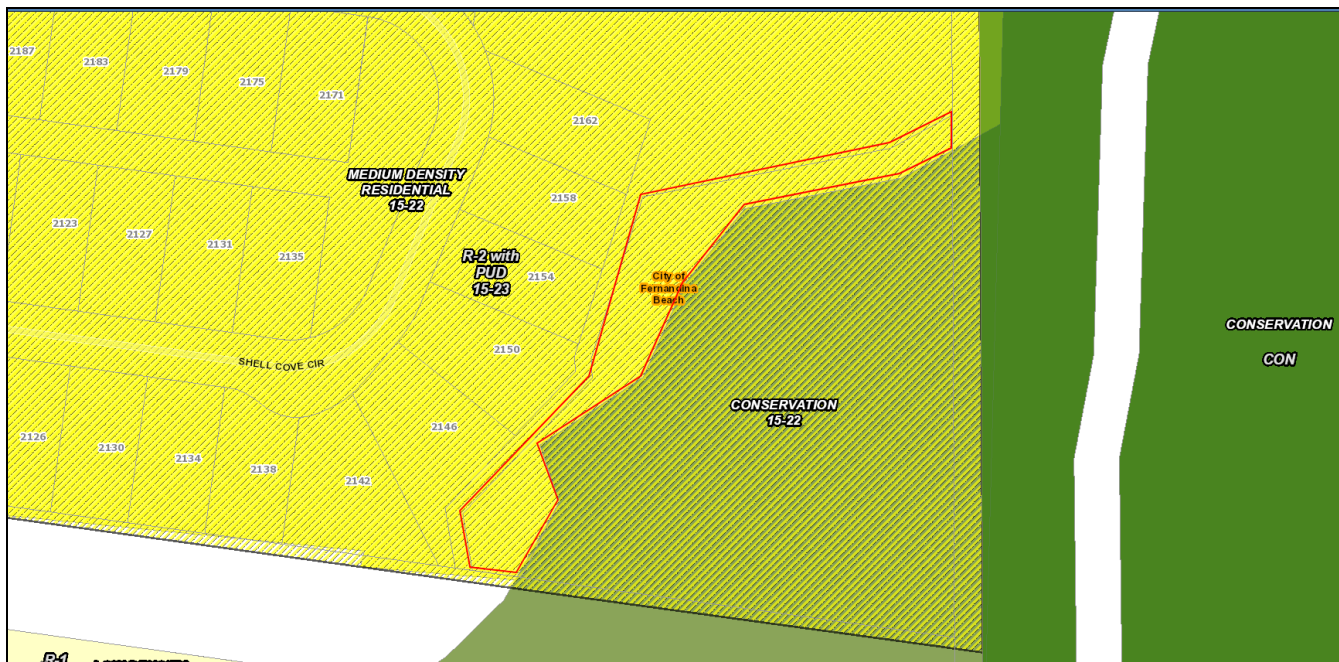




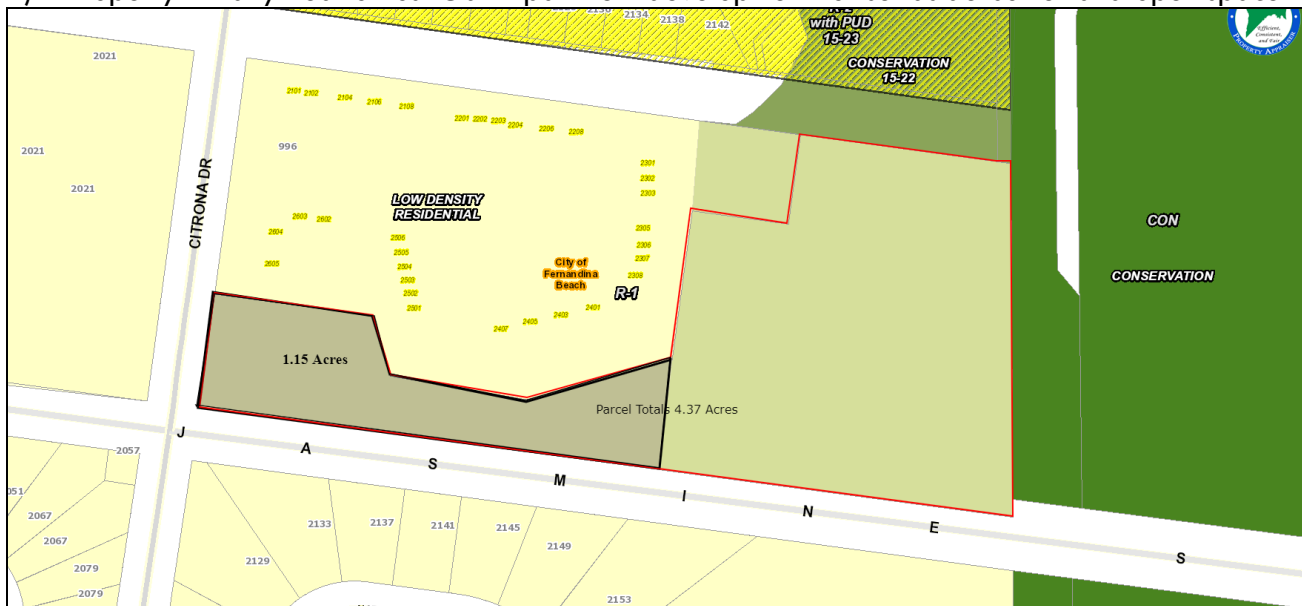
STAFF REPORT CITRONA DRIVE – CITY/ FDOT/ SHELL COVE ZONING CHANGE TO CONSERVATION

Citrona Drive - Future Land Use Map Changes

27-3N-28-1192-000C-0000: 0.22 acres (9,583.20 sq. ft.) from Low Density Residential (LDR) to Conservation (CON) Future Land Use Map and Zoning Map change



00-00-31-1180-0022-0010: 1.15 acres (50,094 sq. ft.) FLUM amendment from Low Density Residential (LDR) to Conservation (CON) and 4.37 acres (190,357.20 sq. ft.) to Conservation Zoning from Low Density Residential (R-1) – Property initially tied to Post Oak Apartment development for set aside buffer and open space





STAFF REPORT CITRONA DRIVE – CITY/ FDOT/ SHELL COVE ZONING CHANGE TO CONSERVATION

Citrona Drive – Zoning Map Changes along Citrona Drive for Vacant Properties

00-00-31-1180-0017-0050: 056 acres (24,393.60 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

00-00-31-1180-0018-0010: 0.64 acres (27,878.40 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

00-00-31-1180-0018-0040 :0.14 (6,098.4 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

00-00-31-1180-0018-0030: 0.36 acres (15,681.60 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

00-00-31-1180-0018-0040: 0.14 acres (6,098.40 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change

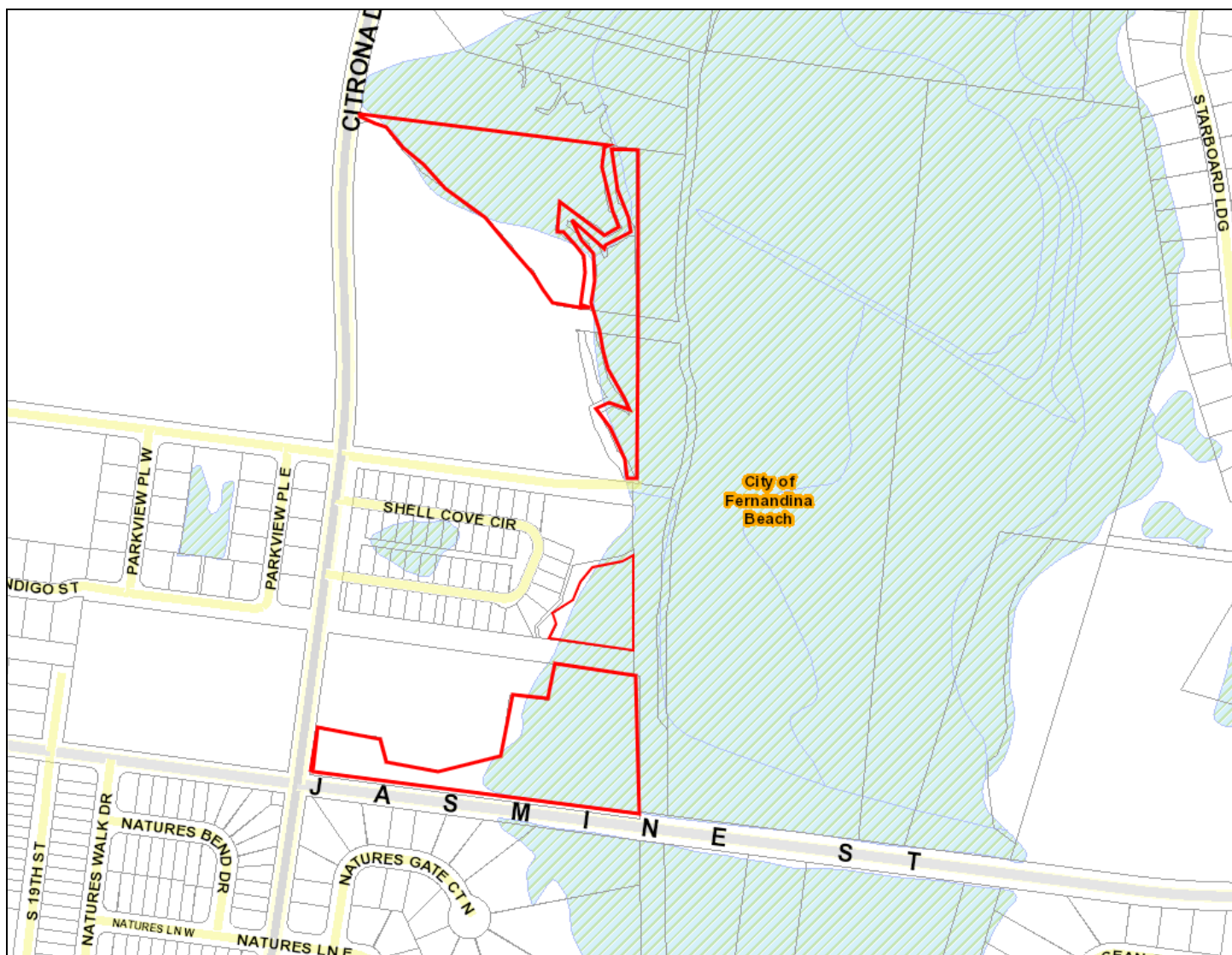
27-3N-28-1192-000D-0000: 0.96 acres (41,817.60 sq. ft.) from Low Density Residential (R-1) to Conservation (CON) Zoning Map change





STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION

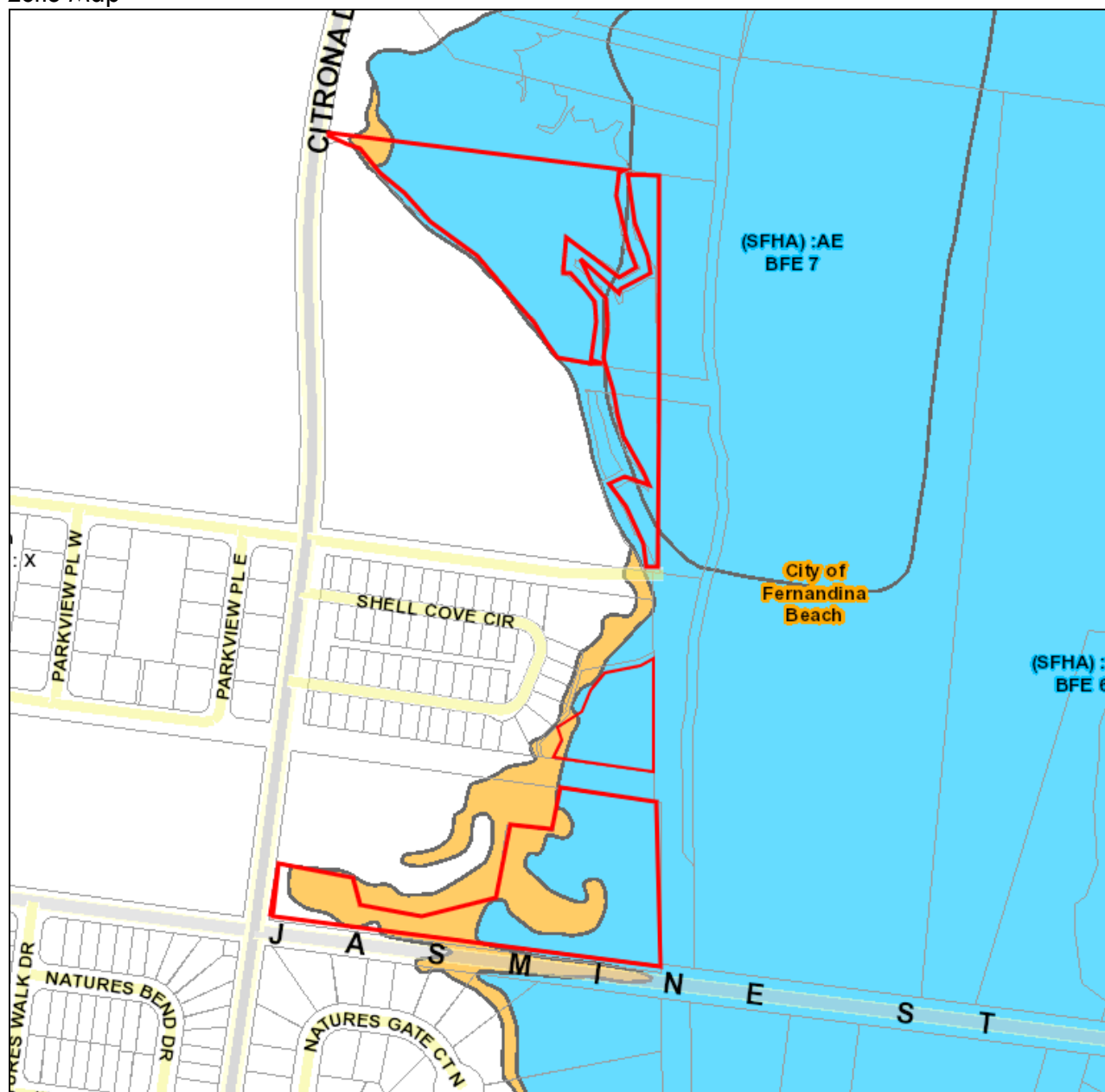
Wetlands Map





**STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION**

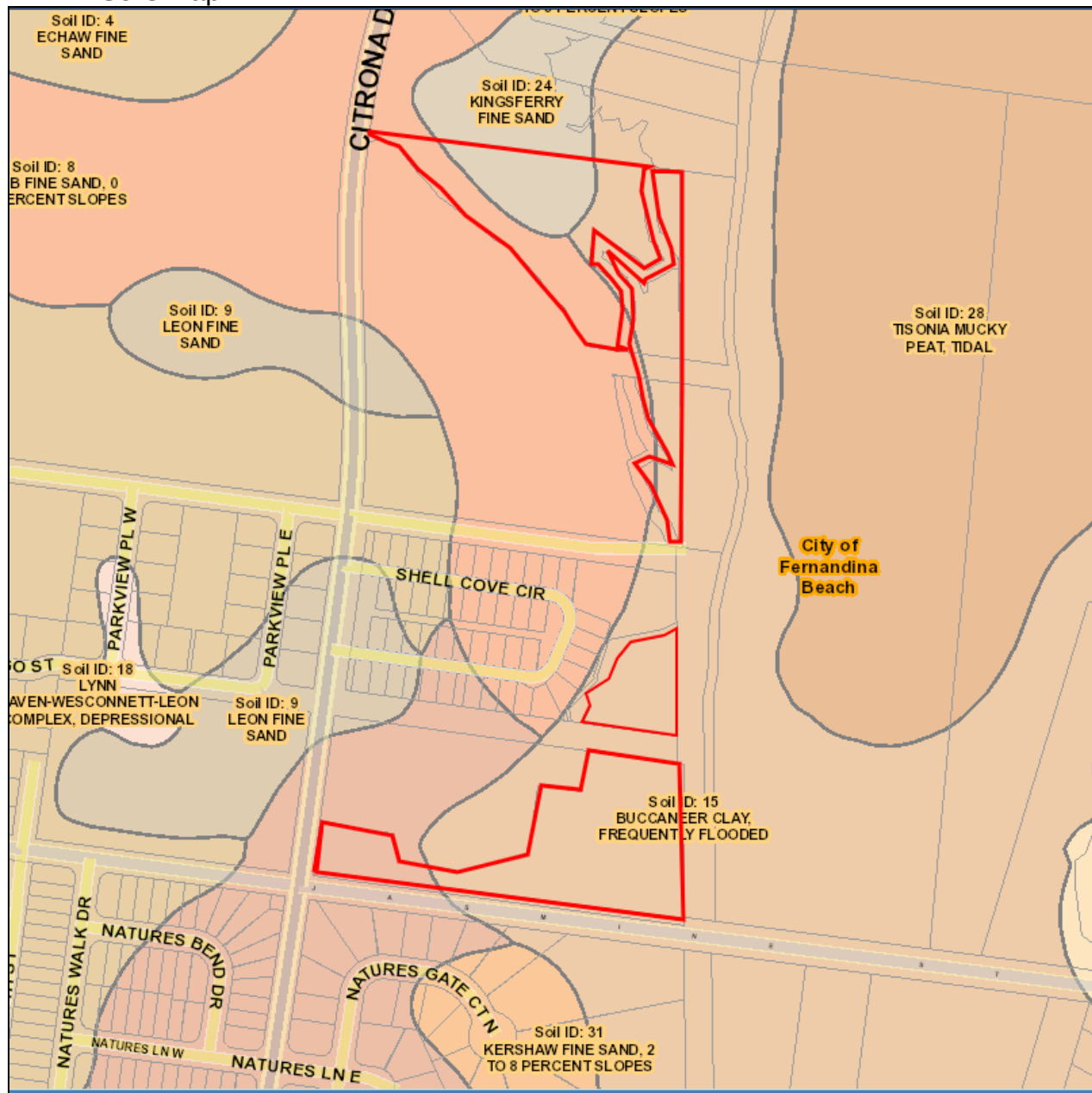
Flood Zone Map





**STAFF REPORT
CITRONA DRIVE – CITY/ FDOT/ SHELL COVE
ZONING CHANGE TO CONSERVATION**

Soils Map





City of Fernandina Beach

PLANNING DEPARTMENT

September 14, 2015

Greystone Affordable Housing Initiatives LLC
c/o Serena Kefauver
4025 Lake Boone Trail, Suite 209
Raleigh, NC 27607

RE: Post Oak Apartments – Parcel # 00-00-31-1180-0022-0000

The Planning Department is in receipt of your request for information on the above-referenced property. This property carries a Future Land Use designation of **Low Density Residential and Conservation** (Attachment A) and is zoned **R-1, Low Density Residential** (Attachment B). Currently there are six multifamily structures with a total of 42 units on this property.

This property was developed with an application for conditional use (PUD) No. PUD0189 applied for by Midland Properties Partnership. The City Commission granted the Conditional Use with Resolution Number 967 on April 4, 1989 (Attachment C). The property originally totaled 8.22 acres as presented in the Conditional Use application. Today, 996 Citrona Drive is a 3.91 acre parcel with 42 dwelling units. Your specific questions regarding this parcel will be answered as the property is today.

Zoning and Land Development Regulations:

- A. Is this site appropriately zoned for the proposed development? No.** The property is zoned R-1, Low Density Residential.
- B. Indicate zoning designation(s)** R-1, Low Density Residential
- C. Current zoning permits 4 units per acre. Existing Conditions are approximately 10 units per acre.** Net Density as defined in the City's Comprehensive Plan is, "Determined by multiplying the "maximum allowable units per acre" by the "net buildable land area" expressed in acreage. "Net buildable land area" means those contiguous land areas under common ownership proposed for residential development, minus undevelopable environmentally sensitive areas, including wetlands, transitional wetlands, floodplains and waters of the state. Lots adjoining an existing right-of-way may calculate half of the width of that right-of-way as part of the "net buildable land area" definition." I calculated the **maximum number of dwelling units for this parcel at 18 units**. Without a survey to verify the net buildable land area that is just an approximation.
- D. Total number of units in this development? 42**
- E. Is the site appropriately zoned and consistent with local land use regulations regarding density and intended use? No if no, explain.**
Low Density Residential is intended for development of low density single family detached homes on individual lots. Single family attached homes may be allowed through the PUD

process. The low density residential designation is established to protect the quality and character of existing low density single family neighborhoods.

- F. Does the current, applicable Future Land Use Map designation and associated local government Comprehensive Plan Future Land Use Element provisions permit the proposed development? No.**

Policy 1.07.04

Low Density Residential (LDR)

- a. Areas delineated on the FLUM for low density residential development shall accommodate permanent residential development and shall be comprised of single-family detached homes on individual lots. Single family attached homes may be allowed only through the PUD process.
- b. The maximum density shall not exceed four (4) dwelling units per acre. Specific densities will be determined by such factors as natural features of the land, density and/or intensity of developed and/or undeveloped land surrounding development, level of accessibility, housing supply and demand, adequacy of public facilities, consumer preference, and other factors which may be identified in the City's land development regulations.
- c. Supportive community facilities and accessory land uses may be located within areas designated for single-family low density residential uses. The land development regulations shall provide regulatory procedures for considering such uses.
- d. The low density residential designation is established to:
 1. Protect the quality and character of existing low density single family neighborhoods;
 2. Preserve open space;
 3. Prevent encroachment by commercial uses, including hotels, motels, bed and breakfast units, resort rentals, or other forms of transient accommodations, and incompatible non-residential uses;
 4. Encourage densities that are compatible with existing and anticipated future developments;
 5. Promote compatibility with natural features of the land; and,
 6. Minimize the burden on existing and projected supportive public services and facilities within the area.

Policy 1.07.14

Conservation (CON)

- a. Lands that are natural resources such as wetlands shall be included in the Conservation land use designation in order to provide for the maximum long-term protection and preservation of environmentally sensitive natural resource systems. All wetlands, as verified by jurisdictional field delineation, are designated as limited development overlays and shall be protected by policies contained within the Conservation and Coastal Management Element of this plan.
- b. Potentially allowable uses in the Conservation land use category may include: docks, boardwalks, hiking trails, and picnic areas or other passive recreation uses.
- c. Development within the conservation land use category is limited to buildings that are supportive of and accessory to the Conservation land use category, such as an interpretative center, rest rooms, or covered picnic pavilions.
- d. Potentially allowable uses are limited in location and extent, and shall avoid adverse impacts on the hydrologic functions of wetlands, natural systems, habitats, water quality, shorelines, marine life, and coastal resources. Allowable uses shall serve to protect the safety and welfare of the natural resource.



City of Fernandina Beach

PLANNING DEPARTMENT

- e. Any improvement within Conservation areas shall be developed using low impact development (LID) practices and sustainable building strategies.

Outstanding zoning and/or building violations:

- A. Are there any outstanding zoning or building violations? Yes. If yes, please list in detail.** There are three expired building permits listed below.
1. **2003-4211** Electrical Permit, 60 AMP subfeed for well pump irrigation.
Expired 5/29/2004
 2. **2010-1323** Mechanical Permit, Install one 1.5 ton HVAC unit only.
Expired 2/06/2011
 3. **2010-1944** Electrical Permit, Replace wiring & 2 fixtures due to small kitchen fire in unit #2301. Expired 5/14/2011

Rebuild ability threshold:

- A. What is the threshold to rebuild the property should it be destroyed?**

LDC Section 10.01.01(E) Nonconforming Situations

If a structure located within the city receives storm damage or other structural in excess of fifty (50%) of the appraised value of the structure, such structure may be replaced in compliance with current laws and ordinances, including those enacted since the construction of the subject structure. If the structure was non-conforming based on density or zoning, it may be re-constructed at no greater non-conformity than prior to when it was damaged. In no instance may any non-conformity be expanded.

Minimum Building Setbacks:

- A. What are the minimum setback requirements?**

- Maximum Building Height- 35 ft. (measured from approved finished grade to peak of roof)
- Front Setback – 25 ft. (measured from property line)
- Rear Setback – 20 ft. (measured from property line)
- Side Setback – 10% of lot width (Each side yard setback increases by one-half (1/2) foot for each one (1) foot, or fraction thereof, of building heights above 25 feet up to a maximum building height of 35 feet)

Parking Ratio:

- A. What are the parking requirements for the property?**

LDC Section 7.01.04(A) Parking Space Requirements

Multi-family dwellings are required to have 2 spaces per dwelling unit. There are 42 dwelling units requiring 84 parking spaces. The approved site plan shows 84 parking spaces.

Legal Conforming or Legal Non-conforming

A. Is the property a legal conforming or legal non-conforming use?

996 Citrona Drive is a legal non-conforming property. It was developed as a Conditional Use PUD, granted by Resolution 967. Legal non-conforming means a structure that was legally permitted at the time of its construction prior to subsequent changes in the code which changes would no longer permit the re-establishment of such structure, including nonconformity with current density, floor area ratio, parking, structure setback, impervious surface ratio or lot coverage. The structure being nonconforming does not restrict you from making renovations. Nonconforming structures shall not be expanded except where such expansions meet all requirements of the Land Development Code. The Land Development Code does not inhibit you from making interior or exterior renovations.

A complete version of the City's Land Development Code can be viewed online at <http://www.fbfl.us/LDC>. Please note that this zone is also governed by the City's Comprehensive Plan, found at <http://www.fbfl.us/compplan>.

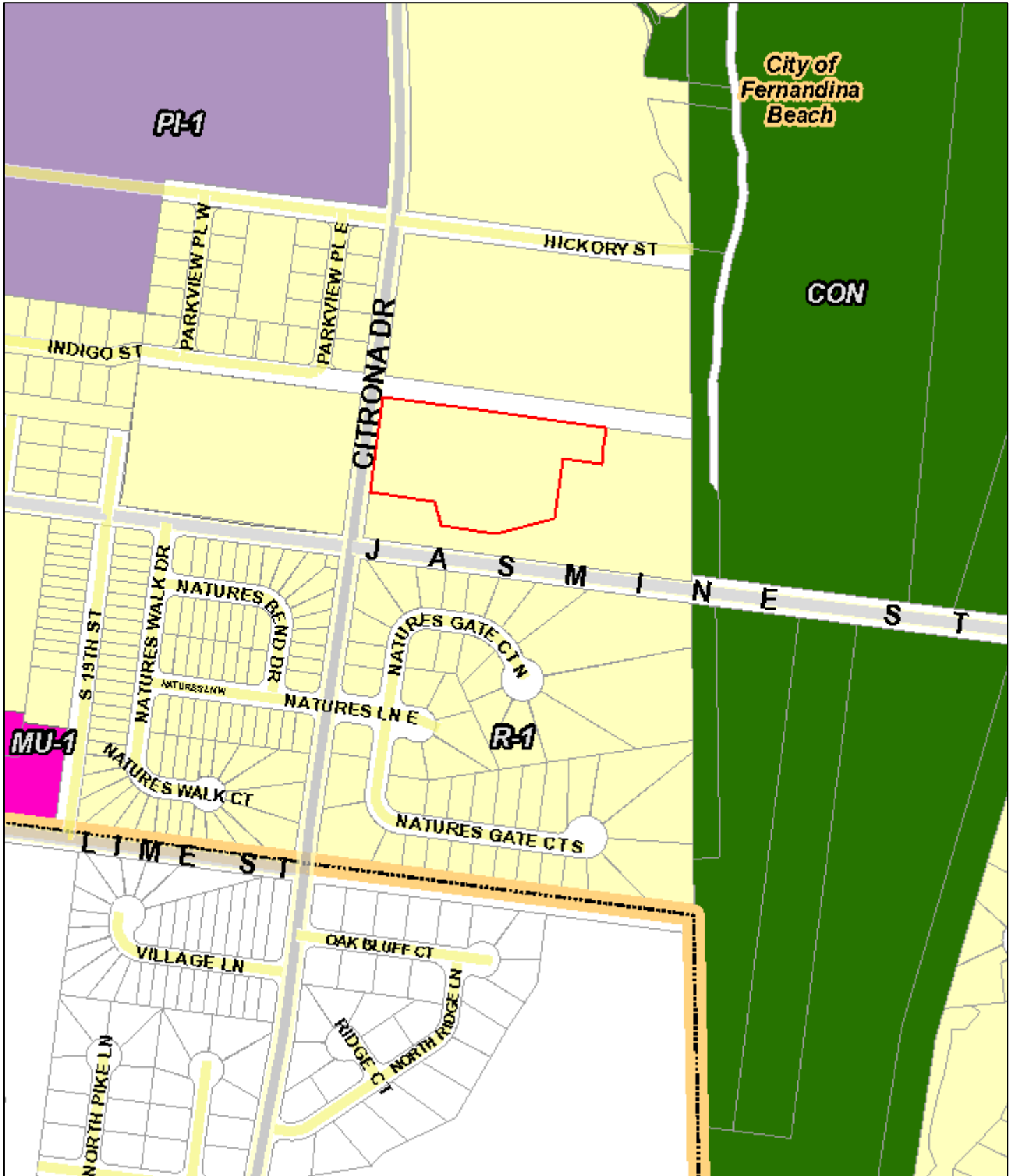
If you have any further questions regarding this due diligence report please contact the Planning Department at (904) 310-3135.

Sincerely,

A handwritten signature in blue ink, appearing to read 'J. Platt' with a stylized flourish.

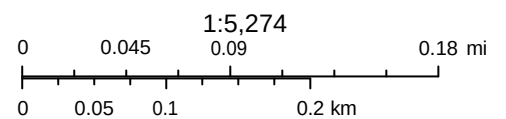
Jacob M. Platt
Planner 1 |

ZONING



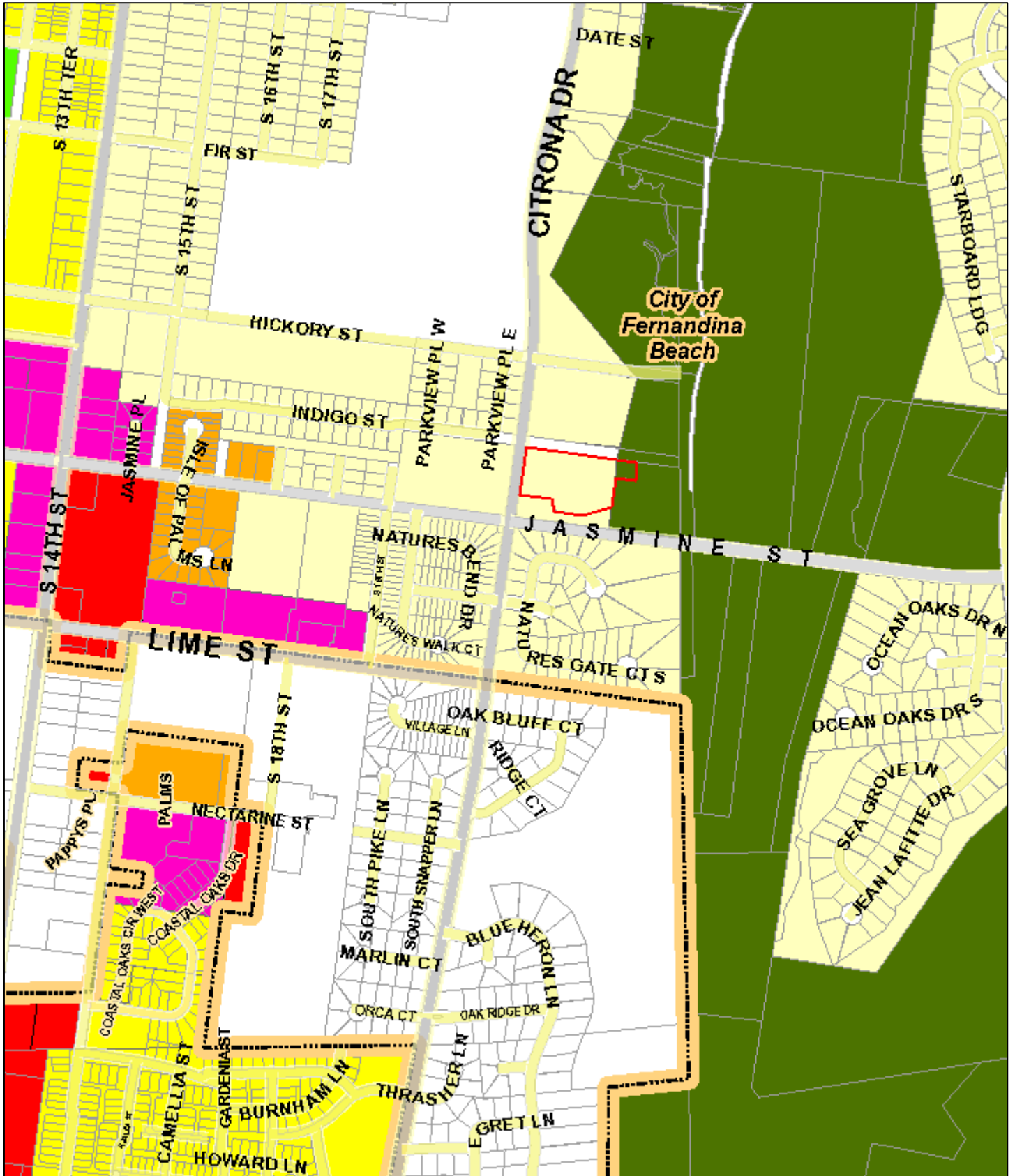
September 14, 2015

Land Parcels	R-1	OT-1	PI-1
City of F.B. Zoning	RLM	OT-2	CON
C-1	R-2	W-1	REC
C-2	R-3	IW	
C-3	RE	I-1	
MU-1	R-1-IG	IA	

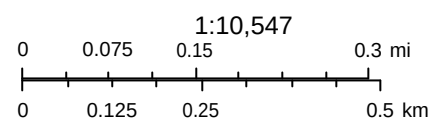
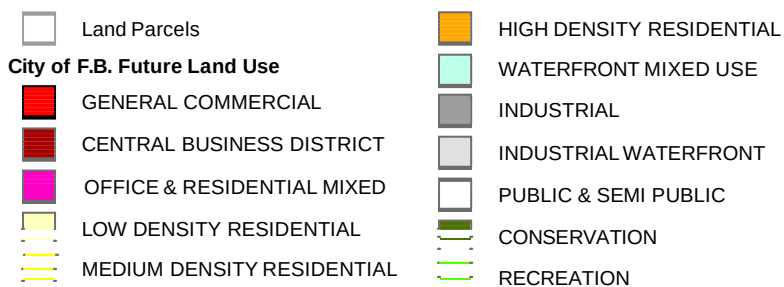


Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

FLUM



September 14, 2015



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

RESOLUTION NUMBER 967

IN RE: APPLICATION FOR CONDITIONAL USE (PUD) NO. PUD0189

WHEREAS, Midland Properties Partnership has applied for a Conditional Use, for a Planned Unit Development (PUD), under Sections 26-10.3 and 26-11 (K) of the Code of Ordinances of the City of Fernandina Beach, Florida, Application No. PUD0181 and

WHEREAS, the Planning Advisory Board has considered such application and rendered its report and recommendations on the same; and

WHEREAS, Notice of Hearing on such application was published in the News-Leader, a newspaper of general circulation in Fernandina Beach, Nassau County, Florida, on March 1, 1989 and on March 8, 1989; and also posted on the subject property; and

WHEREAS, a public hearing was held on such application by the City Commission of the City of Fernandina Beach, Florida, on April 4, 1989; and

WHEREAS, after consideration of the testimony and evidence presented on such application and at the public hearings thereon, the City Commission made the following findings:

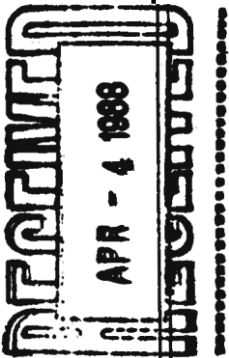
A. That the Commission is empowered under Sections 26-11 and 26-10.3 of the Zoning Code of the City of Fernandina Beach, to grant the conditional use (PUD) described in the application.

B. That the grant of the conditional use will not adversely affect the public interest of health, safety and welfare.

C. That the specific rules governing the conditional use, if any, as required by Section 26-10.3 of the Zoning Code have been met, and that satisfactory provisions and arrangements have been made concerning those certain matters specified in Section 26-11(K) (4), (a) through (h) of the Zoning Code.

NOW, THEREFORE, BE IT RESOLVED by the CITY COMMISSION of the CITY OF FERNANDINA BEACH, FLORIDA, at its meeting duly called and assembled, that Application for Conditional Use (PUD) No. PUD0189, filed by Midland Properties Partnership be and the same is hereby approved, subject to the following conditions:

1. That the property shall remain as a unified tract of 8.22 acres without any development activity in the greenbelt or landfill area.
2. A sidewalk or paved walkway from the development area to the Jasmine Street/Citrona Drive intersection will be provided.
3. The Planned Unit Development will contain the same rental criteria, for the same duration, as the FmHA project requires, and, for the duration of the provision, the project shall not be converted to condominium form of ownership.
4. Deceleration and acceleration lanes shall be provided as approved by the County Engineer.
5. The access to the development is subject to approval of the County Engineer.
6. Fencing is to be provided along Jasmine Street, but without visual interference with intersection traffic.
7. Plans for storm water and street lighting to be provided.



RONNIE SAPP
Mayor-Commissioner

VICKI P. WINGATE
City Clerk



715 S. 6TH STREET
ZONING MAP CHANGES

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1800-0288-0060 WALKER GERALDINE
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	715 S. 6 TH Street Single Family Home Built in 2000 and Accessory Structures
CURRENT LAND USE + ZONING:	Future Land Use Map: Medium Density Residential Zoning: Industrial
PROPOSED LAND USE + ZONING:	Amend the Zoning Map from Industrial (I-1) to Medium Density Residential (R-2)
EXISTING USES ON SITE:	Single-Family Home constructed in 2000 with ancillary structures (Homesteaded)
PROPERTY SIZE:	0.23 Acres of Land

DATA AND ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X	None Noted	11 ft to 12 ft	Fine Sand	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Single Family Home/ vacant lots	1900	I-1 (vacant section only)/R-2	Industrial (vacant section only) /Medium Density Residential
	South	Single Family Home	1941	I-1	Medium Density Residential/ Industrial
	East	Single Family Home	2000	R-2	Medium Density Residential
	West	Unimproved Public ROW (S.5 th Street) abutting CSX transportation building/offices	N/A	I-1	Industrial
APPLICABLE	1.02.02 (adequate public services);				



STAFF REPORT
715 S. 6th Street

COMPREHENSIVE PLAN POLICIES:	1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.05 (medium density residential land use category); 3.01.05 (provision of land use for housing); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.04 (R-2 zoning district); 2.01.20 (CON zoning district); 2.03.03 (Table of Accessory Uses); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	In order to correct the zoning conflict and ensure protection of the current use of the structure and its ancillary structures staff recommends that the board approve the following actions: 1. Amend Zoning Map for approximately 0.23 acres of land from Industrial (I-1) to Medium Density Residential (R-2) Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



STAFF REPORT
715 S. 6th Street

MAP EXHIBITS & PROPERTY IMAGES:

715 S. 6th Street Photo + 2019 Aerial



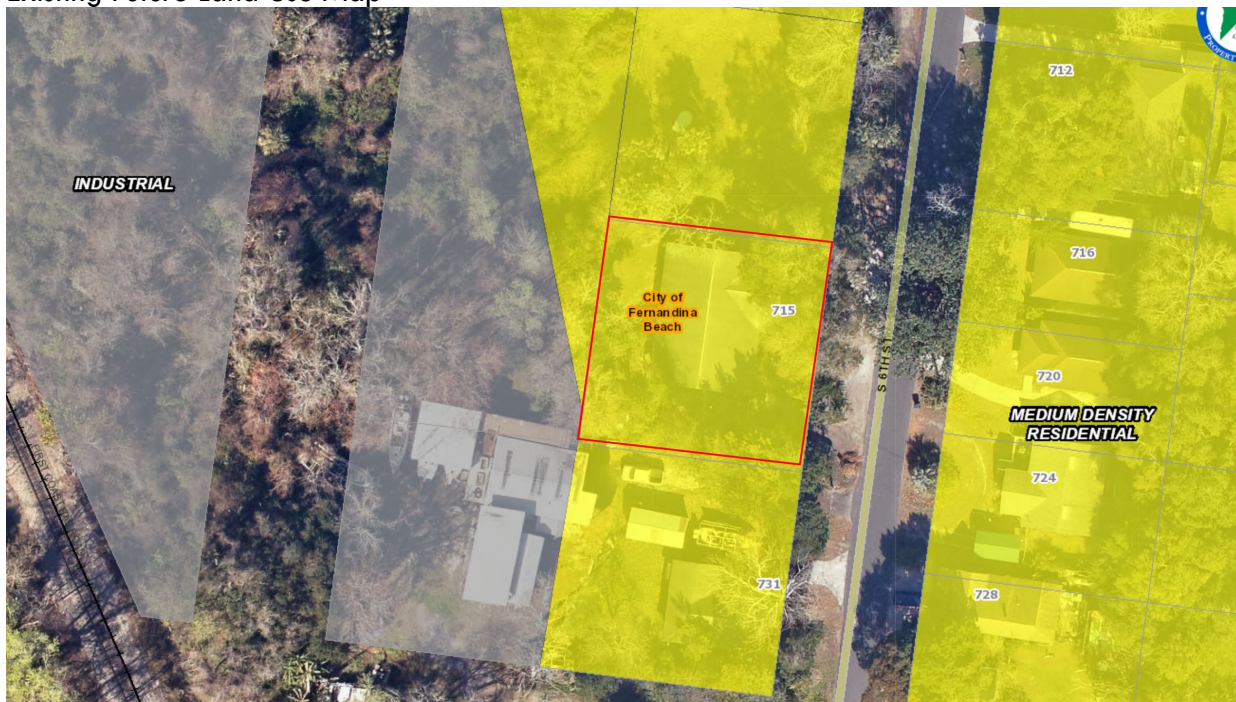


STAFF REPORT
715 S. 6th Street

Existing Zoning District I-1 (Request is to change entire parcel to R-2 to match FLUM)



Existing Future Land Use Map





STAFF REPORT 715 S. 6th Street

Approximate location of nearest wetlands:



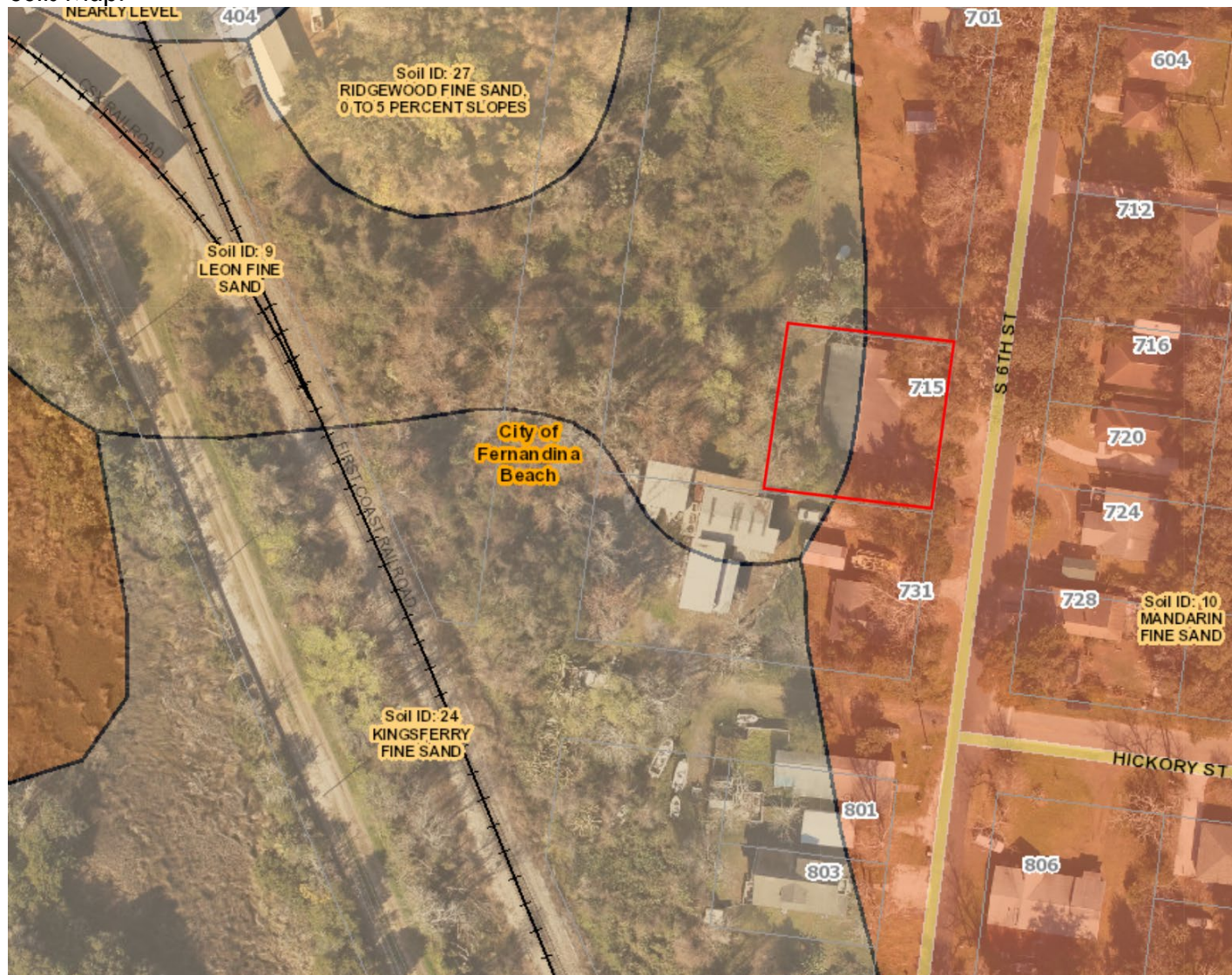
Flood Zone:





STAFF REPORT
715 S. 6th Street

Soils Map:





STAFF REPORT
715 S. 6th Street

Topography:





**731 S. 6TH STREET
FLUM AND ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1800-0288-0040 YORK WAYNE & BETTY R				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	731 S. 6 TH Street Single Family Home Built in 1941 and Accessory Structures				
CURRENT LAND USE + ZONING:	Split Future Land Use Map of Medium Density Residential (MDR) for 0.23 acres and Industrial (Ind) for 0.23 acres of Land Zoning: Industrial for 0.46 acres of land				
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map for approximately 0.23 acres of land located on the western half of the property from Industrial (IND) to Medium Density Residential (MDR) 2. Amend Zoning Map for approximately 0.46 acres of land for approximately 0.46 acres of land from Industrial (I-1) to Medium Density Residential (R-2)				
EXISTING USES ON SITE:	Single-Family Home constructed in 1941 with ancillary structures (Not Homesteaded)				
PROPERTY SIZE:	0.46 Acres of Land				
DATA AND ANALYSIS					
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	None Noted	12 ft to 8 ft	Fine Sand	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Single Family Home	2000	Industrial	Medium Density Residential
	South	Single Family Home	1925	R-2	Medium Density Residential
	East	Single Family Home	1920	R-2	Medium Density Residential
	West	Unimproved	N/A	I-1	Industrial



STAFF REPORT
731 S. 6th Street

	Public ROW (S.5 th Street) abutting CSX transportation building/offices			
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.05 (medium density residential land use category); 3.01.05 (provision of land use for housing); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan			
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.04 (R-2 zoning district); 2.01.20 (CON zoning district); 2.03.03 (Table of Accessory Uses); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC			
STAFF RECOMMENDATION:	In order to correct the current land use and zoning conflict and ensure protection of the current use of the structure and its ancillary structures staff recommends that the board approve the following actions: 1. Amend Future Land Use Map for approximately 0.23 acres of land located on the western half of the property from Industrial (IND) to Medium Density Residential (MDR) 2. Amend Zoning Map for approximately 0.46 acres of land for approximately 0.46 acres of land from Industrial (I-1) to Medium Density			



STAFF REPORT
731 S. 6th Street

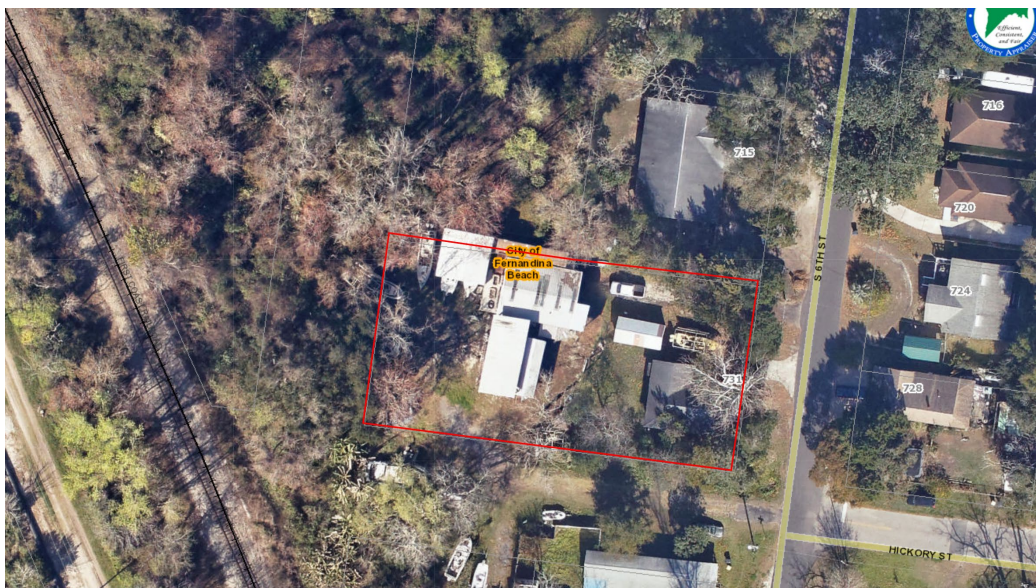
	Residential (R-2)
	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



STAFF REPORT
731 S. 6th Street

MAP EXHIBITS & PROPERTY IMAGES:

731 S. 6th Street Photo + 2019 Aerial



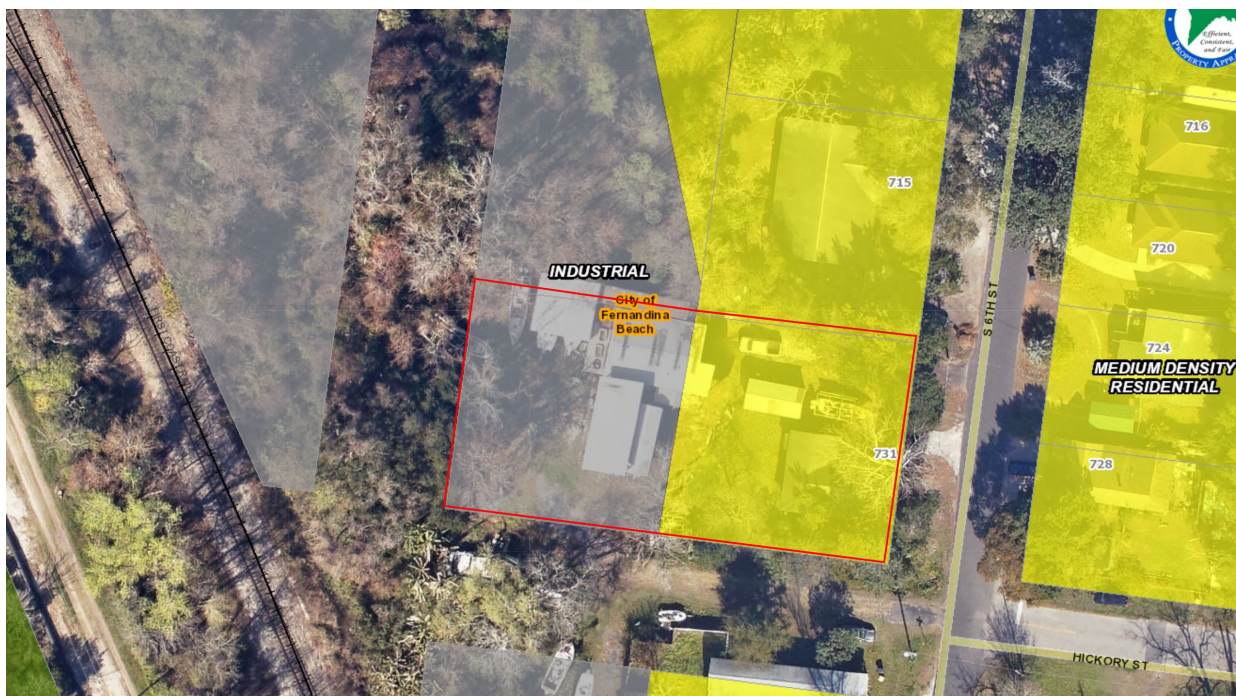


STAFF REPORT 731 S. 6th Street

Existing Zoning District



Existing Future Land Use Map



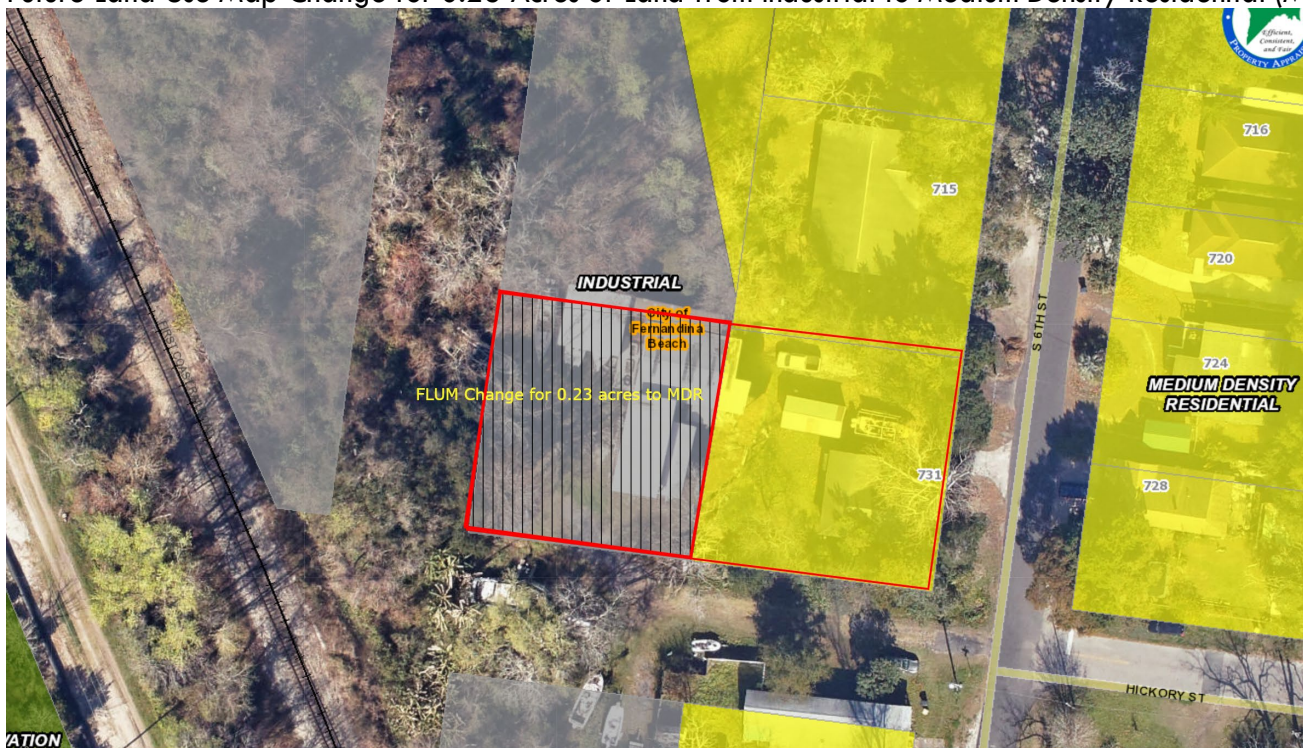


STAFF REPORT
731 S. 6th Street

Change of Zoning from I-1 to R-2 for 0.46 acres of land



Future Land Use Map Change for 0.23 Acres of Land from Industrial to Medium Density Residential (MDR)



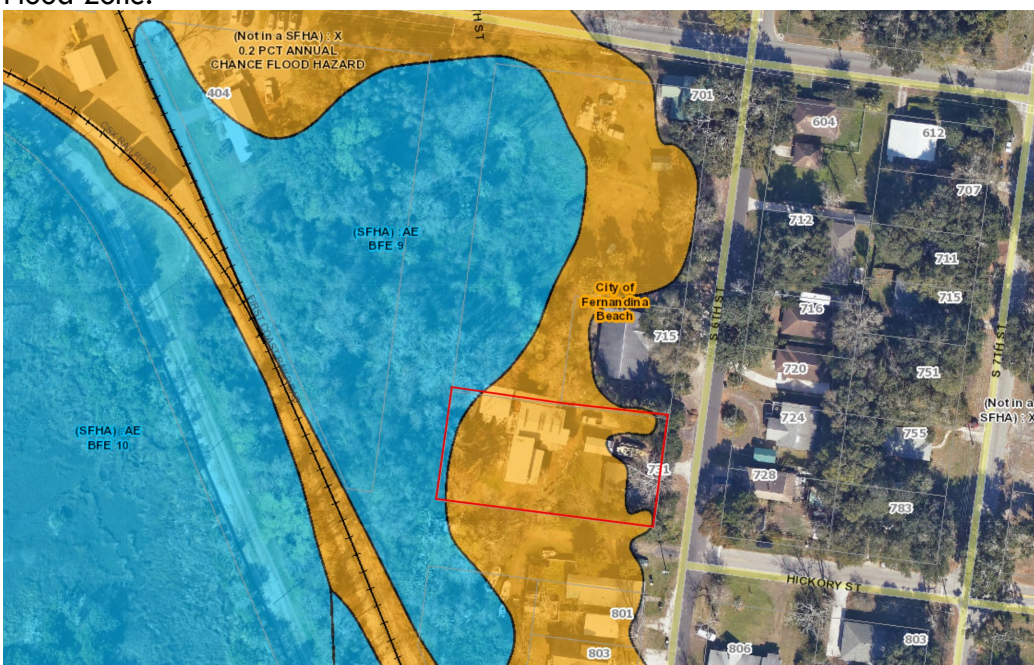


STAFF REPORT
731 S. 6th Street

Approximate location of nearest wetlands:



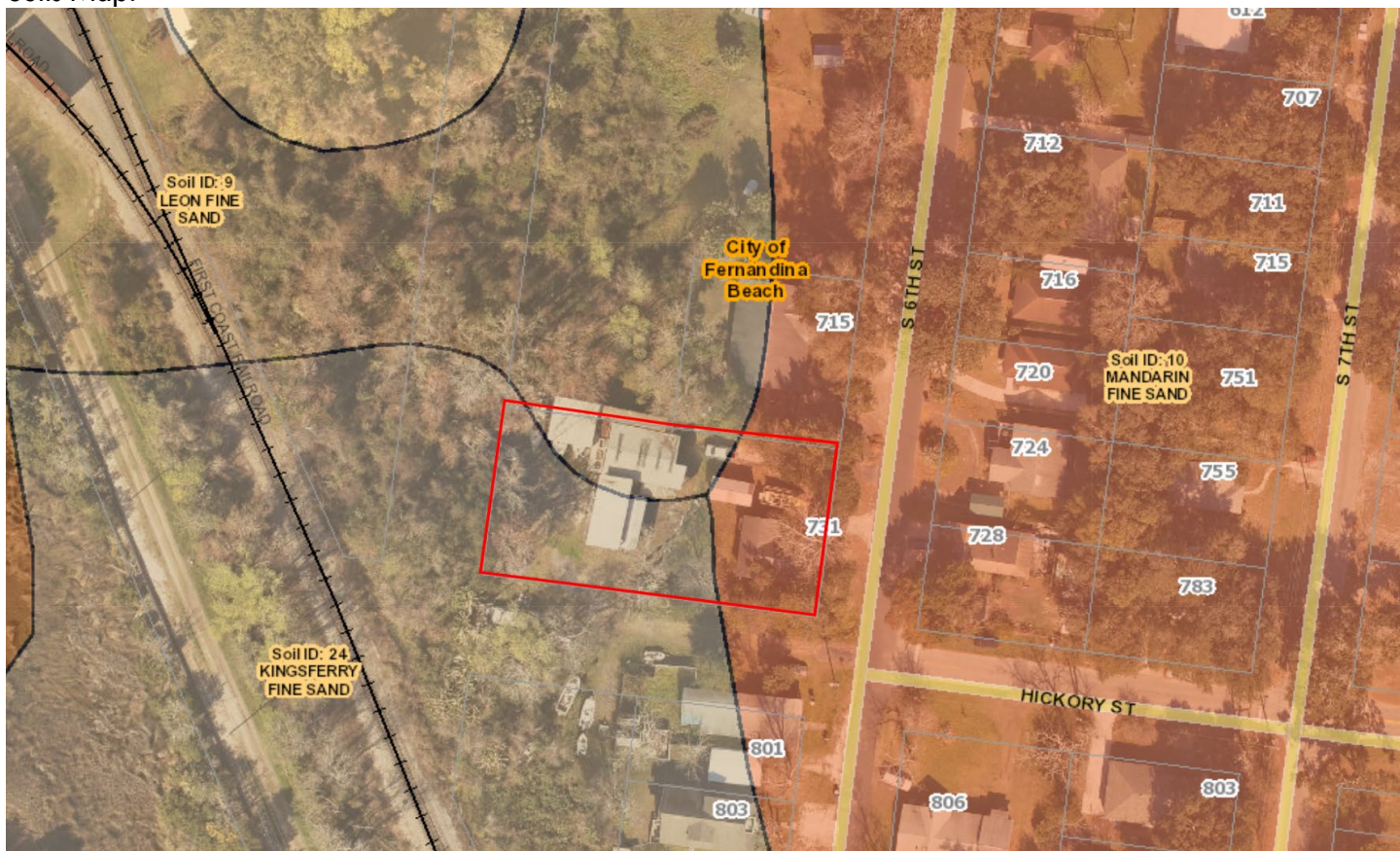
Flood Zone:





STAFF REPORT
731 S. 6th Street

Soils Map:





STAFF REPORT
731 S. 6th Street

Topography:





**STAFF REPORT
S 5TH STREET
ZONING CHANGE TO R-2**

**FIR STREET AND S. 5TH STREET- MILLER
ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1800-0287-0150 00-00-31-1800-0287-0130 00-00-31-1800-0287-0002 MILLER MATTHEW & JOELYNN				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	410 FIR STREET 615 S. 5 TH STREET VACANT PARCEL ADJOINING 615 S. 5 TH STREET				
CURRENT LAND USE + ZONING:	MEDIUM DENSITY RESIDENTIAL/ INDUSTRIAL FOR 456.84 SQ.FT. I-1				
PROPOSED LAND USE + ZONING:	MEDIUM DENSITY RESIDENTIAL R-2				
EXISTING USES ON SITE:	VACANT				
PROPERTY SIZE:	0.34 Acres of Land in Total				
DATA & ANALYSIS					
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X	NONE	10-11 FT	SAND	NOT IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Single Family Homes	varies	R-2	Medium Density Residential
	South	Vacant	N/A	R-2	Medium Density Residential
	East	Single Family Homes	Varies	R-2	Medium Density Residential
	West	Vacant	N/A	I-1	Industrial
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.04 (FLUM amendments); 1.02.09 (smooth land use transition and buffering); 1.07.05 (Medium Density Residential land use category); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09;				



STAFF REPORT
S 5TH STREET
ZONING CHANGE TO R-2

	5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 4.05.00 (Landscaping, Buffers, and Tree Protection); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff recommends changing the Zoning District to R-2 (Medium Density Residential) to correspond with the current Future Land Use Map. Additionally, staff recommends the correction of the Future Land Use Map from Industrial to Medium Density Residential for approximately 457 square feet. Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



**STAFF REPORT
S 5TH STREET
ZONING CHANGE TO R-2**

MAP EXHIBITS & PROPERTY IMAGES:

2019 AERIAL





STAFF REPORT
S 5TH STREET
ZONING CHANGE TO R-2

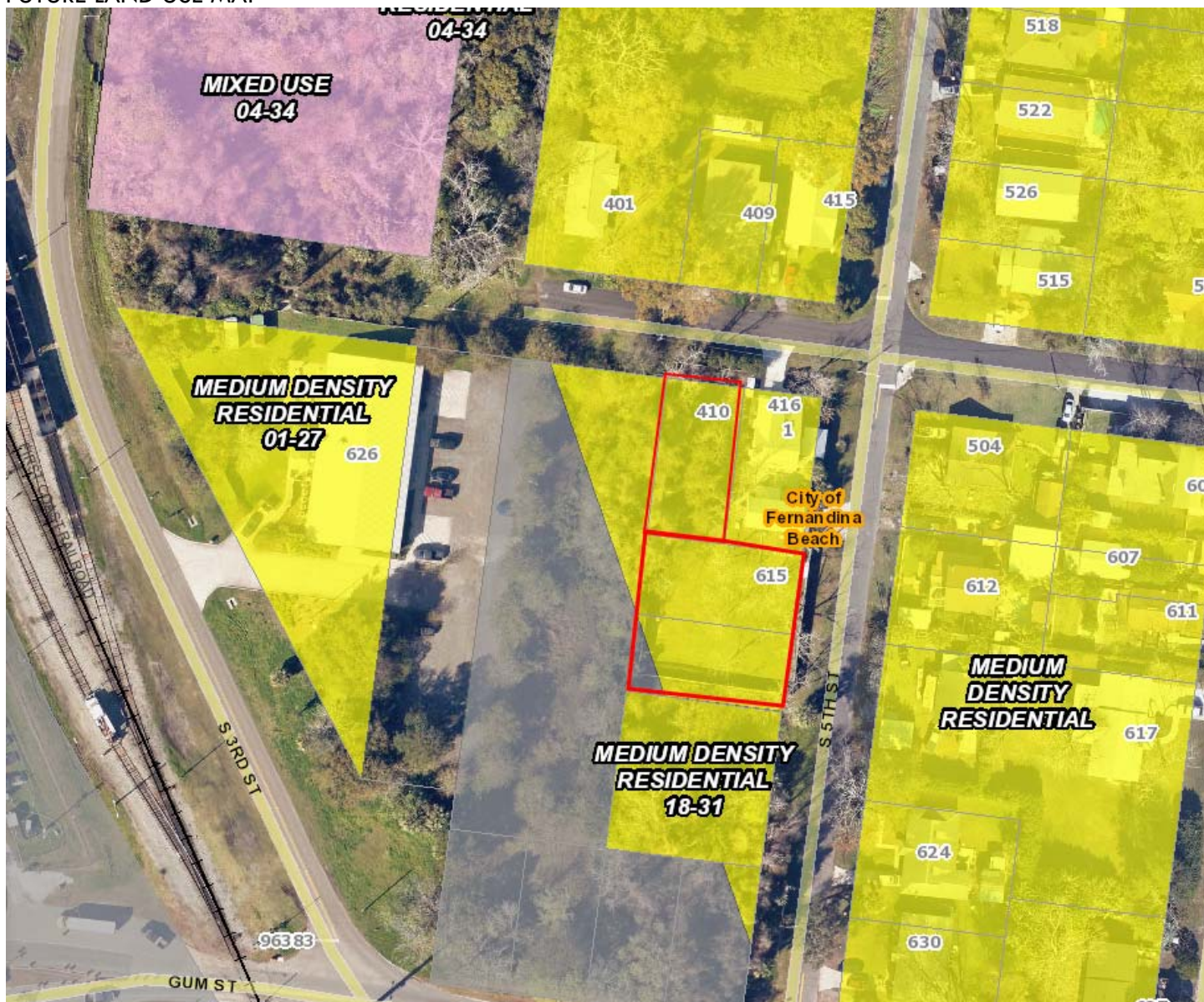
PHOTOS OF PROPERTY





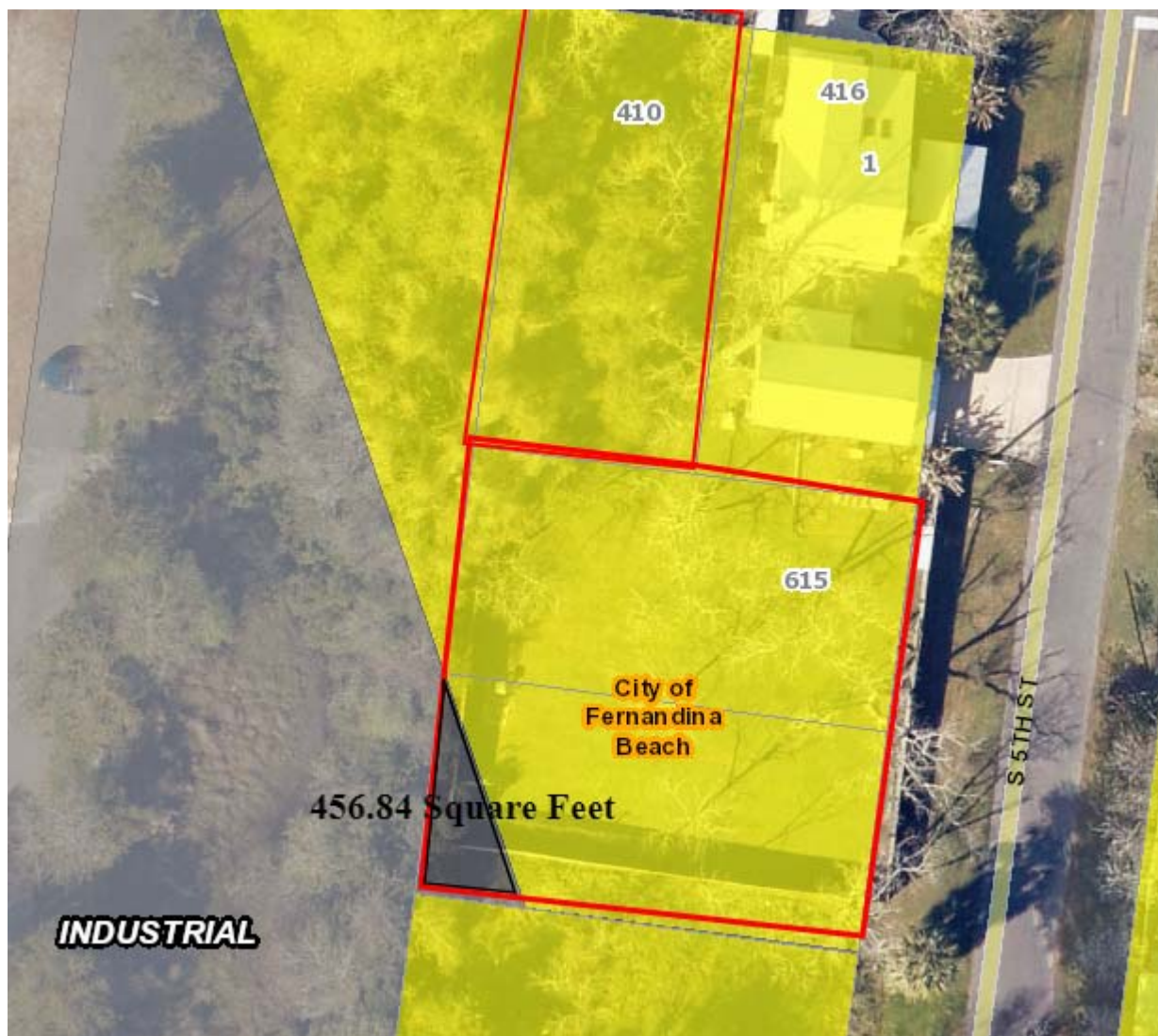
**STAFF REPORT
S 5TH STREET
ZONING CHANGE TO R-2**

FUTURE LAND USE MAP





STAFF REPORT
S 5TH STREET
ZONING CHANGE TO R-2





**STAFF REPORT
S 5TH STREET
ZONING CHANGE TO R-2**

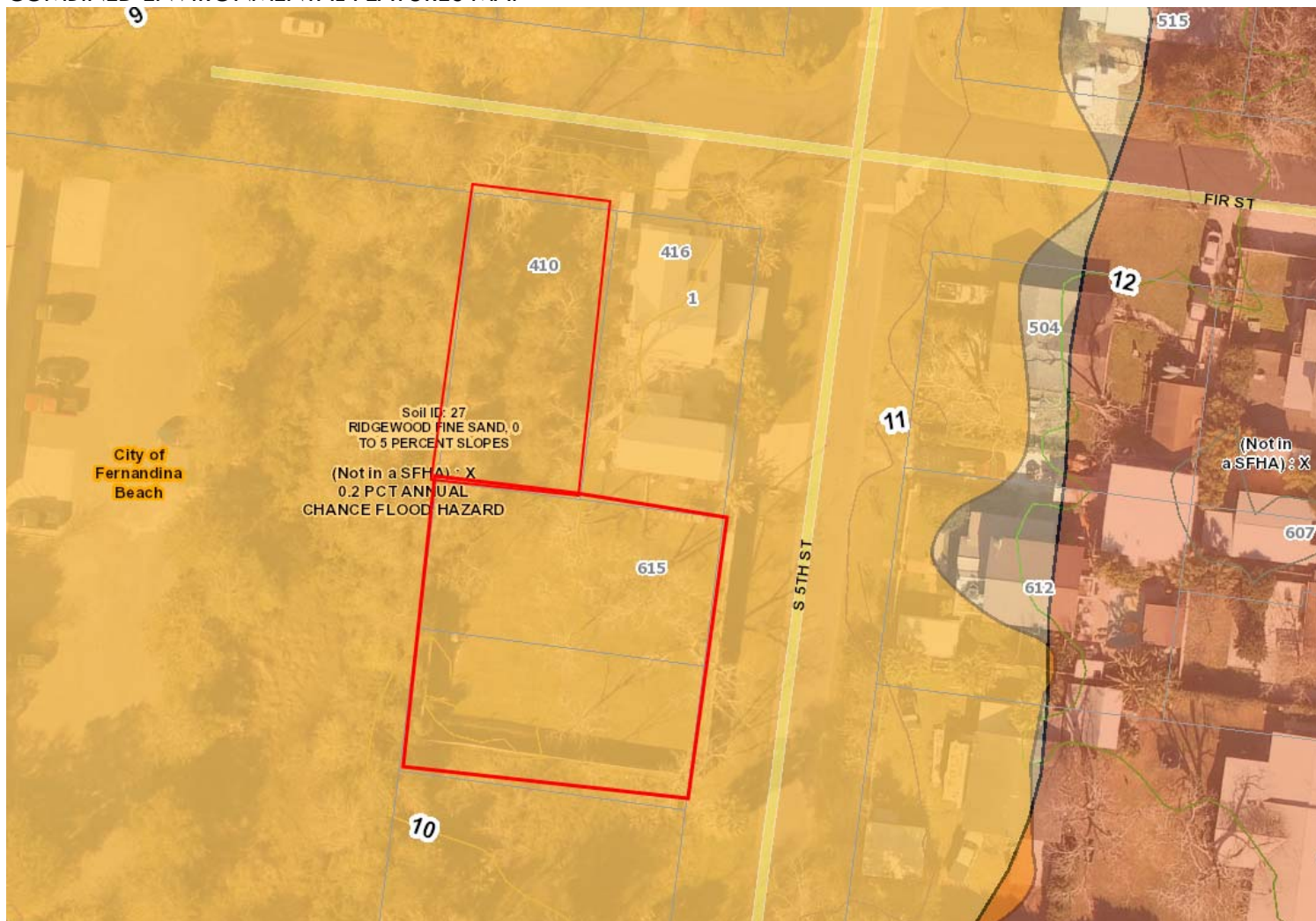
ZONING MAP





STAFF REPORT
S 5TH STREET
ZONING CHANGE TO R-2

COMBINED ENVIRONMENTAL FEATURES MAP





**STAFF REPORT
CITRONA DRIVE - CITY**

**CITRONA DRIVE- CITY
FLUM AND ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1180-0017-0060 CITY OF FERNANDINA BEACH
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	CITRONA DR VACANT/ UNDISTURBED
CURRENT LAND USE + ZONING:	Split Future Land Use Map Category of Low Density Residential (LDR) = approximately 21,000 sq. ft. and Conservation (CON)= approximately 3.17 acres Zoning Map Designation reflects approximately 3.65 acres (158,994 sq. ft.) as R-1/ Low Density Residential
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map for approximately 21,000 sq. feet from Low Density Residential (LDR) to Conservation (CON) 2. Amend Zoning Map for approximately 3.65 acres of land from R-1 to CON
EXISTING USES ON SITE:	VACANT
PROPERTY SIZE:	3.65 Acres of Land

DATA AND ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	None Noted	11 ft to -1 ft	Fine Sand/ Clay	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Vacant	N/A	R-/CON	Low Density Residential
	South	Vacant	N/A	R-1	Low Density Residential and Conservation
	East	Vacant	N/A	R-1	Conservation
	West	FB Middle School	1991	PI-1	Public & Institutional



STAFF REPORT
CITRONA DRIVE - CITY

APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.04 (FLUM amendments); 1.02.09 (smooth land use transition and buffering); 1.07.15 (conservation land use category); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.20 (CON zoning district); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 4.05.00 (Landscaping, Buffers, and Tree Protection); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	The requested action results in the reduction of approximately 21,000 square feet of Conservation (CON) Future Land Use Category on the FLUM and in increase in the amount of Conservation (CON) zoning district by 158,994 square feet. Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval. Analysis to support the recommendation is found through the available data provided by the Nassau County Property Appraiser Mapping resources. Specifically, the topography, potential wetlands, soils, and flood zone files.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



**STAFF REPORT
CITRONA DRIVE - CITY**

MAP EXHIBITS & PROPERTY IMAGES:

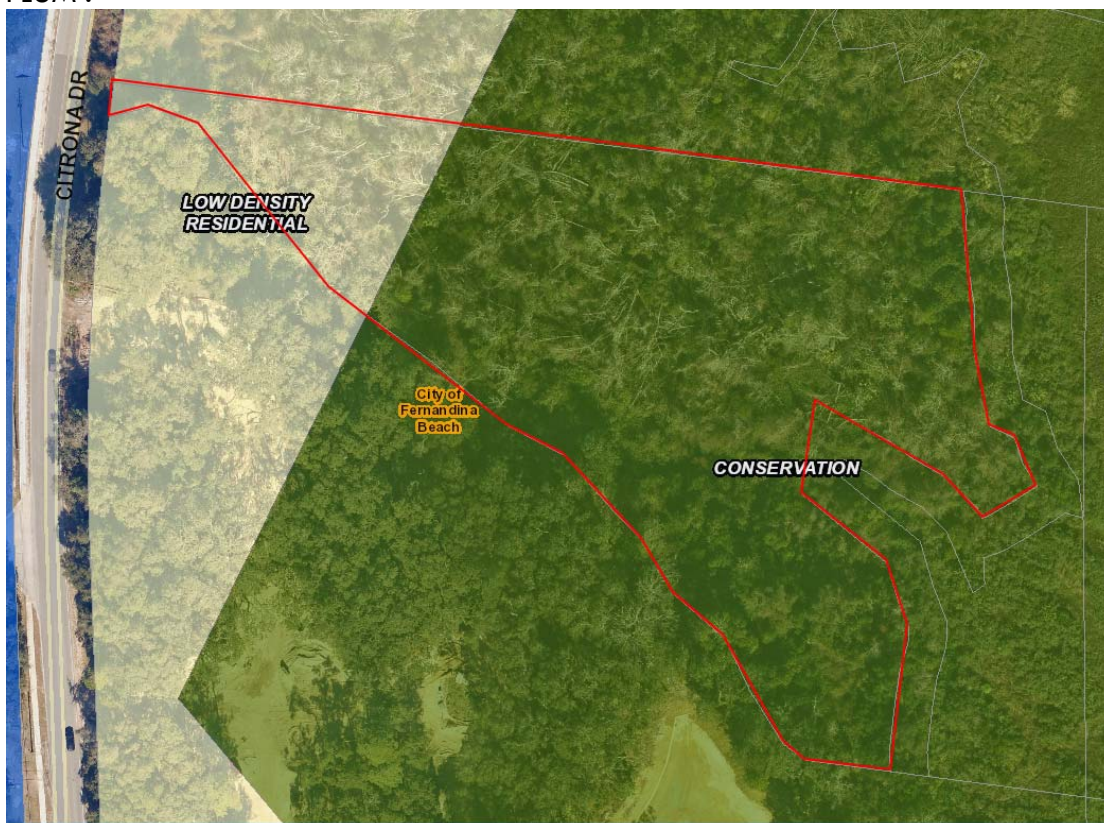
Citrona Drive 2019 Aerial





STAFF REPORT CITRONA DRIVE - CITY

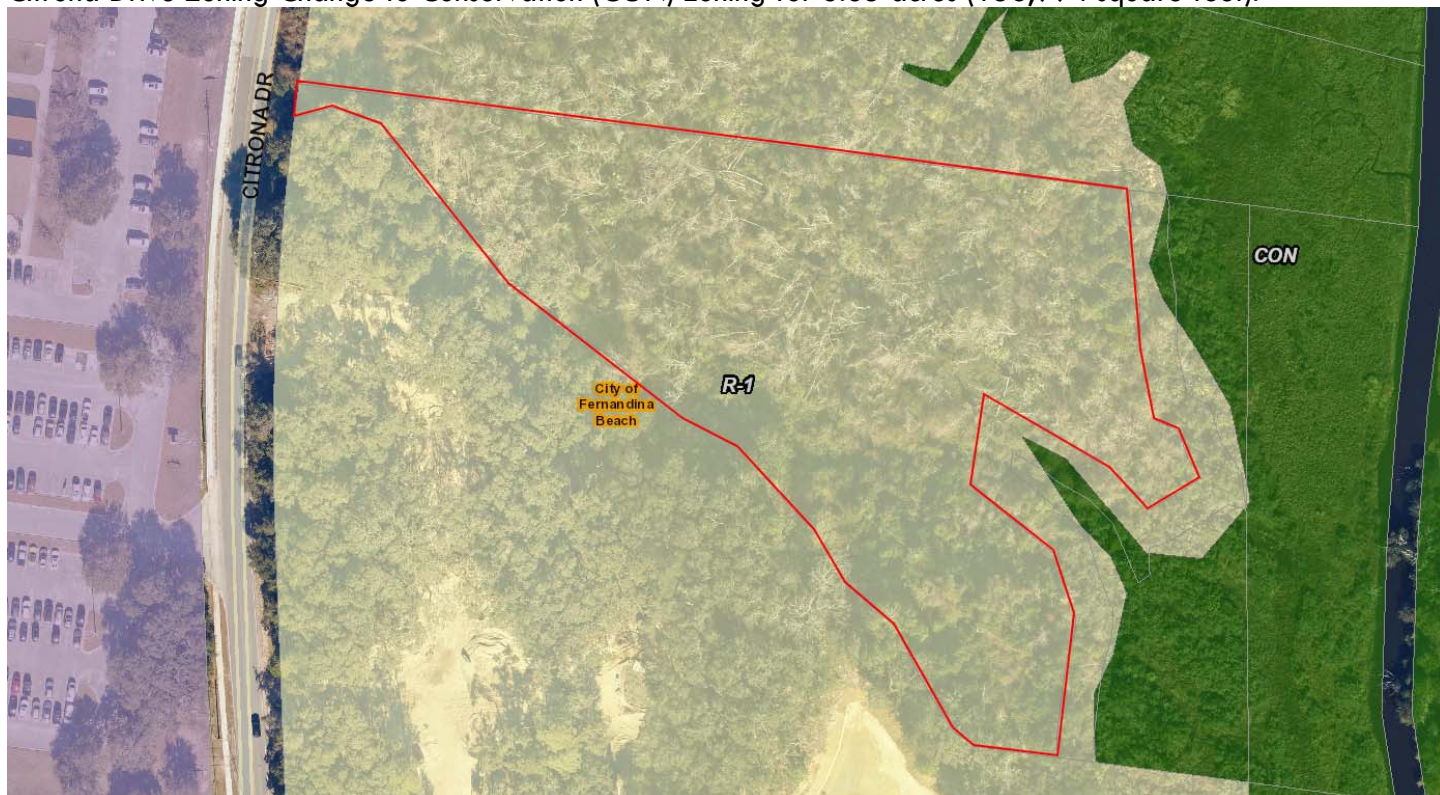
Citrona Drive Future Land Use Map Change Request for approximately 21,000sq ft to Conservation (CON) FLUM :





**STAFF REPORT
CITRONA DRIVE - CITY**

Citrona Drive Zoning Change to Conservation (CON) zoning for 3.65 acres (158,994 square feet):





**STAFF REPORT
CITRONA DRIVE - CITY**

Citrona Drive Approximate Location of Wetlands:



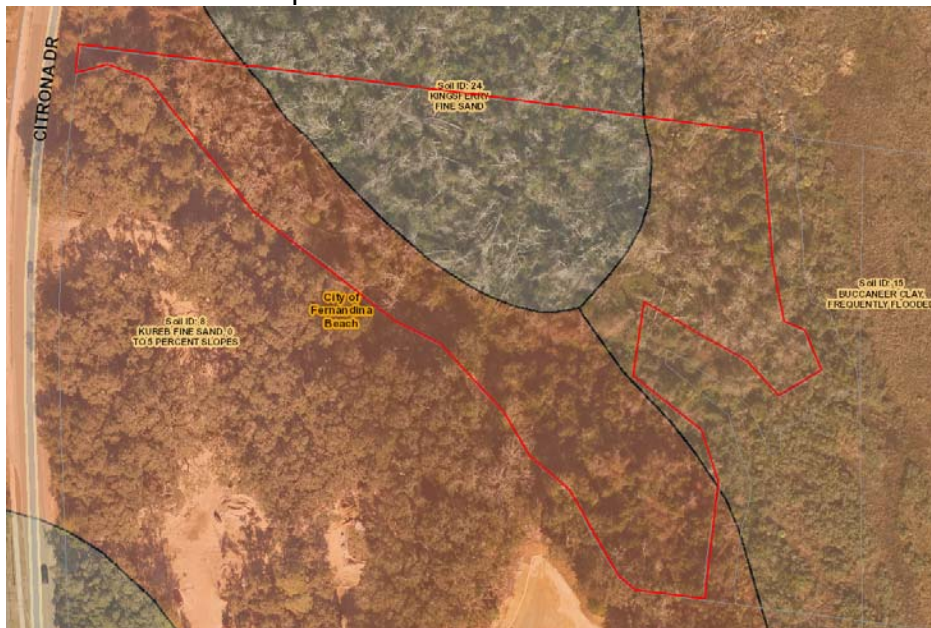


STAFF REPORT CITRONA DRIVE - CITY

Citrona Drive Flood Zone:



Citrona Drive Soils Map:





STAFF REPORT CITRONA DRIVE - CITY

Citrona Drive Topography:





**STAFF REPORT
ROBERT OLIVER DRIVE - CITY**

**ROBERT OLIVER DRIVE- CITY
FLUM AND ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	01-2N-28-0000-0002-0000 AND 02-2N-28-0000-0001-0010 CITY OF FERNANDINA BEACH				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	ROBERT OLIVER DRIVE VACANT/ UNDISTURBED				
CURRENT LAND USE + ZONING:	Medium Density Residential (MDR) Zoning Map Designation reflects approximately 0.66 acres as R-2/ Medium Density Residential				
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map for approximately 2.92 acres of land from Medium Density Residential (MDR) to Conservation (CON) 2. Amend Zoning Map for approximately 0.66 acres of land from R-2 to CON				
EXISTING USES ON SITE:	VACANT				
PROPERTY SIZE:	2.92 Acres of Land				
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	Entire Site	8 ft to 2 ft	Muck	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Vacant			
	South	Vacant			
	East	Forest Ridge PUD			
APPLICABLE COMPREHENSIVE PLAN POLICIES:	West	Vacant			
	1.02.04 (FLUM amendments); 1.02.09 (smooth land use transition and buffering); 1.07.15 (conservation land use category); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and				



STAFF REPORT
ROBERT OLIVER DRIVE - CITY

	conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.20 (CON zoning district); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 4.05.00 (Landscaping, Buffers, and Tree Protection); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>



**STAFF REPORT
ROBERT OLIVER DRIVE - CITY**

MAP EXHIBITS & PROPERTY IMAGES:

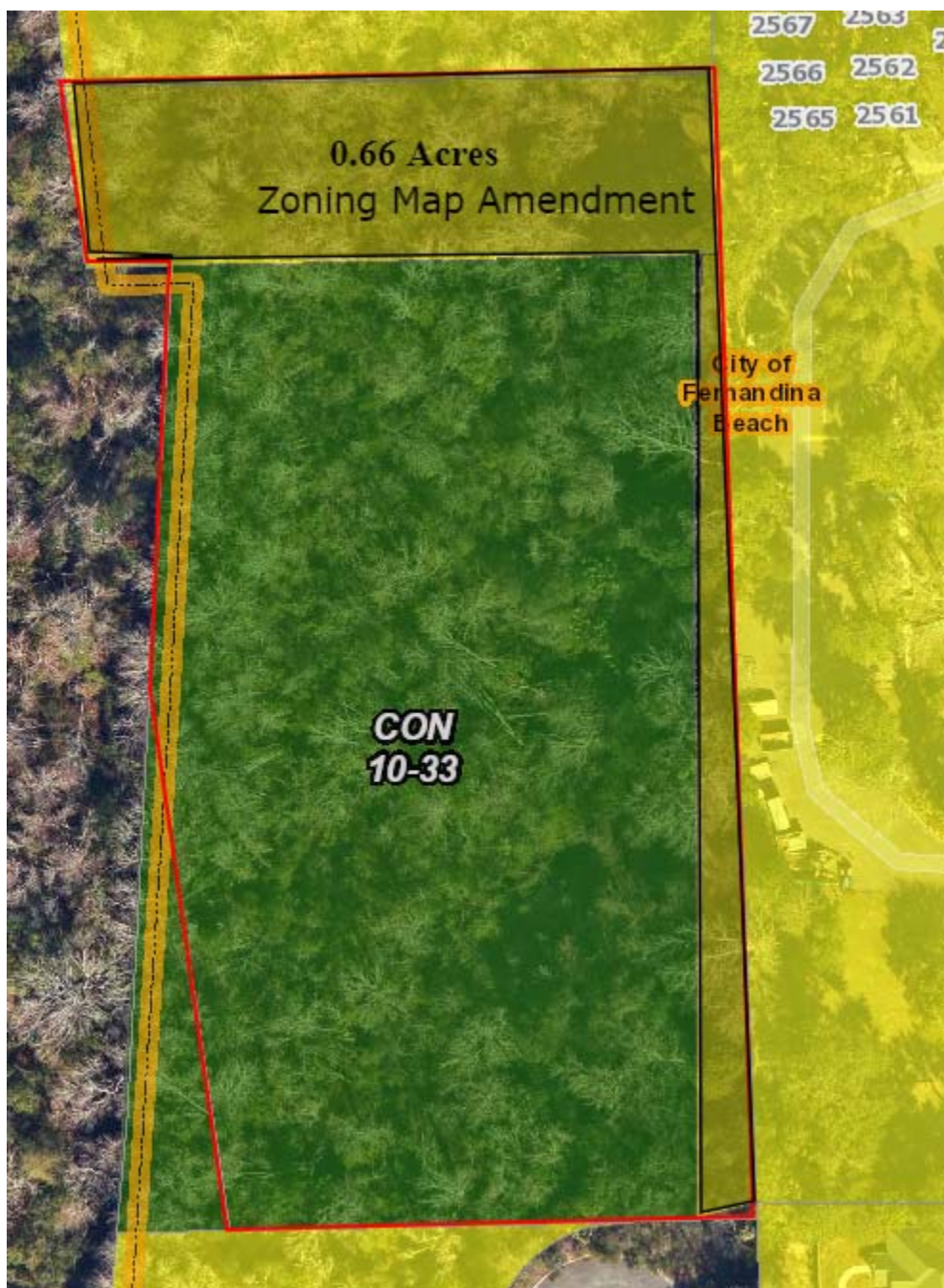
Robert Oliver Future Land Use Map Change Request for approximately 2.92 acres of land:





**STAFF REPORT
ROBERT OLIVER DRIVE - CITY**

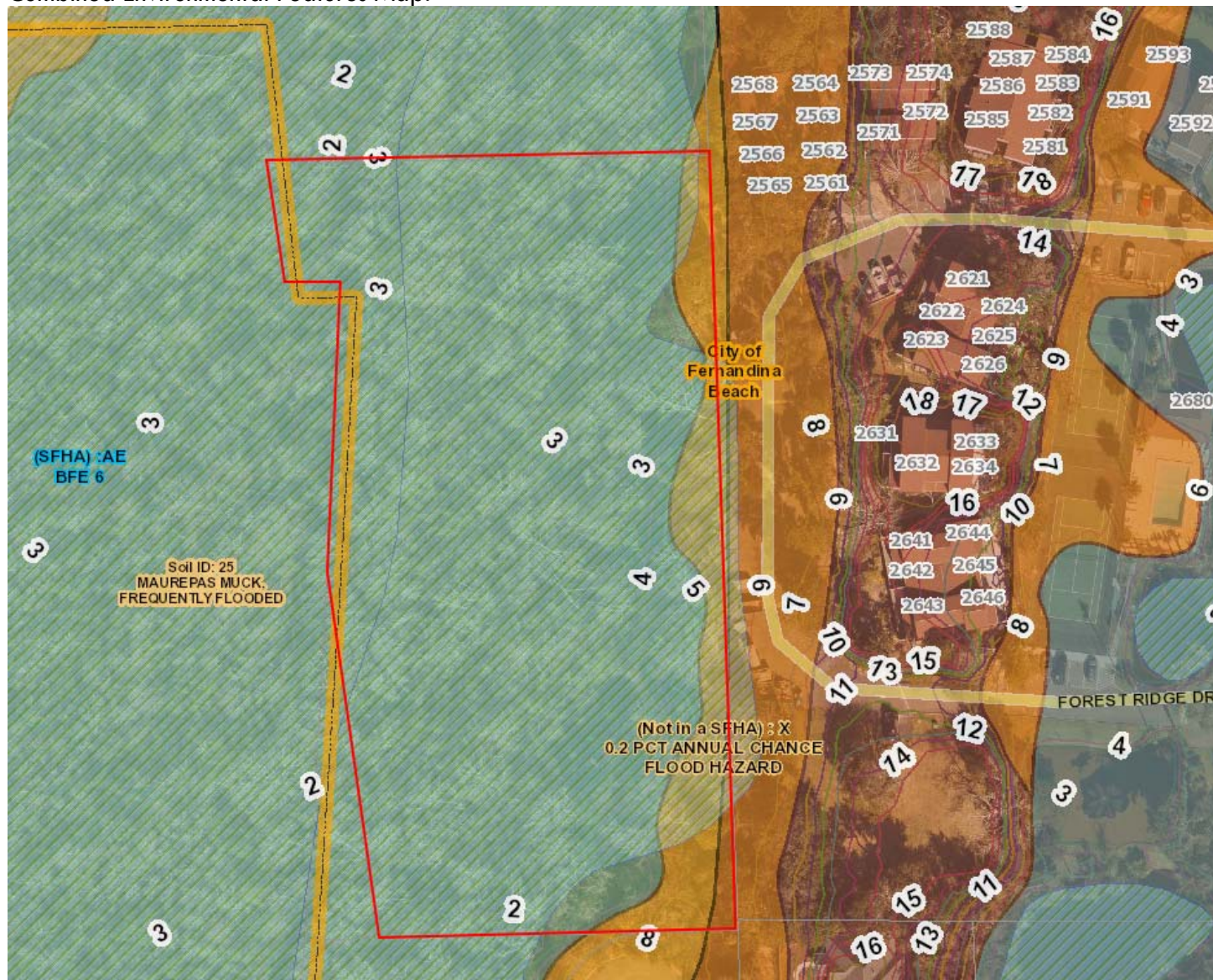
Robert Oliver Zoning Change to Conservation:





STAFF REPORT ROBERT OLIVER DRIVE - CITY

Combined Environmental Features Map:





**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

**OFF SHORE COURT & OFF SHORE DR
ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1652-0012-0000 HUTZELL CRAIG L & MARY KAY (2309 Off Shore Ct) 00-00-31-1652-0015-0000 MCADAMS JANE (2329 Off Shore Ct) 00-00-31-1652-0016-0000 OLIVER SHARON D (2347 Off Shore Ct) 00-00-31-1651-0050-0000 FALLON ROBERT & DARYL (2119 Off Shore Dr) 00-00-31-1652-0010-0000 LEEN MATTHEW M & CAROLYN B (2225 Off Shore Dr) 00-00-31-1652-0011-0000 WASHECHEK TIFFANY (2255 Off Shore Dr) 00-00-31-1652-0014-0000 PRONTAUT ANTOINE B & SHARON N (2315 Off Shore Ct)
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	OFF SHORE COURT SINGLE FAMILY HOMES
CURRENT LAND USE + ZONING:	MEDIUM DENSITY RESIDENTIAL (MDR) AND CONSERVATION (CON) Zoning Map: R-2
PROPOSED LAND USE + ZONING:	Amend Zoning Map from R-2 to align with Plat Map and Conservation FLUM boundary with both R-2 and Conservation zoning districts applied as depicted by the Residence Amelia Landings Unit Five Plat (Plat Book 6, Page 60) Change totals approximately 2.31 acres of land
EXISTING USES ON SITE:	Single Family Homes
PROPERTY SIZE:	Approximately 4.45 Acres in Total

DATA AND ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	APPROX. 2.45 ACRES	16-2 FEET	SAND AND MUCK	NOT IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	Single-Family Homes	Varies	R-2	Medium Density Residential
	South	Condos	Varies	R-2	Medium Density Residential
		Single-Family	Varies	R-2	Medium Density



**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

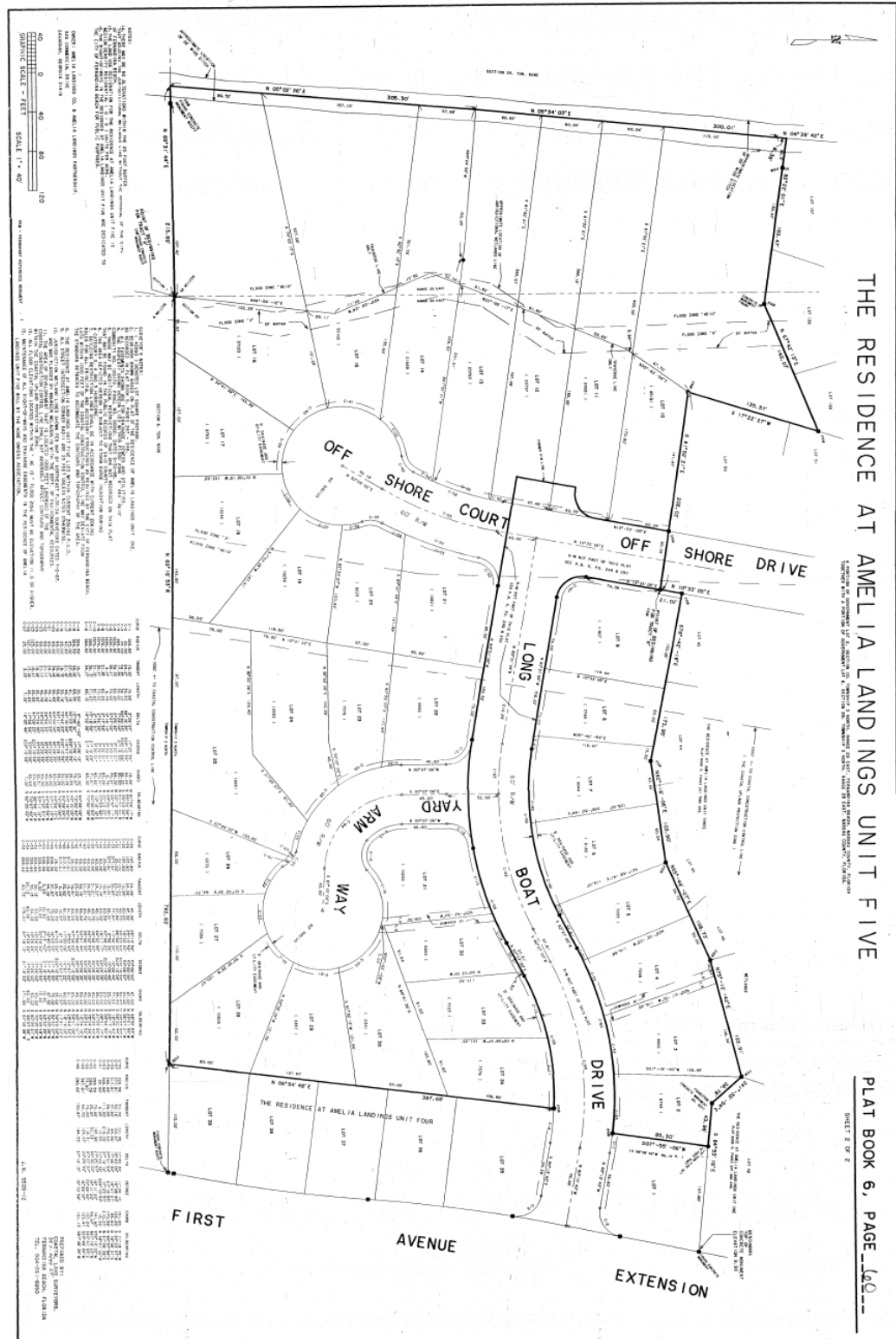
	East West	Homes Vacant	N/A	CON	Residential Conservation
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.04 (FLUM amendments); 1.02.09 (smooth land use transition and buffering); 1.07.05 (Medium Density Residential land use category); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan				
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 4.05.00 (Landscaping, Buffers, and Tree Protection); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC				
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.				
PAB RECOMMENDATION:	<i>Pending 10/9/19 public hearing</i>				



**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

MAP EXHIBITS & PROPERTY IMAGES:

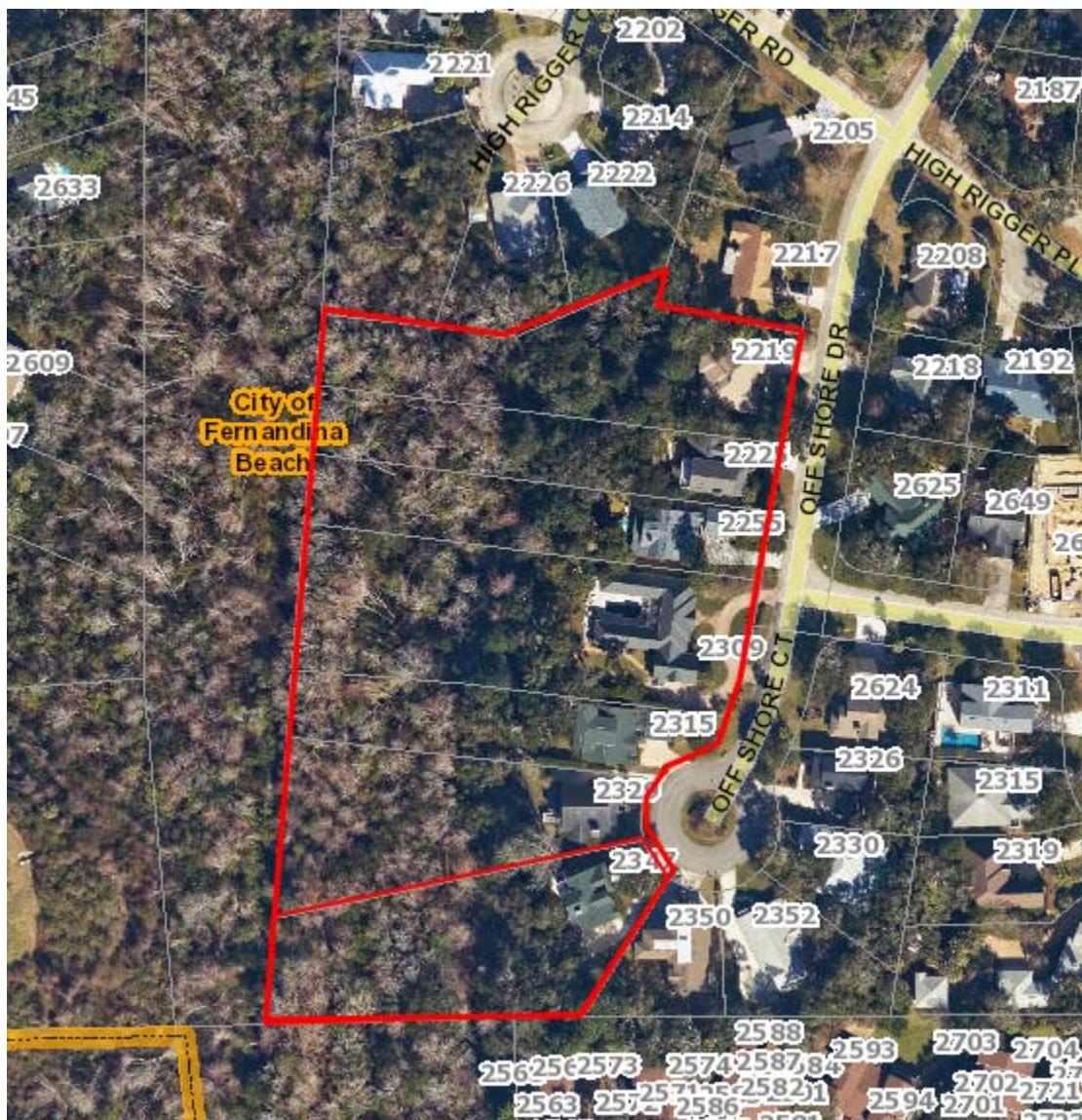
The Residence at Amelia Unit Five Plat Map





**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

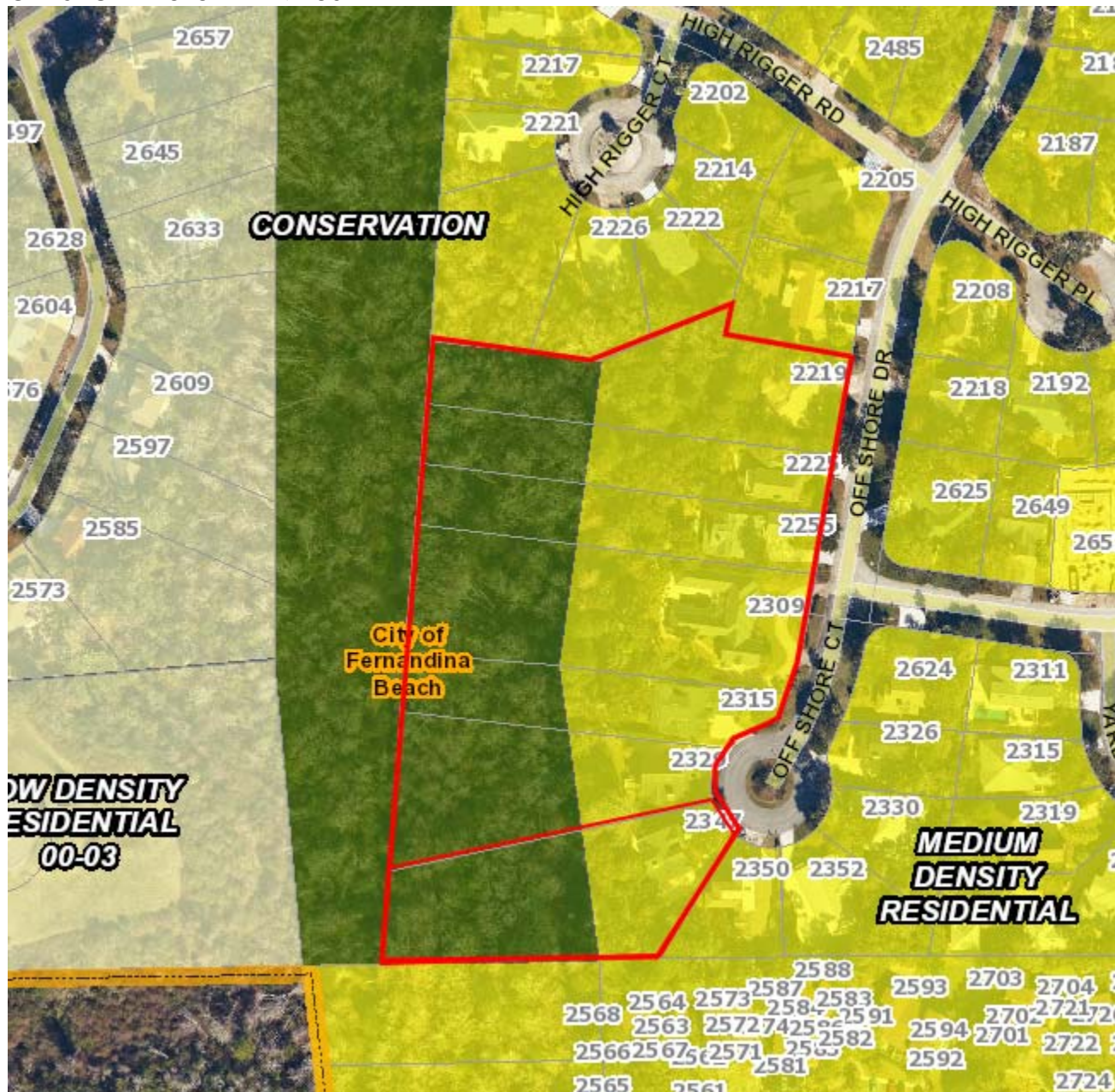
OFF SHORE 2019 Aerial





**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

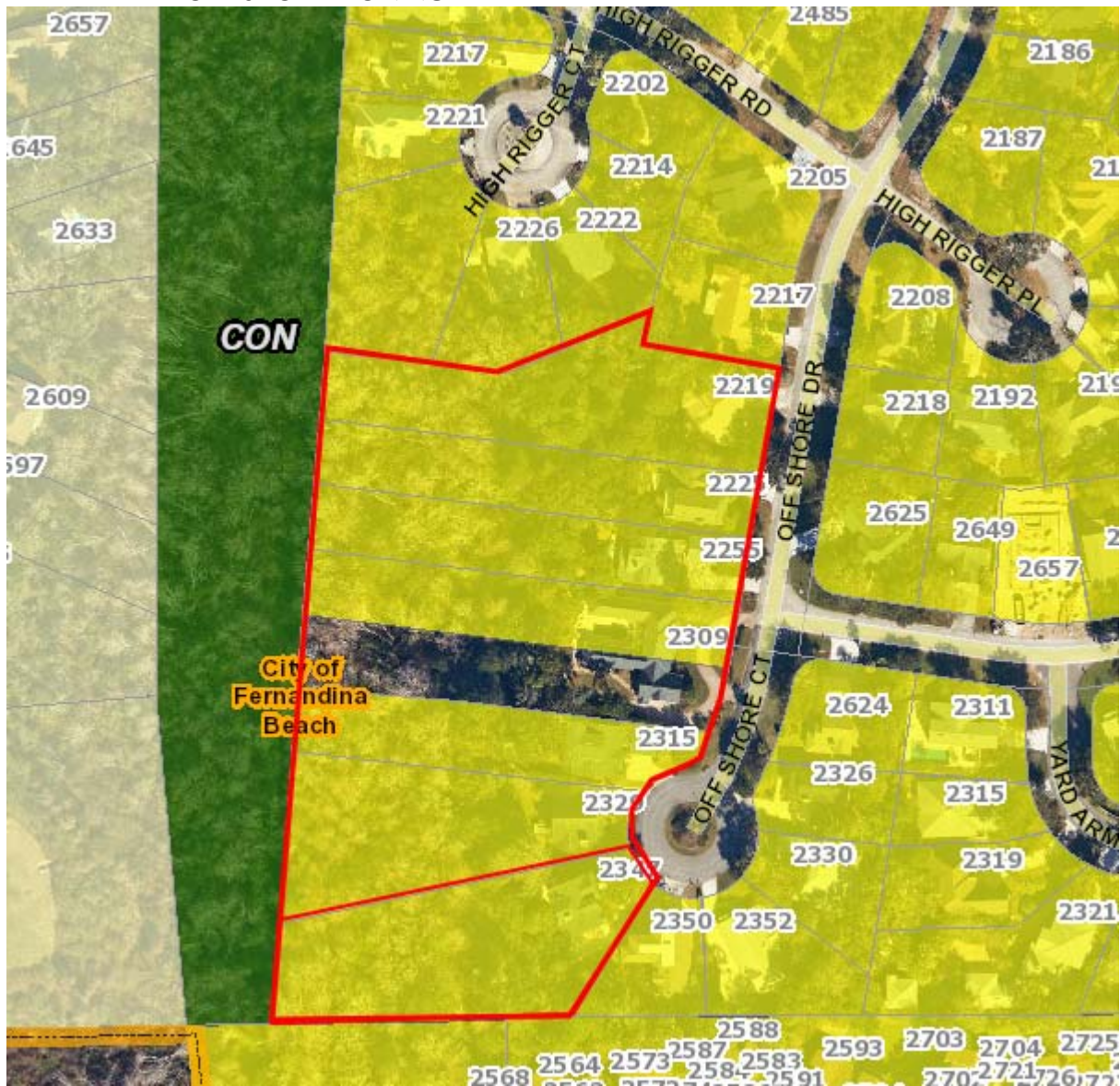
OFF SHORE -FUTURE LAND USE MAP





**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

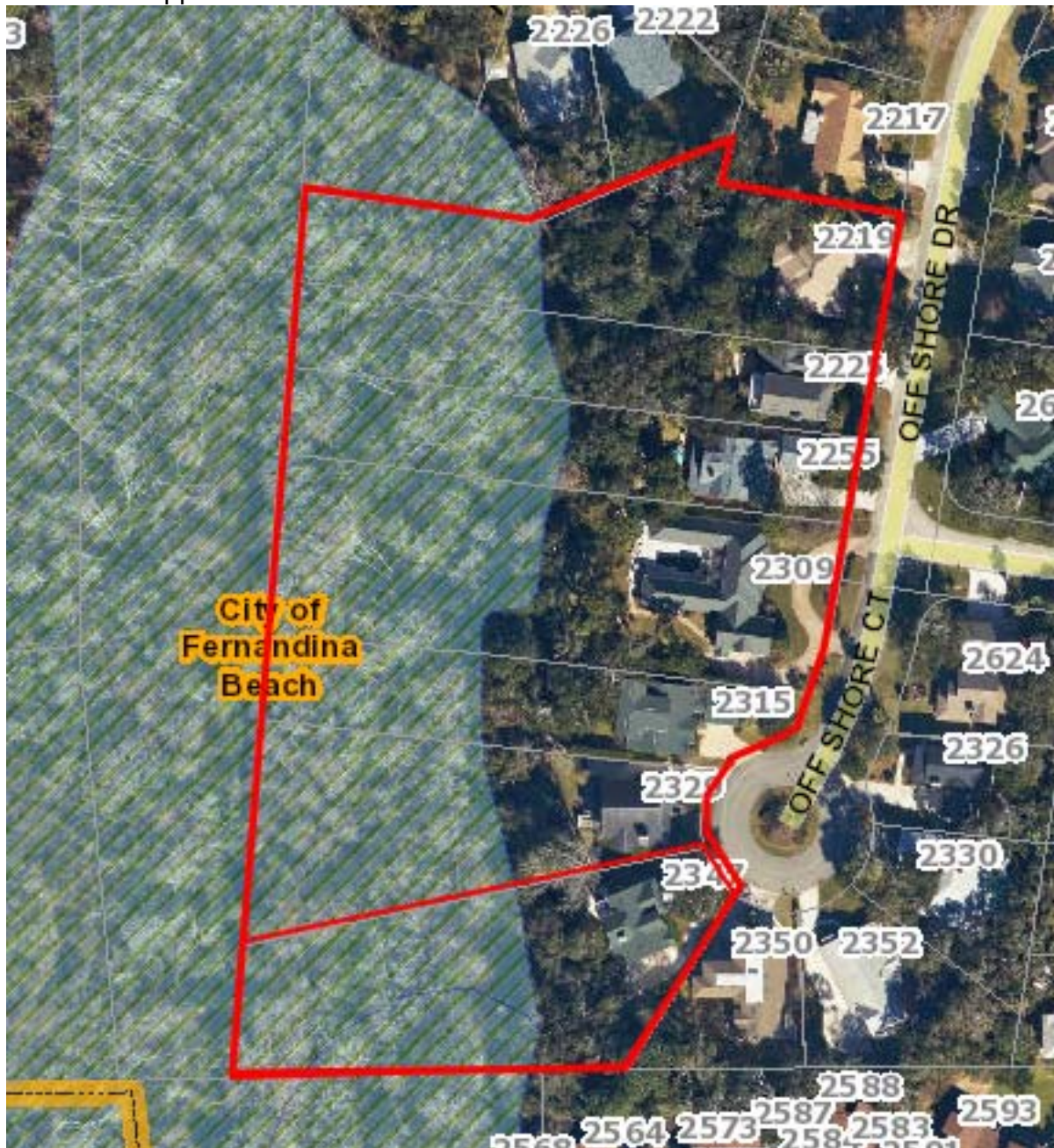
OFF SHORE- ZONING MAP





**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

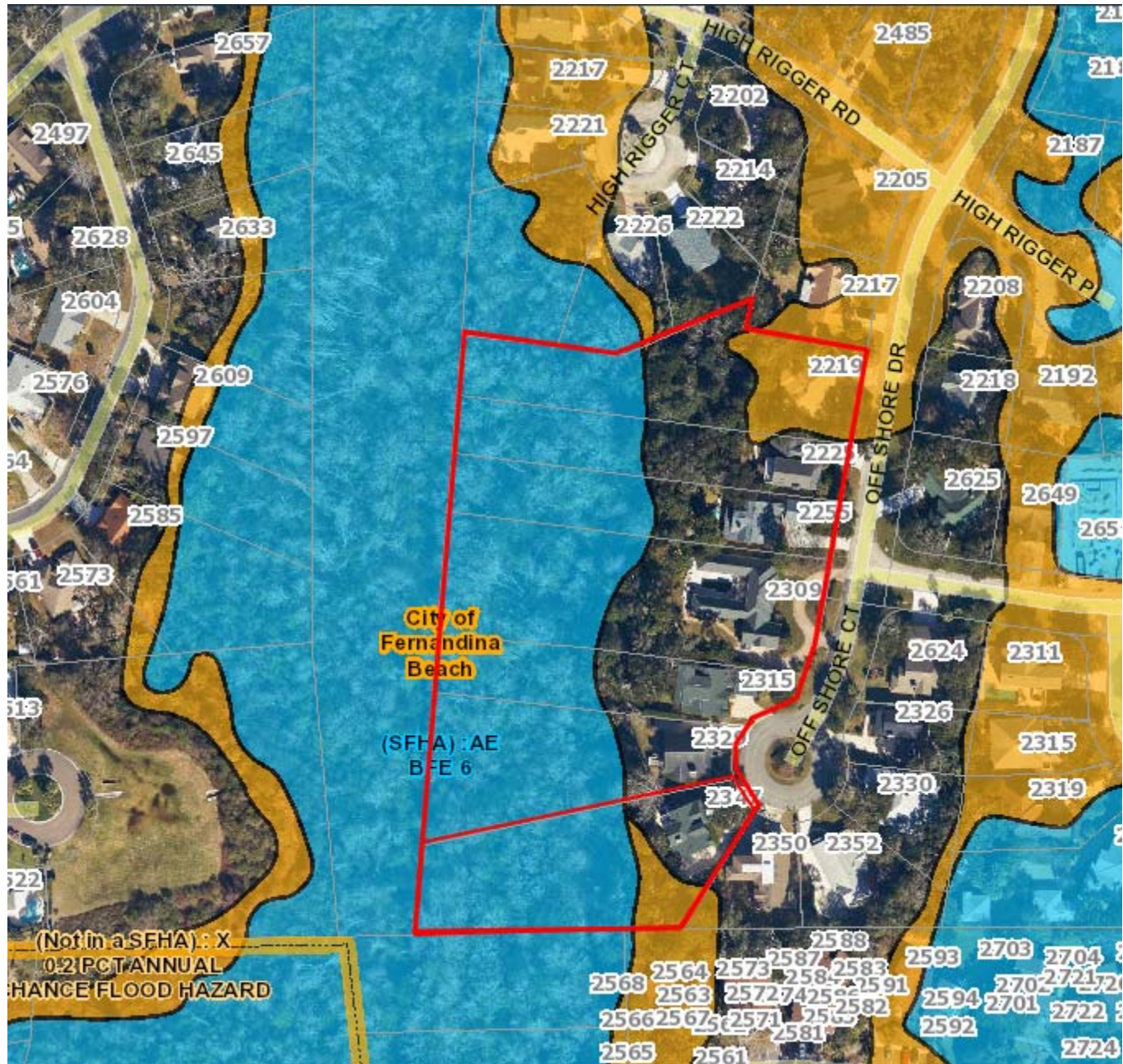
OFF SHORE Approximate Location of Wetlands:





**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

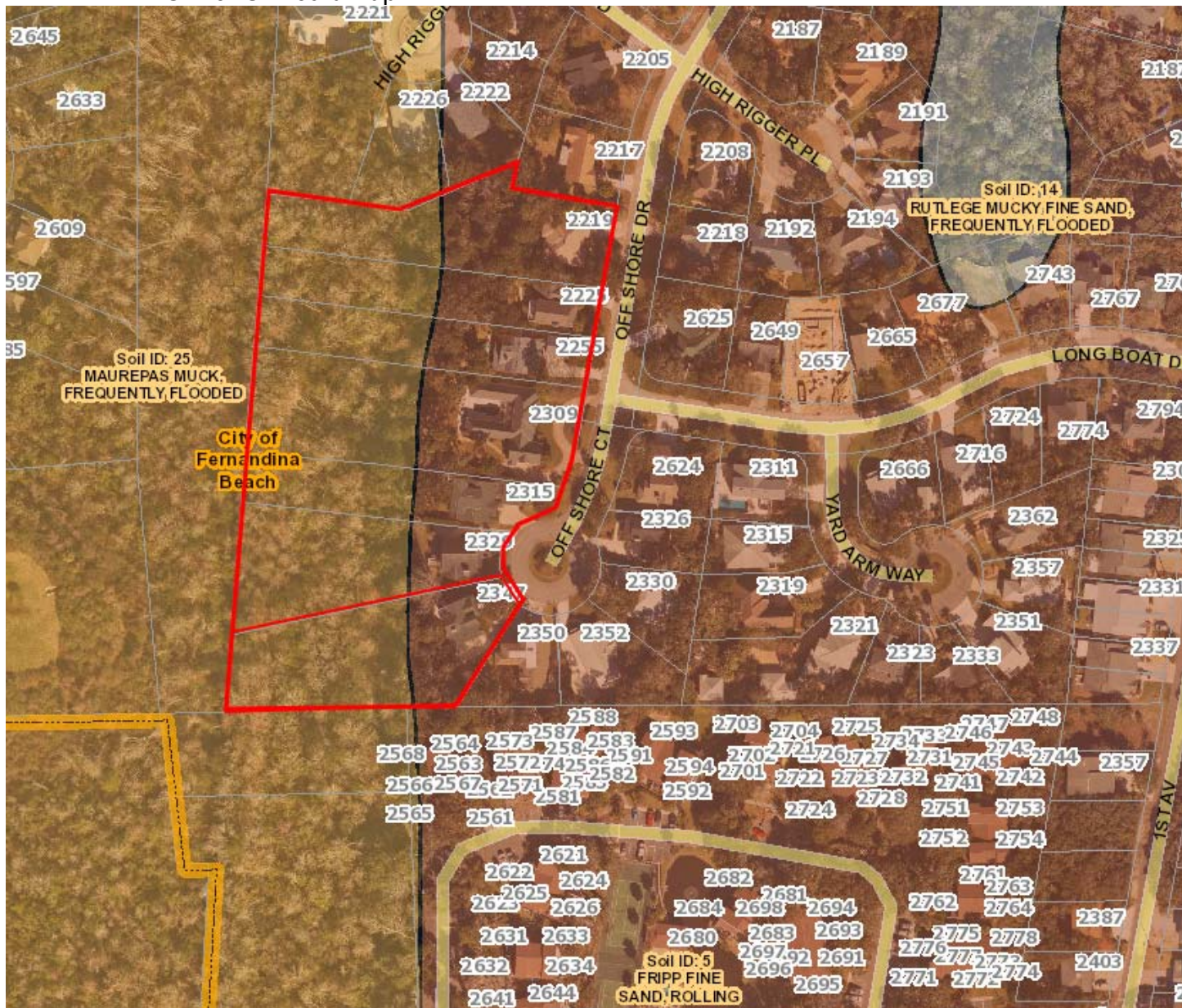
OFF SHORE Flood Zone:





**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

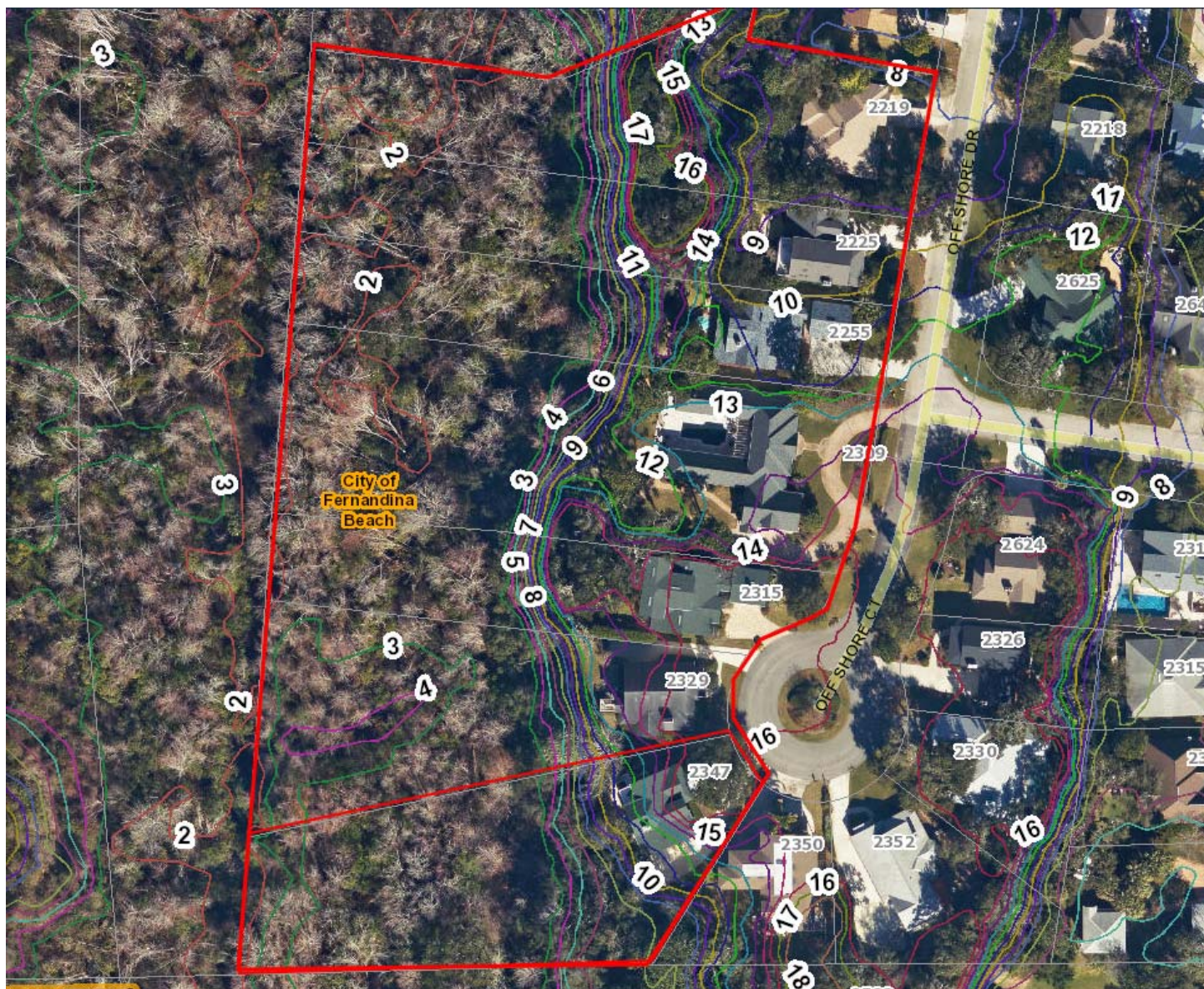
OFF SHORE Soils Map:





**STAFF REPORT
OFF SHORE
ZONING CHANGE TO CON**

OFF SHORE Topography:





STAFF REPORT
510 CITRONA DRIVE - REVISED

510 CITRONA DRIVE
FLUM AND ZONING MAP CHANGES

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1616-0001-0000 KALISTA JAMES D JR & MOFFITT LAURA JEAN (H&W)
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)
LOCATION AND DESCRIPTION OF SITE:	510 CITRONA DR Single Family Home (Homesteaded) Built in 1995
CURRENT LAND USE + ZONING:	Split Future Land Use Map Category of Low Density Residential (LDR) = approximately 28,492.52 sq. ft. and Conservation (CON)= approximately 49,831.75 sq. ft Zoning Map Designation reflects the total parcel acreage of 1.77 acres as R-1 / Low Density Residential
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map for 0.40 acres of land from Conservation (CON) to Low Density Residential (LDR) 2. Amend Zoning Map for 0.71 acres of land from R-1 to CON
EXISTING USES ON SITE:	Single Family Home with Ancillary Uses
PROPERTY SIZE:	1.77 Acres of Land

DATA & ANALYSIS

ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	Approx. 21,881.06 sq. feet	21 ft to 0 ft	Fine Sand and Clay	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	SF Home	1953	R-1	Low Density Residential and Conservation
	South	SF Home	1995	R-1	Low Density Residential and Conservation
	East	Wetlands - FDOT	N/A	CON	Conservation
	West	FB Middle School	1991	PI-1	Public &



STAFF REPORT
510 CITRONA DRIVE - REVISED

				Institutional
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.04 (low density residential land use category); 1.07.15 (conservation land use category); 3.01.05 (provision of land use for housing); Objective 3.02 (Housing Preservation); 3.03.06 (minimize barriers to development of vacant lots); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan			
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.03 (R-1 zoning district); 2.01.20 (CON zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 3.05.00 (Drainage and Stormwater Management); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements);			



STAFF REPORT
510 CITRONA DRIVE - REVISED

	11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval. Analysis to support the recommendation is found through the available data provided by the Nassau County Property Appraiser Mapping resources. Specifically, the topography, potential wetlands, soils, and flood zone files. The requested action results in the reduction of approximately 0.40 acres from Conservation (CON) to Low Density Residential (LDR) on the FLUM. The requested action changes Zoning Map for 0.71 acres of land from R-1 to CON using the 5 foot elevation contour.
PAB RECOMMENDATION:	Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval. <i>Pending 11/13/19 public hearing</i>



**STAFF REPORT
510 CITRONA DRIVE - REVISED**

MAP EXHIBITS & PROPERTY IMAGES:

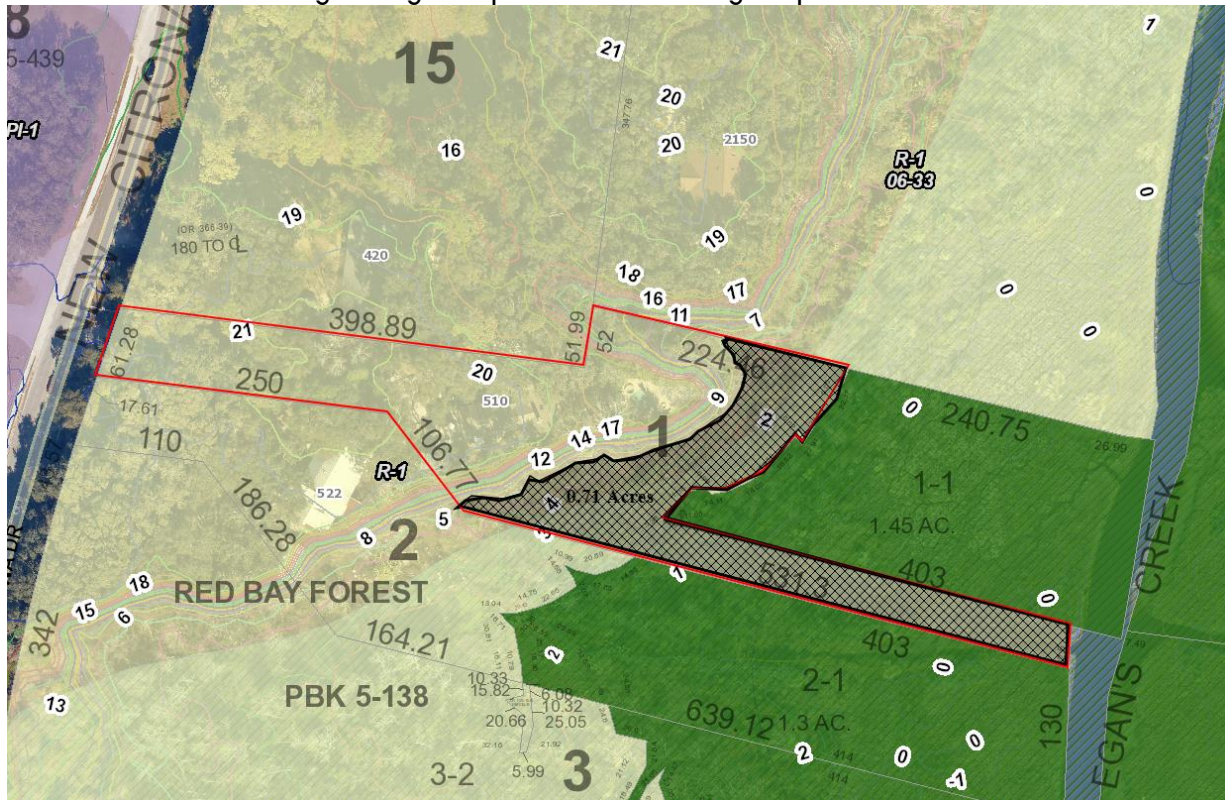
510 Citrona Drive - Photo



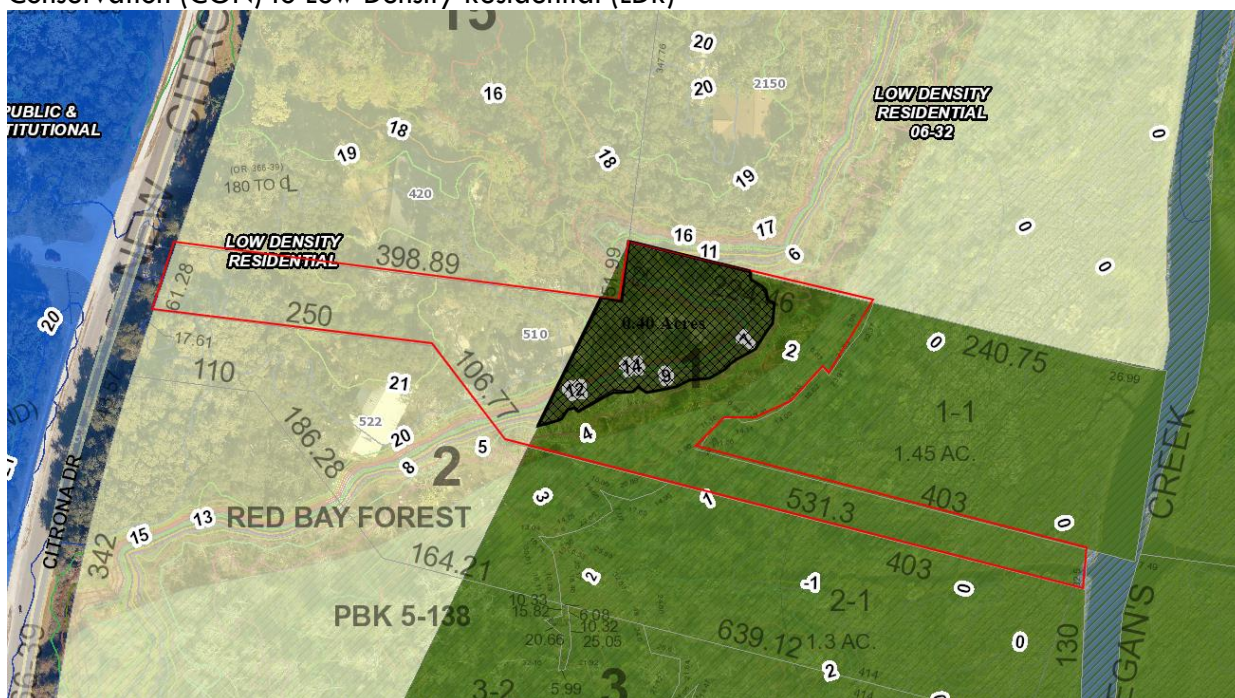


STAFF REPORT
510 CITRONA DRIVE - REVISED

510 Citrona Drive Zoning Change Request: Amend Zoning Map for 0.71 acres of land from R-1 to CON



510 Citrona Drive Future Land Use Map Change Request: Amend Future Land Use Map for 0.40 acres from Conservation (CON) to Low Density Residential (LDR)

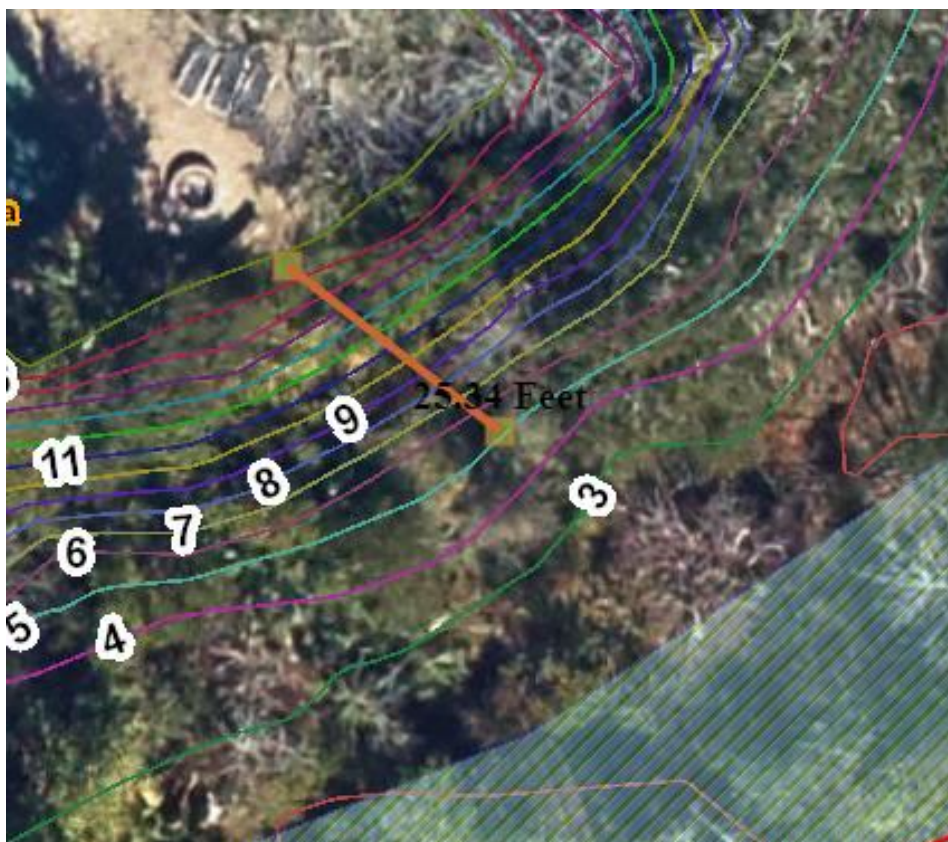




STAFF REPORT
510 CITRONA DRIVE - REVISED

WHY USE THE 5-FOOT ELEVATION CONTOUR?

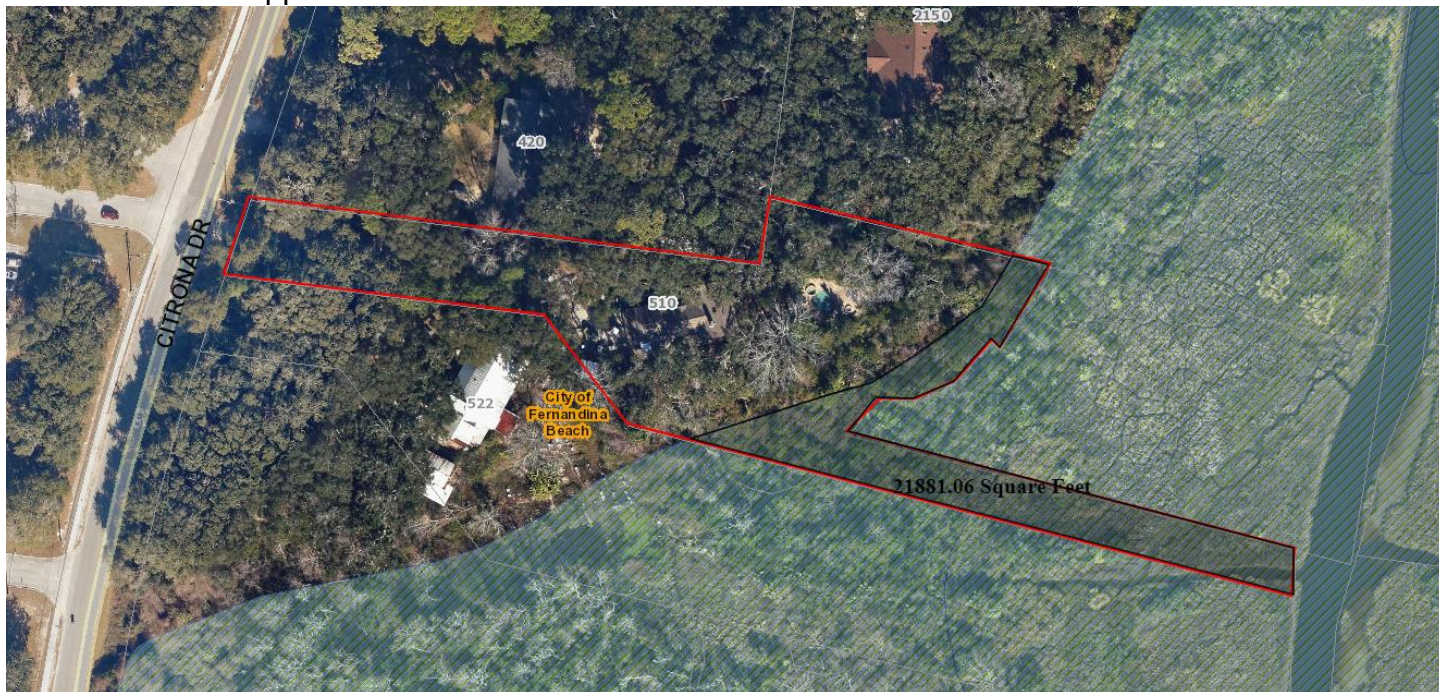
The nearest distance to the "potential wetland line" to the five-foot elevation contour is no less than 25 feet. Similarly the the approximate distance from the pool decking is 25 feet to the five-foot elevation contour.





STAFF REPORT 510 CITRONA DRIVE - REVISED

510 Citrona Drive Approximate Location of Wetlands:



510 Citrona Drive Flood Zone:





STAFF REPORT 510 CITRONA DRIVE - REVISED

510 Citrona Drive Soils Map:



510 Citrona Drive Topography:





STAFF REPORT
522 CITRONA DRIVE- REVISED

522 CITRONA DRIVE
FLUM AND ZONING MAP CHANGES

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1616-0002-0000 AUSTIN DAVID BERT				
APPLICANT/AGENT:	City of Fernandina Beach				
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)				
LOCATION AND DESCRIPTION OF SITE:	522 CITRONA DR Single Family Home (Homesteaded) Built in 1995 with Nassau County Property Appraiser listing as Multi-family (tri/quad)				
CURRENT LAND USE + ZONING:	Split Future Land Use Map Category of Low Density Residential (LDR) = approximately 38,835.39 sq. ft. and Conservation (CON)= approximately 10,522.18 sq. ft Zoning Map Designation reflects the total parcel acreage of 1.13 acres as R-1 / Low Density Residential				
PROPOSED LAND USE + ZONING:	1. Amend Future Land Use Map for 0.23 acres of land from Low Density Residential (LDR) to Conservation (CON) 2. Amend Zoning Map for 0.47 acres of land from R-1 to CON				
EXISTING USES ON SITE:	DATA & ANALYSIS Single Family Home (listed as Tri/Quad on NCPA site) with Ancillary Uses				
PROPERTY SIZE:	1.13 Acres of Land				
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	X and AE	Approx. 14,580.62 sq. ft.	20 ft to 1 ft	Fine Sand	Not in CUPZ Not in CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	SF Home	1995	R-1	Low Density Residential and Conservation
	South	Vacant	N/A	R-1	Low Density Residential and Conservation
	East	Wetlands - FDOT	N/A	CON	Conservation
	West	FB Middle School	1991	PI-1	Public & Institutional



STAFF REPORT
522 CITRONA DRIVE- REVISED

APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures); 1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.04 (low density residential land use category); 1.07.15 (conservation land use category); 3.01.05 (provision of land use for housing); Objective 3.02 (Housing Preservation); 3.03.06 (minimize barriers to development of vacant lots); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); Objective 5.08 (Wetlands Protection and Preservation) and all policy statements which follow; Objective 5.10 (Wildlife Planning) and specific policies 5.10.01, 5.10.02, 5.10.05 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 5.14.09 (LDC Standards for development of environmentally sensitive and conservation lands); 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools)
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	Reference: www.fbfl.us/Compplan 2.00.03 (Establishment of district boundary); 2.01.03 (R-1 zoning district); 2.01.20 (CON zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.02.06 (Land Uses within Areas of Special Flood Hazard); 3.03.00 (Wetland Protection); 3.05.00 (Drainage and Stormwater Management); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board)



STAFF REPORT
522 CITRONA DRIVE- REVISED

Reference: www.fbfl.us/LDC

**STAFF
RECOMMENDATION:**
**PAB
RECOMMENDATION:**

Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval. Analysis to support the recommendation is found through the available data provided by the Nassau County Property Appraiser Mapping resources. Specifically, the topography, potential wetlands, soils, and flood zone files.

The requested action results in the addition of approximately 0.23 acres of Conservation (CON) Future Land Use Category on the FLUM and in increase in the amount of Conservation (CON) zoning district by approximately 0.47 acres of land.

Pending 10/9/19 public hearing



STAFF REPORT
522 CITRONA DRIVE- REVISED

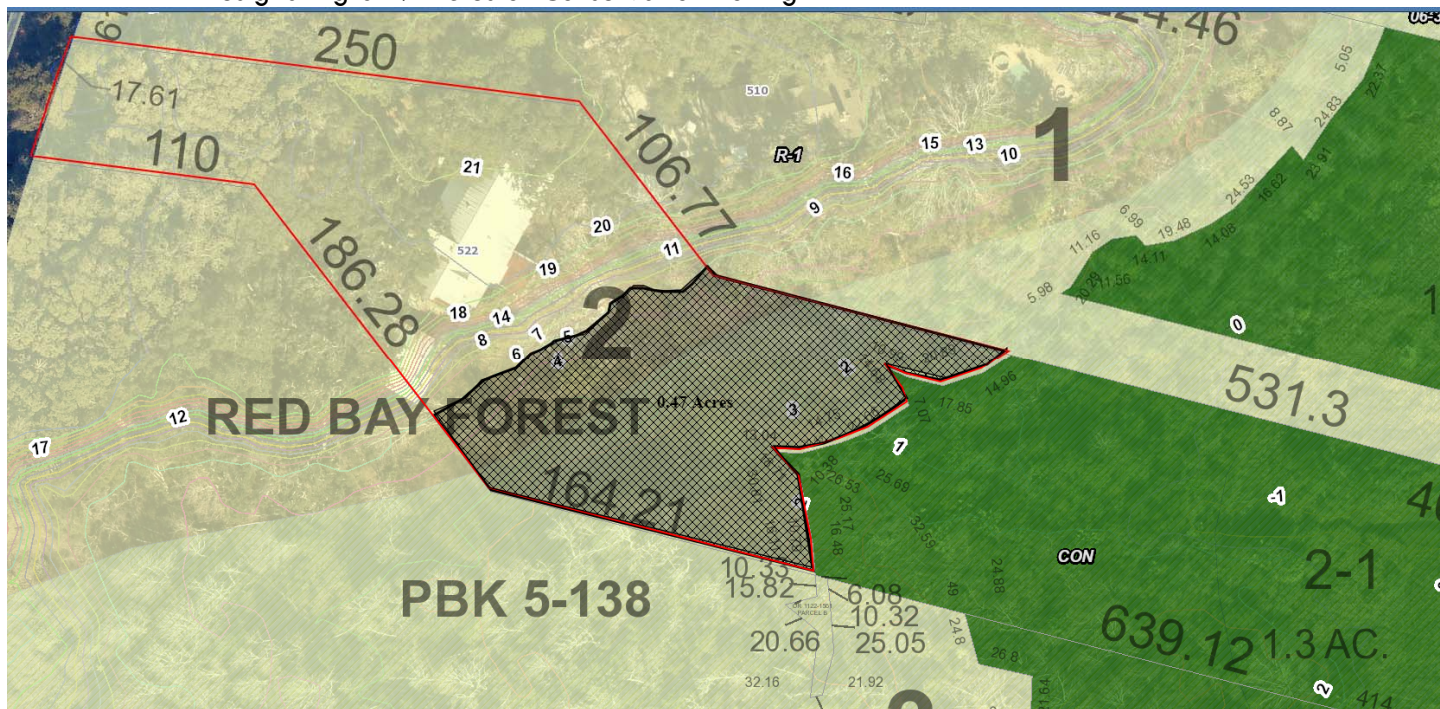
522 Citrona Drive Photo + 2019 Aerial



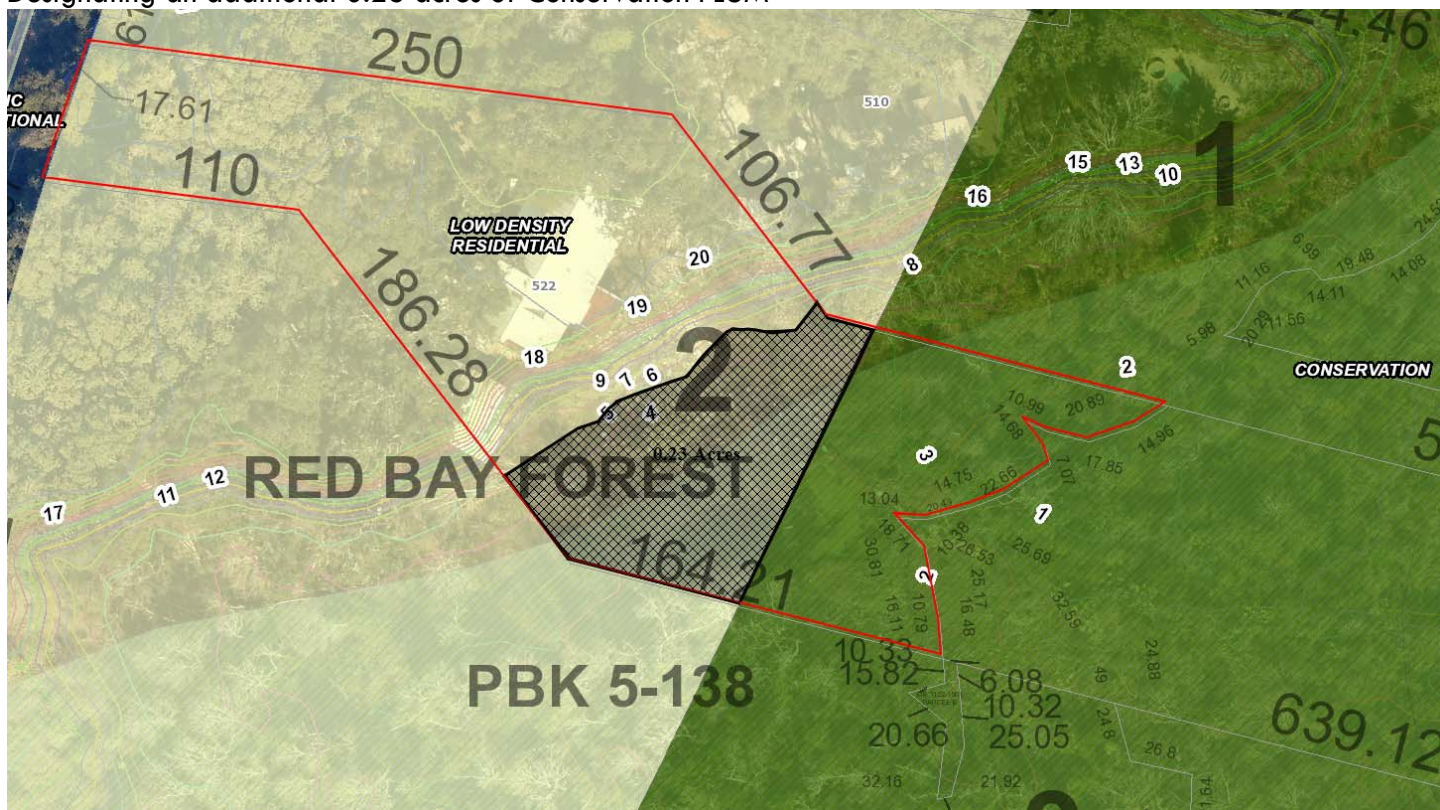


STAFF REPORT
522 CITRONA DRIVE- REVISED

522 Citrona Drive Zoning Change Request:
Designating 0.47 Acres of Conservation Zoning



522 Citrona Drive Future Land Use Map Change Request:
Designating an additional 0.23 acres of Conservation FLUM

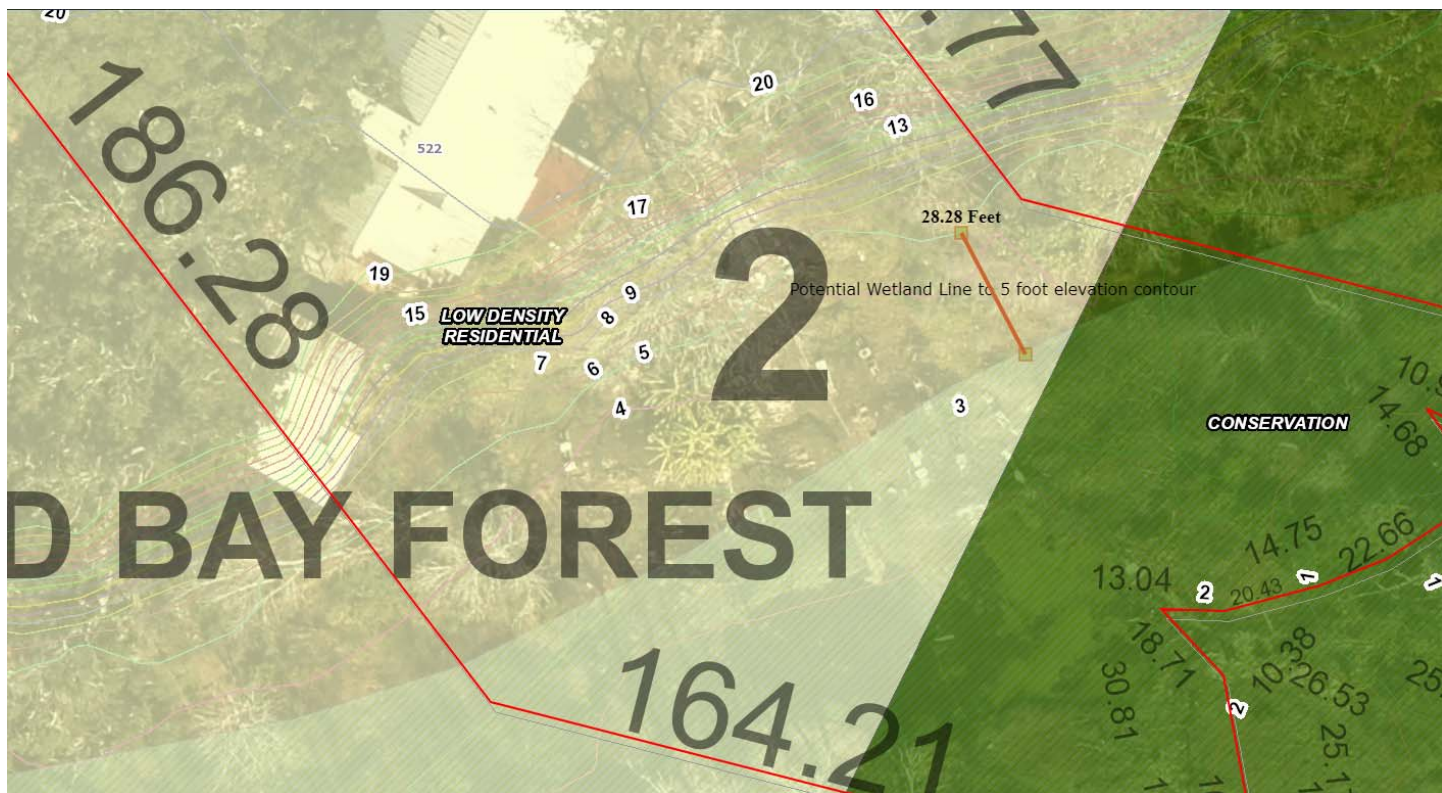




STAFF REPORT
522 CITRONA DRIVE- REVISED

WHY USE THIS BOUNDARY?

There is approximately 11.52 feet from the nearest structure and 28.28 feet from nearest point of "potential wetland boundary" to the 5 foot elevation.





STAFF REPORT
522 CITRONA DRIVE- REVISED

522 Citrona Drive Approximate Location of Wetlands:



522 Citrona Drive Flood Zone:





STAFF REPORT 522 CITRONA DRIVE- REVISED

522 Citrona Drive Soils Map:



522 Citrona Drive Topography:





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

**NORTH POINTE - 925 TARPON AVE
ZONING MAP CHANGES**

APPLICATION & SURROUNDING AREA INFORMATION:

PARCEL ID # AND PROPERTY OWNER:	00-00-31-1470-0001-0000
	00-00-31-1470-0002-0000
	00-00-31-1470-0003-0000
	00-00-31-1470-0004-0000
	00-00-31-1470-0005-0000
	00-00-31-1470-0006-0000
	00-00-31-1470-0007-0000
	00-00-31-1470-0008-0000
	00-00-31-1470-0009-0000
	00-00-31-1470-000A-0000
	00-00-31-1470-000B-0000
	00-00-31-1470-0010-0000
	00-00-31-1470-0011-0000
	00-00-31-1470-0012-0000
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	00-00-31-1470-0023-0000
	00-00-31-1470-0024-0000
	00-00-31-1470-0025-0000
	00-00-31-1470-0026-0000
	00-00-31-1470-0027-0000
	00-00-31-1470-0028-0000
	00-00-31-1470-0029-0000
	00-00-31-1470-0030-0000
	00-00-31-1470-00E1-0000
APPLICANT/AGENT:	City of Fernandina Beach
REQUESTED ACTION:	Future Land Use Map Amendment and Zoning Map Change (In accordance with action directed under Ord. 2019-05)



**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

LOCATION AND DESCRIPTION OF SITE:	925 TARPON AVE – NORTH POINTE TOWNHOMES TOWNHOUSE CONDOS CONSTRUCTED IN 1982				
CURRENT LAND USE + ZONING:	High Density Residential FLUM and R-2 Zoning				
PROPOSED LAND USE + ZONING:	Maintain the High Density Residential Future Land Use Map Category and Amend Zoning District to R-3 *PAB RECCOMENDATION: CHANGE FLUM TO MEDIUM DENSITY RESIDENTIAL *STAFF RECCOMENDATION: MAINTAIN THE CONFLICT TO AVOID CONCERN WITH DENSITY AND USE R-2 TO RESTRICT RESORT RENTAL ALLOWANCE				
EXISTING USES ON SITE:	30 Townhome Units				
PROPERTY SIZE:	3.19 Acres of Land				
DATA AND ANALYSIS					
ENVIRONMENTAL CHARACTERISTICS:	<u>Flood zone</u>	<u>Potential Wetlands</u>	<u>Topography Range</u>	<u>Soil Type</u>	<u>Coastal Upland Protection Zone or Coastal High Hazard Area</u>
	AE	NONE	7-8 FEET	SAND	IN CUPZ NOT IN CHHA
ADJACENT PROPERTIES:	<u>Direction</u>	<u>Existing Use(s)</u>	<u>Year Built</u>	<u>Zoning</u>	<u>FLUM</u>
	North	State Park	N/A	REC	Recreation
	South	Single Family Homes	Varies	R-2	Medium Density Residential
	East	Single Family Homes	Varies	R-2	Medium Density Residential
	West	State Park	N/A	REC	Recreation
APPLICABLE COMPREHENSIVE PLAN POLICIES:	1.02.02 (adequate public services); 1.02.03 (compact development patterns and availability of public facilities and services); 1.02.04 (FLUM amendments); 1.02.06 (criteria for allocating density); 1.02.07 (private property rights); 1.02.09 (smooth land use transition and buffering); 1.05.02 (nonconforming structures);				



**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

	1.05.04 (existing platted lots of record); 1.06.06 (maintain and enhance existing conventional single-family neighborhoods); 1.07.06 (high density residential land use category); 3.01.05 (provision of land use for housing); 4.05.11 (water quality/ stormwater); 4.05.12 (stormwater impacts); Objective 4.06 (fire rescue); Objective 4.07 (law enforcement); 5.14.09 (development standards for environmentally sensitive and conservation lands); Objective 5.11 (Tree Preservation and Urban Forestry) specifically policy 5.11.09; 6.02.06 (level of service for parks); 6.02.07 (level of service for neighborhood parks) 10.06.01 (level of service for public schools) Reference: www.fbfl.us/Compplan
APPLICABLE LAND DEVELOPMENT CODE SECTIONS:	2.00.03 (Establishment of district boundary); 2.01.05 (R-3 zoning district); 2.03.02 (Table of Land Uses); 2.03.03 (Table of Accessory Uses); 3.05.00 (Drainage and Stormwater Management); 4.01.01 (Density and Housing Types); 4.02.01 (Standards for Lot Design); 4.02.03 (Standards for Building and Building Placement); 4.05.00 (Landscaping, Buffers, and Tree Protection); 5.01.00 (Accessory Uses and Structures); 7.03.00 (Stormwater Management); 7.04.00 (Concurrency Requirements); 11.01.07 (Zoning Map Amendments); and 11.03.03 (Procedures for Action of the Planning Advisory Board) Reference: www.fbfl.us/LDC
STAFF RECOMMENDATION :	The change is requested to align the Zoning Map with the current Future Land Use Map as directed under Ordinance 2019-05. Staff finds the requested amendments to be sufficiently compliant with the comprehensive plan and land development code and recommends approval.
PAB RECOMMENDATION :	<i>Pending 10/9/19 public hearing</i>



NORTH POINTE Plat Map – Book 5, Page 27 -1982





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

NORTH POINTE Photo + 2019 Aerial





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**



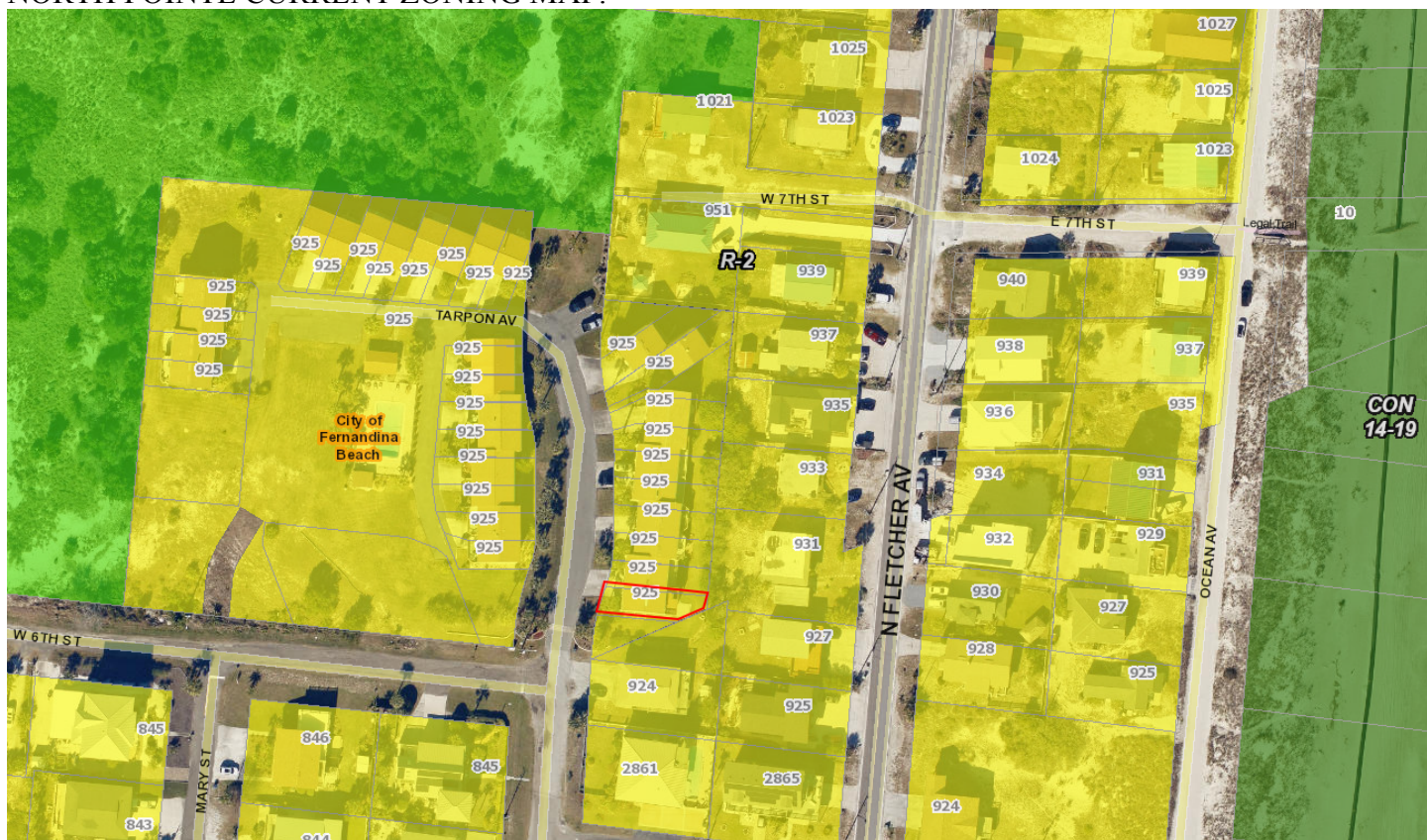
NORTH POINTE CURRENT FLUM:





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

NORTH POINTE CURRENT ZONING MAP:





**STAFF REPORT
NORTH POINTE TOWNHOMES
925 TARPON AVE**

NORTH POINTE- COMBINED ENVIRONMENTAL FEATURES MAP

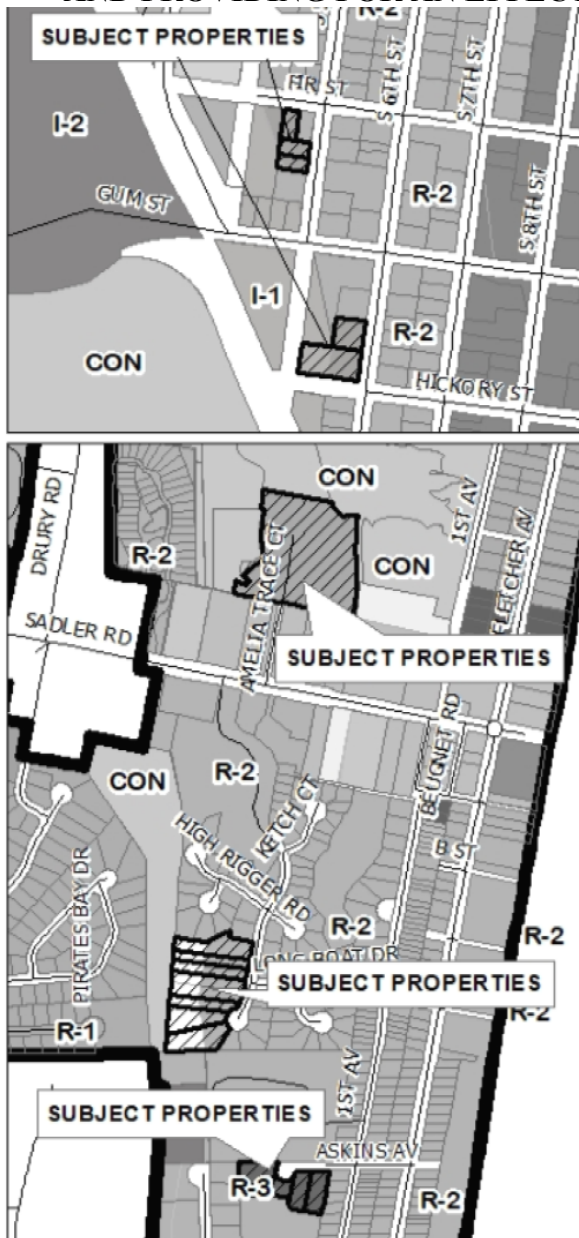


NOTICE OF PUBLIC HEARING
CITY COMMISSION
CITY OF FERNANDINA BEACH

NOTICE IS HEREBY GIVEN that a Public Hearing is scheduled for **Tuesday, March 17, 2020, at 6:00 PM** in the City Commission Chambers, 204 Ash Street Fernandina Beach, Florida to consider the following application:

ORDINANCE 2020-04

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, AMENDING THE CITY'S ZONING MAP FOR VARIOUS PROPERTIES THROUGHOUT THE CITY; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.





Interested parties may appear at said hearing and be heard as to the advisability of any action, which may be considered. Any persons with disabilities requiring accommodations in order to participate in this program or activity should contact 310-3115, TTY/TDD 711 or through the Florida Relay Service at 1-800-955-8771 at least 24 hours in advance to request such accommodation.

IF ANY PERSON DECIDES TO APPEAL ANY DECISION MADE BY THE BOARD/COMMISSION WITH RESPECT TO ANY MATTER CONSIDERED AT SUCH HEARING, S/HE WILL NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE, WHICH RECORD INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED.

For information, please contact the Staff of the City Clerk's Office, 204 Ash Street, between the hours of 8:00 AM – 5:00 PM, Monday through Friday, (904) 310-3115.

Note:

Please run as a DISPLAY in the March 4, 2020 edition of the News Leader.

Please send proof of publication to:

City Clerk's Office

City Hall, 204 Ash Street

Fernandina Beach, FL 32034

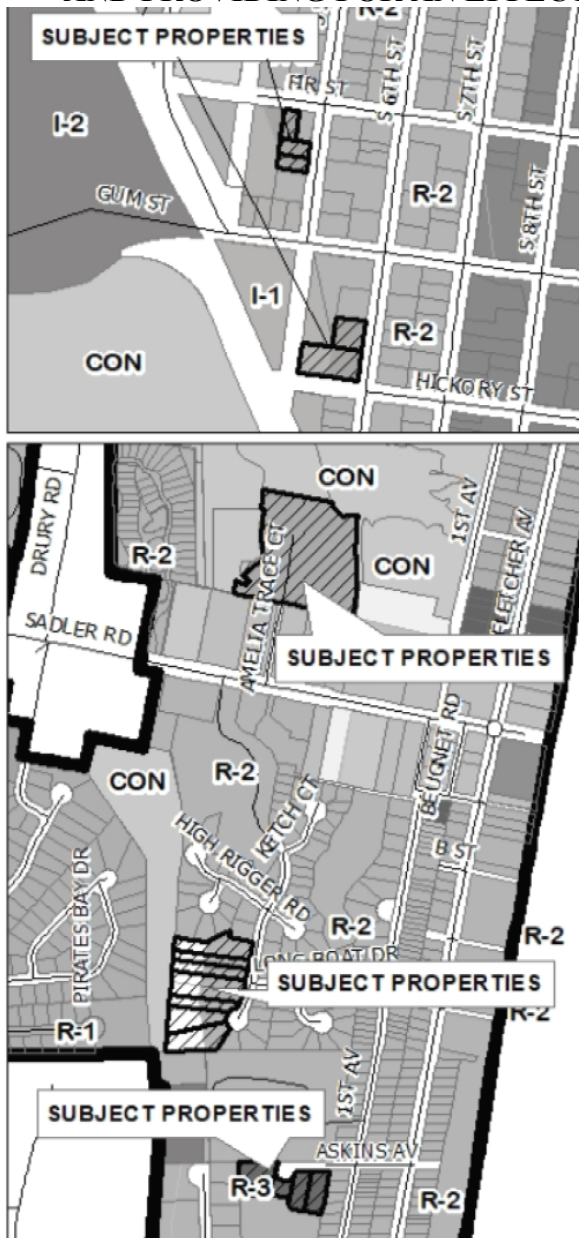
904-310-3115

NOTICE OF PUBLIC HEARING
CITY COMMISSION
CITY OF FERNANDINA BEACH

NOTICE IS HEREBY GIVEN that a Public Hearing is scheduled for **Tuesday, April 21, 2020, at 6:00 PM** in the City Commission Chambers, 204 Ash Street Fernandina Beach, Florida to consider the following application:

ORDINANCE 2020-04

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, AMENDING THE CITY'S ZONING MAP FOR VARIOUS PROPERTIES THROUGHOUT THE CITY; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.





Interested parties may appear at said hearing and be heard as to the advisability of any action, which may be considered. Any persons with disabilities requiring accommodations in order to participate in this program or activity should contact 310-3115, TTY/TDD 711 or through the Florida Relay Service at 1-800-955-8771 at least 24 hours in advance to request such accommodation.

IF ANY PERSON DECIDES TO APPEAL ANY DECISION MADE BY THE BOARD/COMMISSION WITH RESPECT TO ANY MATTER CONSIDERED AT SUCH HEARING, S/HE WILL NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE, WHICH RECORD INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED.

For information, please contact the Staff of the City Clerk's Office, 204 Ash Street, between the hours of 8:00 AM – 5:00 PM, Monday through Friday, (904) 310-3115.

Note:

Please run as a DISPLAY in the April 8, 2020 edition of the News Leader.

Please send proof of publication to:

City Clerk's Office

City Hall, 204 Ash Street

Fernandina Beach, FL 32034

904-310-3115

CITY COMMISSION AGENDA ITEM

City of Fernandina Beach



SUBJECT: Ordinance 2020-09
Historic District Boundary Expansion - Old Nassau County Jail (Amelia Island Museum of History)

ITEM TYPE: Ordinance (w/o fiscal impact)

REQUESTED ACTION: Consider Ordinance 2020-09 at Second Reading.

SYNOPSIS: The applicant is seeking to expand the Downtown Historic District Boundary to include the Old Nassau County Jail/Amelia Island Museum of History as a non-contributing structure.

The structure was individually listed on the National Register of Historic Places in 2009. It was cited as being significant in the areas of local history and architecture. The current building is the third iteration of the Nassau County Jail on this site and was in use as the jail for Nassau County from 1878 to 1978. In 1986, the property was adapted for use as the Amelia Island Museum of History, which continues to occupy the building today.

Although this building falls outside of the period of significance for the Fernandina Beach Downtown Historic District (1850-1927), it represents an important aspect of our local history and architecture and should be included in the district as a non-contributing resource. Inclusion in the Downtown Historic District adds a level of protection to the site in that all exterior changes or demolitions would be reviewed by the Historic District Council.

This Ordinance was approved at First Reading by the City Commission at its Regular Meeting on March 3, 2020.

FISCAL IMPACT: None

CITY ATTORNEY COMMENTS: No additional comments.

CITY MANAGER RECOMMENDATION(S): I recommend that the City Commission enact proposed Ordinance 2020-09 at Second Reading.

Dale L. Martin, City Manager 4/8/2020

Tammi E. Bach, City Attorney 4/8/2020

Date: March 05, 2020

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION: Enact

ORDINANCE 2020-09

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, EXPANDING THE BOUNDARY OF THE HISTORIC DISTRICT TO INCLUDE THE OLD NASSAU COUNTY JAIL; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the building known as the Old Nassau County Jail, located at 233 South 3rd Street was built circa 1938 and expanded in 1954; and

WHEREAS, the two-story Art Moderne styled building is noteworthy for its hard-fired red brick walls laid up in a modified Flemish bond, tripartite belt course, a glass block panel, decorative basket weave brick panels, fleur-de-lis cast stone ornamentation and iron cage at the south entrance; and

WHEREAS, this site has been home to two previous versions of the Nassau County Jail beginning in 1878; and

WHEREAS, the structure served as Nassau County's jail until 1978 and was adapted in 1986 to house the Amelia Island Museum of History; and

WHEREAS, the Nassau County Jail was individually listed on the National Register of Historic Places in November of 2009; and

WHEREAS, on November 21, 2019, the Historic District Council of the City of Fernandina Beach recommended the City Commission take action on including the Old Nassau County Jail as a non-contributing resource in the local historic district to ensure its protection; and

WHEREAS, on January 28, 2020, the Planning Advisory Board of the City of Fernandina Beach recommended the City Commission take action on including the Old Nassau County Jail in the local historic district to ensure its protection.

NOW, THEREFORE, BE IT ENACTED BY THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, AS FOLLOWS:

SECTION 1. That the Historic District, as previously established by Ordinance No. 526, and expanded by Ordinance Nos. 749, 846, 95-12, 97-24, and 201-24, is hereby restated and amended to read as follows:

DISTRICT BOUNDARIES:

A) There is established a Historical District area in the city comprising all of the area within the city limits contained in the following boundaries: begin at the northeast corner of Front and Centre streets; then cross Centre Street and run south along the east curb line of Front Street to a point parallel with the south elevation of 102 Centre Street; then run east along the south property lines of the buildings fronting on the south side of Centre Street and South 2nd Street along the rear property lines of the buildings fronting on the south side of the 200 block of Centre Street to the point said line intersects the west property lines of the buildings fronting on the west side of South 3rd Street; then run south along said lines to the north curb of Ash Street; then crossing Ash Street to the south curb of Ash Street; then run west along the south curb of Ash Street to the east curb of Second Street; then run south to the south property line of 204 Ash Street; then run east along the south property line of 204 Ash Street; then run east along the south property line of 218 Ash Street; then run east along said line, crossing South 3rd Street and continue along the south property line of 302 Ash Street to the southeast corner of the property; then run north along the east property line of 302 Ash Street, continuing to the north curb of Ash Street; then run east along the north curb of Ash Street to the northeast corner of Ash and South 4th Streets; then run south along the east curb of South 4th Street, crossing Ash and Beech streets, to a point parallel with the south property line of 402 Beech Street; then run east along the south property lines of the structures fronting on the south side of Beech Street, continuing to the east curb of South 5th Street; then run south along the east curb of South 5th Street to the northeast corner of South 5th and Cedar streets; then run east along the north curb of Cedar Street to a point parallel with the west property line of 301 South 6th Street; then crossing Cedar Street, run along the west property lines of the buildings fronting on the west side of the 300 block of South 6th Street to the north curb of Date Street; then continuing across Date Street, run along the west property line of 401 South 6th Street to the southwest corner of the property; then run east along the south property line of 401 South 6th Street and continue to the east curb of South 6th Street; then run south along the east curb of 6th Street to a point parallel with the south property line of 602 Date Street; then run east along the south property line of 602 Date Street and continue east along the south property line of 606 Date Street to the southeast corner of said property; then run north along the east property line of 606 Date Street, continuing across Date Street to its north curb; then run north along the north curb of Date Street to the northeast corner of Date and South 7th streets; then run south along the east curb of South 7th Street to the northeast corner of South 7th and Elm Streets; then run east along the north curb of Elm Street to a point parallel with the east property line of 430 South 7th Street; then run north along the east property lines of the buildings fronting on the west side of the 400 block of South 7th Street to the south curb of Date Street; then continue north, crossing Date Street, along the east property lines of the buildings fronting on the east side of the 300 block of South 7th Street to the point said line intersects the southwest corner of the property line of 303 South 8th Street; then run east along the south property line of 303 South 8th Street to the west curb of South 8th Street; then run

north along the west curb of South 8th to the northwest corner of South 8th and Beech streets; then run east along the north curb of Beech Street to the southeast corner of the property line of 801 Beech Street; then run north along the east property line of 801 Beech Street and continue to a point parallel with the south property line of 115 South 9th Street; then run east along the south property line of 115 South 9th Street to the west curb of South 9th Street; then run north along the west curb of South 9th Street to a point parallel with the northeast corner of the property line of 115 South 9th Street; then run east, crossing South 9th Street and continuing along a line south of 112 South 9th Street; then continue across South 10th Street to the southwest corner of the property line of 116 South 10th Street; then run east along the south property line of 116 South 10th Street to the southeast corner of the said property; then run north along the east property lines of the buildings fronting on the east side of the 100 block of South 10th Street and continue north, crossing Ash Street and along the east property lines of the buildings fronting on the east side of the first block of South 10th Street to the south curb of Centre Street (Atlantic Avenue); then run west along the south curb of Atlantic Avenue to a point parallel with the east property line of 909 Atlantic Avenue; then run north, crossing Atlantic Avenue, along the east property line of 909 Atlantic Avenue to the northeast corner of the property; then run west along the north property line of 909 and 901 Atlantic Avenue and continue west across North 9th Street along the north property line of 801 Atlantic Avenue to the east curb of North 8th Street; then run south along the east curb of North 8th Street to the southeast corner of 8th Street and Atlantic Avenue; then run west, crossing 8th Street to the beginning of Centre Street and run west along the south curb of Centre Street to the southwest corner of Centre and 7th Streets; then run north along the west curb of North 7th Street to the southwest corner of North 7th and Alachua streets; then run west along the south curb of Alachua Street to a point parallel with the northeast corner of the property line of 30 North 6th Street; then run north, crossing Alachua Street along the east property lines of the buildings fronting on the east side of the 100 block of North 6th Street to the south curb of Broome Street; then run west along the south curb of Broome Street to the southwest corner of Broome and North 6th streets; then run north along the west curb of North 6th Street to a point parallel with the north property line of 515 Broome Street; then run west along said property line and continue west along the north property line of 511 Broome Street to its northwest corner; then run north along the east property line of 506 Calhoun Street to the south curb of Calhoun Street; then run west along the south curb of Calhoun Street to a point parallel with the northwest corner of the property line of 506 Calhoun Street; then run north, crossing Calhoun Street and continuing along the east property lines of the buildings fronting on the east side of the 300 block North of 5th Street to the northeast corner of the property line of 320 North 5th Street; then run west along the north property line of 320 North 5th Street to the east curb of North 5th street; then run south along the east curb of North 5th Street to a point parallel with the north property line of 307 North 5th street; then run west, crossing North 5th Street, along the north property line of 307 North 5th Street to the northwest

comer of the property; then run south along the west line of said property to the southwest comer of said property; then run west along the north property line of 304 Calhoun Street and continue to the west curb of North 4th street; then run north along the west curb of North 4th Street to the southwest comer of North 4th and Dade streets; then run west along the south curb of Dade Street to a point parallel with the east property line of 412 North 3rd Street; then run north, crossing Dade Street and continue along the east property lines of the buildings fronting on the east side of North 3rd Street to the southwest comer of the property line of 310 Escambia Street; then run east along the south line of said property; then run north along the east line of said property to the south curb of Escambia Street; then run west along the south curb of Escambia Street to the west curb of North 3rd Street; then run north along the west curb of North 3rd Street to a point parallel with the north property line of 501 North 3rd Street; then run west along said line to the northwest comer of the property; then run south along the west property lines of the buildings fronting on the west side of North 3rd Street to the northeast comer of the property line of 209 Dade Street; then run west along the north line of said property to its northwest comer; then run south along the west property line of 209 Dade Street to the north curb of Dade Street; then run east along the north curb of Dade Street to the northeast comer of Dade and North 3rd Streets; then run south along the east curb of North 3rd Street to a point parallel with the north property line of 227 North 3rd Street; then run west along said line to its northwest comer; then run south along the west property lines of the buildings fronting on the west side of the 200 block of North 3rd Street to the point where said line intersects the northeast comer of the property line of 211 Broome Street, then run west along the north property line of 211 Broome Street and continue along the north property line of 209 Broome Street to the northwest comer of said property; then run south along the west property line of 209 Broome Street to the north curb of Broome Street; then run east along the north curb of Broome Street to a point parallel with the southeast comer of the property line of 211 Broome Street; then run south, crossing Broome Street and continue along the west property lines of 121 and 117 North 3rd Street to the southwest comer of the property line of 117 3rd Street; then run east along the south property line of 117 North 3rd Street to the east curb of North 3rd Street; then run south along the east curb of North 3rd Street to the southeast comer of North 3rd and Alachua streets; then run west along the south curb of Alachua Street to the southeast comer of Alachua and Front streets; then run south along the east curb of Front Street to the northeast comer of Front and Centre streets, the point of the beginning.

(B) (1) The area of the Historic District, as established by division (A) above, is hereby restated and expanded to include the following tracts, parcels or areas of land:

- (a) Tract A: A portion of that certain property known as "Old Town",

more particularly described as follows: All of San Carlos Plaza and all of blocks 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 23, 24, 25, 30, 35, 37, and 222, and those portions of blocks 14, 22, and 31 lying west of North 14th Street; and that portion of water lots, 1, 2, 3, 4, 5, 6, 7, 14, 15, 16, 17 and 18 extending westerly to the mean high water mark; all according to the official plat or plats of the City of Fernandina Beach, Nassau County, Florida.

(b) Tract B: Lot 1, block 244, in the City of Fernandina Beach, Florida.

(c) Tract C: Beginning at the southeast corner of lot 64 of Forrest Hill Subdivision and running west along the southerly property lines of lots 64 and 65 of Forrest Hill Subdivision to the northeast corner of lot 8 of Lighthouse Lane Subdivision; thence south along the easterly property lines of lots 8, 9, 10, and 11 of Lighthouse Lane subdivision to the northerly property line of lot 9 of Lighthouse Circle Subdivision; thence east along the northerly property lines of lots 9, 8, 7 and 6 of Lighthouse Circle Subdivision to the northeast corner of lot 6; thence north along the westerly shoreline of Egan's Creek to the point of beginning. All subdivisions listed are recorded in the Plat Books of Nassau County, Florida.

(d) Tract D: That certain property including the central portion of the downtown waterfront and part of the surrounding neighborhood including lots 2-14 of block 269, lots 6-28 of block 268, water lots 1 and 2, and water lots 25-29 in the City of Fernandina Beach, Florida.

(e) Tract E: That certain City property known as "The Peck Center", consisting of lots 1 through 8 of block 144 and lots 1 through 8 of block 145, inclusive of the intervening public right-of-way associated with Fir Street, in the City of Fernandina Beach, Florida.

(f) Tract F: That certain property known as the "Old Nassau County Jail", consisting of lots 15 through 21 of block 273 in the City of Fernandina Beach, Florida.

(B) (2) The above expanded Historic District and additional parcels, tracts or areas of land shall henceforth be subject to all the provisions and regulations established and set forth in the Land Development Code.

SECTION 2. SEVERABILITY. If any section, subsection, sentence, clause, phrase of this Ordinance, or the particular application thereof, shall be held invalid by any court,

administrative agency or other body with appropriate jurisdiction, the remaining sections, subsections, sentences, clauses and phrases under application shall not be affected thereby.

SECTION 3. EFFECTIVE DATE. This Ordinance shall be deemed effective after its passage and approval upon second and final reading.

ENACTED this 21st day of April, 2020.

CITY OF FERNANDINA BEACH

John A. Miller
Commissioner - Mayor

ATTEST:

APPROVED AS TO FORM AND LEGALITY:



Caroline Best
City Clerk

Tammi E. Bach
City Attorney

PAB2020- 00 18

REC'D: _____ BY: (8)

INVOICE #: _____

PAYMENT: _____ TYPE: _____

BOARD MEETING DATE: _____



PLANNING ADVISORY BOARD APPLICATION



ZONING MAP AMENDMENT
(≤ 10 acres \$1,000 / > 10 acres \$2,000)



LAND USE MAP AMENDMENT
(≤ 10 acres \$1,000 / > 10 acres \$2,000)



LDC TEXT AMENDMENT (\$1,000)



COMP PLAN AMENDMENT (\$1,700)



SUBDIVISION PLAT – PRELIMINARY
(≤ 20 units \$1,000 / > 20 units \$1,600)



SUBDIVISION PLAT – FINAL (\$850)



VACATION OF R.O.W. (\$1,700)



VOLUNTARY ANNEXATION (\$1,500)



Revision to each PAB Application
To offset additional display ad fee (\$400)

APPLICANT INFORMATION

Owner Name: The Amelia Island Museum of History

Mailing Address: 233 S. 3rd Street, Fernandina Beach, FL 32034

Telephone: _____ **Fax:** _____

Email: _____

Agent Name: The City of Fernandina Beach

Mailing Address: 204 Ash Street

Telephone: 904-310-3480 **Fax:** _____

Email: scumella@fbfl.org

PROPERTY INFORMATION

Street Address: 233 S. 3rd Street, Fernandina Beach, FL 32034

Parcel Identification Number(s): 00-00-31-1800-0273-0150

Lot Number: _____ **Block Number:** _____ **Subdivision:** _____

Section: _____ **Township:** _____ **Range:** _____

PROJECT INFORMATION

Total Number of Lots/Parcels: 1

Less than One (1) acre Sq. Footage: _____ One (1) Acre or Greater: _____

Existing Zoning Classification: MU-1

Existing Future Land Use Classification: Mixed Use

Previous Planning/Zoning Approvals: _____

Description of Request:

The applicant is seeking to expand the Downtown Historic District Boundary to include the Old Nassau

County Jail/ Amelia Island Museum of History, as a non-contributing structure.

SIGNATURE/NOTARY

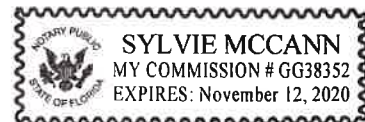
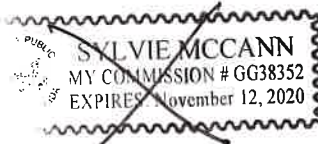
The undersigned states the above information is true and correct as (s)he is informed and believes.

12/23/2019
Date

[Signature]
Signature of Applicant

STATE OF FLORIDA
COUNTY OF NASSAU

ss }



Sworn to (or affirmed) and subscribed before me by means of ☒ physical presence or ☐ online notarization, this 23rd day
of December, 20 19, by Phyllis Davis.

[Signature]
Notary Public

SYLVIE MCCANN
Printed Name

11/12/20
My Commission Expires

Personally Known ☒ OR Produced Identification _____ ID Produced: _____



OWNER'S AUTHORIZATION FOR AGENT REPRESENTATION

I /WE Amelia Island Museum of History
(print name of property owner(s))

hereby authorize: DALE MARTIN - City of FERNANDINA BEACH
(print name of agent)

to represent me/us in processing an application for: PAB + HDC - EXPANSION of City BOUNDARY
(type of application) TO INCLUDE PARCEL

on our behalf. In authorizing the agent to represent me/us, I/we, as owner/owners, attest that the application is made in good faith and that any information contained in the application is accurate and complete.

[Signature]
(Signature of owner)

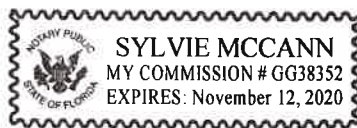
(Signature of owner)

Phyllis E. Davis
(Print name of owner)

(Print name of owner)

STATE OF FLORIDA
COUNTY OF NASSAU

ss }



Sworn to (or affirmed) and subscribed before me by means of ☒ physical presence or ☐ online notarization, this 23rd day
of December, 20 19, by Phyllis Davis.

[Signature]
Notary Public

SYLVIE MCCANN
Printed Name

11/12/20
My Commission Expires

Personally Known ☒ OR Produced Identification _____ ID Produced: _____



HISTORIC DISTRICT COUNCIL STAFF REPORT
HDC 2019-32
AUGUST 15, 2019

Owner/Applicant:	City of Fernandina Beach, agent for Amelia Island Museum of History (owner)
Property Address:	233 S. 3 rd Street
Legal Description:	BLOCK 273 LOTS 15 TO 21 IN OR 803/1353 CITY OF FDNA BEACH
Parcel ID:	00-00-31-1800-0273-0150
Requested action:	Downtown Historic District Boundary Expansion to include the Old Nassau County Jail/ Amelia Island Museum of History.
Zoning:	MU-1
FLUM land use category:	Mixed Use
Existing uses on the site:	Museum
FL Master Site File #	8NA00287
Year Built:	c. 1938
Contributing Status:	Non-Contributing
National Register Status:	Individually Listed (09000927)

All required application materials have been received. All fees have been paid. All required notices have been made.



SUMMARY OF REQUEST AND BACKGROUND INFORMATION:

The applicant is seeking to expand the Downtown Historic District Boundary to include the Old Nassau County Jail/ Amelia Island Museum of History, as a non-contributing structure.

The structure was individually listed on the National Register of Historic Places in 2009. It was cited as being significant in the areas of local history and architecture. (see Exhibit 1)

The current building is the third iteration of the Nassau County Jail on this site and was in use as the jail for Nassau County from 1878 to 1978.

In 1986 the property was adapted for use as the Amelia Island Museum of History, which continues to occupy the building today.

Although this building falls outside of the period of significance for the Fernandina Beach Downtown Historic District (1850-1927), it represents an important aspect of our local history and architecture and should be included in the district as a non-contributing resource. Inclusion in the Downtown Historic District adds a level of protection to the site, in that all exterior changes or demolitions would be reviewed by the Historic District Council.

APPLICABLE GUIDELINES:

CITY OF FERNANDINA BEACH COMPREHENSIVE PLAN

OBJECTIVE 11.01. Historic Resources

The City shall continue to promote the preservation of resources through commitment to conduct historic, cultural and archaeological resource surveys and the continued development of ordinances, guidelines, and databases.

Policy 11.01.01.

The City shall encourage the protection, preservation and conservation of districts, sites, landmarks and/or structures within the City that are included on the National Register of Historic Places, or in a locally designated historic district, to ensure their protection from demolition, deterioration, reconstruction or alteration.

Policy 11.01.08.

The City shall continue delegating authority to City Commission appointed review board(s) for decisions affecting the historic, cultural and archaeological resources of the City. The historic preservation ordinance shall continue to grant powers to the appropriate review board which may include, but are not limited to:

- a. Promulgating rules governing its operation in carrying out its responsibilities;
- b. Making recommendations to the City Commission for historic district or neighborhood conservation district designation;
- c. Working on design guidelines specific to designated historic or neighborhood conservation districts and making recommendations to the Planning Advisory Board and City Commission regarding those guidelines;
- d. Working on the historic preservation ordinance and making recommendations to the Planning Advisory Board and City Commission regarding the ordinance;
- e. Reviewing proposed physical alterations of designated properties or districts;
- f. Issuing certificates of appropriateness for proposed physical alterations deemed by the appropriate review

- board to comply with the Secretary of the Interior's Standards for Rehabilitation or any adopted design standards that are based on the Secretary's Standards;
- g. Hearing variances for properties within historic districts, neighborhood conservation districts, or the Community Redevelopment Area; and
- h. Conducting public outreach and educational opportunities regarding historic preservation and cultural resource protection.

OBJECTIVE 11.03. Programs AND Policies

The City shall continue to develop programs and policies to protect and preserve the City's historic, cultural and archaeological resources.

Policy 11.03.01. The City shall explore strategies for preservation of historic resources and properties, including, but not limited to:

- a. Incentives for maintenance, restoration and rehabilitation, and stabilization of historic, cultural or archaeological resources;
- b. Incentives for productive and adaptive reuse of historic structures;
- c. Incentives for private ownership and responsible stewardship of these resources;
- d. Opportunities for acquisition and/or conservation by governmental entities, private interests, or non-profit organizations; and
- e. Establishment of historic, archaeological, or neighborhood conservation districts.

Policy 11.03.11. The City recognizes the importance of structures constructed in the last fifty years, and encourages efforts to protect significant examples of these structures as illustrative of the community's recent heritage.

Policy 11.03.15. The City shall promote historic, cultural and archaeological resource protection as an economic tool in the revitalization of the City and its neighborhoods, and support heritage tourism opportunities as a form of economic development. The City shall support the efforts of other local organizations to further heritage tourism opportunities.

OBJECTIVE 11.04. Historic Structures

The City shall actively encourage maintenance and preservation of historic structures.

OBJECTIVE 11.08. Non-designated Resources

The City shall encourage protection and revitalization of non-designated historic structures and neighborhoods within Fernandina Beach.

Policy 11.08.01. The City shall encourage protection, preservation, and revitalization of historic non-designated structures and neighborhoods.

CITY OF FERNANDINA BEACH LAND DEVELOPMENT CODE

8.00.01 Intent

It is declared as a matter of public policy that protection, enhancement, perpetuation and use of sites of aesthetic, archaeological, architectural, cultural, historical and paleontological merit or value is in the interests of the health, prosperity, safety and welfare of the people of Fernandina Beach. The City Commission finds that the irreplaceable loss of these resources to the community would detrimentally

affect the community as a whole. It is therefore the intent of this chapter to:

- A. Effect and accomplish the protection, enhancement and perpetuation of buildings, structures, improvements, sites, districts, landscape features, and archaeological and paleontological resources that represent distinctive elements of the City's architectural, cultural, economic, natural, political, prehistoric, religious, scientific, and social history;
- B. Safeguard the City's architectural, cultural, economic, natural, political, prehistoric, religious, scientific and social heritage, as embodied and reflected in such structures, sites, and districts;
- C. Foster awareness and pride in the accomplishments and events of the City's past;
- D. Protect and enhance the City's attraction to residents, tourists, and visitors, and serve as an economic stimulus to business and industry;
- E. Stabilize and improve property values and encourage compatible redevelopment;
- F. Enhance the visual and aesthetic character of the City; and
- G. Promote the use of individual structures, sites, and districts for the education, leisure, and welfare of the people of Fernandina Beach.

8.02.02 Historic District Council Roles and Responsibilities

The HDC shall have the duty and responsibility to:

- C. Review and approve or deny applications for a certificate of Approval for construction, alteration, demolition, or removal of historic landmarks, historic sites, archaeological sites, properties in historic districts, or properties in the CRA Overlay.

8.03.02 Procedure for Designation of Historic Districts

A. No historic district or property proposed for inclusion in a historic district within the city shall be designated by any City agency except as provided in this section.

B. For purposes of this section, the term "property owner" shall mean the record owner or owners of one or more parcels of property within the boundaries of the proposed historic district. Should an individual, individuals or entity own more than one parcel of property within the boundaries of the proposed historic district according to the latest available tax rolls from the county property appraiser's office, then such individual or entity shall be considered one property owner for purposes of calculating the number of property owners in the proposed historic district regardless of the number of parcels that may be owned by the individual, individuals or entity within the boundaries of the proposed historic district. Should a parcel of property be owned by more than one individual for purposes of calculating the number of property owners within the boundaries of the proposed historic district, such co-owners shall be considered cumulatively as one property owner regardless of their number.

C. Upon the recommendation of the City Commission or the Historic District Council an application may be submitted by a property owner within the proposed district, or his authorized agent, to the Planning Department to prepare or assist in preparation of a designation report. The City shall charge a fee for each application that reflects processing costs for the application, except such fee shall be waived for City-initiated applications. An area or property may be identified as being potentially suitable for designation as an historic district or for inclusion in a historic district. The area or property shall be surveyed and studied for the purpose of determining the age and significance of each building, site, structure, or object within the area. A nomination report shall be prepared based on the results of the survey. Once the district boundaries are determined, the property owners shall be surveyed for their agreement with the designation and the results shall be available and considered during public hearings at meetings of the Historic District Council, Planning Advisory Board, and City Commission.

D. The applicant shall complete an application form provided by the City which shall, to the extent possible, include:

- 1. A written description of the architectural, historical, or archaeological significance of the structures, sites and building in the proposed historic district specifically addressing and documenting the criteria set forth in subsection (j) of this Section;

2. An identification of all buildings, structures and sites within the proposed historic district and the proposed classification of each as contributing or noncontributing with an explanation of the criteria utilized for the proposed classification;
3. A physical description of the proposed historic district, accompanied by photographs of buildings, structures or sites within the district indicating examples of contributing and noncontributing structures within the district;
4. A statement of recommended boundaries for the proposed historic district and a justification for those boundaries, along with a map showing the recommended boundaries;
5. The names and addresses of all owners of real property within the boundaries of the land upon which the designation of the historic district is requested and the real estate assessment numbers for the property within the boundaries of the land upon which the designation is requested. Requirements (1), (2), (3) and (4) shall be waived with respect to any historic districts listed on the National Register of Historic Places as of January 1, 1990.

E. The Historic District Council shall hold a public hearing on the proposed designation within 90 days of the filing of a completed application. The Historic District Council shall hold at least one town meeting at which the proposed district will be explained and discussed. A quorum is not necessary to conduct the town meeting. The property owners within the proposed district shall be notified by United States mail at least thirty (30) days in advance of the Historic District Council public hearing date and time. For the purpose of notice requirements to owners, the names and addresses of owners shall be deemed to be those on the current tax records in the Office of the Property Appraiser. All notices required by this section shall state clearly the boundaries of a proposed historic district. The notice required by this section, the cost of which shall be \$2 for each notification, shall be paid by the applicant to the City.

F. The notice referred to in paragraph (E) of this section shall include the following information and documents:

1. The notice shall state that the creation of an historic district will impose design review on certain permitted activities.
2. The notice shall state that the ordinance creating the historic district will contain requirements which must be met in order to alter, renovate or demolish a structure or building within the district. These requirements may relate to density, siting, building materials and architectural features as well as other matters.
3. The notice shall state that a list of contributing and noncontributing structures has been compiled and that contributing structures will be identified in the ordinance creating the historic district.
4. The notice shall state that the owners have the right to vote whether they want the historic district to be created.
5. The owners shall be provided a ballot which must be signed and witnessed which will permit the owner to vote whether he approves or disapproves the creation of the historic district. In order for the ballot to be valid it must indicate the name of the owner, the residence address of the owner and the address of the property in the proposed historic district. This ballot must be returned to the Historic District Council not less than twenty-one (21) days after the noticed hearing.
6. The notice shall state that at the hearing, the proposed historic district design guidelines for reviewing certain permitted activities will be discussed and voted on by the Historic District Council.
7. The notice shall state that if the district is created the owners shall be required to obtain a Certificate of Approval before certain work is done on the property.
8. The notice shall state that the application for creating the historic district is on file with the Historic District Council and that the Historic District Council shall have on file all information submitted by the applicant and the Planning Department, including recommendations.
9. The notice shall state the time, date, and place of any town meetings scheduled by the Historic District Council. However, nothing herein shall prohibit the Historic District Council from holding other town meetings with published notice.

G. Notice of a public hearing shall also be published once in a newspaper of general circulation in the City not less than fourteen (14) days in advance of the date of the hearing. The published notice shall be in a form

prescribed by the Historic District Council and placed by the applicant at the applicant's expense. The applicant shall file proof of publication with the Historic District Council prior to the public hearing.

H. The applicant for a proposed designation shall post signs within five working days after filing of a completed application, which signs shall be in the form required by the Historic District Council and shall be posted in full view of the public. The sign or signs shall be posted on the boundaries of the proposed historic district at each public right-of-way intersecting the boundary of the proposed historic district, or at such other locations and at such intervals, as determined by the Planning Department, as will ensure that the signs will be seen by as many persons as possible. The signs shall be maintained by the applicant until such time as the advisory recommendation has been made by the Historic District Council. The signs shall be removed by the applicant within ten days after final action by the City Commission.

I. At the close of the public hearing, the Historic District Council shall determine whether, based upon the evidence, the proposed historic district does or does not meet the criteria for designation. Such a determination shall be made by a report stating the findings of the Historic District Council concerning the relationship between the proposed historic district and the National Register of Historic Places criteria for designation set forth below. At least two of the criteria must be met.

1. Its value as a significant reminder of the cultural, historical, architectural, or archaeological heritage of the City, state or nation.
2. Its location is the site of a significant local, state or national event.
3. It is identified with a person or persons who significantly contributed to the development of the City, state or nation.
4. It is identified as the work of a master builder, designer, or architect whose individual work has influenced the development of the City, state or nation.
5. Its value as a building is recognized for the quality of its architecture, and it retains sufficient elements showing its architectural significance.
6. It has distinguishing characteristics of an architectural style valuable for the study of a period, method of construction, or use of indigenous materials.
7. Its character is a geographically definable area or neighborhood possessing a significant concentration, or continuity of sites, buildings, objects or structures united in past events, or united in culture, architectural style, or aesthetically by plan or physical development.
8. Its suitability for preservation or restoration.

J. The Historic District Council shall also determine what proposed historic district design guidelines it would recommend to apply to the historic district and shall identify what actions to be taken on property within the proposed district that would require a certificate of Approval.

K. The Historic District Council shall inform the public that each owner of real property in the proposed historic district had been sent ballots to vote on the proposed district and that the ballots must be signed, witnessed and delivered to the Historic District Council within 21 days after the hearing.

L. At the first meeting of the Historic District Council held at least seven days after the owners' votes are due, the Historic District Council shall tabulate the votes. If a majority of the owners' votes cast disapprove the creation of the proposed historic district, the Historic District Council shall take no further action on the proposed historic district and the Historic District Council's files on the district shall be closed. If 50 percent or more of the owners' votes cast approve the creation of the proposed historic district, then the Historic District Council shall adopt an advisory recommendation which shall be accompanied by a report stating the findings of the Historic District Council concerning the relationship between the nominated historic district and the National Register criteria for designation. The Historic District Council shall forward the advisory recommendation and report to the Planning Advisory Board.

M. The Planning Advisory Board shall consider the nomination request, the findings of the Historic District Council, and the request's consistency with the comprehensive plan, and make a recommendation to the City Commission. The property owners within the proposed district shall be notified by United States mail at least thirty (30) days in advance of the Planning Advisory Board public hearing date and time. For the purpose of notice requirements to owners, the names and addresses of owners shall be deemed to be those on the current

tax records in the Office of the Property Appraiser. All notices required by this Section shall state clearly the boundaries of a proposed historic district. The notice required by this Section, the cost of which shall be \$2 for each notification, shall be paid by the applicant to the City.

N. When a majority of the owners' votes disapprove the creation of the proposed historic district, any City Commission member may request that an ordinance designating the proposed historic district be drafted, but approval of the designation of such historic district by the City Commission shall require a vote of two-thirds of the City Commission members unless 85 percent of the proposed historic district acreage is already part of an historic district listed on the National Register.

O. The City Commission shall give notice, follow the publication procedure and sign posting procedure, hold public hearings, and make its determination in the same manner as provided in Section 11.02.00; provided however, there shall be no requirement to notify by United States mail all owners of real property within 350 feet of the boundaries of the proposed historic district. The Commission shall consider the same criteria set forth in paragraph (I) of this section. Any ordinance designating an historic district shall set forth the historic district design guidelines that apply to the historic district, which would then become the Historic District Design Regulations for that historic district, and the actions that would require a Certificate of Approval.

P. The City Clerk shall notify each applicant and each owner of real property within the proposed historic district of the final decision relating to the proposed historic district within seven (7) days of the City Commission's action and shall cause the designation of an historic district to be recorded in the official records of Nassau County, Florida, at the expense of the applicant for the designation. The City Clerk shall also notify the Property Appraiser's office of the designation.

Q. Boundaries for designated historic districts identified in or by this chapter shall be clearly established through legal descriptions.

R. When an historic district designation is made, the Director of Planning or his designee shall enter the designation as an overlay on the Zoning Map and Future Land Use Map.

S. Whenever the City Commission has denied an application for the designation of an historic district no further application shall be filed for the same historic district designation for a period of one year from the date of such City Commission denial.

T. The designation of any historic district may be amended or rescinded through the same procedure utilized for the original designation, by the filing of an application for rescission or amendment of designation utilizing the procedure hereinabove set forth. Any Historic District Council recommendation to amend or rescind a prior designation shall be based upon new evidence and negative evaluation according to the criteria used for historic district designation in existence at the time of such application for rescission or amendment.

U. If an updated report shows that there are additional contributing structures outside of the original boundary of an existing district, then the city may consider the expansion of the boundaries of the district to incorporate those properties. A ratio of 50 percent contributing structures within the proposed district expansion is required for the creation of an expanded district.

V. The expansion of existing historic districts shall be done by ordinance adopted by the City Commission, in accordance with the same procedures required for the creation of new districts, except that the information required shall be applicable to the expansion area only, and not to the entire district.

ANALYSIS:

Due to the important role this structure has played in the City's history, it merits inclusion into the Downtown Historic District (see Exhibit 1). As the current iteration of the Nassau County Jail was constructed in 1938 and falls outside of the downtown's period of significance, the property will be classified as a non-contributing structure.

STAFF RECOMMENDATION:

Staff finds that the requested action, as presented, is consistent with the Comprehensive Plan and the Land Development Code.

Staff Recommends: Inclusion of the “Old Nassau County Jail” as a non-contributing resource to the Fernandina Beach Downtown Historic District.

MOTION TO CONSIDER:

I move to approve or deny HDC case number 2019-32 with or without conditions;

AND I move that the HDC make the following findings of fact and conclusions of law part of the record:

That HDC case 2019-32, as presented, is or is not substantially compliant with the Comprehensive Plan and the Land Development Code to warrant approval at this time.

LIST OF EXHIBITS:

- | | |
|------------------|---|
| EXHIBIT 1 | Florida Master Site File 8NA00287 |
| EXHIBIT 2 | Locator Map/ Underlying Lots of Record Map |
| EXHIBIT 3 | Boundary Expansion Vote |
| EXHIBIT 4 | Draft Ordinance |

Respectfully Submitted,



Salvatore J. Cumella
Historic Preservation Planner

HDC 2019-32

EXHIBIT 1

Florida Master Site File 8NA00287

RESTRICTED

Site#/Manuscript# NA 287 contained one or more of the following items:

☐ Drawings/diagrams depicting internal layout and/or structural elements including Floor Plans, Blueprints, building plans, or schematic drawings.

☐ Other, explain _____

The Site File has determined that the above marked material may be Restricted.
Restricted material is defined by one of the following marked categories:

☒ Florida Statute 119.071 § 3.3(b) & (c) (2007), which states:

(b)1. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency are exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution.

2. This exemption applies to building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency before, on, or after the effective date of this act.

(c) Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout or structural elements of an attractions and recreation facility, entertainment or resort complex, industrial complex, retail and service development, office development, or hotel or motel development, which documents are held by an agency are exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution. This exemption applies to any such documents held by an agency before, on, or after the effective date of this act. Information made exempt by this paragraph may be disclosed to another governmental entity if disclosure is necessary for the receiving entity to perform its duties and responsibilities; to the owner or owners of the structure in question or the owner's legal representative; or upon a showing of good cause before a court of competent jurisdiction.

☐ Other, explain _____

Materials indicated have been removed from the paper file and are housed in a secure location and available to authorized persons in the EDMS. If you need these materials, please see Site File staff.



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

September 30, 2009

Dr. Janet Snyder Matthews, Keeper
National Register of Historic Places
Department of Interior
1201 Eye Street, N.W., 8th Floor
Washington, D.C. 20005

Dear Dr. Matthews:

Enclosed are two nominations for listing in the National Register of Historic Places:

North Shore Historic District, Miami Beach, Miami-Dade County, Florida
Nassau County Jail, Fernandina Beach, Nassau County, Florida

Also enclosed is a district map for the North City Historic District, St. Augustine, St. Johns County (Ref# 09000778), which should be delivered to Jim Gabbert.

Please do not hesitate to contact me at (850) 245-6364 if you have any questions or require any additional information.

Sincerely,

Barbara E. Mattick

Barbara E. Mattick, Ph.D.
Interim State Historic Preservation Officer

Enclosures

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6436

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6436

☐ Historic Preservation
(850) 245-6333 • FAX: 245-6437

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM**

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name NASSAU COUNTY JAIL

other names/site number FMSF# NA287

2. Location

street & number 233 South Third Street N/A ☐ not for publication

city or town Fernandina Beach N/A ☐ vicinity

state Florida code FL county Nassau code 089 zip code 32034

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this ☒ nomination
☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of
Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property
☒ meets ☐ does not meet the National Register criteria. I recommend that this property be considered significant
☐ nationally ☐ statewide ☒ locally. (☐ See continuation sheet for additional comments.)

Barbara C. Mattick / Interim SHPO 9/30/2009
Signature of certifying official/Title Date

Florida Department of State, Division of Historical Resources, Bureau of Historic Preservation
State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional comments.)

Signature of certifying official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:

☐ entered in the National Register
☐ See continuation sheet

☐ determined eligible for the
National Register
☐ See continuation sheet.

☐ determined not eligible for the
National Register
☐ See continuation sheet.

☐ removed from the National
Register.

☐ other, (explain) _____

Signature of the Keeper

Date of Action

Nassau County Jail
Name of Property

Nassau Co., FL
County and State

5. Classification

Ownership of Property (Check as many boxes as apply)

- ☐ private
☒ public-local
☐ public-State
☐ public-Federal

Category of Property (Check only one box)

- ☒ buildings
☐ district
☐ site
☐ structure
☐ object

Number of Resources within Property

(Do not include any previously listed resources in the count)

Contributing

Noncontributing

1	0	buildings
0	0	sites
0	0	structures
0	0	objects
1	0	total

Name of related multiple property listings

(Enter "N/A" if property is not part of a multiple property listing.)

Number of contributing resources previously listed in the National Register

"N/A"

0

6. Function or Use

Historic Functions

(Enter categories from instructions)

GOVERNMENT: Correctional Facility

Current Functions

(Enter categories from instructions)

RECREATION & CULTURE: Museum

7. Description

Architectural Classification

(Enter categories from instructions)

MODERN MOVEMENT: Moderne

Materials

(Enter categories from instructions)

foundation BRICK

walls BRICK

roof ASPHALT

other

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

Nassau County Jail
Name of Property

Nassau Co., FL
County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☒ **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ **B** Property is associated with the lives of persons significant in our past.
- ☒ **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ **D** Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- ☐ **A** owned by a religious institution or used for religious purposes.
- ☐ **B** removed from its original location.
- ☐ **C** a birthplace or grave.
- ☐ **D** a cemetery.
- ☐ **E** a reconstructed building, object, or structure.
- ☐ **F** a commemorative property.
- ☐ **G** less than 50 years of age or achieved significance within the past 50 years

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 36) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey

- ☐ recorded by Historic American Engineering Record

Areas of Significance

(Enter categories from instructions)

POLITICS/GOVERNMENT

SOCIAL HISTORY

ARCHITECTURE

Period of Significance

1938-1956

Significant Dates

1938

1954

Significant Person

N/A

Cultural Affiliation

N/A

Architect/Builder

Benjamin, Roy A.; Hopkins, A.C. (addition)

Davis, Charles J.; Woodcock, O.P. (addition)

Primary location of additional data:

- ☒ State Historic Preservation Office
- ☐ Other State Agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other

Name of Repository

Nassau County Jail
Name of Property

Nassau Co., FL
County and State

10. Geographical Data

Acreage of Property 1.03 acres

UTM References

(Place additional references on a continuation sheet.)

1	1	7	4	5	5	5	8	0	3	3	9	2	8	8	0
Zone	Easting			Northing											
2															

3															
Zone	Easting			Northing											
4															

☐ See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Johnston, Sidney; Carmen Godwin/Robert O. Jones, Historic Preservationist

organization Bureau of Historic Preservation date September 2009

street & number 500 South Bronough Street telephone 850-245-6333

city or town Tallahassee state FL zip code 32399-0250

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location.

A Sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.

Additional items

(check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name Nassau County Jail Museum, Phillis Davis, Director

street & number 233 South Third Street telephone 904-241-7378 x121

city or town Fernandina Beach state FL zip code 32034

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and amend listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

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**NASSAU COUNTY JAIL, FERNANDINA BEACH
NASSAU COUNTY, FLORIDA**

SUMMARY

Nassau County Jail is located at 233 South Third Street in Fernandina Beach, Florida. Constructed in 1938 and expanded in 1954 and 2007, the building is a good example of Moderne design. The two-story building contains approximately 6,800 square feet of interior floor space. It faces south and displays a flat roof of reinforced concrete with straight parapets and hard-fired red brick walls laid up in a modified Flemish bond. The brick walls are three rows thick, providing sufficient strength to prevent escape and to stand against hurricane-force winds on the coastal island city. Other exterior finishes include a tripartite belt course, a glass block panel, decorative basket weave brick panels, fleur-de-lis cast stone ornamentation, cantilevers, six-over-six double-hung sash windows, and an articulated foundation. A cast stone head mast contains the words "Nassau County Jail" above the east entrance. Metal exterior doors and an iron cage protecting the south entrance unmistakably identify the building as a jail. All parts of the building remain in excellent condition, in part, because of its uninterrupted use from a jail to a museum, and because of its reinforced concrete and brick construction. The building served as the county's jail until a new facility was built in 1978. Compatible additions were made to the building in 1995 and 2007.

SETTING

Fernandina Beach is the seat of government of Nassau County. Located on the leeward side of Amelia Island, Fernandina Beach is known as the "Isle of Eight Flags" for its position near the south end of the Sea Islands and its heritage of having eight nations flags been planted on its shores. It claims to be the northeastern most incorporated city in Florida, Fernandina Beach has a population of 11,815 and the larger Nassau County contains 68,188 residents.

Nassau County Jail faces east on South Third Street, occupying a site one block south of the Fernandina Beach Historic District which was listed in the National Register in 1973 with a boundary extension in 1987. The building stands three blocks east of Fernandina Beach's harbor and three blocks south of Centre Street, the central business district. Most of Centre Street's buildings were constructed of brick after fires in 1876 and 1883 destroyed much of the downtown. Four blocks to the northeast are the Fairbanks House (NR 1973) and the Tabby House (NR 1973), late nineteenth century landmarks. Closer to the jail are relatively small one-story dwellings of recent vintage. To the west is a railroad yard, and the single story Amelia Community Theater Building, formerly owned by the School District of Nassau County.

PHYSICAL DESCRIPTION

Exterior

The asymmetrical east elevation (Photo 1) of the 1938 part of the building displays a straight parapet with cast stone coping. Emphasizing its horizontal massing, three brick belt courses in header bonds are interrupted by

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the "Nassau County Jail" name plate and cast stone belt courses which occupy a location above the offset entrance protected by a metal cantilever and iron door with bars. The modified Flemish bond employed in the brick work adds character and strengthens the bond between the exterior walls of hard fired-clay face bricks and the unglazed clay common brick interior walls. Asymmetrical but regular fenestration includes six-over-six-light double-hung sash windows in single arrangements along the second story and paired and singular arrangements along the first story. The window openings are accented by bricks laid in a rowlock bond for the sills and vertical stretcher patterns for the headers. The first-story window to the right, or north, of the entrance reveals iron bars protecting the interior. This entrance historically led into the cells and jail administration areas. The entrance and window arrangement and the windows opening at the southeast corner are further accented by bricks laid on their beds to form basket weave patterns. Header bonds in corbelled patterns form inset panels. Accented by cast stone drip molding that extends ten feet from the southeast corner, an articulated foundation consists of salmon-colored bricks laid up in American common bond, contrasting with the red brick modified Flemish bond on the primary walls. A stack bond laid vertically accents the upper row of bricks on the articulated foundation, providing an unusual belt course and visually identifying the position of the first floor.

At the north end of the east elevation projects a small one-story flat roof extension (Photo 2). Similar in design and materials to the two-story east elevation, the extension is part of the 1954 addition. It is differentiated from the 1938 part of the building by the absence of any belt courses or decorative brick panels and its use of a cast stone belt course that extends across the top of the articulated foundation. The same modified Flemish brick bond work evident on the older part of the building appears on the addition. The north elevation of the one-story extension (Photo 3) displays a six-over-six and four-over-four-light double-hung sash window and the west elevation of the one-story addition contains no piercings.

The south elevation (Photo 4) is symmetrical with a central iron door with bars protected by a distinctive cantilever enclosed with an iron cage and accented by a decorative metal railing. This entrance historically led into the jailer's quarters. A full-height projecting brick panel further identifies the entrance which is further accented with a central window opening filled with glass blocks and fleur-de-lis floral designs executed in cast stone. The tripartite brick belt courses evident on the east elevation continues along the south elevation, interrupted by the cast stone floral designs and continued with cast stone belt coursing. The basket weave panels accent the walls between first- and second-story windows and entrance. The first-story windows bracketing the entrance have been covered with diagonal boards; the second-story six-over-six-light double-hung sash windows remain evident, a cast stone drip molding that accents the foundation is obscured by vegetation.

The remainder of the south elevation displays a stepped back plan with asymmetrical and irregular fenestration resulting from a combination of the 1954 and 2007 additions (Photos 5&6). Rising two stories, the additions display a parapet line three feet lower than the parapet accenting the wall to the east. The parapet cap on the

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addition intersects the uppermost belt course of the wall to the east with the two lower belt course lines continued in the appropriate alignment. Four blind windows contrast with a single six-over-six double-hung sash window. Supported by a small concrete porch, a door and single window punctuate the southwest corner of the elevation. Hard clay-fired brick walls are accented by a stuccoed foundation finish.

The west elevation (Photos 7&8) displays more of the six-over-six double-hung sash windows set in a regular pattern with the exception of a blank wall at the northwest first-story corner. Three windows on the second floor have been removed for restoration and the openings temporarily boarded over. A cast stone foundation skirt contrasts with the red clay-fired brick walls.

Continuing the irregular plan of the south elevation, the north elevation (Photo 9) displays a projecting flat-roof extension at the northwest corner that yields to a glass enclosure shaded by a green awning and incised within the building to provide ingress and egress at the center of the elevation. Farther east, the two-story walls are interrupted by double-hung sash windows set in an asymmetrical pattern and a brick chimney with an arched cap. Two of the windows on the second story are boarded over; one window has been removed for restoration, the other remains in the opening. The one-story addition projects at the northeast corner.

EXTERIOR ALTERATIONS

The east elevation (Photos 1&2) has not been altered with the exception of the one-story 1954 addition, which is part of the historic fabric of the building. The south elevation has been altered by the addition of the ca 1986 installation of the iron cage mounted under the cantilever to protect the entrance. Originally, brick walls were located under the cantilever with a four-over-four light double-hung sash window piercing the west elevation and an entrance at the east elevation. An uninterrupted brick wall originally faced Cedar Street. The cantilever and decorative metal railing were part of the original design; salvaged from interior sections of the jail, the iron cage replaced the brick walls to provide a serviceable entrance into the museum and an outward visual indicator of the historic interior function of the building.

Another alteration to the south elevation is the 2007 addition (Photo 5). The 2007 addition covers sixteen feet and four double-hung windows along the west elevation of the 1938 part of the building and twenty-four feet and four windows of the south elevation of the 1954 addition. Designed by Kenneth Smith Architects, Inc., of Jacksonville and approved by the Architectural Services Section of the Division of Historical Resources, the 2007 addition meets the Secretary of the Interior's criteria for a compatible, but differentiated addition to a historic building. Set back appropriately from the historic wall of the south elevation, the 2007 addition displays red brick walls of differing hues, distinct from the red bricks employed on either the 1938 original part or the 1954 addition. The parapet, modified Flemish bond pattern, belt courses, and window headers and sills accenting the windows are copied directly from the historic fabric, but none of the decorative brick panels appear. The stuccoed foundation skirt contrasts from the brick foundation on the 1938 building and the cast

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stone veneer on the 1954 addition. The six-over-six double-hung sash windows and blank windows arranged in an asymmetrical pattern both reflect the fenestration on the unaltered walls of the building.

The north elevation (Photo 9) is altered by the introduction of the 2007 addition that in-fills the space between the 1938 portion of the building to the east and the 1954 addition to the west. The addition covers a space amounting to sixteen feet of historic wall fabric in an area historically that was a two-story flat-roof hyphen that served as a passageway between the 1938 and 1954 parts of the building. Historically, it measured sixteen feet in length by ten feet in width. Reflecting the pattern revealed on the south elevation, the north elevation of the 2007 addition has red clay-fired bricks of various hues that contrast from the historic fabric, but laid up in the same historic pattern. The glass enclosure provides at once an entrance vestibule, visual relief from the massing of red bricks along the elevation, and the original depth of the historic hyphen connecting the parts of the building. Two double-hung sash windows pierce the wall surface above the glass wall. Setbacks emphasize the introduction of a modern addition along the north elevation. The setback from the north wall of the 1938 building amounts to eighteen inches and sixteen feet from the 1954 addition. The 2007 addition includes a new concrete step and ramp system to provide access into the building to meet local building and ADA codes.

**Interior
First Floor**

The interior of the building contains thirteen primary rooms that support the museum's exhibits, patrons, and administrative staff. The first floor contains exhibition halls, restrooms, central hall and stairs, and storage room. The iron cage and door on the first-story south elevation opens into the reception area and primary exhibition hall (Photo 10). Framed with large wood planks during construction and leaving striation marks, reinforced concrete joists and the second-story floor system remain clearly evident at the ceiling, which rises ten feet. In association with the iron cage and barred iron door at the entrance, the ceiling conveys the feeling of the building's historic use as a jail. Unglazed brick interior walls are apparent above and beside exhibition panels and temporary walls installed to enhance the museum. This area historically served as the jailer's quarters, which consisted of a combined living/dining room, kitchen, bedroom, bathroom, and guest or child's room. To the northeast is an area that historically was a part of the jailer's quarters and now is a exhibition hall (Photo 11) that interprets Nassau County's history. This room displays similar details at the ceiling and walls as found at the primary exhibition hall.

To the east of the Nassau County History Room is the central hall and staircase (Photo 12). The straight stairs have a brick base, iron newels and handrails. The central hall reveals the building's unusual interior brick wall system, barred iron doors, and the iron utilitarian staircase. The iron materials were designed, fabricated, and installed by the Decatur Iron & Steel Company of Decatur, Alabama. Historically containing a temporary holding cell, restrooms (Photo 13) are located to the north of the central hall. Along the south wall of the central hall and at the foot of the staircase is located a barred iron door (Photo 14) that historically provided

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access between the jailer's quarters and the central hall. East of the central hall lies the sally port, or prisoner's entrance vestibule (Photo 15) which historically served the jailer's quarters to the south, to the west the central hall and jail, and the booking and processing room to the north (Photo 16). The processing room currently supports Spanish mission and Timucuan exhibits. The sally port has its original iron door framing systems, but the barred iron doors have been removed to improve circulation through the museum.

A narrow corridor extends to the west of the Nassau County Exhibition Hall (Photo 17). The corridor visually identifies a transition from the historic building into the modern addition through differentiated red brick walls and a reinforced concrete ceiling to a gypsum-board-and-plaster walls and drop ceiling system. The corridor empties into part of the 2007 addition that contains a hall (Photo 18) which supports a new elevator, vestibule, rear entrance, and handicap ramp. To the north of the elevator is located the entrance vestibule (Photo 19), which visually unites and differentiates historic brick walls and double-hung sash windows with modern spaces and materials. In the vestibule are revealed to the east original brick walls and windows associated with the 1938 original building, and the 1954 addition's materials to the west. Iron bars remain intact on the former windows, indicating the historic use of the facility in the new entrance. West of the elevator and rear vestibule and contained within the 1954 addition is a secondary hall (Photo 20); an exhibition hall with an emergency exit on the south elevation (Photos 21&22); and storage room to the north (Photo 23). The exhibition hall has temporary walls and finishes that obscure the original brick interior walls, windows, and ceiling. Formerly containing the primary electrical service panels and transmitter equipment, and currently undergoing rehabilitation and re-use as an exhibition hall, the storage room reveals plaster-and-brick walls, a reinforced concrete ceiling, and replacement double-hung sash windows.

Second Floor

The current and historic system for gaining access to the upper floor is the central staircase (Photo 24). Not available to the general public as part of the overall museum experience, the second floor contains administrative offices, library, archives, and a multi-purpose room for developing exhibits and holding seminars and workshops. It historically contained only cells for inmates. In general, the rooms have double-hung sash windows and brick walls, although some walls have been painted white. Drop ceilings obscure original reinforced concrete ceilings in many rooms, and provide access spaces for electrical and HVAC systems. At the top of the staircase and to its north are located administrative offices (Photos 25&26) and a storage facility (Photo 27), which is protected by a barred iron door (Photo 28). To the south of the staircase is the library and archives (Photo 29). Although the walls of this room have been covered with gypsum board and plaster, the original windows and brick floor remain visible. At the northwest corner of the library is a narrow corridor (Photo 30) that leads into the 2007 addition with modern bathrooms and a new stairwell (Photo 31). To the north of the corridor are the elevator, accompanying hall, and an administrative office (Photo 32). Contrasting with the modern finishes in the office is an original window and supporting brick wall (Photo 33). With the exception of the narrow corridor, these rooms comprise the 2007 addition. To the west of the elevator is a large

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open multi-purpose room (Photo 34), which has drop ceiling panels, double-hung sash windows, and partially exposed brick walls.

INTERIOR ALTERATIONS

First Floor

The first floor has several alterations made to adapt the building to its present use as a museum. Those changes are largely sensitive to the original circulation system and use. The reception area and primary exhibition hall (photograph 10) originally contained five spaces for the jailer's quarters, that is, a living/dining room, kitchen, two bedrooms, and restroom. The interior walls were removed about 1995 and the space reorganized with partitions for reception, gift sales, main exhibition hall, and a small theater. With the exception of the removal of several metal doors, the original east entrance vestibule, booking room, and dispatch, deputy's lockers, and armament storage room (Photos 15&16) retain their original features and circulation pattern. The original jail laundry (Photo 13) was divided into two spaces around 1995 to accommodate restrooms. Free-standing in the center of the room, the original trustee cells were removed about 1988 to create exhibition space (Photo 11). Red brick walls, metal doors, and reinforced concrete ceiling systems remain visible reminders of the originally intended use of the building.

An addition and modifications made in 2007 altered the interior of the original sally port system and connector between the 1938 and 1954 sections of the jail (Photos 17,18,19&31). Two restrooms and a staircase were added to the south elevation, and the sally port to the north was enclosed to accommodate an elevator, hallway, and handicapped ramp. New interior partitions were finished with smooth plaster. They contrast with the exposed original exterior brick wall and double-hung sash windows complete with iron bars revealed within the new vestibule. Removed about 1988, the original female jail cells for both black and white inmates occupied the large space at the west elevation (Photos 20-22). A wood-frame partition extending north-to-south visually separated the free-standing cells. The wall system was reorganized in 2007 to accommodate a hall serving the elevator and north entrance, and exhibitions in the former cell room for female inmates.

Second Floor

The second floor retains its original circulation pattern, materials, and features to a high degree. The most obvious change is the removal of the free-standing iron cells in the two major spaces (Photos 29&34). Most alterations were completed about 1995 to support museum operations. A small partition in the former "Black men's bull pen" (Photo 29) forms a library reading space (2007), and a secure archives (c.1994) with many of the museum's most valuable resources are stored in the locked room. The mentally deficient, padded, solitary confinement, and trustee cells (Photos 24-28) have been adapted for offices, but retain their original walls. Completed in 2007, the addition and alteration above the first-floor sally port (Photos 30-33) provides a

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staircase, restrooms, and an office on the second floor. A revealed window (Photo 33) serves as a visual reminder that the latter room is an addition with this space originally located outside the exterior walls.

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SUMMARY

The Nassau County Jail, currently housing the Amelia Island Museum of History, is significant at the local level under Criterion A in the areas of Politics/Government and Social History, and under Criterion C for Architecture. The jail was constructed by Nassau County government in 1938, on the site of an 1878, one-story wood-frame jail and a subsequent two-story masonry jail. Contributing to a local initiative to expand and modernize Nassau County's government buildings, the 1954 addition was part of a larger contract that also expanded and modernized County Courthouse. The jail was the hub of activity for persons charged with crimes and held through trials, incarcerated for one year or less, or transported to the state prison. Under Criterion C, the building possesses significance for its rare Moderne design, and for its distinctive characteristics of a type of construction designed for incarceration. In its original form, the building was designed by Jacksonville architect Roy A. Benjamin and constructed by Charles J. Davis, Inc., of Jacksonville. The Decatur Iron & Steel Company of Decatur, Alabama, designed and installed the iron and steel work and equipment used for the jail's doors and cells. Another Jacksonville architect, Abner C. Hopkins, drafted the plans for the 1954 addition, which gave the building its current irregular shape. The O. P. Woodcock Company of Jacksonville supervised construction of the addition with the Roanoke Iron & Bridge Company of Roanoke, Virginia, supplying the iron work for cells and doors. The Nassau County Jail has played an integral part of Nassau County's history until a new facility was built in 1978. With an adaptive reuse the Amelia Island Museum of History re-opened the building in 1986.

HISTORIC CONTEXT

Nassau County, Florida's tenth county designation, was created by Florida's Territorial Legislature in 1824. A German name applied to a river and sound on the south side of the county, Nassau supported numerous plantations dotting the banks of the Amelia River, Nassau River, and St. Mary's River in the colonial and antebellum periods. Established earlier in the century, the Town of Fernandina became the county seat. The major port in Nassau County, Fernandina was one of the largest towns in Florida, and an important northeast Florida port in the decades before the Civil War. The population increased from 1,511 in 1830 to approximately 3,000 in 1860. Built at the north end of Amelia Island, Fort Clinch protected the towns of Fernandina, Florida, and St. Mary's, Georgia. In 1861, Senator David Levy Yulee completed the Florida Railroad from Fernandina to Cedar Key. In the process, he moved Fernandina from its original Old Town site at the north end of the island to a new location south on the Amelia River (WPA 1936; Johannes 2000:27, 30).

The Civil War forced most construction plans to be shelved, particularly after March 4, 1862, when a force of 15,000 Union troops on twenty ships arrived from Hilton Head Island. The Confederates abandoned the island without a fight and most of Fernandina's citizens fled the town. By contrast, within a few months of the Federal occupation, hundreds of runaway slaves arrived on the island, moved into Fernandina, and many able-bodied male ex-slaves joined the Union army. During his tour of the South with Chief Justice Salmon Chase in 1865,

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journalist Whitelaw Reid found the Yulee residence to have a senatorial look "among the forsaken-looking wooden buildings," which otherwise made up the town. John Muir, the naturalist who passed through Fernandina in 1867 on a 1,000 mile walk, only commented that he walked off a "...ramshackle pier into a ramshackle town." Both returning black veterans and the white citizenry rebuilt Fernandina. Notably, one of the first elections in the South that included both black and white voters during Reconstruction occurred in Fernandina's mayoral election of 1865 (Johannes 2000:324; Rerick 1902 2:316).

Beyond fishing and the railroad, the economy of Nassau County consisted of agriculture, lumber, naval stores, and tourism. County government reorganized following the Civil War. Many meetings were consumed with the typical issues associated with the collection of tax revenues, elections and constitutional offices, roads and bridges, the county's poorest residents, and law enforcement. In the process, the board of county commissioners acted upon petitions to create new roads, bridges, set millage rates, and constructed public buildings, including a courthouse and jail in Fernandina (Johannes 2000:36-37).

The late nineteenth century was Fernandina's Golden Age (1870-1910) when an influx of investor businessmen helped to transform Fernandina. Some of the growth spilled over into the county as naval stores and timber were harvested. Fernandina became a winter resort and an area in which freed slaves worked to retain the rights and freedom they had won in the Civil War. It was a time of boundless economic optimism for the town. Part of that development was the construction of a county courthouse on Centre Street and a county jail several blocks to the southwest. In addition to public buildings, numerous fashionable residences were built, including the Fairbanks House (NR 1973), fondly called Fairbank's Folly. This Italianate gem was designed by prominent architect Robert S. Schuyler, who also drafted the plans for St. Peter's Episcopal Church, the Tabby House (NR 1973), the 1886 School House, and the Hirth House. The Egmont Hotel opened in 1880 and gained a reputation, not only as the best of the eight hotels on the island, but one of the best in the nation. It was located just three blocks from the jail, and visitors to the hotel passed by the fine new jail on the way to the hotel. In 1877, General Grant visited the island at the beginning of his world tour and was feted in Fernandina. By 1880, the town had entered an economic boom. Initially, most commercial buildings lining Centre Street were constructed with wood. Brick became the material of choice after devastating fires burned most of Centre Street in 1876 and 1883 (Wood 1989:223; Johannes 2000:36-37).

The county's population expanded in the late nineteenth century, climbing from 6,635 in 1880 to 8,294 in 1890 and reached 9,654 in 1900. The growth of Fernandina played an important role in the population boom, expanding from 1,722 in 1870 to 2,562 in 1880. The introduction of new railroads and an increase in port traffic contributed to the county's growth. Beyond Amelia Island, Fernandina, and the towns of Callahan and Hilliard, Nassau County extended over 650 square miles to include the unincorporated communities of Andrews, Boulogne, Brickyard Landing, Bryceville, Chester, Crackertown, Crandall, Crawford, Dahoma, Dyal, Evergreen, Franklintown, Frink, Gross, Inglehome, Italia, Keene, Kent, Kings Ferry, Lessie, Mattox, Nassauville, O'Neil, Orange Bluff, Ratliff, Romulus, Wilds Landing, Woodstock Mills, and Yulee. The naval

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stores, railroad, and turpentine industries played an important role in the founding and development of most of those communities (Johannes 2000:40-81).

With growth came an increase in crime. Presumably, the initial county jail was contained within the first Nassau County Courthouse between the 1820s and 1870s. A subsequent courthouse was completed in Fernandina in 1891, complete with a lock-up for prisoners awaiting arraignment and trials, but by then a separate county jail had been built. In 1868, the Nassau County Board of County Commissioners took its first tentative steps to create a stand-alone county jail. In December of that year the board authorized the sheriff to develop plans for a jail, but the initiative failed. Then, on 23 May 1871 the county government purchased land south of Fernandina's downtown and east of the railroad tracks for a jail. Standing northwest of the intersection of Cedar Street and Third Street, this first jail was a one-story wood frame building completed in 1878. The county government responded to jail breaks in the early 1880s by improving its selection of jailers and locking mechanisms. In one well-publicized case from 1880 a local resident was robbed on the train from Cedar Key. He left the train and telegraphed ahead to the justice of the peace in Fernandina who met the train with several deputies and conveyed the suspect to the jail for the night. When the justice of the peace returned the next morning, the accused was gone. Suspecting the jailer of releasing him, the justice of the peace arrested the jailer and had him held in his own jail. By 1884, the jail had grown in size with a two-story main building with a supporting stockade and outbuildings. By 1909, the aging nineteenth century jail was replaced with a two-story brick building with a single outbuilding known as a calaboose, a colloquial term for a city lock-up or dungeon (*Florida Mirror*, 11 December 1880; Minutes of the Board of County Commissioners, 1868-1871; Deed Book N, p. 15 Clerk of Court Nassau County FL; Sanborn 1909).

Supported by constables and justices of the peace, the sheriff's department provided law enforcement over unincorporated Nassau County. Deputized officers delivered suspects arrested for criminal activities to the jailer at the Nassau County Jail for processing and incarceration. Jailed suspects formally charged with criminal activities were transported from the jail to the Nassau County Courthouse approximately four blocks northeast for arraignments and trials. Suspects who failed to meet a bond set by the court were held on remand in jail until trial. Some of the accused found guilty were sentenced to the county jail, generally for terms of one year or less. Longer sentences were carried out in the Florida State Prison at Raiford (Minutes of the Nassau County Board of County Commissioners, 1868-1871).

Growth in Nassau County persisted in the first half of the twentieth century, increasing from 9,654 in 1900 to 11,340 in 1920. By 1907, the county contained 138 miles of mainline railroads and, along with the development of United States Highways 1, 17, 23, and 301 and State Road A1A in the 1920s and 1930s, brought visitors, new homeowners, and businessmen into Nassau County. The development of the Intracoastal Waterway and bridges over the Amelia River and the St. Mary's River provided greater access for residents and visitors alike, and more crime into the region. The Era of Prohibition (1918-1933) prompted Nassau County's sheriff's department to launch periodic raids on moonshine stills leading to the destruction of barrels of liquor.

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The United States Coast Guard installed a base at Fernandina in the late-1920s to help curb rum-runners along the north Florida and South Georgia coasts. Entered into Nassau County's criminal bench docket books, other common forms of criminal activities included arson, assault, embezzlement, grand theft, interfering with an officer in the discharge of duty, larceny, manslaughter, murder, and rape. The end of prohibition closed an important chapter in the history of criminal activity in Nassau County. The shrimp industry thrived along the coast and the introduction of the factories by the Fernandina Pulp & Paper Company, Nassau Fertilizer & Oil Company, and Kraft Corporation brought new jobs to the county. Notwithstanding those new opportunities, the Great Depression coupled with joblessness and hunger ushered in a new period of criminal activities. Motivated by the desperate times, some residents relied on embezzlement and larceny just to fulfill their basic needs (Tebeau 1971:393-402; WPA 1939:374; Criminal Court Docket Book 1920-1933).

Some relief measures associated with the New Deal, including the Civilian Conservation Corps (CCC) and Public Works Administration (PWA), alleviated the harshest effects of the Depression, but few municipal governments in Nassau County took advantage of the programs. World War II lifted the economy out of the Depression. By 1945, the United States government had allocated more resources to the war and supported more construction projects in any other time in its history. In nearby Jacksonville, the Department of the Navy established Naval Air Station Jacksonville, which was supported by various outlying fields, including an emergency facility at Callahan in west Nassau County. By 1950, the county's population had climbed to 12,811 and, responding to that growth and Florida's image as a tourist and vacation destination, the municipal government at Fernandina changed the city's name to Fernandina Beach, in 1947. Between 1950 and 1957, the county experienced a twenty-five percent increase in population, and in 1960 the county's population reached 17,189 (Johannes 2000:188, 211-212; Morris 1949: 251; Morris 1985:549-551, 557).

HISTORICAL SIGNIFICANCE

The construction of the Nassau County Jail during the Great Depression was precipitated, in part, by a report received in 1936 by the county government from Jesse Elliott Creech, a Jacksonville inventor and inspector of correctional institutions, county jails, and state convicts for the board of commissioners of state institutions. The board of county commissioners then consisted of Chairman John T. Ferreira, Pasco Jones, Harry F. Sahlman, C. J. Walker, and K. K. Wilds. Creech cited the county government for the general poor condition of its aging nineteenth century jail and especially the building's inadequate cells, plumbing, cots, and bedding. In addition, Creech found the county's stockade at Hilliard in a similar poor state of repair. Only five years earlier, the Florida Federation of Women's Clubs had taken a statewide survey of Florida's county jails and found the condition of those facilities less than ideal and in some cases worse than during a similar study conducted nine years earlier. The Club cited inadequate medical care, unsanitary conditions and structures, lack of education and rehabilitation measures for inmates, enforced idleness of prisoners, and a fee system of 65¢ paid by various counties to its sheriffs for board for each incarcerated person. Responding to the state official, Nassau County's commissioners, for their part, promised to improve the condition of both facilities and subsequently made a few

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repairs to the jail. A two-story masonry building, the jail had been constructed about 1891 to complement a new courthouse built the same year on Centre Street (FWP 1939:111; NCBCCM Book 9).

In April 1937, after making additional repairs to the jail, the county determined to replace the building. That month, the board instructed its clerk to contact Jacksonville architect Roy A. Benjamin about his availability to design a new jail for the county. Responding quickly to the unsolicited work, Benjamin submitted a proposal to design a new county jail in May 1937. Benjamin agreed to prepare the preliminary sketches, working drawings and specifications, take bids, let contracts, and supervise the work. The next month, Winter Park architect James Gamble Rogers II, solicited the board with his services, but by then Benjamin's services had been secured. In June 1937, after being hired by the board, Benjamin indicated that "...the present jail will be safe to handle prisoners for the next sixty days or probably longer, at which time it is hoped the new jail will be pretty well on the way." Benjamin completed the jail plans on 23 July 1937 and submitted the plans to the board later that month. Reflecting the decline in the construction business associated with the Great Depression and the accelerated bidding process laid out by county officials, the board received construction bids from several Jacksonville firms by 11 August 1937. The bidders consisted of Charles J. Davis, Inc.; R. H. Gallespie; W. T. Hadlow; George Haydock; J. M. Raymond Construction Company; Ivy H. Smith Company; and the O. P. Woodcock Company. The board submitted the bids to Benjamin for evaluation and recommendation. Later that month, Benjamin recommended that the board approve the bid of \$19,361 submitted by Charles J. Davis, Inc., for construction and the steel work and equipment bid of \$10,069 submitted by the Decatur Iron & Steel Company. Davis's contract stipulated that the contractor would "...demolish the present old two-story Jail Building, and will erect and complete a two-story jail building on the property now occupied by the old jail building..." He agreed to have the new jail "...substantially completed on the 1st day of January, 1938." To streamline the process and further reduce costs, at the county's request Benjamin submitted an addenda to his original specifications, which included omitting the parapet wall on the rear elevation, the cast stone belt along the first floor, and furring in and plastering the jailer's office. Demonstrating the completeness of Benjamin's architectural services, the Jacksonville architect included a section on Special Jail Equipment in his specifications, which were used by the Decatur company to formulate its bid. Unfortunately, those documents have been lost (NCBCCM Book 9).

Running slightly behind schedule, Davis appeared before the board of county commissioners at their regularly scheduled meeting on 16 February 1938. The contractor indicated the jail was complete and the commissioners agreed to visit the building following the meeting. Approving the work, the board made its final settlement with Benjamin and Davis at a special session designated for that purpose on 28 April 1938. Satisfied with Benjamin's work on the jail, the board turned to the architect to design a new county hospital, a design that was later rejected (NCBCCM Book 9).

J. C. Colson served as Nassau County's jailer between the late 1930s and the 1950s. A county employee supervised by the sheriff's department, Colson worked closely with deputies to receive and process suspects,

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incarcerate inmates, transport prisoners between the jail and courthouse, and maintain a secure facility. He supervised several guards, including Owen Barnard whose responsibilities included standing night watch. In 1938 alone, the first year of operations for the new jail, Colson reported the cost of handling the prisoners, that is, booking them and escorting them between jail and courthouse, as \$448.75. In contrast, the jailer reported that the cost to feed inmates during the first six months of operations as \$125. Between the late 1930s and 1950s, Colson's annual salary increased from \$270 to \$350 (NCBCCM Book 9).

As an arm of the county's law enforcement department, Colson held an appointed post and over time worked closely with two Nassau County sheriffs, an elected position. A resident of Hilliard with vast landholdings and a saw mill, Andrew J. Higginbotham served as Nassau County sheriff for nearly forty years, a period spanning the 1910s through the 1940s. In 1944, after several failed bids to win the top post, Henry J. Youngblood won election as Nassau County sheriff. A native of Nassau County, Youngblood initially worked as superintendent of the county's road department in the 1920s and 1930s. Because of his wide travels across the county Sheriff Higginbotham deputized Youngblood. Aspiring to a better paying county position, Youngblood won the sheriff's election in the mid 1940s and held the post for several decades. Deputized officers working under Higginbotham and Youngblood between the 1930s and 1950s included Joseph Hendricks, D. B. Higginbotham, Arthur Hunt, L. W. Pickett, O. Z. Rowe, Clement P. Rutishauser, P. H. Sauls, Ben Scott, H. S. Skipper, S. D. Trego, and E. A. Yates. The sheriff's department also worked closely with several constables in Nassau County's unincorporated communities to protect citizens, apprehend law breakers, and arrest suspects. In 1950, Youngblood hired Jeremiah Mattox, the first African American to serve in county law enforcement. Mattox patrolled the African-American communities on Amelia Island, but was deputized to make arrests only in those areas. He was killed in 1954 while responding to a domestic dispute south of Fernandina Beach, the first black sheriff's deputy killed in the line of duty in the State of Florida. In addition to these deputy sheriffs, bailiffs who often escorted inmates from the jail to the nearby courthouse for arraignment and trial included John Cone and S. A. Sapp. These law enforcement officials were in the jail on a daily basis participating in the process of law enforcement in Nassau County between the 1930s and 1950s (NCBCCM Book 9; Johannes 2000:11, 12, 45, 249, 274, 315).

In addition to housing drunks found wandering the streets late at night, the jail served its larger purpose of holding persons charged with violent crimes, such as larceny, murder, and rape. Beyond the jailer, guards, and law enforcement officials conducting affairs in the jail were various lawyers representing defendants accused of these and other crimes. Some of the attorneys who consulted with their clients in the jail included Frank D. Brennan, Mabry Carlton, Thomas G. Hall, Lester W. Jennings of Jennings & Coffee, Thomas M. Linton, L'Engle & Kelly, and Frank D. Upchurch. Some of these defense attorneys represented high-profile murder cases in Nassau County, became involved in state politics, and held other posts in the legal and legislative systems. Most were from Jacksonville and St. Augustine. Mabry Carlton opened his law practice in Jacksonville in 1930 and later became a Duval County judge. Representing Nassau County, Frank D. Upchurch served in the Florida Legislature in the 1920s, but then moved his law practice to St. Augustine in the 1930s and

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served as a delegate from St. Johns County from Florida in the Democratic National Convention in 1948. Nassau County's prosecuting attorneys of the period included Thomas J. Shave and J. B. Stewart. Circuit court judges presiding over these cases in the seventh judicial circuit included Bayard Shields and W. A. Stanly. Criminal bench docket books and other official documents provide details of attorneys, inmates, arraignments, and trials, and many of the criminal activities in Nassau County during the period and the names of those incarcerated in Nassau County Jail between the 1930s and 1950s (NCCBD Book 4; Dovell 1952 4:669-670).

Dozens of suspects jailed between the 1930s and 1950s for more serious crimes included Charles Armstrong for grand larceny, Della Fullwood for first degree murder, Charles Henley for manslaughter, and Lawrence Verdier for assault with intent to commit murder. After processing and booking into the jail, the suspects awaited arraignment and some bonded out of the facility. Others, failing to obtain a bond, were held on remand in the jail until trial. Most arraignments and trials occurred in a speedy and timely fashion. Jailed for first degree murder in October 1941, Flora Bell Wilson was arraigned later that month and after several continuances filed by her attorneys, L'Engle & Kelly of Jacksonville, was found not guilty in a jury trial in February 1942. Accused of killing her husband, Vander Fullwood, Della Fullwood was jailed and arraigned in February 1942. Found guilty on a reduced charge of second degree murder on 1 June 1942, Fullwood was sentenced by Judge Shields to thirty years hard labor at Florida State Prison at Raiford. Also charged with second degree murder, Brantly Hicks was found guilty in February 1942, but was sentenced to only three years hard labor at Raiford. Other persons charged with murder and jailed at the Nassau County lockup for a period included Herman Conner, Roscoe Dixon, Fred Higginbotham, Ernest Hinson, the Melzer brothers H.C., Paul, and W.H., and Allen Rowe and William Rowe (NCCBD Book 4).

In one bizarre case, deputy Rutishauser shot William King of Fernandina Beach while trying to arrest him in early 1949. After transporting King to the jail, Rutishauser worked with Colson, but could not stop the bleeding and drove the suspect to nearby Nassau County Hospital. After stabilizing the patient but finding the bullet had shattered the bone and severed a main blood vessel, Dr. H. B. Dickens, Jr., ordered the law enforcement officials to transport the suspect to Brewster Hospital in Jacksonville to "...save his life." After an operation, deputies transported the World War II veteran to the Veteran's Administration Hospital in Lake City to recuperate. By August 1949, the deputies had returned King to Fernandina Beach, where he was incarcerated in Nassau County Jail for arraignment and trial. Several unusual court cases unfolded, in part, in the Nassau County Jail. Charged with breaking and entering with intent to commit a misdemeanor, Jacob Wall remained in jail between April and June 1942. In the latter month at a subsequent hearing, Judge Shields ruled Wall to be insane and sentenced him to Florida State Hospital at Chattahoochee. In October 1942, after admitting thirteen-year-old Kenneth York into the jail, Colson caught the youth with a concealed a weapon that he intended to deliver to a relative. The jailer disarmed the youth and then placed him in a holding cell for formal charges and arraignment. Subsequently, the state attorney charged the youth with conveying a weapon into Nassau County Jail to aid an escape. At his arraignment, York pleaded guilty and Judge Shields released him from jail, remanding the juvenile to the custody of the Nassau County Sheriff for further appropriate proceedings. Other

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youths placed in jail temporarily included fifteen-year-old Willie Walthour, Jr., and fourteen-year-old James Wallace. Arrested for armed robbery, the youths allegedly perpetrated the crime with James Williams, an adult, but all were found not guilty in Judge Shield's courtroom in February 1943. In February 1955, A. A. Justice pleaded guilty to willful and intentional burning of woods and received a sentence of one year of hard labor at Florida State Prison (NCCBD Book 4; NCBCCM 11).

Many of the court's sentences were completed in Nassau County Jail. Those included a ten-month sentence for Beulah Benton who the court found guilty of breaking and entering with intent to commit a misdemeanor; Jasper Jones for six months at hard labor for embezzlement of less than \$50.00; and six and three month sentences for Sarah Hooper and Altamese Hooper, respectively, for interfering with an officer in discharge of duty. In 1954, Charles Armstrong received a sentence of nine months hard labor at Nassau County Jail for grand larceny. Perhaps the harshest sentence handed down by the court during the period to be served in the jail went to Clyde Pritchett. In 1943, Judge Shields sentenced the forty-year old to one year hard labor at Nassau County Jail for assault with intent to commit murder (NCCBD Book 4).

By the early 1950s, an increase in the size of county government and the rates criminal activities and incarceration in Nassau County had increased sufficiently to compel the board of county commissioners to expand the courthouse and county jail. Providing continuity over county politics during the era, John T. Ferreira still served as the chairman of the county commission. Other commissioners included Harry L. Dunman, McKendree, Shaffer, and Walker. In their September 1953 meeting, the commissioners enacted a resolution for the "...remodeling and erecting additions to the Nassau County Courthouse and modernizing the Nassau County Jail and erecting additions thereto..." Passing a special building tax, the commissioners and the county engineer estimate the combined projects would amount to \$250,000. Later that year, the board hired Jacksonville architect Abner C. Hopkins to draft the addition plans for the courthouse and jail. The board publicly advertised the projects and opened the bids in December 1953, but rejected the two bids from the Auchter and Woodcock companies of Jacksonville as too costly. The county re-advertised the bids and opened those submitted by Jacksonville contractors Clyde P. Knowles and Owen P. Woodcock in March 1954. After reviewing the documents, the board awarded the jail contract for \$57,406 to the Woodcock company and the Knowles company received the bid for the courthouse expansion. In addition, the board awarded the equipment and iron work for the jail addition, amounting to \$19,700, to the Roanoke Iron and Bridge Works, of Roanoke, Virginia. In addition to fabricating and installing its own iron cells and doors, the county stipulated that the Virginia company install a "Patented Creech Cell" in the jail. Patented in 1943 by the Jacksonville, Florida, inventor Jesse Elliott Creech, and a former prison inspector, the cell was designed specifically for "...confining violent prisoners and mental patients, the salient objects being to safeguard the occupants of the cell against self-inflicted injuries as far as possible, to prevent the occupant from damaging the cell, and to provide for convenient and thorough cleansing of the cell" (NCBCCM Book 11; United States Patent Office 1943: Patent#2,323,455).

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Construction began in early 1954, but delays in the shipment of steel and iron slowed progress. In August 1954, Sheriff Youngblood expressed concerns about the quality of some of the workmanship. Although Woodcock took some steps to address the sheriff's concerns and those of several commissioners, at the scheduled final inspection in October 1954 the board refused to accept the project. At the next inspection, the sheriff and board found Woodcock had "...remedied all things pointed out as not complete or needing changing to comply with plans and specifications..." In November 1954, architect Hopkins conducted his final inspection and provided his closing certificate, turning over the addition to the county government (NCBCCM Book 12; *Fernandina Beach News-Leader*, 27 August 1954).

The addition nearly doubled the size of Nassau County Jail. New spaces included a desk clerk's office with two guest rooms, lockers, and showers. Four cells and two day rooms for inmates occupied spaces on the first floor and six cells with sixteen bunks radiated across the second floor. Built during the period of segregation, the addition provided the necessary accommodations to uphold the "separate, but equal" constitutional clause. Prior to 1954, black and white inmates in Nassau County Jail often faced overcrowded cells with upwards of four or five persons incarcerated in a single cell for brief periods. The addition included what became known as the "Black Bull Pen" for African-American male prisoners on the second floor in the original building. White males were imprisoned in cells on the second floor of the addition. On the first floor of the addition, white females were held in three iron cells separated by a solid partition from three additional iron cells reserved for black women. Annis Moore-Littles stated that when she and her husband lived on the first floor of the original part of the jail Sheriff McKendree ended the segregation of deputies at meal times (Interview with Annis Moore-Littles and daughter, Cindy, conducted by Marlene Schang and Suanne Thamm 1999; *Fernandina Beach News-Leader*, 27 August 1954).

ARCHITECTURAL CONTEXT

The Oxford English Dictionary defines a jail (gaol) as a French term for "a place or building for the confinement of persons accused or convicted of a crime or offence. Now, a public building for the detention of persons committed by process of law." Other dictionaries define the term as a detention building for persons awaiting trial or convicted of minor offenses. Typically, jails are intended to hold persons awaiting trial or convicted of minor offenses and serving sentences of less than one year, whereas prisons incarcerate inmates convicted of significant crimes or sentenced by a court to longer sentences. Jails historically have operated in the shadow of prisons, which have informed their general design and operation features. A jail is a specific type of building designed for a singular purpose, and jails have mirrored prisons general design and operation features. Historically a town or county jail consisted of a small one-story wooden building that yielded to a larger masonry building as the community grew in population and criminal activity. Some jails were ornate masonry buildings with cast stone walls, turrets, and castellated parapets; others were relatively simple brick buildings. Generally constructed with load bearing walls, jails were sometimes built adjacent to a courthouse or city hall, but more often as a free-standing building generally separated from commercial buildings in a

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downtown with a cleared paved area around the building that enhanced security and identified its specialized function. In other cases, a jail was incorporated into the design of a county courthouse or town hall with iron bars in the fenestration and a high fence protecting a flat-roof jail section of the larger building.

Architectural historian Henry Hitchcock-Russell once observed that America's first great contribution to architecture was through its novel designs of jails and prisons, which conveyed a sense of the "strictly social and organizational." As early as 1790, the City of Philadelphia introduced individual cells into its Walnut Street Jail, a typical colonial building that previously had permitted the intermingling of convicts of every crime and description in large rooms. Cellular construction followed in the 1820s with Eastern Penitentiary in Philadelphia, and Sing Sing, in Ossining, New York, and New Jersey State Prison in the 1830s. Nineteenth century jails and prisons evolved, in part, using the Auburn System in which inmates worked together during the day and were locked into solitary cells at night. The primary architectural feature of the Auburn System consisted of a cell block where cells were placed back-to-back with air space between the cell block and outer walls. Prison and jail design, however, was generally a low-priority, if necessity, for local governments. Consequently, many architects turned to existing models for new facilities. The 1840s Charles Street Jail in Boston offered H. H. Richardson a model for his 1880s boldly massed Allegheny County Courthouse and Jail in Pittsburgh, and Jeremy Bentham's circular Panopticon in England from the eighteenth century served as the model for Illinois State Penitentiary of the 1920s. In some cases, some counties replaced an aging masonry building with a larger, stronger, and newer facility of similar materials and design.

Since the primary purpose of jails is to isolate people who have broken a law, efficiency and economy in separating and guarding inmates were guiding principles in jail design and construction. Jail and prison reform movements periodically responded to civic outcries to rehabilitate inmates. Apart from isolating persons, jail architects were left wide latitude to select a specific architectural solution to the general need. The designs assured constant retention of inmates, unwanted contact between prisoners within the jail population, guards and law enforcement officials, and members of the community. Architects generally provided a complex arrangement that provided for secure accommodations, gender segregation and various categories of inmates, sanitation and hygiene, daily routines of the jailer, guards, and inmates, and opportunity for exercise and physical activity. In the American South, many jails provided accommodations for African-American and Caucasian inmates between the 1890s and 1950s predicated on the Plessy v. Ferguson "separate, but equal" clause. Interior spaces generally included a booking and processing room, individual cells, galleries, jailer and/or guard quarters, a public entrance, and a sally port.

The Amelia Island Museum of History re-opened the historic jail to its adapted reuse in 1986. The adaptive reuse plan resulted in the removal of the original iron cells and the introduction of temporary partitions in about 1995 to support exhibits. Notwithstanding that change, the original circulation pattern in the jail and many of the original iron doors, frames between rooms and iron bars protecting windows remain intact. In 2007, the museum completed an addition supported by Special Category grant assistance from the Florida Department of

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State, Division of Historical Resources. Designed by Kenneth Smith Architects, Inc., of Jacksonville with oversight by the Division's Architectural Preservation Services Section, the 2007 addition meets the Department of the Interior's criteria for compatible but differentiated additions to historic buildings. The jail contributes to the sense of time, place, and historical development of Nassau County and the City of Fernandina Beach. The jail retains its integrity through its location, design, materials, workmanship, feeling, and association. The building provides an important architectural, political, and social link to the heritage of Fernandina Beach.

ARCHITECTURAL SIGNIFICANCE

Nassau County Jail possesses significance for its Moderne Style construction. Its masthead, solid brick utilitarian massing, and unusual fenestration represent a building developed for a particular function. Displaying an irregular shape, the building has a straight parapet with cast stone coping, translucent glass blocks accented by cast stone fleur-de-lis floral patterns, cantilevered ledge projecting over the east entrance, red brick walls accented by basket-weave bond patterns and slender belt courses of brick and cast stone. Slightly projecting and receding surfaces contrast with the horizontal bands and emphasize the building's verticality at the south entrance and corner window fenestration. A masthead on the east façade spells out Nassau County Jail. Original metal doors and an iron cage at the south entrance remain prominent features identifying it as a jail. The features and floor plan of the original 1938 building, 1954 expansion, and 2007 addition with alterations are readily apparent in its present museum incarnation.

Architects

Roy A. Benjamin

Jacksonville architect Roy A. Benjamin drafted the plans for the original 1938 jail. A charter member of the Florida Association of Architects, Benjamin was the 31st architect to be granted a license to practice in Florida by the Florida State Board of Architecture. Relocating from Ocala to Jacksonville in 1902, Benjamin opened his practice about 1905 and contributed to the rebuilding of Jacksonville following its devastating May 1901 fire. Between 1919 and 1924, he associated with Mellen Greeley, another prominent Jacksonville architect. Benjamin's landmark projects included Jacksonville's Chamber of Commerce Building, Elks Club Building (NR 2000), Jewish Center, Otis Elevator Building, Park Lane Apartments, Scottish Rite Temple, and the State Board of Health Building. Benjamin's elaborate Tudor Revival Cheek Mansion on River Boulevard was completed in 1929 by Charles J. Davis, Inc., one of the few projects other than Nassau County Jail in which the architect and builder collaborated on a project. Benjamin's school plans included Central School (NR 1998) in Putnam County and Nassau County's Public School No. 1 and Peck High School, both in Fernandina in the 1920s. Beyond the Nassau County and Putnam County schools, Benjamin drafted the plans for the John Gorrie and Kirby Smith junior high schools in Jacksonville. Despite his wide experience, Benjamin became best

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known as a theater architect, designing approximately 200 movie houses throughout the American South. These included the Arcade Theater, Center Theater, Florida Theatre (NR 1982), Riverside Theater, and San Marco Theater in Jacksonville; Edwards Theatre (NR 1984) in Sarasota, Florida; the Saenger Theater (NR 1984) in Biloxi, Mississippi; and the Albany Theatre (NR 2006) in Albany, Georgia. Benjamin sold his practice after World War II to William Kemp, Franklin Bunch, and William Jackson, who continue to operate as KBJ Architects, Inc., in the twenty-first century as Jacksonville's oldest architectural firm (Wood 1989:8; Dovell 1952 4:839-841; *Florida Times Union*, 29 January 1963, 10 October 1982; Florida Master Site File).

Abner C. Hopkins

Abner C. Hopkins prepared plans for the 1954 addition. The 940th architect licensed to practice in Florida by the Florida State Board of Architecture, Hopkins was born in Texas about 1903 and was graduated from Texas Agricultural & Mechanical University with a degree in architecture in the early 1920s. In 1928, after working in a Texas office for several years, he moved to Jacksonville, Florida. Organizing his business in Florida after the collapse of the land boom proved difficult, but eventually Hopkins landed commissions in several fashionable neighborhoods, including San Jose and San Marco. During the late 1930s, Hopkins formed a partnership with Prentiss Huddleston, another Jacksonville architect who later relocated to Tallahassee. Specializing in residential designs, Hopkins initially worked in the Mitchell Building, then on West Forsyth Street, and later on West Adams Street. A member of the American and Florida institutes of architects, Hopkins maintained his home on Ingleside Street in the 1930s and later moved to Julington Creek Road. Many of his early projects were in the San Marco neighborhood of Jacksonville, where he designed homes in the Classical Revival, Colonial Revival, and Tudor Revival styles. Many of his projects were in association with builders and developers Stockton & Company, Whatley, Davin & Company, and Victor Zambetti. A departure from earlier projects, Hopkins's Royal Crown Cola Bottling Company in 1938 embodied the International style and his 1941 Campus Art Theatre in Tallahassee had the trappings of the Art Deco Style. Later, Hopkins' projects reflected Minimal Traditional, Ranch, and Split Level influences. Beyond dwellings, Hopkins drafted the plans for Southside Christian Church and commercial buildings on San Marco Boulevard. In the 1930s and 1940s, Hopkins, along with architects Bernard W. Close, Jefferson D. Powell, D. Floyd Rosser, and Ivan H. Smith, drafted the plans for homes in several of Jacksonville's fashionable neighborhoods and at Ponte Vedra Beach. In 1940, Hopkins contributed to *Jacksonville Architecturally*, a coffee-table picture book showcasing notable projects they had completed during the late-1930s. Outside of Duval County Hopkins designed Lovett's Groceteria in Ft. Lauderdale, Florida, in 1937, and in 1941 the Nassau County Hospital, a \$60,000 building in Fernandina. Hopkins competed for the hospital design with several other Jacksonville architects, including Roy A. Benjamin. Hopkins's practice found new energy after World War II and he practiced until just before his death in 1972 (*Florida Times Union*, 10 June 1972; Nassau County Jail File AIMH; Minutes, Board of County Commissioners, Nassau County, 14 April, 11, 17 August 1937, 28 April 1938, 11 September 1940, 4 August 1941).

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Builders

Charles J. Davis, Inc.

A native of Florida, born about 1891, Charles J. Davis, Jr., learned the construction trade in Jacksonville's busy building boom that persisted between the Great Fire of 1901 and the years preceding World War I. In the 1920s, he expanded and then incorporated his construction company as Charles J. Davis, Inc. During the decade, Davis built some of his most important projects, which consisted of commercial buildings in Jacksonville's downtown, such as the Hamby Building and the South Atlantic Investment Company Building. Most of his work was residential in the exclusive neighborhoods of Avondale, Riverside, and St. Nicholas. Davis's construction projects included designs by some of Jacksonville's leading architects, such as Roy A. Benjamin, Henry J. Klutho, Jefferson D. Powell, and Marsh & Saxelbye. In 1937, contemporaneous with the construction of Nassau County Jail, Davis completed an addition to the McIver Residence, a fashionable home in Jacksonville's St. Nicholas neighborhood (Wood 1989:63, 80, 121, 125, 135, 148, 150, 165, 171, 232).

O. P. Woodcock Construction Company

A prominent Jacksonville contractor, Owen Prescott Woodcock arrived in Jacksonville about 1893 and constructed various buildings until 1904. He then left for business opportunities in the oil fields of Pennsylvania. He returned to Jacksonville in 1905 and incorporated the \$100,000 Halsema-Woodcock Construction Company with builder J. C. Halsema. Several years later, Halsema and Woodcock ended their partnership with Halsema organizing the Florida Engineering and Construction Company and the latter establishing O. P. Woodcock Construction Company. During a career that spanned nearly six decades, Woodcock constructed residences and buildings in Duval County's beach communities of Atlantic Beach, Jacksonville Beach, Neptune Beach, Ponte Vedra Beach, downtown Jacksonville, and the Jacksonville neighborhoods of Lackawanna, Riverside, North Riverside, San Jose, San Marco, and Springfield. His distinctive buildings and schools included Buckman & Ulmer Building, Cookman Elementary School, Eastside Elementary School, Elizabeth Swaim United Methodist Church, Fire Station No. 5, Fishweir Creek School, John Gorrie Junior High School, Kirby Smith Junior High School, Public School No. 3, and Willow Branch Library. In 1918, he completed a large addition to the Lackawanna Public School No. 10. In 1925, the Woodcock Company built the Jacksonville Terminal Company's express terminal on Myrtle Avenue at a cost of approximately \$400,000. In 1942, Woodcock completed the Lane Drug Company Building on Park Street, one of Jacksonville's early examples of the Streamline Moderne Style. His construction of Boston Avenue Elementary School in DeLand, Flagler County Courthouse in Bunnell, Hastings High School (NR 2006), and the 1954 addition to Nassau County Jail represent the few large projects completed by Woodcock outside of Duval County between the 1920s and the 1950s (*Jacksonville Florida Times-Union*, 3 November 1905, 25 June 1916, 10, 17 July 1917, 24 April 1952; Wood 1989:120, 141, 142).

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Iron & Steel Works Companies

Decatur Iron & Steel Works

The Decatur Iron & Steel Works, the contractors for the iron and steel cells and doors in the 1938 Nassau County Jail, was organized about 1910 in Decatur, Alabama. The company initially operated as a subsidiary of the Decatur Cornice and Roofing Company, a nineteenth-century metal works that specialized in decorative metallic roof shingles for dwellings and decorative cornices and storefronts on commercial buildings. By the mid-1930s, the iron and steel company operated on its own and in addition to its specialty of fabricating cells and doors for jails and prisons the company assembled bridges, primarily swing and lift spans. In the 1930s, H. R. Sears served as the company's president and A. L. Stephenson as its secretary. During World War II, the company re-tooled its metal works to meet some of the exigencies associated with war-time construction. Between 1942 and 1944 the Decatur Iron & Bridge Works built thirty-three steel Landing Craft Tank (LCT), amphibious assault vehicles operated by the United States Navy. These vehicles carried tanks ashore during the allied invasion of Europe on D-Day in World War II. The company also fabricated thirty-nine steel tugboats for the United States Army. Following the war, the company returned to its traditional iron and steel work. Important projects included the Frederick County Jail in Virginia, in 1949 and the eight-story Queens Jail, part of the Criminal Courts Building complete with 360 cells in 1959. Important company officials included James W. Fitzpatrick, chief engineer of the jail and prison division, and civil engineer Forrest Anderson who worked as chief engineer of the architectural metals division. In 1957, three years after the addition was completed for Nassau County Jail, the iron and steel company acquired the patent from Perry M. Smith and James H. Whitfield for a new operating and locking mechanism for jail and prison doors (*New York Times*, 25 April 1959).

Roanoke Iron and Bridge Works, of Roanoke, Virginia

The Roanoke Iron and Bridge Works fabricated and installed the iron and steel work in the 1954 addition of Nassau County Jail. Organized in Roanoke, Virginia, about 1905, the Roanoke Iron and Bridge Works built a variety of metal products during the first half of the twentieth century, including bridges, jails, and decorative metal objects throughout the American South. Early projects included the 1912 Sharptown Bridge (HAER 1984) across the Nanticoke River in Maryland, the Cedar Creek Bridge in Roanoke, Virginia, in 1929, and the Saluda Bridge No. 1 (HAER 1982) in Newberry County, South Carolina, in 1930. In 1932, the company fabricated and installed the draw in the Wright Memorial Bridge that spanned Currituck Sound in Dare County, North Carolina. The company's jail work included the Frederick County Jail in Winchester, Virginia, in 1949. That year the company fabricated and installed the Roanoke Star on Mill Mountain (NR 1999) in Roanoke, Virginia, the world's largest freestanding illuminated man-made star. In 1951, several years before the company designed and installed jail cells in Nassau County Jail, the United Steelworkers Union of America reached an agreement with the Roanoke Iron and Bridge Works in the union's first collective bargaining

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number 8 Page 15

**NASSAU COUNTY JAIL, FERNANDINA BEACH
NASSAU COUNTY, FLORIDA**

agreement with a major iron works company. The Virginia company endured into the late twentieth century, designing prison equipment in the Arlington County Police Facility and Detention Center in Arlington, Virginia; Bibb County Jail in Macon, Georgia; North Carolina's state prison at Caledonia; and Attica Correctional Facility in Attica, New York. Eventually the company was acquired by Crowder Detention Equipment Parts & Service, Inc., a leading American detention contractor based in Indiana (*Washington Post*, 8 July 1972; *New York Times*, 17 July 1977).

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number 9 Page 1 **NASSAU COUNTY JAIL, FERNANDINA BEACH
NASSAU COUNTY, FLORIDA**

Primary Sources

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Nassau County. Clerk of Court. Fernandina Beach, FL.
Deed Book N, p. 15.
Deed Book B-3, p. 180.
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Secondary Sources

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United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number 9 Page 2 **NASSAU COUNTY JAIL, FERNANDINA BEACH
NASSAU COUNTY, FLORIDA**

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Interviews and Statements

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- Moore-Littles, Annis and Cindy Moore. Interview with Marlene Schang and Suanne Thamm. Interview at Amelia Island Museum of History, 4 November 1999.
- Richardson, Michael, Architect. Interview with Jim Longacre. Interview at the Amelia Island Museum of History, 3 August 2006.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number 9 Page 3 **NASSAU COUNTY JAIL, FERNANDINA BEACH
NASSAU COUNTY, FLORIDA**

Smith, Kenneth Architect. Interview with Susan Little. Interview at the Amelia Island Museum of History 17 August 2006.

Saylor, Sammy. Written statement recorded on 7 August 1980 at the old Nassau County Jail regarding a hanging.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number 10 Page 1

**NASSAU COUNTY JAIL, FERNANDINA
BEACH, NASSAU COUNTY, FLORIDA**

VERBAL BOUNDARY DESCRIPTION

See attached scaled site plan. The boundary encloses approximately a one-half acre tract associated with lots 15 through 21 in block 273 of the Town of Fernandina (00-00-31-1800-0273-0150).

BOUNDARY JUSTIFICATION

The boundary encloses property historically associated with the historic jail.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number Attachments Page 1

**NASSAU COUNTY JAIL, FERNANDINA BEACH
NASSAU COUNTY, FLORIDA**

1. Nassau County Jail, 233 South Third Street, Fernandina Beach
2. Nassau County, Florida
3. Sidney Johnston
4. September 2008
5. Bland & Associates, Inc. Jacksonville, FL
6. East elevation, facing west
7. Photo #1 of 34

Numbers 1-5 are the same for the remaining photographs.

6. East elevation of the one-story 1954 addition, facing west
7. Photo #2 of 34

6. North elevation of the 1938 portion and one-story 1954 addition, facing southeast
7. Photo #3 of 34

6. South elevation of 1938 part of the building, facing northwest
7. Photo #4 of 34

6. South elevation addition, facing north
7. Photo #5 of 34

6. Detail of south elevation, facing northeast
7. Photo #6 of 34

6. West elevation, facing northeast
7. Photo #7 of 34

6. West elevation, facing east
7. Photo #8 of 34

6. North elevation, facing south
7. Photo #9 of 34

6. Main exhibition hall, facing east
7. Photo #10 of 34

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number Attachments Page 2 **NASSAU COUNTY JAIL, FERNANDINA BEACH
NASSAU COUNTY, FLORIDA**

6. Nassau County History exhibition hall, facing north
7. Photo #11 of 34

6. Central hall stairway and Heritage Exhibition hall, facing west
7. Photo #12 of 34

6. First-floor restrooms and barred iron door, facing northwest
7. Photo #13 of 34

6. Barred iron door on south wall of central hall, facing south
7. Photo #14 of 34

6. Sally port and central hall, facing east
7. Photo #15 of 34

6. Spanish Mission/Timucuan exhibition hall doorway, facing southeast
7. Photo #16 of 34

6. Narrow corridor and elevator, facing east
7. Photo #17 of 34

6. Elevator and rear entrance vestibule, facing north
7. Photo #18 of 34

6. Rear/north entrance vestibule, facing east
7. Photo #19 of 34

6. Secondary hall in 1954 addition, facing north
7. Photo #20 of 34

6. Exhibition hall, facing southwest
7. Photo #21 of 34

6. Exhibition hall, facing south
7. Photo #22 of 34

6. Storage room, facing east
7. Photo #23 of 34

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number Attachments Page 3

**NASSAU COUNTY JAIL, FERNANDINA BEACH
NASSAU COUNTY, FLORIDA**

6. Central staircase, facing east

7. Photo #24 of 34

6. Administrative office, facing north

7. Photo #25 of 34

6. Administrative office, facing north

7. Photo #26 of 34

6. Storage room, facing northwest

7. Photo #27 of 34

6. Iron door protecting storage room, facing northwest

7. Photo #28 of 34

6. Library and archives, facing west

7. Photo #29 of 34

6. Corridor into 2007 addition, facing west

7. Photo #30 of 34

6. Stairwell, facing south

7. Photo #31 of 34

6. Elevator and hall, facing north

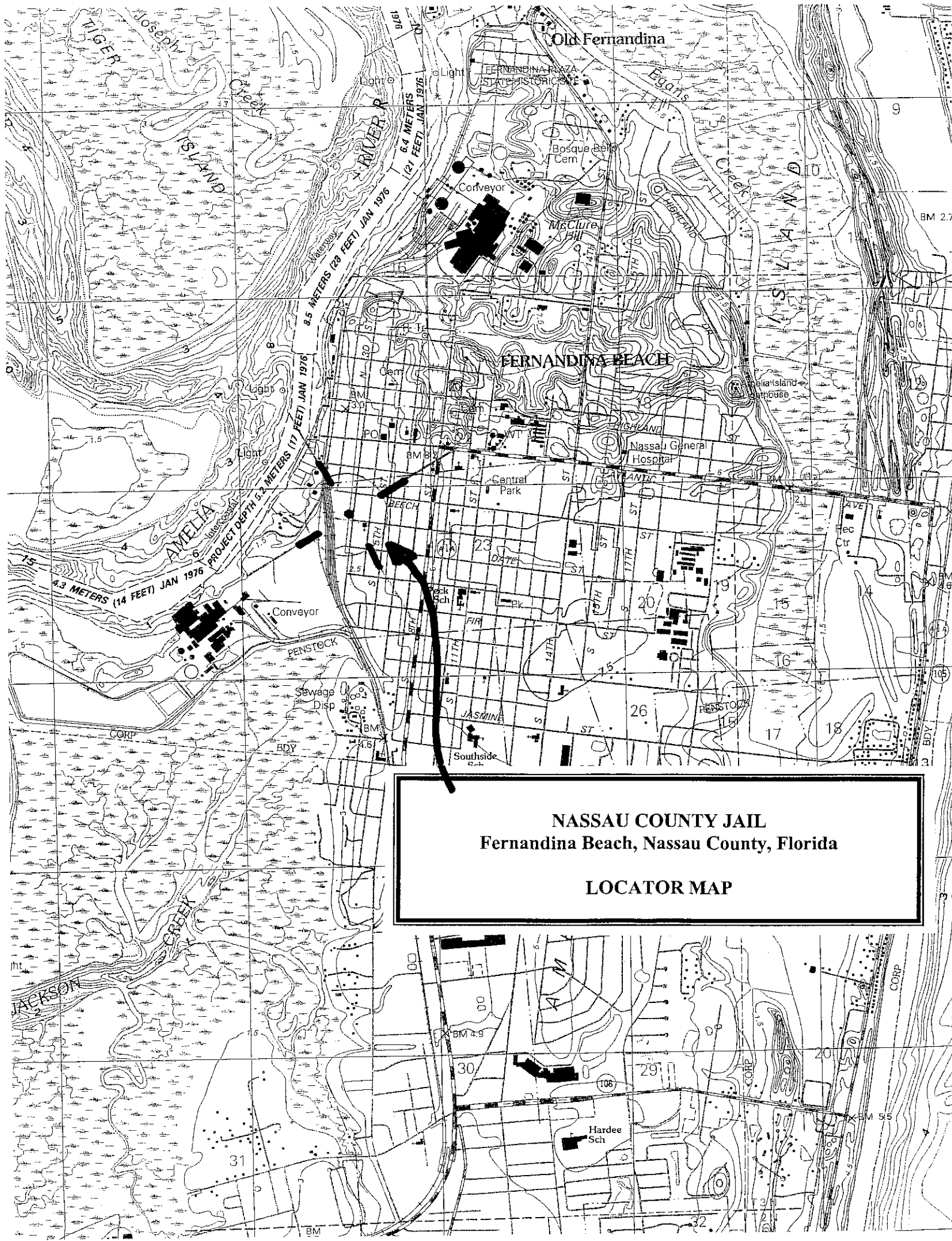
7. Photo #32 of 34

6. Office and window, facing southwest

7. Photo #33 of 34

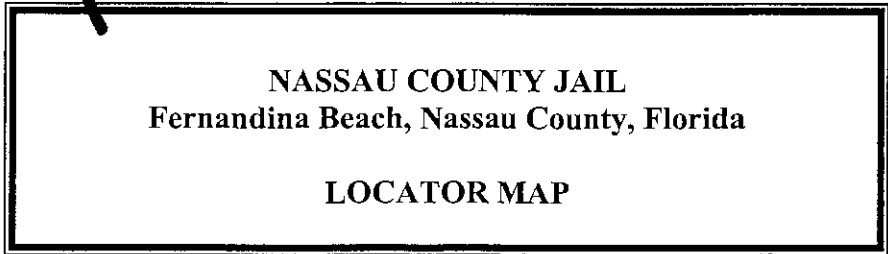
6. Multi-purpose room, facing northwest

7. Photo #34 of 34



NASSAU COUNTY JAIL
Fernandina Beach, Nassau County, Florida

LOCATOR MAP



FMSF NOTE TO IMAGE VIEWER

Some material contained in the corresponding paper manuscript has not been scanned.

Check material affected:

☐ Blueprints

☐ Map

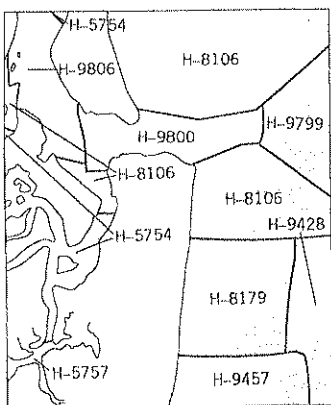
☐ Site Forms

☒ Other, specify 2 pages Floor Plans

This material can be viewed at the Florida Master Site File.

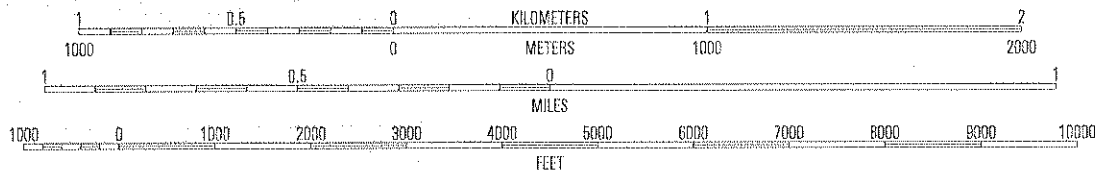


NATIONAL OCEAN SURVEY
HYDROGRAPHIC SURVEY INDEX

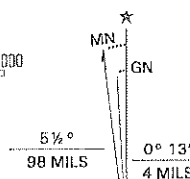


HYDROGRAPHIC SURVEY
INFORMATION

SCALE 1:24 000



CONTOUR INTERVAL 1.5 METERS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
BATHYMETRIC CONTOUR INTERVAL 1 METER WITH SUPPLEMENTARY
0.5 METER CONTOURS - DATUM IS MEAN LOWER LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
TO CONVERT FROM METERS TO FEET, MULTIPLY BY 3.2808
BASE MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
BATHYMETRIC SURVEY DATA COMPLIES WITH
INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
SPECIAL PUBLICATION 44 ACCURACY STANDARDS AND/OR
STANDARDS USED AS OF THE DATE OF THE SURVEYS



UTM GRID AND 2001 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

FOR SALE BY U.S. GEOLOGICAL SURVEY, P.O. BOX 25286, DENVER, COLORADO 80225
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



20%
TOTAL RECOVERED FIBER

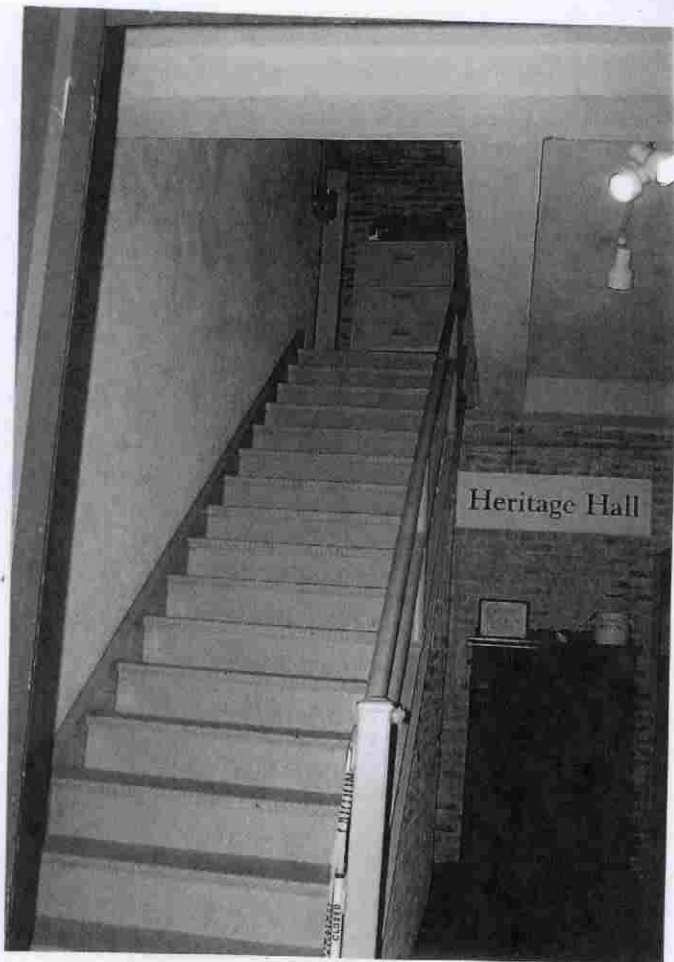
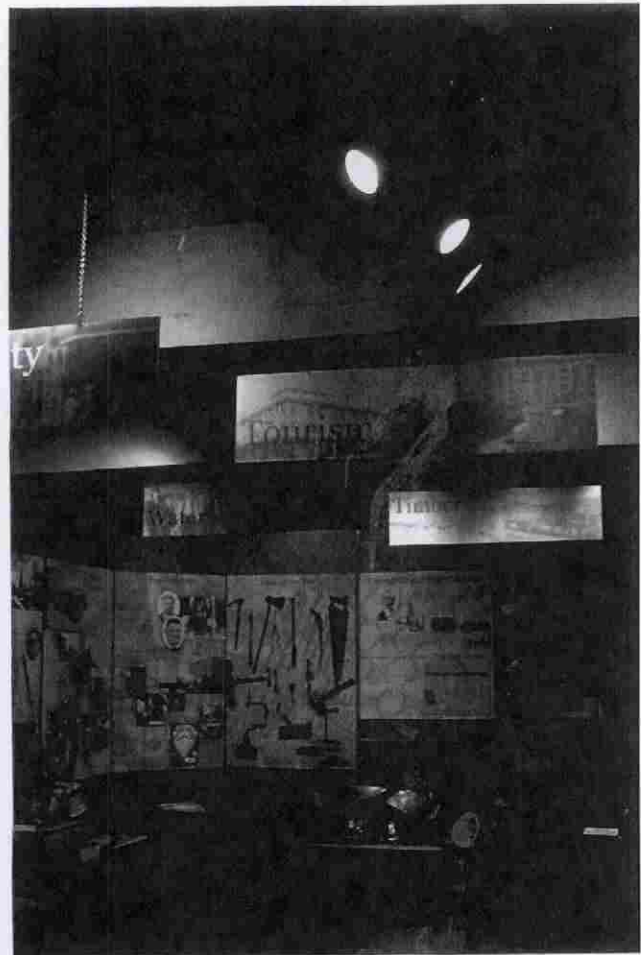






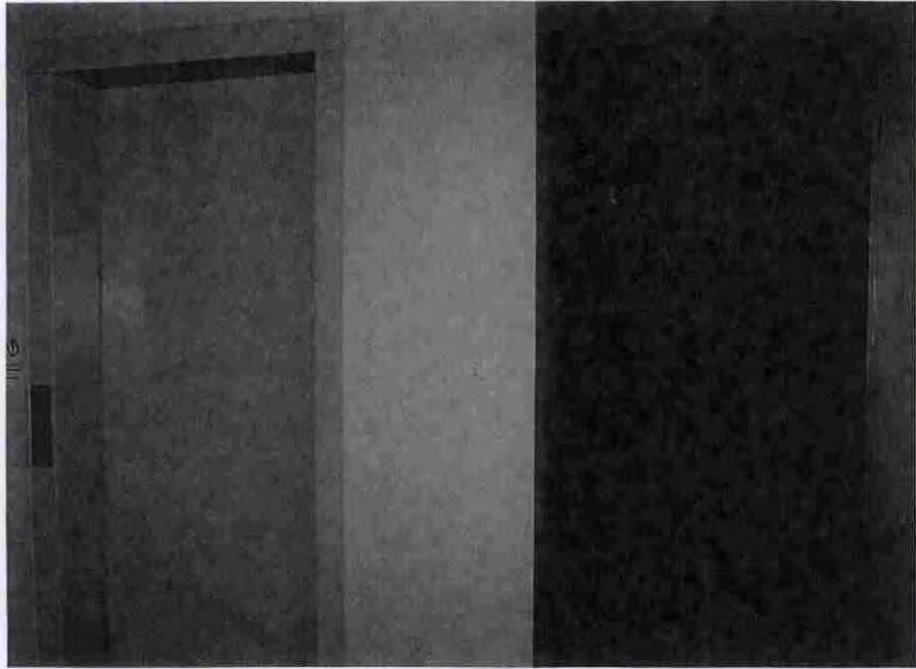










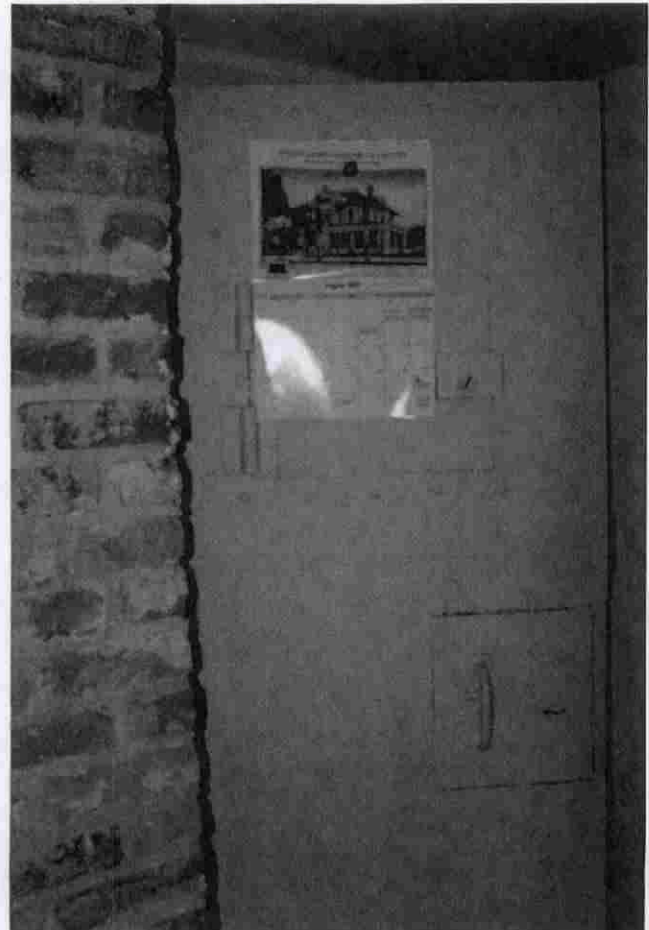
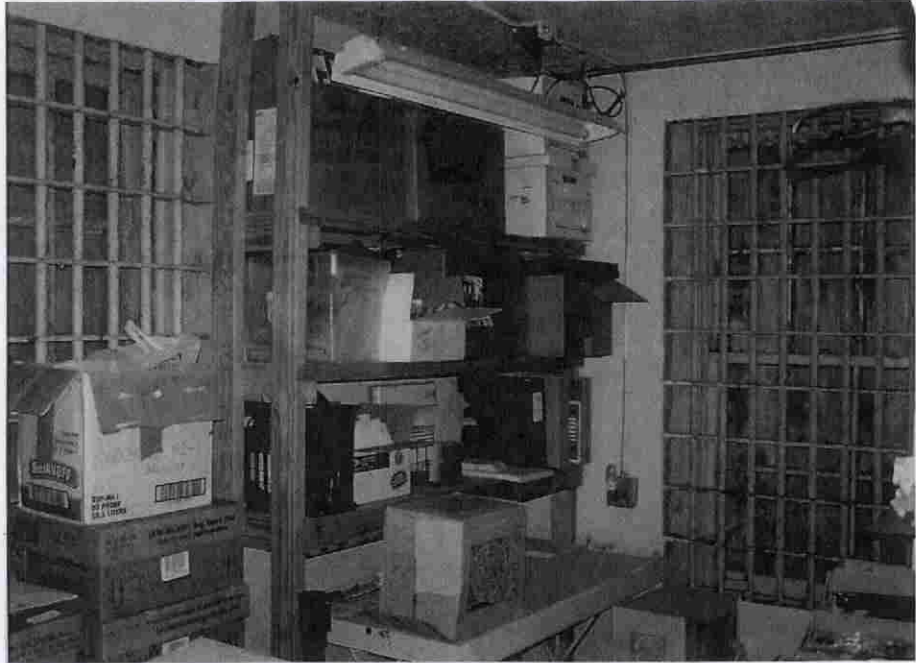






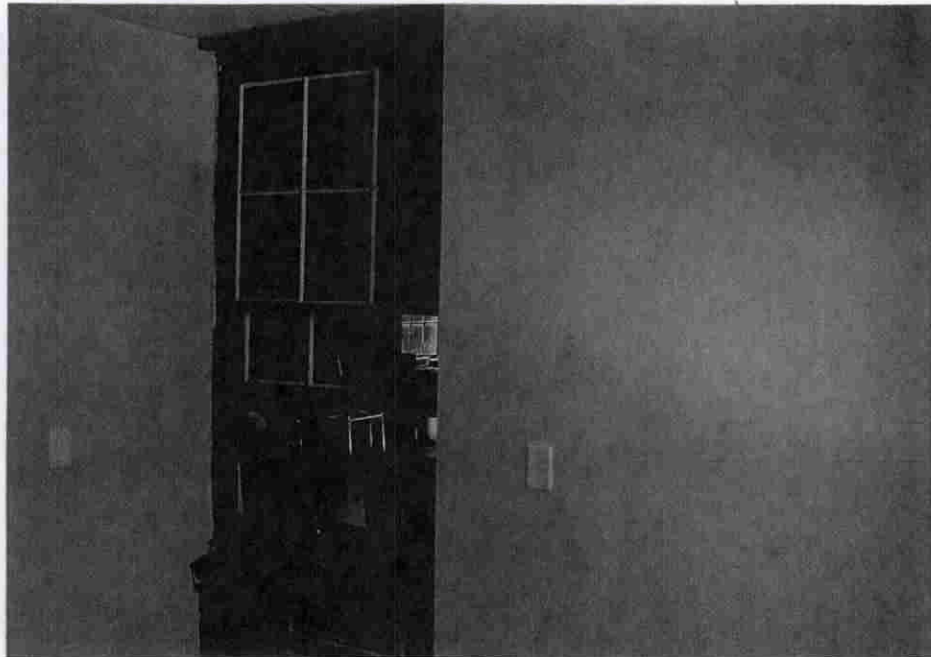












RESTRICTED

Site#/Manuscript# NA 287 contained one or more of the following items:

☐ Drawings/diagrams depicting internal layout and/or structural elements including Floor Plans, Blueprints, building plans, or schematic drawings.

☐ Other, explain _____

The Site File has determined that the above marked material may be Restricted.
Restricted material is defined by one of the following marked categories:

☒ Florida Statute 119.071 § 3.3(b) & (c) (2007), which states:

(b)1. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency are exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution.

2. This exemption applies to building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency before, on, or after the effective date of this act.

(c) Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout or structural elements of an attractions and recreation facility, entertainment or resort complex, industrial complex, retail and service development, office development, or hotel or motel development, which documents are held by an agency are exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution. This exemption applies to any such documents held by an agency before, on, or after the effective date of this act. Information made exempt by this paragraph may be disclosed to another governmental entity if disclosure is necessary for the receiving entity to perform its duties and responsibilities; to the owner or owners of the structure in question or the owner's legal representative; or upon a showing of good cause before a court of competent jurisdiction.

☐ Other, explain _____

Materials indicated have been removed from the paper file and are housed in a secure location and available to authorized persons in the EDMS. If you need these materials, please see Site File staff.

Florida Department of State
Division of Historical Resources
Bureau of Historic Preservation

FLORIDA NOMINATION PROPOSAL

Adapted from NPS 10-900
to propose the nomination of
Properties in Florida for listing in
the National Register of Historic
Places

Grayed Areas for Use by Staff

1. Name of Property

historic name Old Nassau County Jail

other names (current) Amelia Island Museum of History

FMSF Number

2. Location

street & number 233 South Third Street

☐ not for publication

city or town Fernandina Beach

☐ vicinity

state FLORIDA code FL county Nassau code 233 zip code 32034

3. Owner Awareness Statement

As the owner, or official representative of the owner, of the property identified above, I am aware of this proposal for its nomination for listing in the National Register of Historic Places. I have been advised of the procedures for review of the proposal by the State Historic Preservation Office and the Florida National Register Review Board, and for the formal nomination of the property at the discretion of the State Historic Preservation Officer. I understand that I will be notified of the date and place of the public meeting at which the proposal will be considered by the Florida National Register Review Board, and that I will be given an opportunity to submit written comments and to appear in person in support of or opposition to the nomination of the property.

At this time I ☒ support ☐ oppose ☐ reserve opinion on this proposal.

Carmen Godin, Director
Signature of property owner or representative

8/28/06
Date

4. Legal Description of Property (according to county property appraiser's office)

Please also provide:

Name of USGS Quadrangle: FERNANDINA BEACH

Township, Section and Range: T 3N S 23 R 28

Tax Parcel #: 00-00-31-1800-0273-0150

RECEIVED
BUREAU OF
HISTORIC PRESERVATION
2006 SEP - 1 P 2:15

*(f) early proposal
with historic images
electronic files
7/8 submitted*

Attach continuation sheet if necessary

Early proposal

Name of Property

County and State

5. Classification**Ownership of Property**

(Check as many boxes as apply)

- ☒ private
☐ public-local
☐ public-State
☐ public-Federal

Category of Property

(Check only one box)

- ☒ buildings
☐ district
☐ site
☐ structure
☐ object

Number of Resources within Property

(Do not include any previously listed resources in the count)

Contributing

Noncontributing

1

buildings

sites

structures

objects

total

Name of related multiple property listings

(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

N/A

6. Function or Use**Historic Functions**

(Enter categories from instructions)

Nassau County Jail**Current Functions**

(Enter categories from instructions)

history museum**7. Description****Architectural Classification**

(Enter categories from instructions)

art moderne**Materials**

(Enter categories from instructions)

foundation masonry and concretewalls brickroof flat with raised parapet

other

Narrative Description

(Describe the historic and current condition of the property on one or more continuations sheets.)

8. Statement of significance**Applicable National Register Criteria**

(Mark "X" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☒ **A** Property is associated with events that have made a significant contribution broad patterns of our history.
- ☒ **B** Property is associated with the lives of persons significant in our past.
- ☐ **C** Property embodies the distinctive characteristics of a type, period, or method of construction of represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ **D** Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations

(Mark "X" in all the boxes that apply.)

Property is:

- ☐ **A** owned by a religious institution or used for religious purposes.
- ☐ **B** removed from its original location.
- ☐ **C** a birthplace or grave.
- ☐ **D** a cemetery.
- ☐ **E** a reconstructed building, object, or structure.
- ☐ **F** a commemorative property.
- ☐ **G** less than 50 years of age or achieved significance within the past 50 years

Areas of Significance

(Enter categories from instructions)

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References**Bibliography**

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

- | | |
|---|---|
| ☐ Agriculture | ☐ Industry |
| ☐ Architecture | ☐ Maritime History |
| ☐ Archaeology | ☐ Military |
| ☐ Community Planning | ☒ Politics/Government |
| ☐ Commerce | ☐ Recreation |
| ☐ Education | ☒ Social History |
| ☐ Early Settlement | ☐ Transportation |
| ☐ Health/Medicine | Other: _____ |

Period of Significance1878-19561878-1935 original building (Golden Era 1870-1910)1935 addition; 1955 addition1986 became a museum location**Significant Dates**1878 jail opened1978 Old jail closed; last prisoners moved to new facility1986 Museum opened**Significant Person**David Yulce's company sells land for the jail to Nassau Cty.Nassau Sheriffs 1824-2006**Cultural Affiliation****Architect/Builder**1878 and 1935 unknown1955 O.P. Woodcork, contractorAbner C. Hopkins, architect

Old Nassau County Jail
Name of Property

Nassau, Florida
County and State

10. Geographical Data

Acreage of Property less than one acre

UTM References

(Place additional references on a continuation sheet.)

1	East	East	North
2	East	East	North
3	East	East	North
4	East	East	North

☐ See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Carmen Godwin, director

organization Amelia Island Museum of History date August 31, 2006

street & number 233 South Third Street telephone 904-277-4036 X101

city or town Fernandina Beach state FL zip code 32034

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets (All information on continuation sheets must be typed.)

Maps

A USGS map (7.5 or 15 minute series) Do not write upon or attach labels to this map.

A Sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.
(Do not write upon or attach permanent labels to the photographs.)

Additional items

(check with the area Historic Sites Specialist at [850] 487-2333 for any additional items)

Property Owner

name Amelia Island Museum of History, Carmen Godwin Director

street & number 233 South Third Street telephone 904-261-7378

city or town (Fernandina Beach) state FL zip code 32034

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number 8 Page 1

Summary ? ROOF ? FOUNDATION ? WINDOWS

The Nassau County Jail building is located at 233 South Third Street, Fernandina Beach, Florida 32034, on the northeast corner of Third Street and Cedar Street. Built to ~~last~~ in 1878 of reinforced concrete and brick with unusually strong structural support, just three blocks from the water and three blocks from the main business district of the town of Fernandina, it served as the jail for the town of Fernandina and Nassau County continuously from 1878 until 1978. Presently, it is the home of The Amelia Island Museum of History, providing permanent display space, space dedicated to docent led tours, general use space for lectures, research space, archival storage and staff offices. *Nassau Co.,*

The original building, dating from 1878, was probably of Italianate ^{had} style, and was changed to the present Art Moderne ^{elements} style when the original building was enlarged in 1935. In that year a second story of brick was added with new exterior brick cladding both stories featuring Art Moderne characteristics. Subsequently, two brick wings were added to the north and west sides in 1955. In part because the 1955 additions are on sides which do not face a street, they minimally impact the building appearance to most viewers.

^{setting} Located just outside the Registered Historical District, the building is situated among residences dating from the same time period, many restored. Except for moving an iron cage from one entrance to another, the exterior appearance of the building remains unaltered from its days as a jail. With the words "Nassau County Jail" prominent above the east entrance, bars on several of the windows, a metal door on the east side and an iron cage extending around the south entrance, the building is unmistakable to even the casual observer as a jail. At the same time the building bears witness to the optimism and dynamism of the time in which it was built, a time now referred to as The Golden Age, (approximately 1870-1910) when the ramshackle pre-civil war town of Fernandina was converted in just a few years to a bustling resort and business center. *see #8*

Setting

The Nassau County Jail is located just three blocks from the harbor and three blocks from Centre Street, along which most businesses were located at the time the jail was built as well as today. Most of these Centre Street buildings are of brick construction and similar style to the jail. Most were constructed of brick after two fires in 1876 and 1883 destroyed the wooden buildings that preceded them. Just four blocks to the east at 227 S. 7th Street is the imposing, Italianate National Register Fairbanks House (Reg # 73000592). Near the Fairbanks House is the registered Tabby House (#73000594) at 7th and Ash Streets. Three blocks away are four cottages built from salvages from the Egmont Hotel, considered one of the finest hotels in the Southeastern United States when the jail was built. The building is now accessed primarily through the door on the south side and a brick walkway leads around the east side of the building to the southern entrance.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number 3 Page 2

The other properties in this immediate area are one and two story residential building plus the one story Amelia Community Theater building (formerly owned by the Nassau County Board of Education). These properties do not appear on the Sandborn tax maps until the early 1920's, so the jail likely stood apart from other buildings of the time but was built to reflect the same construction of other public buildings like the Old School House and the Court House.

Physical description

Exterior

The original one story 1878 building was built on a foundation of concrete, with a crawl space underneath. Three layers of bricks formed each of the four walls, providing sufficient strength to withstand any conceivable hurricane winds. Steel I beams supported a flat concrete roof. The bricks also certainly came from a brickyard near St. Mary's Georgia owned by a local prominent citizen, Samuel Swann, who also supplied most of the three million bricks used in the construction of Fort Clinch, both before and after the Civil War. Fort Clinch is located roughly five miles from the Nassau County Jail building. Six wooden sash windows open into the east side. Two of the windows are double windows and one still has prominent iron bars. non sec 8

6/6 double hung windows with wooden sashes are located throughout, and on both stories. The building has two entrances on the east and south sides respectively, with the south entrance providing access directly into the quarters of the jailer and the east entrance serving as the entrance to the cells and jail administration. The south access now is the main entrance into the museum, while the east access provides a secondary entrance and emergency egress.

The second story was added in 1955, by laying a row of bricks on the outside of the structure from the foundation to the flat roof. The second story also adds a number of Art Moderne features, mostly over and adjacent to the main entrance into the museum. Over the upper windows on the south side flanking and above the door are a basket weave pattern of bricks contrasting with the conventional running bond pattern that makes up the adjacent walls. Translucent glass blocks in a roughly five feet by five feet area above the south door contribute to the art deco affect, which is further enhanced by a decorative metal railing that extends around a cantilevered cover over the south door. The cantilevered cover extends outward from the building about four feet. Although Art Moderne was popular for brick cladding in 1935, not much remains of this style in the area of Fernandina Beach. American bond

All parts of the building remain in excellent condition because of its reinforced concrete and brick construction and its unusually strong structural system for a building this size—usually reserved for much bigger, more prominent structures built to last. Today's condition reflects the quality with which it was constructed, using the best materials available that could resist storms, decay and could be made secure for its intended purpose.

Interior

Significance

United States Department of the Interior
National Park Service

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Interior

*no east side entrance on floor plan
room by room description - main entry/prisoner entry*

The interior walls which enclosed the jailer's living space and the prisoner section were originally plastered. All of the plaster is now gone, and the original bricks are visible at several locations. This innermost layer of bricks is laid with laths separating the layers of brick throughout. The bricks remain in good condition. The large steel beams which supported the original 1878 roof are prominent and now support the concrete second floor. In the section reserved for the prisoners several cell doors remain. Both inside and out the building's function as a jail is unmistakable.

Architectural Significance

*criterion C
not claimed on form - for Moderne style - needs
arch. context*

While the building makes a striking impression and clearly represents the time and place when it was built during Fernandina's Golden Age, it has even greater importance as part of a large number of other buildings – residences, commercial building and public buildings – that were constructed at the same time. Together these buildings communicate the optimism and the dynamism of those times. The community of Fernandina chose to make even their jail a grand and striking building that they knew would last for centuries.

The architect of the 1878 building is unknown but probably was local and certainly was aware of the similar buildings then under construction. The architect of the 1955 additions was Abner C. Hopkins of Jacksonville, Florida.

Information gathered from interviews with two Architects

Richardson, Michael, Architect. Interview with Jim Longacre. Interview at the Amelia Island Museum of History, August 3, 2006.

Smith, Kenneth Architect. Interview with Susan Little. Interview at the Amelia Island Museum of History August 17, 2006.

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CONTINUATION SHEET**

Section number 9 Page 1

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Books

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Jan H. Johansen, Sr. *Yesterday's Reflections, Nassau County, Florida*. Jacksonville, Florida: Lexington Ventures, Inc., 2000.

Muir, John. *Thousand Mile Walk to the Gulf*, Boston And New York Houghton Mifflin Company The Riverside Press Cambridge, 1916.

Reid, Whitlow. *After the War: A Tour of the Southern States 1865-1866*. Cincinnati, New York, London: Moore, Wiltach and Baldwin, 1886.

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The Florida Mirror, Volume III, No. 3, December 11, 1880

Interviews and Statements

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Summary

The Nassau County Jail, now housing the Amelia Island Museum of History, is significant at the local level under Criteria A in the areas of Government and Social History. Built to last as a brick, one story building in 1878, the Nassau County Jail building embodies and uniquely represents The Golden Age of Fernandina, which extended from roughly the end of the Civil War until the early 1900's, and is adjacent to the Historic District (National Register # 87000195) which preserves so much of the architecture and history of that time. The expanded two story building dating from the 1930s likewise stands as a unique embodiment of the Fernandina of the Great Depression, while embracing the original 1878 building. Subsequent additions in the 1950s to the north and west sides are unobtrusive and do not detract from the original building (visible on the inside walls) and its 1930s art moderne second floor.

Historical Context

In 1824, during the Territorial Period, Florida created counties and among them was Nassau County, the 10th county created in Florida. The town of Fernandina became the county seat and has remained so except for a brief period between the 1830's and 1860s. Also it should be noted that Fernandina changed its name to Fernandina Beach in 1951. (1)

1 The Nassau County Jail was constructed in 1878 of locally made brick, expanded in 1935 by the addition of a second floor and art moderne features, and expanded once again in the 1950s by additions to the north and west sides. The building appears to the casual viewer to have been built at one time. Presently, the building houses the Amelia Island Museum of History and includes, in its exhibits, a display setting forth the history of the building.

In the years before the Civil War, Fernandina, although one of the largest towns in Florida, had a deserved reputation as a seedy and dilapidated place, with all the vices expected in a port town. But change was in the air when, on the eve of hostilities, Senator David Yulee completed his railway from Fernandina to Cedar Key, and at the same time convinced most citizens to relocate from the Old Town at the far north end of the island to his planned new community of Fernandina. The war forced most construction plans to be shelved, particularly after March 4, 1862 when a force of 15,000 Union troops on 20 ships arrived from Hilton Head. The Confederates abandoned the island without a fight and many white Fernandinians stayed away for the duration of the war. Within a few months, though, hundreds of runaway slaves fled to the island, and most able bodied male ex-slaves joined the union army. (2)

No notable construction occurred during the four years of union occupation, and, in his tour of the South with Chief Justice Salmon Chase in 1865, the journalist Whitelaw Reid found the Yulee residence to have a

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CONTINUATION SHEET

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Senatorial look "among the forsaken-looking wooden buildings," which otherwise made up the town. (3) The naturalist John Muir who passed through Fernandina in 1867 on a thousand mile walk only commented that he walked off a ramshackle pier into a ramshackle town. (4) However, both the returning black veterans and the white citizenry were determined to make Fernandina rich.

This was the beginning of the Golden Age (1870-1910) when the little town of Fernandina was entirely transformed. It became, on the one hand, a luxurious winter resort for the rich and famous of the great American cities, and, on the other hand, an arena in which freed slaves – many of whom were civil war veterans who escaped to Amelia Island and enlisted in Fernandina – worked to retain the rights and freedom they had won in the Civil War. Notably the first southern election involving both black and white voters after the Civil War occurred in the Fernandina mayoral election of Adolphus Mot in 1865. Chief Justice Chase personally administered the oath of office to him. (5) It was a time of boundless optimism in the economic future of the community on the part of both whites and African Americans. Together, they built a grand town in less than two decades, and they built a grand and solid jail for that town. Both elements, the resort aspect of the setting as well as the opportunities for African Americans are once again alive in the current life of the Fernandina and Nassau County.

significance
On December 7, 1868, the minutes of the Nassau County Commission meeting authorized the sheriff to seek proposals and plans for a jail. (6) A decision was made to build a jail that would be both secure and fitting to the town they envisioned. Land was purchased near the center of Fernandina Beach to emphasize the central role of the jail, and the deed was recorded on May 23, 1871. (7) The jail was completed and in operation by 1878.

By 1878 the town was in the midst of a boom. At first, wood was the building material of choice with wooden commercial buildings lining Centre Street for many blocks. Then, devastating fires in 1876 and in 1883 burned out Centre Street, and when it was finally rebuilt, the brick construction used in the jail was adapted, a fortunate decision since these buildings remain today in commercial use. Almost certainly all the bricks came from the same Georgia brickyard. (8)

Most of the bricks in the new Centre Street buildings, and likely the jail as well, were supplied by Samuel A. Swann who owned and operated a brickyard up the St. Mary's river in nearby Georgia both before and after the war. Prior to the war this brickyard supplied the bricks for Fort Clinch, which bricks appear to be from the same source as the original bricks visible in the interior of the jail. Also the bricks in the courthouse (1892) appear to be the same type of bricks. (9)

Swann was an accountant for the railroad before the Civil War, a blockade runner during the war and a rich businessman, shipper, philanthropist and devout church warden after the war. He was one of the founders of St Peters Episcopal Church, and likely he contributed to the plans for the jail. He was born in 1832 and died in

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1909. Swann's architectural legacy includes the house he built for his son at 214 S. 7th Street (known as the Kelly House) as well as the Swann Building at Centre and 4th. (10)

context
More grand buildings continued to be built in the 1880s. Just seven years after the construction of the original jail, The Fairbanks House (National Register #73000592), fondly called by many Fairbank's Folly, was built. Located just four blocks from and directly east of the jail, this Italianate gem is a remarkable contrast to the understated all-brick jail. This massive and eccentric residence was designed by prominent architect Robert S. Schuyler, who also designed St Peter's Episcopal Church, The Tabby House (National Register #73000594), the 1886 School House and The Hirth House. All of these were built before 1890, and form an arc around the Jail. (11)

The Egmont Hotel opened in Fernandina in 1880 and instantly gained a reputation, not only as the best of the eight hotels on the island, but one of the best in the nation. It was located just three blocks from the jail, and visitors to the hotel passed by the new fine jail on the way to the hotel. In 1877 General Grant visited the island at the beginning of his world tour and was feted in party after party, some at the Egmont. He could not have missed the jail. The city fathers certainly placed their jail as prominently as they could for the simple reason that they were rightly proud of it. (12)

Sadly, the jail has outlasted all eight hotels from The Golden Age. However, four small houses were constructed on the site of the Egmont Hotel from wood salvaged from the hotel when it was torn down and these homes remain today. So the jail and the hotel remain in a way interconnected and in contrast.

The jail is also located just a few feet to the south of the track of the railway constructed by Joseph Finnegan for David Yulee in the late 1850s. The railway linked the port of Fernandina to Cedar Key, and was finished just weeks before the outbreak of fighting in the Civil War. Its operation ceased after the Union Army occupied Fernandina on March 4, 1862. After the war, traffic on the railroad resumed, and the first sight passengers saw upon entering Fernandina by rail was its fine and solid brick jail. (13)

As described in Memoirs of Florida published in 1902:

Nassau County has an area of 640 square miles and a population of 9,634, and increase since 1890 of 1,360 or 16.3%. This county...has a world wide reputation for the purity of its waters. Amelia Island, on which Fernandina is located is about fifteen miles in length and from one to two miles in width.... The Fernandina of today is one of the liveliest towns of Florida and has excellent waterworks, and police and sanitary systems and creditable public buildings and schools and fine churches. (14)

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The Jail and The African-American Struggle

At the time construction of the jail was authorized, and still at the time of its completion, African-Americans were serving on the Fernandina city council and had been elected to sheriff, tax collector and other county and city posts. The decision to build the jail, and the jail that was built were a decision of the entire community. The size, permanency and prominent location of the jail made it a symbol of a legal system that was viewed then as permanent and grand and something of which to be proud.

By the end of the Golden Age, most blacks on the island had lost their rights and few elected officials were African American. For African-Americans the Golden Age ended in 1888, when five hundred black dock workers in Fernandina went on strike. The strike was brutally suppressed and that signaled the effective end of any measure of justice for African Americans in Fernandina until the Civil Rights movement of the 1960s. (15)

The Adjacent Historic District

The Historic District of Fernandina includes Victorian-era homes, churches, and ornate government structures, like the 1891 Nassau County Courthouse. It even has a small brick railway depot from 1899 at the corner of Centre and Front streets that today is a satellite office for the Amelia-Fernandina Beach-Yulee Chamber of Commerce. St. Peter's Episcopal Church, with its Spanish-influenced brick-red gabled roof, tawny gothic pillars and statuary is another gem. The solid brick buildings which line palm shaded Center Street were built at the same time as the jail and currently house bookstores, coffee shops, antique shops, craft and clothing stores, and trendy dining spots.

Eight of these buildings are already on the register and dozens more could be. The Jail sits prominently among these gems. Every community has churches, stores, residences and the like and every community has a jail. Fernandina is lucky enough to have a prominent jail that has played a significant role in its history.

In a nutshell, these dozens of historical buildings convey as a group much more than they could individually. They tell the story of a community at a point in time. The jail is integral to that story but sits outside the current historic district designation.

The Jail Remains Very Much a Jail

From both inside and outside the building is unmistakable for what it was for 100 years – a jail. Above the east entrance near the flat roof are letters in bronze unmistakably spelling out: **Nassau County Jail**.

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significance
Iron bars back several windows on the east, north and south sides. Inside, the original 1878 bricks can be seen throughout the ground floor. Iron doors and cell doors remain in prominent sight of museum visitors. No one can have any doubt this was a jail.

2 The original plan for the 1878 jail is still readily apparent in its present museum incarnation. The East entrance leads to a small hall with a door to the left leading into the quarters where the jailer and his or her family lived. To the right is a small exhibit room where prisoners were booked and visitors checked in and out. Beyond this room were the cells and several doors remain.

Jail Tales

There are many tales circulating about the jail, some of which can be verified and some of which cannot. One famous story, known to most residents and still told frequently in the museum, concerns the Carnegie family, who, during the Golden Age maintained several mansions on adjacent Cumberland Island. According to this legend, one or more of the younger Carnegies regularly came to Fernandina on Saturday night to drink at The Palace Saloon, which is still in operation. Just as regularly, they were tossed into the jail to sleep it off. The next morning they were released and headed back to Cumberland. Allegedly, the mother had a special cell decorated with curtains and better linens for their inevitable confinements.

The story of a 1880 jailbreak was fully documented in the local paper. It seems a local resident was robbed on the train from Cedar Key. He left the train and telegraphed ahead to The Justice of the Peace who met the train and conveyed the accused to the jail four blocks away for the night. When he returned the next morning, both of the accused were gone. Suspecting the jailer of releasing them, he arrested the jailer, and had him held in his own jail! Two years later two other accused men made their escape by breaking the lock to their cell. (16)

The jail built in 1878 had a gallows on the roof with a trapdoor opening into the jail. No record can be found that anyone was ever officially executed there. However, there are too many recollections to ignore of a hanging that took place in the early twentieth century with residents standing around the building watching. An eyewitness Sammy Saylor signed a statement that he saw the hanging and later saw the body when it was placed on a bed in one of the cells. (17)

More Modern Times

During an oral interview November 4, 1999, reminiscences were recorded from a former wife of a jailer, Annis Moore-Littles and their daughter, Cindy, who lived in the jail during the 1970's. This eye witness was able to describe that there was a "Black Bull Pen" for black men prisoners on the second floor in the area that is now the reference room and that white men were held in cells on the second floor of the 1955 addition. On the first floor of the same addition, white women were held in three cells and separated from three cells for black

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women. Ms. Moore-Littles stated that Sheriff McKendree ended the practice of the segregation of deputies by race at mealtime while she lived in the jail.

Also of interest was the information that the current civil defense rooms that still house communication equipment for the local police was originally a small apartment for visiting law men who were in town on police business. (18)

In 1950 Sheriff H. J. Youngblood hired the first black deputy to be sworn in as a deputy sheriff in Nassau County. Jeremiah Mattox was sworn in and subsequently was shot and killed in the line of duty in the 700 block of South 8th St. in Fernandina. Deputy Mattox is the first African American sheriff's deputy killed in the line of duty in the State of Florida. (19)

- create separate HISTORICAL SIGNIFICANCE section

In Conclusion

The Nassau County Jail is an integral and prominent part of the history of Nassau County. It has stood in one location from its beginning until the jail function was moved in 1978. The Amelia Island Museum of History opened its doors to visitors in 1986 and trained docents have continued to tell the story of the Eight Flags over Amelia Island and the history of the old jail. Now home to over 60,000 residents, (20) Nassau County is once again experiencing a boom time, hopefully for all of its citizens. The Amelia Island Museum of History is open 7 days a week and serves over 30,000 people each year!!

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National Park Service**

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Section number 7 Page 7

FOOTNOTES

- 1 Jan H. Johansen, Sr., *Yesterday's Reflections, Nassau County, Florida*. (Jacksonville, FL: Lexington Press, 2000), 27.
- 2 Deon Lawrence Jaccard, *The Historic Splendor of Amelia Island*. Fernandina Beach, FL: Larus Book Publisher, 1997), 151-162; 172-177.
- 3 Whitlow Reid, *After the War: A Southern Tour May 1865-May 1866*. (Cincinnati, New York, London: Moore, Wiltach and Baldwin, 1886). Page unknown.
- 4 John Muir, *Thousand Mile Walk to the Gulf*, 1916.
- 5 Reid, page unknown.
- 6 Nassau County Commissioners Meeting Minutes, December 7, 1868 on file in the Nassau County Court House Records Office. Copy attached.
- 7 Deed recorded May 23, 1871, on file in Nassau County Court House Records Office. Copy attached.
- 8 Susanne Hardee, *The Golden Age of Amelia Island*. Fernandina Beach, FL: Amelia Island Museum of History, 1993) 43.
- 9 Johansen, 163-164.
- 10 Hardee, 22; 24.
- 11 National Register information found on line at National Register of Historic Places, Florida, Nassau County.
- 12 Johansen, 41.
- 13 Johansen, 178.
- 14 Rerick, 354-355.
- 15 Johansen, 41.

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16 "The Florida Mirror", Volume III, No. 3, December 11, 1880, page 8.

17 Signed Statement from Sammy Saylor, received August 7, 1980.

18 Interview with Annis Moore- Littles and daughter, Cindy conducted by Marlene Schang, museum education coordinator and Suanne Thamm, volunteer on November 4, 1999.

19 Johanes, 45.

20 "Fernandina Beach News-Leader Fact Book 2006", supplement in February 2006, 4.

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Moore-Littles, Annis and Cindy Moore. Interview with Marlene Schang and Suanne Thamm. Interview at Amelia Island Museum of History, November 4, 1999.

Richardson, Michael, Architect. Interview with Jim Longacre. Interview at the Amelia Island Museum of History, August 3, 2006.

Smith, Kenneth Architect. Interview with Susan Little. Interview at the Amelia Island Museum of History August 17, 2006.

Saylor, Sammy. Written statement at the old jail building on August 7, 1980 regarding a hanging.

Documents:

1. Property Assessor's Office:

- a. Tax Roll
- b. Parcel Map
- c. Air view of parcel map *specific*

2. County Records:

- a. Deeds: May 23, 1871 Lots 17 and 18 were sold to Nassau County for the jail
(Recorded in Deed Book N page 15.)
January 10, 1922 Lot 19 was sold to Nassau County
(Recorded in Deed Book B-3, p. 180.)
June 21, 1937 Lots 15 and 16 were sold to Nassau County
- b. Nassau County Commissioner's meeting minutes, December 7, 1868
called for the Sheriff to ask for proposals and plans for a county jail.

3. Maps:

- a. USGS Map
- b. Sketch Map

4. Photographs

Black and white photo series photographed on August 2, 2006 by Carol Ann Atwood. Negatives on file at Amelia Island Museum of History.

Color photo series photographed on August 10, 2006 by Carol Ann Atwood.
Negatives on file at the Amelia Island Museum of History.

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National Park Service**

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Section 10

Verbal Boundary Description Block 273 Lots 15-21

Boundary Justification The boundary encompasses the property visible in the Nassau County
Parcel Maps which are attached. The original footprint with the
1955 addition is clearly visible as well as the parking lot.

FMSF NOTE TO IMAGE VIEWER

Some material contained in the corresponding paper manuscript has not been scanned.

Check material affected:

☐ Blueprints

☐ Map

☐ Site Forms

☒ Other, specify 2 pages Floor Plans

This material can be viewed at the Florida Master Site File.

RESTRICTED

Site#/Manuscript# NA 287 contained one or more of the following items:

- ☐ Drawings/diagrams depicting internal layout and/or structural elements including Floor Plans, Blueprints, building plans, or schematic drawings.
- ☐ Other, explain _____

The Site File has determined that the above marked material may be Restricted.
Restricted material is defined by one of the following marked categories:

☒ Florida Statute 119.071 § 3.3(b) & (c) (2007), which states:

(b)1. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency are exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution.

2. This exemption applies to building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency before, on, or after the effective date of this act.

(c) Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout or structural elements of an attractions and recreation facility, entertainment or resort complex, industrial complex, retail and service development, office development, or hotel or motel development, which documents are held by an agency are exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution. This exemption applies to any such documents held by an agency before, on, or after the effective date of this act. Information made exempt by this paragraph may be disclosed to another governmental entity if disclosure is necessary for the receiving entity to perform its duties and responsibilities; to the owner or owners of the structure in question or the owner's legal representative; or upon a showing of good cause before a court of competent jurisdiction.

☐ Other, explain _____

Materials indicated have been removed from the paper file and are housed in a secure location and available to authorized persons in the EDMS. If you need these materials, please see Site File staff.



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MEMORANDUM

TO: Robert Jones, Historic Sites Specialist
Survey and Registration Section
Bureau of Historic Preservation
Division of Historical Resources
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399

FROM: Myles Bland (mbland@bland.cc)
Registered Professional Archaeologist No. 10650

DATE: 15 October 2008

RE: Nassau County Jail / Amelia Island Museum of History NRHP
Nomination

Good morning.

For your attention, please find enclosed a NRHP nomination for the Nassau County Jail / Amelia Island Museum of History.

As always, we look forward to working with you.

Thanks.

RECEIVED
BUREAU OF
HISTORIC PRESERVATION
2008 OCT 30 A 9:23

Florida Department of State
Division of Historical Resources
Bureau of Historic Preservation

Adapted from NPS 10-900
to propose the nomination of
Properties in Florida for listing in
the National Register of Historic
Places

FLORIDA NOMINATION PROPOSAL

Grayed Areas for Use by Staff

1. Name of Property

historic name Nassau County Jail

other names Amelia Island Museum of History

FMSF Number NA287

2. Location

street & number 233 South Third Street

☐ not for publication

city or town Fernandina Beach

☐ vicinity

state FLORIDA code FL county Nassau code 89 zip code 32034

3. Owner Awareness Statement

As the owner, or official representative of the owner, of the property identified above, I am aware of this proposal for its nomination for listing in the National Register of Historic Places. I have been advised of the procedures for review of the proposal by the State Historic Preservation Office and the Florida National Register Review Board, and for the formal nomination of the property at the discretion of the State Historic Preservation Officer. I understand that I will be notified of the date and place of the public meeting at which the proposal will be considered by the Florida National Register Review Board, and that I will be given an opportunity to submit written comments and to appear in person in support of or opposition to the nomination of the property.

At this time I ☒ support ☐ oppose ☐ reserve opinion on this proposal.

Pat Ruella, Board of Trustees, President 10-1-08
Signature of property owner or representative

Date

4. Legal Description of Property (according to county property appraiser's office)

Please also provide:

Name of USGS Quadrangle: Fernandina Beach, FL

Township, Section and Range: T 3N S 23 R 28E

Tax Parcel #: 00-00-31-1800-0273-0150

Block 273 lots 15 to 21 in City of Fernandina Beach

Attach continuation sheet if necessary

RECEIVED
BUREAU OF
HISTORIC PRESERVATION
2008 OCT 20 A 9:23

Nassau County Jail
Name of Property

Nassau, FL
County and State

5. Classification

Ownership of Property

(Check as many boxes as apply)

- ☒ private
☐ public-local
☐ public-State
☐ public-Federal

Category of Property

(Check only one box)

- ☒ buildings
☐ district
☐ site
☐ structure
☐ object

Number of Resources within Property

(Do not include any previously listed resources in the count)

Contributing

Noncontributing

1 buildings
sites
structures
objects
1 total

Name of related multiple property listings

(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

6. Function or Use

Historic Functions

(Enter categories from instructions)

GOVERNMENT/jail

Current Functions

(Enter categories from instructions)

RECREATION AND CULTURE/museum

7. Description

Architectural Classification

(Enter categories from instructions)

OTHER: Masonry Veracular

Materials

(Enter categories from instructions)

foundation BRICK

walls BRICK

roof BUILT UP: tar-and-gravel

other IRON: bars; WINDOWS: glass

Narrative Description

(Describe the historic and current condition of the property on one or more continuations sheets.)

8. Statement of significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☒ **A** Property is associated with events that have made a significant contribution broad patterns of our history.
- ☐ **B** Property is associated with the lives of persons significant in our past.
- ☒ **C** Property embodies the distinctive characteristics of a type, period, or method of construction of represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

- ☐ **D** Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- ☐ **A** owned by a religious institution or used for religious purposes.
- ☐ **B** removed from its original location.
- ☐ **C** a birthplace or grave.
- ☐ **D** a cemetery.
- ☐ **E** a reconstructed building, object, or structure.
- ☐ **F** a commemorative property.
- ☐ **G** less than 50 years of age or achieved significance within the past 50 years

Areas of Significance

(Enter categories from instructions)

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

- | | |
|--|---|
| ☐ Agriculture | ☐ Industry |
| ☒ Architecture | ☐ Maritime History |
| ☐ Archaeology | ☐ Military |
| ☐ Community Planning | ☒ Politics/Government |
| ☐ Commerce | ☐ Recreation |
| ☐ Education | ☒ Social History |
| ☐ Early Settlement | ☐ Transportation |
| ☐ Health/Medicine | Other: _____ |

Period of Significance

1937
1938-1958

Significant Dates

1938, 1954

Significant Person

N/A

Cultural Affiliation

N/A

Architect/Builder

Architect: Benjamin, Roy A. (original); Hopkins, A.C.
(addition)

Builder: Davis, Charles J. (original); Woodcock, O.P.
(addition)

Nassau County Jail
Name of Property

Nassau, FL
County and State

10. Geographical Data

Acreage of Property +210 . 4

UTM References

(Place additional references on a continuation sheet.)

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Sidney Johnston, Senior Historian & Myles Bland, President

organization Bland & Associates, Inc. (BAI) Jacksonville, FL date 4/14/2008

street & number 4104 St. Augustine Road telephone (800) 605-4478

city or town Jacksonville state FL zip code 32207-6609

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets (All information on continuation sheets must be typed.)

Maps

A USGS map (7.5 or 15 minute series) Do not write upon or attach labels to this map.

A Sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.
(Do not write upon or attach permanent labels to the photographs.)

Additional Items

(check with the area Historic Sites Specialist at [850] 487-2333 for any additional items)

Property Owner

name Amelia Island Museum of History

street & number 233 South Third Street telephone (904) 261-7378

city or town Fernandina Beach state FL zip code 32034

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National Park Service

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Summary

completed in

37

Nassau County Jail is located at 233 South Third Street in Fernandina Beach, Florida. Constructed in 1938 and expanded with compatible additions in 1954 and 2007, the building is a good example of Masonry Vernacular construction with Modernistic influences. The two-story building contains approximately 6,800 square feet of interior floor space. It faces south and displays a flat roof of reinforced concrete with straight parapets and hard-fired red brick walls laid up in a modified Flemish bond. Three rows of bricks form the walls, providing sufficient strength to prevent escape and against hurricane-force winds in the coastal island city. Other exterior finishes include a tripartite belt course, a glass block panel, decorative basket weave brick panels, fleur-de-lis cast stone ornamentation, cantilevers, six-over-six double-hung sash windows, and an articulated foundation. A cast stone head mast contains the words Nassau County Jail above the east entrance. Metal exterior doors and an iron cage protecting the south entrance unmistakably identify the building as a jail. All parts of the building remain in excellent condition, in part, because of its uninterrupted use from a jail to a museum, and, in part, because of its reinforced concrete and brick construction. It contains unusually strong structural components for a building this size—usually reserved for larger, more prominent structures. ~~The current condition of the building reflects the quality with which it was constructed using the best materials available to provide the safekeeping of prisoners and capable of resisting storms and deterioration.~~ The building served as the county's jail until a new facility was built in 1978. The Amelia Island Museum of History re-opened the historic jail to its ~~adapted~~ reuse in 1986. The adaptive re-use plan resulted in the removal of the original iron cells and the introduction of temporary partitions about 1995 to support exhibits. ~~Notwithstanding that change,~~ The original circulation pattern in the jail and many of the original iron doors and frames between rooms and iron bars protecting windows remain intact. In 2007, the museum completed an addition supported by Special Category grant assistance from the Florida Department of State, Division of Historical Resources. Designed by Kenneth Smith Architects, Inc. of Jacksonville with oversight by the Division's Architectural Preservation Services Section, the 2007 addition meets the Department of the Interior's criteria for compatible but differentiated additions to historic buildings. As part of an overall renovation program, the addition was necessary to meet standards associated with the American Disabilities Act (ADA) requirements for public buildings. The jail contributes to the sense of time, place, and historical development of Nassau County and the City of Fernandina Beach in which it stands through its location, design, materials, workmanship, feeling, and association. Retaining its early twentieth century character to a sufficient degree for listing in the National Register, the building provides an important architectural, political, and social link to the heritage of Fernandina Beach.

Setting

The historic jail stands in Fernandina Beach, the seat of government of Nassau County. Located on the leeward side of Amelia Island, Fernandina Beach is known as the "Isle of Eight Flags" for its position near the south end of the Sea Islands and its heritage of having eight flags being planted on its shores. Claiming the northeastern

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most incorporated city in Florida, Fernandina Beach has a population of 11,815 and the larger Nassau County contains 68,188 residents.

part first
Nassau County Jail faces east on South Third Street, occupying a site one block south of the Fernandina Beach Historic District, which was listed in the National Register in 1973 with a boundary extension in 1987. The building stands three blocks east of Fernandina Beach's harbor and three blocks south of Centre Street, the central business district. Most of Centre Street's buildings were constructed of brick after fires in 1876 and 1883 destroyed much of the downtown. Four blocks to the northeast are the Fairbanks House (NR 1973) and the Tabby House (NR 1973), late nineteenth century landmarks. Closer to the jail are located relatively small one-story dwellings of recent vintage. To the west is the single story Amelia Community Theater Building, formerly owned by the School District of Nassau County, and a railroad yard.

Physical description

Exterior

The asymmetrical east elevation (photograph 1) of the 1938 part of the building displays a straight parapet with cast stone coping. Emphasizing its horizontal massing, three brick belt courses in header bonds are interrupted by the Nassau County Jail name plate and cast stone belt courses, which occupy a location oriented above the offset entrance protected by a metal cantilever and iron door with bars. The modified Flemish bond employed in the brick work adds character and strengthens the bond between the exterior walls of hard fired-clay face bricks and the unglazed clay common brick interior walls. Asymmetrical but regular fenestration includes six-over-six-light double-hung sash windows in single arrangements along the second story and paired and singular arrangements along the first story. The window openings are accented by bricks laid in a rowlock bond for the sills and vertical stretcher patterns for the headers. The first-story window to the right, or north, of the entrance reveals iron bars protecting the interior. This entrance historically led into the cells and jail administration areas. The entrance and window arrangement and the windows opening at the southeast corner are further accented by bricks laid on their beds to form basket weave patterns. Header bonds in corbelled patterns form inset panels. Accented by cast stone drip molding that extends ten feet from the southeast corner, an articulated foundation consists of salmon-colored bricks laid up in American common bond, contrasting with the red brick modified Flemish bond on the primary walls. A stack bond laid vertically accents the upper row of bricks on the articulated foundation, providing an unusual belt course and visually identifying the position of the first floor.

At the north end of the east elevation projects a small one-story flat roof extension (photograph 2). Similar in design and materials to the two-story east elevation, the extension is part of the 1954 addition. It is differentiated from the 1938 part of the building by the absence of any belt courses or decorative brick panels and its use of a cast stone belt course that extends across the top of the articulated foundation. The same modified Flemish brick bond work evident on the older part of the building appears on the addition. The north

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elevation of the one-story extension (photograph 3) displays a six-over-six-light and four-over-four-light double-hung sash window and the west elevation of the one-story addition contains no piercings.

The south elevation (photograph 4) is symmetrical with a central iron door with bars protected by a distinctive cantilever enclosed with an iron cage and accented by a decorative metal railing. This entrance historically led into the jailer's quarters. A full-height projecting brick panel further identifies the entrance, which is further accented with a central window opening filled with glass blocks and fleur-de-lis floral designs executed in cast stone. The tripartite brick belt courses evident on the east elevation continues along the south elevation, interrupted by the cast stone floral designs and continued with cast stone belt coursing. The basket weave panels accent the walls between first- and second-story windows and entrance. The first-story windows bracketing the entrance have been covered with diagonal boards; the second-story six-over-six-light double-hung sash windows remain evident. Obscured by vegetation, a cast stone drip molding accents the foundation.

A combination of the 1954 and 2007 additions (photographs 5, 6), the remainder of the south elevation displays a stepped back plan with asymmetrical and irregular fenestration. Rising two stories, the additions display a parapet line three feet lower than the parapet accenting the wall to the east. The parapet cap on the addition intersects the uppermost belt course of the wall to the east with the two lower belt course lines continued in the appropriate alignment. Four blind windows contrast with a single six-over-six-light double-hung sash window. Supported by a small concrete porch, a door and single window punctuate the southwest corner of the elevation. Hard clay-fired brick walls are accented by a stuccoed foundation finish.

The west elevation (photographs 7, 8) displays more of the six-over-six-light double-hung sash windows set in a regular pattern with the exception of a blank wall at the northwest first-story corner. Three windows on the second floor have been removed for restoration and the openings boarded over with the fenestration pattern intact. A cast stone foundation skirt contrasts with the red clay-fired brick walls.

Continuing the irregular plan evident on the south elevation, the north elevation (photograph 9) displays a projecting flat-roof extension at the northwest corner that yields to a glass enclosure shaded by a green awning and incised within the building to provide ingress and egress at the center of the elevation. Farther east, the two-story walls are interrupted by double-hung sash windows set in an asymmetrical pattern and a brick chimney with an arched cap. Two of the windows on the second story are boarded over; one window has been removed for restoration, the other remains in the opening. The one-story addition projects at the northeast corner.

Alterations

The east elevation has not been altered with the exception of the one-story 1954 addition, ~~which is part of the historic fabric of the building.~~ The south elevation has been altered by the addition about 1986 by the installation of the iron cage mounted under the cantilever to protect the entrance. Originally, brick walls were

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located under the cantilever with a four-over-four light double-hung sash window piercing the west elevation and an entrance at the east elevation. An uninterrupted brick wall originally faced Cedar Street. The cantilever and decorative metal railing were part of the original design; salvaged from interior sections of the jail, the iron cage replaced the brick walls to provide a serviceable entrance into the museum and an outward visual indicator of the historic interior function of the building.

Another alteration to the south elevation is the 2007 addition (photograph 5). The 2007 addition covers sixteen feet and four double-hung windows along the west elevation of the 1938 part of the building and twenty-four feet and four windows of the south elevation of the 1954 addition. Designed by Kenneth Smith Architects, Inc. of Jacksonville and approved by the Architectural Services Section of the Division of Historical Resources, the 2007 addition meets the Secretary of the Interior's criteria for a compatible, but differentiated addition to a historic building. Setback appropriately from the historic wall of the south elevation, the 2007 addition displays red brick walls of differing hues, distinct from the red bricks employed on either the 1938 original part or the 1954 addition. The straight parapet, modified Flemish bond pattern, belt courses, and window headers and sills accenting the windows are copied directly from the historic fabric, but none of the decorative brick panels appear. The stuccoed foundation skirt contrasts from the brick articulated foundation on the 1938 building and the cast stone veneer on the 1954 addition. The six-over-six-light double-hung sash windows and blank windows arranged in an asymmetrical pattern both reflect the fenestration on the unaltered walls of the building.

The north elevation (photograph 9) is altered by the introduction of the 2007 addition that infills the space between the 1938 part of the building to the east and the 1954 addition to the west. The addition covers a space amounting to sixteen feet of historic wall fabric in an area historically that was a two-story flat-roof hyphen that served as a passageway between the 1938 and 1954 parts of the building. Historically, it measured sixteen feet in length by ten feet in width. Reflecting the pattern revealed on the south elevation, the north elevation of the 2007 addition has red clay-fired bricks of various hues that contrast from the historic fabric, but laid up in the same historic pattern. The glass enclosure provides at once an entrance vestibule, visual relief from the massing of red bricks along the elevation, and the original depth of the historic hyphen connecting the parts of the building. Two double-hung sash windows pierce the wall surface above the glass wall. Setbacks emphasize the introduction of a modern addition along the north elevation. The setback from the north wall of the 1938 building amounts to eighteen inches and sixteen feet from the 1954 addition. The 2007 addition includes a new concrete step and ramp system to provide access into the building to meet local building and ADA codes.

Interior

First Floor

The interior of the building contains thirteen primary rooms that support the museum's exhibits, patrons, and administrative staff. The first floor contains exhibition halls, restrooms, central hall and stairs, and storage

*7, shift from 2 brick thick walls to 3
↳ Moderne Style change to 3rd?*

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room. The iron cage and door on the first-story south elevation opens into the reception area and primary exhibition hall (photograph 10). Framed with large wood planks during construction and leaving tell-tale striation markings, reinforced concrete joists and the second-story floor system remain clearly evident at the ceiling, which rises ten feet. In association with the iron cage and barred iron door at the entrance, the ceiling provides a strong feeling of the building's historic use as a jail. Unglazed brick interior walls are apparent above and beside exhibition panels and temporary walls installed to enhance the museum. This area historically served as the jailer's quarters, which consisted of a combined living/dining room, kitchen, bedroom, bathroom, and guest or child's room. To the northeast of this area is a secondary exhibition hall (photograph 11) that interprets Nassau County's history, and historically contributed to the jailer's quarters. This room displays similar details at the ceiling and walls as found at the primary exhibition hall.

To the right, or east, of the Nassau County History Room is located the central hall and staircase (photograph 12). The straight stairs are executed with a brick base and iron newels, treads, risers, and handrails. The central hall reveals the building's unusual interior brick wall system, barred iron doors, and the iron utilitarian staircase. The iron materials were designed, fabricated, and installed by the Decatur Iron & Steel Company of Decatur, Alabama. Historically containing a temporary holding cell, restrooms (photograph 13) are located to the north of the central hall. Along the south wall of the central hall and at the foot of the staircase is located a barred iron door (photograph 14) that historically provided access between the jailer's quarters and the central hall. East of the central hall lies the sally port, or prisoner's entrance vestibule (photograph 15), which historically supported to the south the jailer's quarters, to the west the central hall and jail, and to the north the booking and processing room (photograph 16), which currently supports Spanish mission and Timucuan exhibits. The sally port has its original iron door framing systems, but the barred iron doors have been removed to improve circulation through the museum.

A narrow corridor extends to the west of the Nassau County Exhibition Hall (photograph 17). The corridor visually identifies a transition from the historic building into the modern addition through differentiated red brick walls and a reinforced concrete ceiling to a gypsum-board-and-plaster walls and drop ceiling system. The corridor empties into part of the 2007 addition that contains a hall (photograph 18) which supports a new elevator, vestibule, rear entrance, and handicap ramp. To the north of the elevator radiates the entrance vestibule (photograph 19), which, again, effectively visually unites and differentiates historic brick walls and double-hung sash windows with modern spaces and materials. In the vestibule are revealed to the east original brick walls and windows associated with the 1938 original building and the 1954 addition's materials to the west. Iron bars remain intact on the former windows, indicating the historic use of the facility in the new entrance. West of the elevator and rear vestibule and contained within the 1954 addition radiates a secondary hall (photograph 20); an exhibition hall with an emergency exit on the south elevation (photographs 21, 22); and storage room to the north (photograph 23). The exhibition hall has temporary walls and finishes that obscure the original brick interior walls, windows, and ceiling. Formerly containing the primary electrical service panels and transmitter equipment maintained by the County of Nassau and currently undergoing rehabilitation and re-

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use as an exhibition hall, the storage room reveals plaster-and-brick walls, a reinforced concrete ceiling, and replacement double-hung sash windows.

Second Floor

The current and historic system for gaining access to the upper floor, the central staircase (photograph 24) provides access to the second floor. Not available to the general public as part of the overall museum experience, the second floor contains administrative offices, library, archives, and a multi-purpose room for developing exhibits and holding seminars and workshops. It historically contained only cells for inmates. In general, the rooms display double-hung sash windows and brick walls, although some of the latter have been painted white. Drop ceilings obscure original reinforced concrete ceiling systems in many rooms, and provide access spaces for electrical and HVAC systems. At the top of the staircase and to its north are located administrative offices (photographs 25, 26) and a storage facility (photograph 27), which is protected by a barred iron door (photograph 28). To the south of the staircase is the library and archives (photograph 29). Although the walls of this room have been covered with gypsum board and plaster, the original windows and brick floor remain visible. At the northwest corner of the library is a narrow corridor (photograph 30) that leads into the 2007 addition with modern bathrooms and a new stairwell (photograph 31). To the north of the corridor is the elevator, accompanying hall, and an administrative office (photograph 32). Contrasting with the modern finishes in the office is an original window and supporting brick wall (photograph 33). With the exception of the narrow corridor, these rooms comprise the 2007 addition. To the west of the elevator is a large open multi-purpose room (photograph 34), which displays drop ceiling panels, double-hung sash windows, and partially exposed brick walls.

Interior Alterations

First Floor

The first floor has several alterations made to adapt the building to its present use as a museum. Those changes are largely sensitive to the original circulation system and use. The reception area and primary exhibition hall (photograph 10) originally contained five spaces for the jailor's quarters, that is, a living/dining room, kitchen, two bedrooms, and restroom. The interior walls were removed about 1995 and the space reorganized with partitions for reception, gift sales, main exhibition hall, and a small theater. With the exception of the removal of several metal doors, the original east entrance vestibule, booking room, and dispatch, deputy's lockers, and armament storage room (photographs 15, 16) retain their original features and circulation pattern. The original jail laundry (photograph 13) was divided into two spaces about 1995 to accommodate restrooms. Free-standing in the center of the room, the original trustee cells were removed about 1988 to create exhibition space (photograph 11). Red brick walls, metal doors, and reinforced concrete ceiling systems remain visible reminders of the originally intended use of the building.

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An addition and modifications made in 2007 altered the interior of the original sally port system and connector between the 1938 and 1954 sections of the jail (photographs 17, 18, 19, 31). Two restrooms and a staircase were added to the south elevation, and the sally port to the north was enclosed to accommodate an elevator, hallway, and handicapped ramp. New interior partitions were finished with smooth plaster. They contrast with the exposed original exterior brick wall and double-hung sash windows complete with iron bars revealed within the new vestibule. Removed about 1988, the original female jail cells for both black and white inmates occupied the large space at the west elevation (photograph 20, 21, 22). A wood-frame partition extending north-to-south visually separated the free-standing cells. The iron cells were removed about 1988 and the wall system reorganized in 2007 to accommodate a hall serving the elevator and north entrance, and exhibitions in the former cell room for female inmates.

Second Floor

The second floor ~~also~~ retains its original circulation system, materials, and features to a high degree. The most obvious change is the removal of the free-standing iron cells in the two major spaces (photographs 29, 34), alterations completed about 1995 to support museum operations. A small partition in the former "Black men's bull pen" (photograph 29) forms a library reading space (2007) and a secure archives (c. 1994) with many of the museum's most valuable resources stored in the locked room. The mentally deficient, padded, solitary confinement, and trustee cells (photographs 24-28) have been adapted for offices, but retain their original walls. Completed in 2007, the addition and alteration above the first-floor sally port (photographs 30-33) provides a staircase, restrooms, and an office on the second floor. A revealed window (photograph 33) serves as a visual reminder that the latter room is an addition with this space originally located outside the exterior walls.

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Nassau County Jail
Fernandina Beach, Nassau Co., FL
Photograph List

1. 233 South Third Street
2. Fernandina Beach (Nassau Co.), FL
3. Sidney Johnston
4. 2007
5. Senior Historian, Bland & Associates, Inc. Jacksonville, FL
6. View showing east elevation, facing west
7. Photograph number 1 of 34

Numbers 1-5 are the same for the remaining photographs.

6. View showing east elevation of one-story 1954 addition, facing west
7. Photograph number 2 of 34

6. View showing north elevation of 1938 part of the building and one-story 1954 addition, facing southeast
7. Photograph number 3 of 34

6. View showing south elevation of 1938 part of the building, facing northwest
7. Photograph number 4 of 34

6. View showing south elevation, facing north
7. Photograph number 5 of 34

6. View showing detail of south elevation, facing northeast
7. Photograph number 6 of 34

6. View showing west elevation, facing northeast
7. Photograph number 7 of 34

6. View showing west elevation, facing east
7. Photograph number 8 of 34

6. View showing north elevation, facing south
7. Photograph number 9 of 34

6. View showing main exhibition hall, facing east
7. Photograph number 10 of 34

6. View showing Nassau County History exhibition hall, facing north
7. Photograph number 11 of 34

6. View showing central hall and Heritage Exhibition hall, facing west
7. Photograph number 12 of 34

6. View showing first-floor restrooms and barred iron door, facing northwest
7. Photograph number 13 of 34

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Section number Attachments Page 2 Nassau County Jail
Fernandina Beach, Nassau Co., FL
Photograph List

6. View showing barred iron door on south wall of central hall, facing south
7. Photograph number 14 of 34

6. View showing sally port and central hall, facing east
7. Photograph number 15 of 34

6. View showing Spanish Mission/Timucuan exhibition hall, facing southeast
7. Photograph number 16 of 34

6. View showing narrow corridor and elevator, facing east
7. Photograph number 17 of 34

6. View showing elevator and rear entrance vestibule, facing north
7. Photograph number 18 of 34

6. View showing rear entrance vestibule, facing east
7. Photograph number 19 of 34

6. View showing secondary hall in 1954 addition, facing north
7. Photograph number 20 of 34

6. View showing exhibition hall, facing southwest
7. Photograph number 21 of 34

6. View showing exhibition hall, facing south
7. Photograph number 22 of 34

6. View showing storage room, facing east
7. Photograph number 23 of 34

6. View showing central staircase, facing east
7. Photograph number 24 of 34

6. View showing administrative office, facing north
7. Photograph number 25 of 34

6. View showing administrative office, facing north
7. Photograph number 26 of 34

6. View showing storage room, facing northwest
7. Photograph number 27 of 34

6. View showing iron door protecting storage room, facing northwest
7. Photograph number 28 of 34

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Nassau County Jail
Fernandina Beach, Nassau Co., FL
Photograph List

- 6. View showing library and archives, facing west
- 7. Photograph number 29 of 34

- 6. View showing corridor into 2007 addition, facing west
- 7. Photograph number 30 of 34

- 6. View showing library and archives, facing west
- 7. Photograph number 31 of 34

- 6. View showing iron door protecting storage room, facing northwest
- 7. Photograph number 28 of 34

- 6. View showing library and archives, facing west
- 7. Photograph number 29 of 34

- 6. View showing iron door protecting storage room, facing northwest
- 7. Photograph number 28 of 34

- 6. View showing library and archives, facing west
- 7. Photograph number 29 of 34

- 6. View showing second-floor corridor and hall to restrooms and stairwell, facing west
- 7. Photograph number 30 of 34

- 6. View showing stairwell, facing south
- 7. Photograph number 31 of 34

- 6. View showing elevator and hall, facing north
- 7. Photograph number 32 of 34

- 6. View showing office and window, facing southwest
- 7. Photograph number 33 of 34

- 6. View showing multi-purpose room, facing northwest
- 7. Photograph number 34 of 34

FMSF NOTE TO IMAGE VIEWER

Some material contained in the corresponding paper manuscript has not been scanned.

Check material affected:

☐ Blueprints

☐ Map

☐ Site Forms

☒ Other, specify 2 pages Floor Plans

This material can be viewed at the Florida Master Site File.

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Summary Significance Statement

1878

The historic Nassau County Jail, now housing the Amelia Island Museum of History, is significant at the local level under Criterion A in the areas of politics/government and social history and under Criterion C for architecture. Under Criteria A, the jail was constructed by Nassau County government in 1938 and expanded in 1954. The two-story building stands on the site of a 1870s one-story wood-frame jail and a subsequent two-story masonry jail. Part of the social history of crime and punishment in Nassau County, the jail was built in the 1930s and then expanded in 1950s by the county government to contain a growing criminal population. Contributing to a local initiative to expand and modernize Nassau County's government buildings, the 1954 addition was part of a larger contract that also expanded and modernized Nassau County Courthouse. The jail is part of a long tradition reflecting the law-and-order process in one of Florida's oldest counties. Integral to the larger circuit court and statewide judicial system, Nassau County Jail occupies a site used for incarcerating prisoners since 1878. It is the place where persons charged with crimes were booked and incarcerated, where attorneys first met with their clients, and a hub from which the accused and inmates were transported to the local courthouse for arraignments and trials, and later to the state prison or for carrying out sentences of one year or less. Under Criterion C, the building possesses significance associated with its Masonry Vernacular construction with Modernistic influences. The jail gains further significance for its distinctive characteristics of a type of construction designed for its specific function. In its original rectangular form, the building was designed by Jacksonville architect Roy A. Benjamin and constructed by Charles J. Davis, Inc. of Jacksonville. The Decatur Iron & Steel Company of Decatur, Alabama designed and installed the iron and steel work and equipment used for the jail's doors and cells. Another Jacksonville architect, Abner C. Hopkins drafted the plans for the 1954 addition, which gave the building its current irregular shape. Somewhat smaller and compatible with the original building, the addition reflects the 1938 building's design and materials. The O. P. Woodcock Company of Jacksonville supervised construction of the addition with the Roanoke Iron & Bridge Company of Roanoke, Virginia supplying the iron work for cells and doors. The Nassau County Jail has played an integral part of Nassau County's history since 1938. It served as the county's jail until a new facility was built in 1978. The Amelia Island Museum of History re-opened the historic jail to its adapted reuse as a museum in 1986. Trained docents tell the story of the Eight Flags of Amelia Island and the history of the old jail. The Amelia Island Museum of History is open seven days a week and serves over 30,000 people annually.

Historic Context

3 and Modern design

Florida's tenth county jurisdiction, Nassau County was created by Florida's Territorial Legislature in 1824. A German name applied to a river and sound on the south side of the county, Nassau supported numerous plantations dotting the banks of the Amelia River, Nassau River, and St. Marys River in the colonial and antebellum periods. Established earlier in the century, the Town of Fernandina became the county seat. The major port in Nassau County, Fernandina was one of the largest towns in Florida and an important northeast Florida port in the decades before the Civil War. The population increased from 1,511 in 1830 to approximately

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3,000 in 1860. Built at the north end of Amelia Island, Fort Clinch protected the towns of Fernandina, Florida and St. Marys, Georgia. In 1861, Senator David Levy Yulee completed the Florida Railroad from Fernandina to Cedar Key. In the process, he moved Fernandina from its original Old Town site at the north end of the island to a new location farther south on the Amelia River.

The Civil War forced most construction plans to be shelved, particularly after March 4, 1862 when a force of 15,000 Union troops on twenty ships arrived from Hilton Head Island. The Confederates abandoned the island without a fight and most of Fernandina's citizens fled the town. By contrast, within a few months of the Federal invasion hundreds of runaway slaves arrived on the island, moved into Fernandina, and many able-bodied male ex-slaves joined the Union army. During his tour of the South with Chief Justice Salmon Chase in 1865 journalist Whitelaw Reid found the Yulee residence to have a senatorial look "among the forsaken-looking wooden buildings," which otherwise made up the town. John Muir, the naturalist who passed through Fernandina in 1867 on a 1,000 mile walk, only commented that he walked off a "...ramshackle pier into a ramshackle town." Both returning black veterans and the white citizenry rebuilt Fernandina. Notably, one of the first elections in the South that included both black and white voters during Reconstruction occurred in Fernandina's mayoral election of 1865.

Beyond fishing and the railroad, the economy of Nassau County consisted of agriculture, lumber, naval stores, and tourism. County government reorganized following the Civil War. Many meetings were consumed with the typical issues associated with ~~government and politics, that is,~~ the collection of tax revenues, elections and constitutional offices, roads and bridges, the county's poorest residents, and crime and punishment. In the process, the board of county commissioners acted upon petitions to create new roads and construct bridges, set millage rates, and constructed public buildings, including a courthouse and jail in Fernandina.

The late nineteenth century was Fernandina's Golden Age (1870-1910) when an influx of investors businessmen helped to transform Fernandina. Some of the growth spilled over into the county as naval stores and timber reserves were harvested. Fernandina became a winter resort and an arena in which freed slaves worked to retain the rights and freedom they had won in the Civil War. It was a time of boundless economic optimism for the town. Part of that development was the construction of a county courthouse on Centre Street and a county jail several blocks to the southwest. In addition to public buildings, numerous fashionable residences were built, including the Fairbanks House (NR 1973), fondly called Fairbank's Folly. The Italianate gem was designed by prominent architect Robert S. Schuyler, who also drafted the plans for the ~~designed~~ St. Peter's Episcopal Church, the Tabby House (NR 1973), the 1886 School House, and the Hirth House. The Egmont Hotel opened in 1880 and gained a reputation, not only as the best of the eight hotels on the island, but one of the best in the nation. It was located just three blocks from the jail, and visitors to the hotel passed by the fine new jail on the way to the hotel. In 1877, General Grant visited the island at the beginning of his world tour and was feted in Fernandina. By 1880, the town had entered an economic boom. Initially, most commercial

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buildings lining Centre Street were constructed with wood. Brick became the material of choice after devastating fires burned most of Centre Street in 1876 and 1883.

The county's population expanded in the late nineteenth century, climbing from 6,635 in 1880 to 8,294 in 1890 and reached 9,654 in 1900. The growth of Fernandina played an important role in the population boom, expanding from 1,722 in 1870 to 2,562 in 1880. The introduction of new railroads and an increase in port traffic contributed to the county's growth. Beyond Amelia Island, Fernandina, and the towns of Callahan and Hilliard, Nassau County extended over 650 square miles to include the unincorporated communities of Andrews, Boulogne, Brickyard Landing, Bryceville, Chester, Crackertown, Crandall, Crawford, Dahoma, Dyal, Evergreen, Franklinton, Frink, Gross, Inglehome, Italia, Keene, Kent, Kings Ferry, Lessie, Mattox, Nassauville, O'Neil, Orange Bluff, Ratliff, Romulus, Wilds Landing, Woodstock Mills, and Yulee. The naval stores, railroad, and turpentine industries played an important role in the founding and development of most of those communities.

With growth came an increase in crime. Presumably, the initial county jail was contained within the first Nassau County Courthouse between the 1820s and 1870s. A subsequent courthouse was completed Fernandina in 1891, complete with a lock-up for prisoners awaiting arraignment and trials, but by then a separate county jail had been built. In 1868, the Nassau County Board of County Commissioners took its first tentative steps to create a stand-alone county jail. In December of that year the board authorized the sheriff to develop plans for a jail, but the initiative failed. Then, on 23 May 1871 the county government purchased land south of Fernandina's downtown and east of the railroad tracks for use as a county jail. Standing northwest of the intersection of Cedar Street and Third Street, the initial jail consisted of a one-story wood frame building completed in 1878. The county government responded to jail breaks in the early 1880s by improving its selection of jailers and locking mechanisms. In one well-publicized case from 1880 a local resident was robbed on the train from Cedar Key. He left the train and telegraphed ahead to the justice of the peace in Fernandina who met the train with several deputies and conveyed the suspect to the jail for the night. When the justice of the peace returned the next morning, the accused was gone. Suspecting the jailer of releasing him, the justice of the peace arrested the jailer and had him held in his own jail. By 1884, the jail had grown in size with a two-story main building with a supporting stockade and outbuildings. By 1909, the aging nineteenth century jail had yielded to a two-story brick building with a single outbuilding known as a calaboose, a colloquial term for a city lock-up or dungeon.

Supported by constables and justices of the peace, the sheriff's department provided law enforcement over unincorporated Nassau County. Deputized officers delivered suspects arrested for criminal activities to the jailer at the Nassau County Jail for processing and incarceration. Jailed suspects formally charged with criminal activities were transported from the jail to the Nassau County Courthouse approximately four blocks northeast for arraignments and trials. Suspects who failed to meet a bond set by the court were held on remand in jail until trial. Some of the accused found guilty were sentenced to the county jail, generally for terms of one year or less. Longer sentences were carried out in the Florida State Prison at Raiford.

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Growth in Nassau County persisted in the first half of the twentieth century, increasing from 9,654 in 1900 to 11,340 in 1920. By 1907, the county contained 138 miles of mainline railroads and along with the development of U. S. Highways 1, 17, 23, and 301 and State Road A1A in the 1920s and 1930s brought visitors, new homeowners, and businessmen into Nassau County. The development of the Intracoastal Waterway and bridges over the Amelia River and the St. Marys River provided greater access for residents and visitors alike, and more crime into the region. The Era of Prohibition (1918-1933) prompted Nassau County's sheriff's department to launch periodic raids on moonshine stills and destroying barrels of moonshine. The United States Coast Guard installed a base at Fernandina in the late-1920s to help curb rum-runners along the north Florida and south Georgia coasts. Entered into Nassau County's criminal bench docket books, other common forms of criminal activities included arson, assault, embezzlement, grand theft, interfering with an officer in the discharge of duty, larceny, manslaughter, murder, and rape. The end of prohibition closed an important chapter in the history of criminal activity in Nassau County. The shrimping industry thrived along the coast and the introduction of the factories by the Fernandina Pulp & Paper Company, Nassau Fertilizer & Oil Company, and Kraft Corporation brought new jobs to the county. Notwithstanding those new opportunities, the Great Depression coupled with joblessness and hunger ushered in a new period of criminal activities. Motivated by the desperate times, some residents relied on embezzlement and larceny just to fulfill their basic needs.

Some relief measures associated with the New Deal, including the Civilian Conservation Corps (CCC) and Public Works Administration (PWA), alleviated the harshest effects of the Depression, but few municipal governments in Nassau County took advantage of the programs. World War II lifted the economy out of the Depression. By 1945, the United States government had allocated more resources to the war and supported more construction projects than anytime in its history. In nearby Jacksonville, the Department of the Navy established Naval Air Station Jacksonville, which was supported by various outlying fields, including an emergency facility at Callahan in west Nassau County. By 1950, the county's population had climbed to 12,811 and responding to that growth and Florida's image as a tourist and vacation destination the municipal government at Fernandina changed the city's name to Fernandina Beach in 1947. Between 1950 and 1957, the county experienced a twenty-five percent increase in population and in 1960 the county's population reached 17,189.

Historical Significance

The construction of the Nassau County Jail during the Great Depression was precipitated, in part, by a report received in 1936 by the county government from Jesse Elliott Creech, a Jacksonville inventor and inspector of correctional institutions, county jails, and state convicts for the board of commissioners of state institutions. The board of county commissioners then consisted of chairman John T. Ferreira, Pasco Jones, Harry F. Sahlman, C. J. Walker, and K. K. Wilds. Creech cited the county government for the general poor condition of its aging nineteenth century jail and especially the building's inadequate cells, plumbing, cots, and bedding. In addition, Creech found the county's stockade at Hilliard in a similar poor state of repair. Only five years earlier, the

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Florida Federation of Women's Clubs had taken a statewide survey of Florida's county jails and found the condition of those facilities less than ideal and in some cases worse than during a similar study conducted nine years earlier. The Club cited inadequate medical care, unsanitary conditions and structures, lack of education and rehabilitation measures for inmates, enforced idleness of prisoners, and a fee system of 65¢ paid by various counties to its sheriffs for board for each incarcerated person. Responding to the state official, Nassau County's commissioners, for their part, promised to improve the condition of both facilities and subsequently made a few repairs to the jail. A two-story masonry building, the jail had been constructed about 1891 to complement a new courthouse built the same year on Centre Street (FWP 1939:111; NCBCCM Book 9).

1909 p. 8.3

In April 1937, after making additional repairs to the jail, the county determined to replace the building. That month, the board instructed its clerk to contact Jacksonville architect Roy A. Benjamin about his availability to design a new jail for the county. Responding quickly to the unsolicited work, Benjamin submitted a proposal to design a new county jail in May 1937. Benjamin agreed to prepare the preliminary sketches, working drawings and specifications, take bids, let contracts, and supervise the work. The next month, Winter Park architect James Gamble Rogers, II, solicited the board with his services, but by then Benjamin's services had been secured. In June 1937, after being hired by the board, Benjamin indicated that "...the present jail will be safe to handle prisoners for the next sixty days or probably longer, at which time it is hoped the new jail will be pretty well on the way." Benjamin completed the jail plans on 23 July 1937 and submitted the plans to the board later that month. Reflecting the decline in the construction business associated with the Great Depression and the accelerated bidding process laid out by county officials, the board received construction bids from several Jacksonville firms by 11 August 1937. The bidders consisted of Charles J. Davis, Inc., R. H. Gallespie, W. T. Hadlow, George Haydock, J. M. Raymond Construction Company, Ivy H. Smith Company, and the O. P. Woodcock Company. The board submitted the bids to Benjamin for evaluation and recommendation. Later that month, Benjamin recommended that the board approve the bid of \$19,361 submitted by Charles J. Davis, Inc. for construction and the steel work and equipment bid of \$10,069 submitted by the Decatur Iron & Steel Company. Davis's contract stipulated that the contractor would "...demolish the present old two story Jail Building, and will erect and complete a two-story jail building on the property now occupied by the old jail building..." He agreed to have the new jail "...substantially completed on the 1st day of January, 1938." To streamline the process and further reduce costs, at the county's request Benjamin submitted an addenda to his original specifications, which included omitting the parapet wall on the rear elevation, the cast stone belt along the first floor, and furring in and plastering the jailer's office. Demonstrating the completeness of Benjamin's architectural services, the Jacksonville architect included a section on Special Jail Equipment in his specifications, which were used by the Decatur company to formulate its bid. Unfortunately, those documents have been lost (NCBCCM Book 9).

— 1937 continuation

Running slightly behind schedule, Davis appeared before the board of county commissioners at their regularly scheduled meeting on 16 February 1938. The contractor indicated the jail was complete and the commissioners agreed to visit the building following the meeting. Approving the work, the board made its final settlement with

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Benjamin and Davis at a special session designated for that purpose on 28 April 1938. Satisfied with Benjamin's work on the jail, the board turned to the architect to design a new county hospital, a design that was later rejected (NCBCCM Book 9).

J. C. Colson served as Nassau County's jailer between the late 1930s and the 1950s. A county employee supervised by the sheriff's department, Colson worked closely with deputies to receive and process suspects, incarcerate inmates, transport prisoners between the jail and courthouse, and maintain a secure facility. He supervised several guards, including Owen Barnard whose responsibilities included standing night watch. In 1938 alone, the first year of operations for the new jail, Colson reported the cost of handling the prisoners, that is, booking them and escorting them between jail and courthouse, as \$448.75. In contrast, the jailer reported that the cost to feed inmates during the first six months of operations as \$125. Between the late 1930s and 1950s, Colson's annual salary increased from \$270 to \$350 (NCBCCM Book 9). *? each - ? each insurance*

~~As an arm of the county's law enforcement department,~~ Colson held an appointed post and over time worked closely with two Nassau County sheriffs, ~~an elected position~~. A resident of Hilliard with vast landholdings and a saw mill, Andrew J. Higginbotham served as Nassau County sheriff for nearly forty years, a period spanning the 1910s through the 1940s. In 1944, after several failed bids to win the top post, Henry J. Youngblood won election as Nassau County sheriff. A native of Nassau County, Youngblood initially worked as superintendent of the county's road department in the 1920s and 1930s. Because of his wide travels across the county Sheriff Higginbotham deputized Youngblood. Aspiring to a better paying county position, Youngblood won the sheriff's election in the mid 1940s and held the post for several decades. Deputized officers working under Higginbotham and Youngblood between the 1930s and 1950s included Joseph Hendricks, D. B. Higginbotham, Arthur Hunt, L. W. Pickett, O. Z. Rowe, Clement P. Rutishauser, P. H. Sauls, Ben Scott, H. S. Skipper, S. D. Trego, and E. A. Yates. The sheriff's department ~~also worked closely with several constables in Nassau County's unincorporated communities to protect citizens, apprehend law breakers, and arrest suspects.~~ In 1950, Youngblood hired Jeremiah Mattox, the first African-American to serve in county law enforcement; Mattox patrolled the African-American communities on Amelia Island, but was deputized to make arrests only in those areas. He was killed in 1954 while responding to a domestic dispute south of Fernandina Beach, the first black sheriff's deputy killed in the line of duty in the State of Florida. In addition to these deputy sheriffs, bailiffs who often escorted inmates from the jail to the nearby courthouse for arraignment and trial included John Cone and S. A. Sapp. These law enforcement officials were on a daily basis in the jail ~~participating in the process of law and order, crime and punishment in Nassau County~~ between the 1930s and 1950s (NCBCCM Book 9; Johannes 2000:11, 12, 45, 249, 274, 315).

In addition to housing drunks ~~found wandering the streets late at night~~, the jail served its larger purpose of holding persons charged with violent crimes, such as larceny, murder, and rape. Beyond the jailer, guards, and law enforcement officials conducting affairs in the jail were various lawyers representing defendants accused of these and other crimes. Some of the attorneys who consulted with their clients in the jail included Frank D.

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Brennan, Mabry Carlton, Thomas G. Hall, Lester W. Jennings of Jennings & Coffee, Thomas M. Linton, L'Engle & Kelly, and Frank D. Upchurch. Some of these defense attorneys represented high-profile murder cases in Nassau County, became involved in state politics, and held other posts in the legal and legislative systems. Most were from Jacksonville and St. Augustine. Mabry Carlton opened his law practice in Jacksonville in 1930 and later became a Duval County judge. Representing Nassau County, Frank D. Upchurch served in the Florida Legislature in the 1920s, but then moved his law practice to St. Augustine in the 1930s and served as a delegate from St. Johns County from Florida in the Democratic National Convention in 1948. Nassau County's prosecuting attorneys of the period included Thomas J. Shave and J. B. Stewart. Circuit court judges presiding over these cases in the seventh judicial circuit included Bayard Shields and W. A. Stanly. Criminal bench docket books and other official documents provide details of attorneys, inmates, arraignments, and trials, and many of the criminal activities in Nassau County during the period and the names of those incarcerated in Nassau County Jail between the 1930s and 1950s (NCCBD Book 4; Dovell 1952 4:669-670).

Dozens of suspects jailed between the 1930s and 1950s for more serious crimes included Charles Armstrong for grand larceny, Della Fullwood for first degree murder, Charles Henley for manslaughter, and Lawrence Verdier for assault with intent to commit murder. After processing and booking into the jail, the suspects awaited arraignment and some bonded out of the facility. Others, failing to obtain a bond, were held on remand in the jail until trial. Most arraignments and trials occurred in a speedy and timely fashion. Jailed for first degree murder in October 1941, Flora Bell Wilson was arraigned later that month and after several continuances filed by her attorneys, L'Engle & Kelly of Jacksonville, was found not guilty in a jury trial in February 1942. Accused of killing her husband, Vander Fullwood, Della Fullwood was jailed and arraigned in February 1942. Found guilty on a reduced charge of second degree murder on 1 June 1942, Fullwood was sentenced by Judge Shields to thirty years hard labor at Florida State Prison at Raiford. Also charged with second degree murder, Brantly Hicks was found guilty in February 1942, but was sentenced to only three years hard labor at Raiford. Other persons charged with murder and jailed at the Nassau County lockup for a period included Herman Conner, Roscoe Dixon, Fred Higginbotham, Ernest Hinson, the Melzer brothers H.C., Paul, and W.H., and Allen Rowe and William Rowe (NCCBD Book 4).

In one bizarre case, deputy Rutishauser shot William King of Fernandina Beach while trying to arrest him in early 1949. After transporting King to the jail, Rutishauser worked with Colson, but could not stop the bleeding and drove the suspect to nearby Nassau County Hospital. After stabilizing the patient but finding the bullet had shattered the bone and severed a main blood vessel, Dr. H. B. Dickens, Jr., ordered the law enforcement officials to transport the suspect to Brewster Hospital in Jacksonville to "...save his life." After the operation, deputies transported the World War II veteran to the Veteran's Administration Hospital in Lake City to recuperate. By August 1949, the deputies had returned King to Fernandina Beach, where he was incarcerated in Nassau County Jail for arraignment and trial. Several unusual court cases unfolded, in part, in the Nassau County Jail. Charged with breaking and entering with intent to commit a misdemeanor, Jacob Wall remained in jail between April and June 1942. In the later month at a subsequent hearing, Judge Shields ruled Wall to be

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insane and sentenced him to Florida State Hospital at Chattahoochee. In October 1942, after admitting thirteen-year-old Kenneth York into the jail, Colson caught the youth with a concealed a weapon that he intended to deliver to a relative. The jailer disarmed the youth and then placed him in a holding cell for formal charges and arraignment. Subsequently, the state attorney charged the youth with conveying a weapon into Nassau County Jail to aid an escape. At his arraignment, York pleaded guilty and Judge Shields released him from jail, remanding the juvenile to the custody of the Nassau County Sheriff for further appropriate proceedings. Other youths placed in jail temporarily included fifteen-year-old Willie Walthour, Jr. and fourteen-year-old James Wallace. Arrested for armed robbery, the youths allegedly perpetrated the crime with James Williams, an adult, but all were found not guilty in Judge Shield's courtroom in February 1943. In February 1955, A. A. Justice pleaded guilty to willful and intentional burning of woods and received a sentence of one year of hard labor at Florida State Prison (NCCBD Book 4; NCBCCM 11).

Many of the court's sentences were completed in Nassau County Jail. Those included a ten-month sentence for Beulah Benton who the court found guilty of breaking and entering with intent to commit a misdemeanor; Jasper Jones for six months at hard labor for embezzlement of less than \$50.00; and six and three month sentences for Sarah Hooper and Altamese Hooper, respectively, for interfering with an officer in discharge of duty. In 1954, Charles Armstrong received a sentence of nine months hard labor at Nassau County Jail for grand larceny. Perhaps the harshest sentence handed down by the court during the period to be served in the jail went to Clyde Pritchett. In 1943, Judge Shields sentenced the forty-year old to one year hard labor at Nassau County Jail for assault with intent to commit murder (NCCBD Book 4).

By the early 1950s, an increase in the size of county government and the rates criminal activities and incarceration in Nassau County had increased sufficiently to compel the board of county commissioners to expand the courthouse and county jail. Providing continuity over county politics during the era, John T. Ferreira still served as the chairman of the county commission. Other commissioners included Harry L. Dunman, McKendree, Shaffer, and Walker. In their September 1953 meeting, the commissioners enacted a resolution for the "...remodeling and erecting additions to the Nassau County Courthouse and modernizing the Nassau County Jail and erecting additions thereto..." Passing a special building tax, the commissioners and the county engineer estimate the combined projects would amount to \$250,000. Later that year, the board hired Jacksonville architect Abner C. Hopkins to draft the addition plans for the courthouse and jail. The board publicly advertised the projects and opened the bids in December 1953, but rejected the two bids from the Auchter and Woodcock companies of Jacksonville as too costly. The county re-advertised the bids and opened those submitted by Jacksonville contractors Clyde P. Knowles and Oscar P. Woodcock in March 1954. After reviewing the documents, the board awarded the jail contract for \$57,406 to the Woodcock company and the Knowles company received the bid for the courthouse expansion. In addition, the board awarded the equipment and iron work for the jail addition, amounting to \$19,700, to the Roanoke Iron and Bridge Works, of Roanoke, Virginia. In addition to fabricating and installing its own iron cells and doors, the county stipulated that the Virginia company install a "Patented Creech Cell" in the jail. Patented in 1943 by Jacksonville, Florida inventor

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Jesse Elliott Creech and a former prison inspector, the cell was designed specifically for "...confining violent prisoners and mental patients, the salient objects being to safeguard the occupants of the cell against self-inflicted ~~for~~ injuries as far as possible, to prevent the occupant from damaging the cell, and to provide for convenient and thorough cleansing of the cell" (NCBCCM Book 11; United States Patent Office 1943: Patent#2,323,455).

Construction began in early 1954, but delays in the shipment of steel and iron slowed progress. In August 1954, Sheriff Youngblood expressed concerns about the quality of some of the workmanship. Although Woodcock took some steps to address the sheriff's concerns and those of several commissioners, at the scheduled final inspection in October 1954 the board refused to accept the project. At the next inspection, the sheriff and board found Woodcock had "...remedied all things pointed out as not complete or needing changing to comply with plans and specifications..." In November 1954, architect Hopkins conducted his final inspection and provided his closing certificate, turning over the addition to the county government (NCBCCM Book 12; *Fernandina Beach News-Leader*, 27 August 1954).

The addition nearly doubled the size of Nassau County Jail. New spaces included a desk clerk's office with two guest rooms, lockers, and showers. Four cells and two day rooms for inmates occupied spaces on the first floor and six cells with sixteen bunks radiated across the second floor. Built during the period of segregation, the addition provided the necessary accommodations to uphold the "separate, but equal" constitutional clause. Prior to 1954, black and white inmates in Nassau County Jail often faced overcrowded cells with upwards of four or five persons incarcerated in a single cell for brief periods. The addition included what became known as the "Black Bull Pen" for African-American male prisoners on the second floor in the original building. White males were imprisoned in cells on the second floor of the addition. On the first floor of the addition, white females were held in three iron cells separated by a solid partition from three additional iron cells reserved for black women. Annis Moore-Littles stated that when she and her husband lived on the first floor of the original part of the jail Sheriff McKendree ended the segregation of deputies at meal times (Interview with Annis Moore-Littles and daughter, Cindy, conducted by Marlene Schang and Suanne Thamm 1999; *Fernandina Beach News-Leader*, 27 August 1954).

? when 1954?

Architectural Context

The Oxford English Dictionary defines a jail (gaol) as a French term for "a place or building for the confinement of persons accused or convicted of a crime or offence. Now, a public building for the detention of persons committed by process of law." Other dictionaries define the term as a detention building for persons awaiting trial or convicted of minor offenses. Typically, jails are intended to hold persons awaiting trial or convicted of minor offenses and serving sentences of less than one year, whereas prisons incarcerate inmates convicted of significant crimes or sentenced by a court to longer sentences. Jails historically have operated in the shadow of prisons, which have informed their general design and operation features.

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~~A correctional institution used to detain persons who are in the lawful custody of a government,~~ a jail is a specific type of building designed for a singular purpose. The word jail often evokes images of solid masonry buildings with stark forbidding walls spiked with watchtowers, armed uniformed guards, and tall fences supported by barbed and razor wire. Historically a jail in a small town or county initially consisted of a small one-story wooden building that yielded to a larger masonry building as the community grew in population and criminal activity. Some jails were ornate masonry buildings with cast stone walls, turrets, and castellated parapets; others were relatively simple brick buildings. Generally constructed with load bearing walls, jails were sometimes built adjacent to a courthouse or city hall, but more often as a free-standing building generally separated from commercial buildings in a downtown with a cleared paved area around the building that enhanced security and identified its specialized function. In other cases, a jail was incorporated into the design of a county courthouse or town hall with iron bars in the fenestration and a high fence protecting a flat-roof jail section of the larger building.

Architectural historian Henry Hitchcock-Russell once observed that America's first great contribution to architectural thought was through its novel designs of jails and prisons, which conveyed a sense of the "strictly social and organizational." As early as 1790, the City of Philadelphia introduced individual cells into its Walnut Street Jail, a typical colonial building that previously had permitted the intermingling of convicts of every crime and description in large rooms. Cellular construction followed in the 1820s with Eastern Penitentiary and Sing Sing, and New Jersey State Prison in the 1830s. Nineteenth century jails and prisons evolved, in part, using the Auburn System in which inmates worked together during the day and were locked into solitary cells at night. The primary architectural feature of the Auburn System consisted of a cell block where cells were placed back-to-back with air space between the cell block and outer walls. Prison and jail design, however, was generally a low-priority, if necessity, for local governments. Consequently, many architects turned to existing models for new facilities. The 1840s Charles Street Jail in Boston offered H. H. Richardson a model for his 1880s boldly massed Allegheny County Courthouse and Jail in Pittsburg, and Jeremy Bentham's circular Panopticon in England from the eighteenth century served as the model for Illinois State Penitentiary of the 1920s. ~~In some cases, some counties replaced an aging masonry building with a larger, stronger, and newer facility of similar materials and design.~~

kept ~~The primary reason for the existence of jails is that society through its system of courts finds it necessary to separate and isolate people who have broken a law. Efficiency and economy in separating and guarding inmates were historical guiding principles in jail design and construction. Jail and prison reform movements periodically responded to civic outcries to rehabilitate inmates. In designing these buildings, jail architects were generally confined to a relatively simple criterion, that is, to detain persons. Within that criterion, architects were left wide latitude to select a specific architectural solution to the general need. The design catered to jailers, law enforcement officers, offenders, and the public to provide constant control of inmates to avoid their escape and unwanted contact between prisoners within the jail population, guards and law enforcement officials, and members of the community. Architects generally provided a complex structure that accounted for several~~

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factored, including secure accommodations, gender segregation and various categories of inmates, sanitation and hygiene, daily routines of the jailer, guards, and inmates, and opportunity for exercise and physical activity. In the American South, many jails provided accommodations for African-American and Caucasian inmates between the 1890s and 1950s predicated on the Plessy v. Ferguson "separate, but equal" clause. Interior spaces of jails generally included booking and processing room, individual cells, galleries, jailer and/or guard quarters, a public entrance, and a sally port.

Architects

Roy A. Benjamin

Jacksonville architect Roy A. Benjamin drafted the plans for the original 1938 jail. A charter member of the Florida Association of Architects, Benjamin was the 31st architect to be granted a license to practice his craft in Florida by the Florida State Board of Architecture. Relocating from Ocala to Jacksonville in 1902, Benjamin opened his practice about 1905 and contributed to the rebuilding of Jacksonville following its devastating May 1901 fire. Between 1919 and 1924, he associated with Mellen Greeley, another prominent Jacksonville architect. Benjamin's landmark projects included Jacksonville's Chamber of Commerce Building, Elks Club Building (NR 2000), Jewish Center, Otis Elevator Building, Park Lane Apartments, Scottish Rite Temple, and State Board of Health Building. Benjamin's elaborate Tudor Revival Cheek Mansion on River Boulevard was completed in 1929 by Charles J. Davis, Inc., one of the few projects other than Nassau County Jail in which the architect and builder collaborated on a project. Benjamin's school plans included Central School (NR 1998) in Putnam County and Nassau County's Public School No. 1 and Peck High School, both in Fernandina in the 1920s. Beyond the Nassau County and Putnam County schools, Benjamin drafted the plans for the John Gorrie and Kirby-Smith junior high schools in Jacksonville. Despite his wide experience, Benjamin became best known as a theater architect, designing approximately 200 movie houses throughout the American South, including the Arcade Theater, Center Theater, Florida Theatre (NR 1982), Riverside Theater, and San Marco Theater in Jacksonville; Edwards Theatre (NR 1984) in Sarasota, Florida; the Saenger Theater (NR 1984) in Biloxi, Mississippi; and the Albany Theatre (NR 2006) in Albany, Georgia. Benjamin sold his practice after World War II to William Kemp, Franklin Bunch, and William Jackson who continue to operate as KBJ Architects, Inc. in the twenty-first century as Jacksonville's oldest architectural firm (Wood 1989:8; Dovell 1952 4:839-841; *Florida Times Union*, 29 January 1963, 10 October 1982; Florida Master Site File).

Abner C. Hopkins

Abner C. Hopkins prepared the plans for the 1954 addition. The 940th architect licensed to practice his craft in Florida by the Florida State Board of Architecture, Hopkins was born in Texas about 1903 and was graduated from Texas Agricultural & Mechanical University with a degree in architecture in the early 1920s. In 1928, after working in a Texas studio for several years, he moved to Jacksonville, Florida. Organizing his business in

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Florida after the collapse of the land boom proved difficult, but eventually Hopkins landed commissions in several fashionable neighborhoods, including San Jose and San Marco. During the late 1930s, Hopkins formed a partnership with Prentiss Huddleston, another Jacksonville architect who later relocated to Tallahassee. Specializing in residential designs, Hopkins initially operated his studio initially in the Mitchell Building, then West Forsyth Street, and later West Adams Street. A member of the American and Florida institutes of architects, Hopkins maintained his home on Ingleside Street in the 1930s and later moved to Julington Creek Road. Many of his early projects were in the San Marco neighborhood of Jacksonville, where he designed homes in the Classical Revival, Colonial Revival, and Tudor Revival styles. Many of his projects were in association with builders and developers Stockton & Company, Whatley, Davin & Company, and Victor Zambetti. A departure from earlier projects, Hopkins's Royal Crown Cola Bottling Company in 1938 embodied the International style and his 1941 Campus Art Theatre in Tallahassee displayed the trappings of the Art Deco style. Later, Hopkins projects reflected Minimal Traditional, Ranch, and Split Level associations. Beyond dwellings, Hopkins drafted the plans for Southside Christian Church and commercial buildings on San Marco Boulevard. In the 1930s and 1940s, Hopkins, along with architects Bernard W. Close, Jefferson D. Powell, D. Floyd Rosser, and Ivan H. Smith, drafted the plans for homes in several of Jacksonville's fashionable neighborhoods and at Ponte Vedra Beach. In 1940, Hopkins and several of these architects contributed to *Jacksonville Architecturally*, a coffee-table picture book showcasing notable projects they had completed during the late-1930s. Outside of Duval County Hopkins designed Lovett's Groceteria in Ft. Lauderdale, Florida in 1937, and in 1941 the Nassau County Hospital, a \$60,000 building in Fernandina. Hopkins competed for the hospital design with several other Jacksonville architects, including Roy A. Benjamin. Hopkins's practice found new energy after World War II and he practiced until just before his death in 1972 (*Florida Times Union*, 10 June 1972; Nassau County Jail File AIMH; Minutes, Board of County Commissioners, Nassau County, 14 April, 11, 17 August 1937, 28 April 1938, 11 September 1940, 4 August 1941).

Builders

Charles J. Davis, Inc.

A native of Florida born about 1891, Charles J. Davis, Jr. learned the construction trade in Jacksonville's frothy building boom that persisted between the Great Fire of 1901 and the years preceding World War I. In the 1920s, he expanded and then incorporated his construction company as Charles J. Davis, Inc. During the decade, Davis built some of his most important projects, which consisted of commercial buildings in Jacksonville's downtown, such as the Hamby Building and the South Atlantic Investment Company Building. But, most of his work was residential in the exclusive neighborhoods of Avondale, Riverside, and St. Nicholas. Davis's construction projects included designs by some of Jacksonville's leading architects, such as, Roy A. Benjamin, Henry J. Klutho, Jefferson D. Powell, and Marsh & Saxelbye. In 1937, contemporaneous with the construction of Nassau County Jail, Davis completed an addition to the McIver Residence, a fashionable home in Jacksonville's St. Nicholas neighborhood (Wood 1989:63, 80, 121, 125, 135, 148, 150, 165, 171, 232).

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O. P. Woodcock Construction Company

A prominent Jacksonville contractor, Owen Prescott Woodcock arrived in Florida's gateway city about 1893 and constructed various buildings until 1904, when he left for business opportunities in the oil fields of Pennsylvania. He returned to Jacksonville in 1905 and incorporated the \$100,000 Halsema-Woodcock Construction Company with builder J. C. Halsema. Several years later, Halsema and Woodcock ended their partnership with Halsema organizing the Florida Engineering and Construction Company and the latter establishing O. P. Woodcock Construction Company. During a career that spanned nearly six decades, Woodcock constructed dwellings and buildings in Duval County's beach communities of Atlantic Beach, Jacksonville Beach, and Neptune Beach, Ponte Vedra Beach, in Jacksonville's downtown, and the Jacksonville neighborhoods of Lackawanna, Riverside, North Riverside, San Jose, San Marco, and Springfield neighborhoods. His distinctive buildings and schools included Buckman & Ulmer Building, Cookman Elementary School, Eastside Elementary School, Elizabeth Swaim United Methodist Church, Fire Station No. 5, Fishweir Creek School, John Gorrie Junior High School, Kirby Smith Junior High School, Public School No. 3, and Willow Branch Library. In 1918, he completed a large addition to the Lackawanna Public School No. 10. In 1925, the Woodcock company built the Jacksonville Terminal Company's express terminal on Myrtle Avenue at a cost of approximately \$400,000. In 1942, Woodcock completed the Lane Drug Company Building on Park Street, one of Jacksonville's early examples of the Streamline Moderne style. His construction of Boston Avenue Elementary School in DeLand, Flagler County Courthouse in Bunnell, Hastings High School (NR 2006), and the 1954 addition to Nassau County Jail represent the few large projects completed by Woodcock outside of Duval County between the 1920s and the 1950s (*Jacksonville Florida Times-Union*, 3 November 1905, 25 June 1916, 10, 17 July 1917, 24 April 1952; Wood 1989:120, 141, 142).

Jail Iron & Steel Works Companies

Decatur Iron & Steel Works

The Decatur Iron & Steel Works, the contractors for the iron and steel cell and door works in the 1938 part of Nassau County Jail, was organized about 1910 in Decatur, Alabama. The company initially operated as a subsidiary of the Decatur Cornice and Roofing Company, a nineteenth-century metal works that specialized in decorative metallic roof shingles for dwellings and decorative cornices and storefronts on commercial buildings. By the mid-1930s, the iron and steel company operated on its own and in addition to its specialty of fabricating cells and doors for jails and prisons the company assembled bridges, primarily swing and lift spans. In the 1930s, H. R. Sears served as the company's president and A. L. Stephenson as its secretary. During World War II, the company re-tooled its metal works to meet some of the exigencies associated with war-time construction. Between 1942 and 1944 the Decatur Iron & Bridge Works built thirty-three steel Landing Craft Tank (LCT), amphibious assault vehicles operated by the United States Navy that carried tanks ashore during the allied invasion of Europe on D-Day in World War II. The company also fabricated thirty-nine steel tugboats for the

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number 8 Page 14

United States Army. Following the war, the company returned to its traditional iron and steel work. Important projects included the Frederick County Jail in Virginia in 1949 and the eight-story Queens Jail, part of the Criminal Courts Building complete with 360 cells in 1959. Important company officials included James W. Fitzpatrick, chief engineer of the jail and prison division, and civil engineer Forrest Anderson who worked as chief engineer of the architectural metals division. In 1957, three years after the addition was completed for Nassau County Jail, the iron and steel company acquired the patent from Perry M. Smith and James H. Whitfield for a new operating and locking mechanism for jail and prison doors (*New York Times*, 25 April 1959).

Roanoke Iron and Bridge Works, of Roanoke, Virginia

The Roanoke Iron and Bridge Works fabricated and installed the iron and cell work in the 1954 addition of Nassau County Jail. Organized in Roanoke, Virginia about 1905, the Roanoke Iron and Bridge Works built a variety of metal resources during the first half of the twentieth century, including bridges, jails, and decorative metal objects throughout the American South. Early projects included the 1912 Sharptown Bridge (HAER 1984) across the Nanticoke River in Maryland, the Cedar Creek Bridge in Roanoke, Virginia in 1929, and the Saluda Bridge No. 1 (HAER 1982) in Newberry County, South Carolina in 1930. In 1932, the company fabricated and installed the draw in the Wright Memorial Bridge that spanned Currituck Sound in Dare County, North Carolina. The company's jail work included the Frederick County Jail in Winchester, Virginia in 1949. That year, the company fabricated and installed the Roanoke Star on Mill Mountain (NR 1999) in Roanoke, Virginia, the world's largest freestanding illuminated man-made star. In 1951, several years before the company designed and installed jail cells in Nassau County Jail, the United Steelworkers Union of America reached an agreement with the Roanoke Iron and Bridge Works in the union's first collective bargaining agreement with a major iron works company. The Virginia company endured into the late twentieth century, designing prison equipment in the Arlington County Police Facility and Detention Center in Arlington, Virginia; Bibb County Jail in Macon, Georgia; North Carolina's state prison at Caledonia; and Attica Correctional Facility in Attica, New York. Eventually the company was acquired by Crowder Detention Equipment Parts & Service, Inc., a leading American detention equipment contractor based in Indiana (*Washington Post*, 8 July 1972; *New York Times*, 17 July 1977).

Architectural Significance

Nassau County Jail possesses significance for its Masonry Vernacular construction with Modernistic influences. Its masthead, solid brick utilitarian massing, and unusual fenestration symbolize a building developed for a particular function. Displaying an irregular shape, the building has a straight parapet with cast stone coping, translucent glass blocks accented by cast stone fleur-de-lis floral patterns, cantilevered ledge projecting over the east entrance, and red brick walls accented by basket-weave bond patterns and slender belt courses of brick and cast stone. Slightly projecting and receding surfaces contrast with the horizontal bands and emphasize the

**United States Department of the Interior
National Park Service**

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CONTINUATION SHEET**

Section number 8 Page 15

building's verticality at the south entrance and corner window fenestration. A masthead on the east façade spells out Nassau County Jail. Original metal doors and an iron cage at the south entrance remain prominent features identifying it as a jail. The features and floor plan of the original 1938 building, 1954 expansion, and 2007 addition with alterations are readily apparent in its present museum incarnation.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number 9 Page 1 Nassau County Jail
Fernandina Beach, Nassau Co., FL
Bibliography

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- Wood, Wayne. *Jacksonville's Architectural Heritage*. Gainesville: University of Florida Press, 1989.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section number 9 Page 2 Nassau County Jail
Fernandina Beach, Nassau Co., FL
Bibliography

Interviews and Statements

Cotner, John, Architect. Interview with Carmen Godwin. Interview at the Amelia Island Museum of History, February 20, 2007.

Moore-Littles, Annis and Cindy Moore. Interview with Marlene Schang and Suanne Thamm. Interview at Amelia Island Museum of History, November 4, 1999.

Richardson, Michael, Architect. Interview with Jim Longacre. Interview at the Amelia Island Museum of History, August 3, 2006.

Smith, Kenneth Architect. Interview with Susan Little. Interview at the Amelia Island Museum of History August 17, 2006.

Saylor, Sammy. Written statement at the old jail on August 7, 1980 regarding a hanging.



HISTORICAL STRUCTURE FORM

Electronic Version 1.1.0

Site #8 NA00287

Recorder # 440

Field Date 3/20/2007

Form Date 3/30/2007

FormNo 200703

FormNo = Field Date (YYYYMM)

First Site Form Recorded for this Site? NO

GENERAL INFORMATION

Site Name (address if none) Old Nassau County Jail

Multiple Listing (DHR only)

Other Names

>> Florida Museum of Trans. History

Survey or Project Name

Survey#

National Register Category Building(s)

LOCATION & IDENTIFICATION

Address

Street No.	Direction	Street Name	Street Type	Direction Suffix
233	South	3rd	Street	

Cross Streets (nearest/ between)

City / Town (within 3 miles) Fernandina Beach

In Current City Limits? YES

County Nassau

Tax Parcel #(s)

Subdivision Name

Block

Lot

Ownership

Name of Public Tract (e.g., park)

Route to (especially if no street address)

MAPPING

USGS 7.5' Map Name

Publication Date

>> FERNANDINA BEACH; 2003

Township:

Range:

Section:

1/4 section:

>> 3N ; 28E ; 23 ; UNSP

Irregular Section Name:

Landgrant

UTM: Zone

Easting

Northing

Plat or Other Map (map's name, location)

DESCRIPTION

Style International

Other Style

Exterior Plan Irregular

Other Exterior Plan

Number of Stories 2

Structural System(s)

>> Brick

Other Structural System(s)

Foundation Type(s)

>> Continuous

Other Foundation Types

Foundation Material(s)

>> Brick

Other Foundation Material(s)

Exterior Fabric(s)

>> Brick

Other Exterior Fabric(s)

Roof Type(s)

>> Flat

Other Roof Type(s)

Roof Material(s)

>> Tar & gravel

Other Roof Material(s)

Roof Secondary Structure(s) (dormers etc)

>> Flat extension

Other Roof Secondary Structure(s)

Number of Chimneys 2

Chimney Material Brick

Other Chimney Material(s)

Chimney Location(s) north exterior, north slope

HISTORICAL STRUCTURE FORM

8NA00287

DESCRIPTION (continued)

Window Descriptions 6/6, 4/4

Main Entrance Description (stylistic details) _____

Porches: #open 1 #closed _____ #incised _____ Location(s) southPorch Roof Types(s) flat

Exterior Ornament _____

Interior Plan _____

Other Interior Plan _____

Condition Good

Structure Surroundings

Commercial: _____ Residential: MOSTly this categoryInstitutional: SOME of this category Undeveloped: _____Ancillary Features (Number / type of outbuildings, major landscape features) shedArchaeological Remains (describe): none

If archaeological remains are present, was an Archaeological Site Form completed? _____

Narrative Description (optional) _____

HISTORY

Construction year 1938

Architect (last name first): _____

Builder (last name first): _____

Changes in Locations or Conditions

Type of Change	Year of Change	Date Change Noted	Description of Changes
>>			

Structure Use History

Use	Year Use Started	Year Use Ended	
			>> <u>Jail; 1938;</u>

Other Structure Uses _____

Ownership History (especially original owner, dates, profession, etc.) _____

RESEARCH METHODS

Research Methods _____ >> FL Master Site File-Cultural Resources

Other research methods _____

SURVEYOR'S EVALUATION OF SITE

Potentially Eligible for a Local Register? YES

Name of Local Register if Eligible _____

Individually Eligible for National Register? YESPotential Contributor to NR District? YES

Area(s) of historical significance _____

>> Community planning & development

Other Historical Associations _____

Explanation of Evaluation (required) The property appears to be potentially eligible at the local level under Criteria A and C in the areas of significance of architecture, politics/government, and social history.

HISTORICAL STRUCTURE FORM

8NA00287

DOCUMENTATION (Photos, Plans, etc.)

Photographic Negatives or Other Collections Not Filed with FMSF Including Field Notes, Plans, other Important Documents.

Document type: _____

Maintaining Organization: _____

File or Accession #: _____

Descriptive Information: _____

>> _____

RECORDER INFORMATION

Recorder Name (Last, First) Bland, MylesRecorder Address / Phone 7035 Phillips HWY Ste. 5-129 Jacksonville, FL 904-448-4429Recorder Affiliation Bland & Associates, Inc Other Affiliation _____Is a Text-Only Supplement File Attached (Surveyor Only)? NO

***** MASTER SITE FILE USE ONLY *****

Cultural Resource Type: SSElectronic Form Used: S110Form Type Code: NORMForm Quality Ranking: NEWForm Status Code: SCATSupplement Information Status: NO SUPPLEMENTSupplement File Status: NO SUPPLEMENT FILE

FMSF Staffer: _____

Computer Entry Date: 6/10/2007

SHPO's Evaluation of Resource

Data _____

Form Comments: _____

REQUIRED PAPER ATTACHMENTS

- (1) USGS 7.5" MAP WITH STRUCTURE PINPOINTED IN RED
- (2) LARGE SCALE STREET OR PLAT MAP
- (3) PHOTO OF MAIN FACADE, B&W, AT LEAST 3"X5"

NA00287-200703

Supplementary Printout

- > **USGS map name/year of publication or revision:**
FERNANDINA BEACH;2003
- > **Township/Range/Section/Qtr:**
3N ;28E ;23;UNSP
- > **Structural system(s):**
Brick
- > **Foundation types:**
Continuous
- > **Foundation materials:**
Brick
- > **Exterior fabrics:**
Brick
- > **Roof types:**
Flat
- > **Roof materials:**
Tar & gravel
- > **Roof secondary structures (dormers etc):**
Flat extension
- > **Change status/year changed/date noted/nature:**
- > **Original, intermediate, present uses/year started/year ended:**
Jail;1938;
- > **Research methods:**
FL Master Site File-Cultural Resources
Examine local property records
Pedestrian
- > **Area(s) of historical significance:**
Community planning & development
- > **Repositories: Collection/Housed/Accession#/Describe**
- > **[Other name(s)]:**
Florida Museum of Trans. History



PARCEL INFORMATION TABLE	
Selected Parcel	00-00-31-1800-0273-0150
GIS CALCULATED ACREAGE	0.4
Property Use	CULTURAL G
Land Use	COUNTY
OWNERSHIP INFORMATION	
Name	AMELIA ISLAND MUSEUM OF
Mailing Address	HISTORY 233 SOUTH 3RD ST; FERNANDINA BEACH, FL 32034
Situs/Physical Address	233 SOUTH 3RD ST
2006 PROPOSED VALUES	
Land Value	262,500



440

NA

287

**SEE SITE FILE STAFF FOR
ORIGINAL PHOTO(S) OR MAP(S)**

Site inventory Form

**SEE SITE FILE STAFF FOR
ORIGINAL PHOTO(S) OR MAP(S)**

SITE NO. *8NA287*

SITE NAME: Old Jail-Fla. Museum, Trans. His.

SURVEY DATE: 09/30/85

ADDRESS OF SITE: S. 3rd St.

INSTRUCTION FOR LOCATING:

LOCATION: City of Fernandina Beach

Subdivision Name

Block No. Lot No.

COUNTY:

DISTRICT NAME IF APPLICABLE: Fernandina Beach Historic

OWNER OF SITE: NAME:

ADDRESS:

ADDRESS:

TYPE OF OWNERSHIP:

RECORDING DATE: / /

RECORDER: NAME & TITLE: Historic Property Associates, Inc.

ADDRESS: P. O. Box 1002

St. Augustine, FL 32084

CONDITION OF SITE:

INTEGRITY OF SITE:

Check One

Check one or more

x EXCELLENT

x ALTERED

ORIGINAL USE jail

GOOD

UNALTERED

PRESENT USE museum

FAIR

x ORIGINAL SITE

DATES c. +1935

DETERIORATED

RESTORED: / /

CULTURE/PHASE American

MOVED: / /

PERIOD: 20th Century

NR CLASSIFICATION CATEGORY: building

DATE LISTED ON NR: / /

THREATS TO SITE: Check one or more

ZONING

TRANSPORTATION

DEVELOPMENT

FILL

DETERIORATION

DREDGE

BORROWING

OTHER (See Remarks Below)

AREAS OF SIGNIFICANCE: architecture

SIGNIFICANCE

See Continuation Sheet

RECORD NUMBER 464

ARCHITECT:

BUILDER:

STYLE AND/OR PERIOD: Art Moderne

PLAN TYPE: rectangular

EXTERIOR FABRIC(S): brick: running

STRUCTURAL SYSTEM(S): masonry

PORCHES: S&E/1-story entrance, stoop, 1-bay, access E; stoop
with recessed porch # S: metal entrance porch
ORIENTATION: SE

FOUNDATION: continuous: brick

ROOF TYPE: flat: built-up parapet

SECONDARY ROOF STRUCTURE(S):

CHIMNEY LOCATION:

WINDOW TYPE: DHS, 6/6, wood; paired

CHIMNEY:

ROOF SURFACING: built-up

ORNAMENT EXTERIOR: brick (red) #
metal # concrete

NO. OF CHIMNEYS 0

NO. OF STORIES 2

NO. OF DORMERS: 0

OUTBUILDINGS:

SURROUNDINGS:

SITE SIZE (approx. acreage) LT1

TOWNSHIP RANGE SECTION
3N 28E 22

UTM ZONE UTM EASTING UTM NORTHING

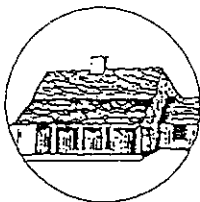
PHOTOGRAPHIC RECORDS NUMBERS:

CONTINUATION SHEET:

The Museum of Transportation History is located within a subdivision known as the City of Fernandina. The subdivision was laid-out on a series of Spanish land grants acquired by Domingo Fernandez, a ships captain and planter, and his family during the early nineteenth century. Following the acquisition of Florida by the United States in 1821, the heirs of Domingo Fernandez sold the land grants which contained the Eliza or Louisa and Yellow Bluff Plantations to David Levy Yulee, President of the Florida Railroad Company and the first United States Senator from Florida. The Florida Railroad Company recorded the plat of the City of Fernandina in 1857 and the Florida Town Improvement Company revised it in 1887 and 1901.

Constructed in c. 1935, it was originally used as the Nassau County Jail. It is a two-story masonry Art Moderne building. It is noteworthy for its metal, Moderne-style entrance porch, brickwork, and ornamentation. It has been significantly altered for future use as a museum.

☐ Original
☒ Update
 (give site#)



HISTORICAL STRUCTURE FORM
 FLORIDA MASTER SITE FILE
 Version 3.0 11/96
 Consult *Guide to Historical Structure Forms* for detailed instructions.

Site #8 NA287
 Recorder # _____
 Field Date / /
 Form Date 04/25/00

Site Name(s) (address if none) Old Nassau County Jail Mult

Survey Fernandina Beach

Survey # 8 NA287

National Register Category (Please check one: consult with Site File before using last four): ☐ building ☐ structure
☐ district ☐ site ☐ object

LOCATION & IDENTIFICATION

Address (Include N,S,E,W; #; St., Ave., etc.) 233 South Third Street
 Cross Streets (nearest / between) Cedar Street
 City / Town (within 3 miles) Fernandina Beach In Current City Limits: ☒ Yes ☐ No ☐ Unknown
 County Nassau Tax Parcel #(s) _____
 Subdivision name _____ Block _____ Lot _____
 Ownership (Please check one): ☐ private-profit ☐ private-individual ☐ city ☐ county ☐ Native American
☒ private-nonprofit ☐ private-unspecified ☐ state ☐ federal ☐ foreign ☐ unknown
 Name of Public Tract (e.g., park) _____
 Route to (especially if no street address) _____

MAPPING

USGS 7.5' Map Name & Date _____
 Township 3N Range 28E Section 22 ¼ section: ☐ NW ☐ SW ☐ SE ☐ NE ☐ Irregular-
 name: _____
 Landgrant Domingo Fernandez UTM: Zone ☐ 16 ☐ 17 Easting _____ 0 Northing _____
 0
 Plat or other map (map's name, location) _____

DESCRIPTION

Style* Art Moderne Exterior Plan* Rectangular Number of
 Stories 2
 Structural System(s) * Masonry
 Foundation: Type(s) * Masonry Material(s) * Brick
 Exterior Fabric(s) * Brick - Running Bond
 Roof: Type(s) * Flat - Built up parapet Material(s) * _____
 Roof secondary strucs. (dormers etc.) * _____
 Chimney: No. _____ Material(s) * _____ Location(s) * _____
 Windows (types, materials, etc.) * 6/6 DHS Single & paired, wood-framed

Main Entrance (stylistic details)
 Porches: #open _____ #closed _____ #incised _____ Location(s) S - Stoop with recessed porch
 Porch roof type(s) E - Entry stoop in center bay
 Exterior Ornament Metal canopy over recessed stoop

Interior Plan* Irregular
 Condition (Please check one): ☒ Excellent ☐ good ☐ fair ☐ deteriorated ☐ ruinous
 Surroundings (N = None, S = Some, M = Most, A = All/nearly all): S commercial A residential _____
 institutional _____ undeveloped _____
 Ancillary Features (No., type of outbuildings; major landscape features. Use continuation sheet for descriptions of interior, landscaping, etc) _____

Archaeological Remains _____ ☐ Check if Archaeological Form completed
 * Consult *Guide to Historical Structure Forms* for preferred descriptions (coded fields at the Site File).

DHR USE ONLY		OFFICIAL EVALUATIONS		DHR USE ONLY	
NR DATE	KEEPER-NR ELIGIBILITY	☐ Yes	☐ No	Date	
SHPO-NR ELIGIBILITY:	☐ Yes	☐ No	☐ potentially elig.	☐ insufficient Info	Date
DELIST DATE	LOCAL DESIGNATION:	Date			
Local office					
National Register Criteria for Evaluation ☐ a ☐ b ☐ c ☐ d. (See National Register Bulletin 15, p. 2)					

HISTORICAL STRUCTURE FORM

Site #8

Consult *Guide to Historical Structure Forms* for detailed instructions.

HISTORY

Construction date: Exactly 1878 (year) Approximately _____ (year) Earlier than _____ (year) Later than _____ (year)

Architect (last name first): _____ Builder (last name first): _____

Moves: ☐ yes ☐ no ☐ unknown _____ Dates _____ Original address _____

Alterations: ☒ yes ☐ no ☐ unknown ca 1935 Dates Exterior facade Nature _____

Additions: ☒ yes ☐ no ☐ unknown 1935, 1955 Women's Addition - 1955 Nature _____

Original Use* (give date ranges) Jail Second Floor Addition - 1935

Intermediate Uses* (give date ranges) _____

Present Use* (give date ranges) Museum 1986 - to present

Ownership History (especially original owner, dates, profession, etc.) Nassau County 1878-1997

* Consult *Guide to Historical Structure Forms* for preferred descriptions (coded fields at the Site File).

RESEARCH METHODS (check all boxes that apply; if needed write others at bottom)

- | | | | |
|--|---|--|------------------------------------|
| ☐ formal archaeological survey maps | ☒ past surveys search at FMSF | ☒ local library research | ☐ Sanborn |
| ☐ informal archaeological inspection subdivision maps | ☐ past sites search at FMSF | ☐ non-local library research | ☐ |
| ☐ Public Lands Survey (DEP) | ☐ FL Archives (Gray Building) | ☐ building permits | ☐ plat maps |
| ☐ tax records/property deeds | ☐ FL Photo Archives (Gray Building) | ☐ demolition permits | ☐ local |
| ☐ newspaper files | | | |
| ☐ tax records only | ☒ occupant/owner interview | ☐ commercial permits | |
| ☒ interior inspection | ☐ neighbor interview | ☐ occupation permits | |
| ☐ other methods (specify) _____ | | | |

SURVIVOR'S EVALUATION OF SITE (check and check one only)

Potentially eligible for local register? NA ☐ yes: name register at right ☐ no ☐ insufficient info Name of local register if eligible _____

Individually eligible for National Register? ☐ yes ☒ no ☐ insufficient info _____

Potential contributor to Nat. Reg. district? ☒ yes ☐ no ☐ insufficient info _____

Area(s) of Historical Significance (See *National Register Bulletin 15*, p. 8 for categories: e.g. "architecture", "ethnic heritage", "community planning & development", etc.) _____

Explanation of Evaluation (required, whether positive or not; limit to three lines; attach longer statement, if needed, on separate sheet)

Located immediately outside boundary of historic district;
Reflective of Art Moderne alterations made ca 1935
Could contribute to enlarged district boundary

BIBLIOGRAPHY (Bibliography, Photos, Plans, etc.)

Bibliographic References (Use Continuation Sheet, give FMSF Manuscript # if relevant) _____

Photographs (required) B&W print(s) at least 3 x 5, at least one main facade.

Location of negatives & negative numbers _____

CONTACTS

Name (last name first) / Address / Phone / Fax / Email / Affiliation _____

Remember: Use a *Supplement for Site Forms* or other continuation sheet for descriptions that do not fit in the spaces above.

REQUIRED: (1) USGS 7.5' MAP WITH STRUCTURE PINPOINTED IN RED
 (2) LARGE SCALE STREET OR PLAT MAP
 (3) PHOTO OF MAIN FACADE, PREFER B&W, AT LEAST 3X5

7) APPLICANT INFORMATION UPDATE:

Please make any corrections necessary to update the following applicant information:

ORGANIZATION NAME: Amelia Island Museum of History

ADDRESS: 233 South Third Street

CITY: Fernandina Beach STATE: Florida ZIP: 32034

NAME AND TITLE OF

ORGANIZATION'S CHIEF OFFICER: Ms. Judith McCoy, Executive Director

DESIGNATED PROJECT MANAGER: Ms. Phyllis Davis

ADDRESS: 233 South Third Street

CITY: Fernandina Beach STATE: Florida ZIP: 32034

DAYTIME TELEPHONE NO: (904) 261-7378 EXT.: 100 FAX NUMBER: (904) 261-9701

EMAIL ADDRESS: phyllis@ameliamuseum.org

YOUR ORGANIZATION'S WEBSITE (if available): www.ameliameuseum.org

8) REVISED TENTATIVE PROJECT TIMELINE: On the graph below, indicate all major elements of the project for which funding assistance is requested, the anticipated time required to complete each element, and the planned sequence of these activities. Month 1 is the July 1, 2009 project start date. *Projects must be completed within 24 months.*

PROJECT ACTIVITY		MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17	18	19	20	21	22	23	24
A	Re-roofing		X	X	X																				
B	Building resto. (civ. def. room)		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
C	Fire alarm wiring improvement					X	X																		
D	Old jail doors- interior/exterior							X	X	X	X	X	X	X	X										
E	Old main entry- cleaning/painting															X	X	X	X						
F	Brick re-pointing														X	X	X	X	X	X	X	X	X	X	X
H	Architectural services		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
I	Site Drainage		X	X	X	X	X	X	X	X	X	X	X	X	X	X									
J																									

9) FOR ARCHAEOLOGY AND MUSEUM EXHIBIT PROJECT.

UPDATED PRINCIPAL INVESTIGATOR / CONSULTANT INFORMATION
and key project personnel, if known. Include curriculum vitae or resume for
This documentation must clearly demonstrate that the Principal Investigator meets
Professional Qualification Standards for Archaeologists or Historians. (Please
law/arch_stnds_9.htm)

Principal Investigator/Consultant: _____

Key Project Personnel:

_____	Responsibility: _____
_____	Responsibility: _____
_____	Responsibility: _____
_____	Responsibility: _____

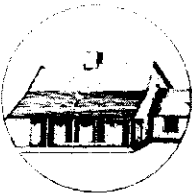
095-3652

Recorder info please.
JFM

gator
ent l.

al-

☐ Original
☒ Update



HISTORICAL STRUCTURE FORM

FLORIDA MASTER SITE FILE

Version 4.0 1/07

Site # **NA00287**
 Field Date 3-13-2018
 Form Date 3-13-2018
 Recorder # _____

Shaded Fields represent the minimum acceptable level of documentation.
 Consult the *Guide to Historical Structure Forms* for detailed instructions.

Site Name(s) (address if none) Nassau County Jail/Amelia Island Museum Multiple Listing (DHR only) _____
 Survey Project Name Fernandina Beach Historic Resource Survey Update Survey # (DHR only) _____
 National Register Category (please check one) ☒ building ☐ structure ☐ district ☐ site ☐ object
 Ownership: ☐ private-profit ☒ private-nonprofit ☐ private-individual ☐ private-nonspecific ☐ city ☐ county ☐ state ☐ federal ☐ Native American ☐ foreign ☐ unknown

LOCATION & MAPPING

Address: 233 S 3rd Street Suffix Direction
 Cross Streets (nearest / between) _____
 USGS 7.5 Map Name FERNANDINA BEACH USGS Date _____ Plat or Other Map _____
 City / Town (within 3 miles) Fernandina Beach In City Limits? ☒ yes ☐ no ☐ unknown County Nassau
 Township 3N Range 28E Section 23 1/4 section: ☐ NW ☐ SW ☐ SE ☐ NE Irregular-name: _____
 Tax Parcel # 00-00-31-1800-0273-0150 Landgrant _____
 Subdivision Name _____ Block _____ Lot _____
 UTM Coordinates: Zone ☐ 16 ☐ 17 Easting ☐ ☐ ☐ ☐ ☐ ☐ Northing ☐ ☐ ☐ ☐ ☐ ☐
 Other Coordinates: X: _____ Y: _____ Coordinate System & Datum _____
 Name of Public Tract (e.g., park) _____

HISTORY

Construction Year: 1938 ☐ approximately ☐ year listed or earlier ☐ year listed or later
 Original Use Detention center/Jail/Prison From (year): _____ To (year): 1978
 Current Use Art gallery/Museum/Planetarium From (year): _____ To (year): _____
 Other Use _____ From (year): _____ To (year): _____
 Moves: ☐ yes ☒ no ☐ unknown Date: _____ Original address _____
 Alterations: ☒ yes ☐ no ☐ unknown Date: _____ Nature Some windows; interior
 Additions: ☒ yes ☐ no ☐ unknown Date: _____ Nature Rear flat, 2-story extensions
 Architect (last name first): _____ Builder (last name first): _____
 Ownership History (especially original owner, dates, profession, etc.) County

Is the Resource Affected by a Local Preservation Ordinance? ☐ yes ☒ no ☐ unknown Describe _____

DESCRIPTION

Style Moderne Exterior Plan Rectangular Number of Stories _____
 Exterior Fabric(s) 1. Brick 2. _____ 3. _____
 Roof Type(s) 1. Flat 2. _____ 3. _____
 Roof Material(s) 1. Built-up 2. _____ 3. _____
 Roof secondary strucs. (domers etc.) 1. _____ 2. _____
 Windows (types, materials, etc.) 6/6 Dhs, paired

Distinguishing Architectural Features (exterior or interior ornaments) Decorative brick and concrete detailing; original jail signage; metal bar security entry cage; parapet

Ancillary Features / Outbuildings (record outbuildings, major landscape features; use continuation sheet if needed.) _____

DHR USE ONLY

OFFICIAL EVALUATION

DHR USE ONLY

NR List Date _____	SHPO - Appears to meet criteria for NR listing: ☐ yes ☐ no ☐ insufficient info Date _____ Init. _____
☐ Owner Objection	KEEPER - Determined eligible: ☐ yes ☐ no Date _____
	NR Criteria for Evaluation: ☐ a ☐ b ☐ c ☐ d (see <i>National Register Bulletin 15</i> , p. 2)

DESCRIPTION (continued)

Chimney: No. 0 Chimney Material(s): 1. _____ 2. _____
 Structural System(s): 1. Brick 2. _____ 3. _____
 Foundation Type(s): 1. Continuous 2. _____
 Foundation Material(s): 1. Brick 2. _____
 Main Entrance (stylistic details) Original/E, metal security door w light; current/N modern glass and metal frame
double doors and entry w canvas awning
 Porch Descriptions (types, locations, roof types, etc.) Entry/E, open stoop w flat metal awning

Condition (overall resource condition): ☒ excellent ☐ good ☐ fair ☐ deteriorated ☐ ruinous

Narrative Description of Resource _____

Archaeological Remains _____ ☐ Check if Archaeological Form Completed

RESEARCH METHODS (check all that apply)

☒ FMSF record search (sites/surveys) ☒ library research ☐ building permits ☒ Sanborn maps
☐ FL State Archives/photo collection ☐ city directory ☐ occupant/owner interview ☒ plat maps
☐ property appraiser / tax records ☒ newspaper files ☐ neighbor interview ☐ Public Lands Survey (DEP)
☒ cultural resource survey (CRAS) ☒ historic photos ☐ interior inspection ☒ HABS/HAER record search
☐ other methods (describe) _____

Bibliographic References (give FMSF manuscript # if relevant, use continuation sheet if needed) _____

OPINION OF RESOURCE SIGNIFICANCE

Appears to meet the criteria for National Register listing individually? ☒ yes ☐ no ☐ insufficient information

Appears to meet the criteria for National Register listing as part of a district? ☐ yes ☒ no ☐ insufficient information

Explanation of Evaluation (required, whether significant or not; use separate sheet if needed) Individually listed in 2009. Retains
integrity.

Area(s) of Historical Significance (see *National Register Bulletin 15*, p. 8 for categories: e.g. "architecture", "ethnic heritage", "community planning & development", etc.)

1. Politics/government 3. Architecture 5. _____
 2. Social/humanitarian 4. _____ 6. _____

DOCUMENTATION

Accessible Documentation Not Filed with the Site File - including field notes, analysis notes, photos, plans and other important documents

1) Document type _____ Maintaining organization _____
 Document description _____ File or accession #'s _____
 2) Document type _____ Maintaining organization _____
 Document description _____ File or accession #'s _____

RECORDER INFORMATION

Recorder Name Sheldon Owens Affiliation Brockington and Assoc. Inc.
 Recorder Contact Information 498 Wando Park Blvd. Suite 700, Mt. Pleasant SC 29464; 843-881-3128
 (address / phone / fax / e-mail)

Required Attachments

- **USGS 7.5' MAP WITH STRUCTURE LOCATION PINPOINTED IN RED**
- **LARGE SCALE STREET, PLAT OR PARCEL MAP** (available from most property appraiser web sites)
- **PHOTO OF MAIN FACADE, ARCHIVAL B&W PRINT OR DIGITAL IMAGE FILE**
 If submitting an image file, it must be included on disk or CD AND in hard copy format (plain paper is acceptable).
 Digital image must be at least 1600 x 1200 pixels, 24-bit color, jpeg or tiff.



Brockington
CULTURAL RESOURCE CONSULTING

**Fernandina Beach
Survey Update 2018**

○ Historic Resource

0 50 100 Feet

* All numbers start with NA****



NATIONAL REGISTER OF HISTORIC PLACES PRELIMINARY SITE INFORMATION QUESTIONNAIRE

FLORIDA DEPARTMENT OF STATE - GLENDA E. HOOD - SECRETARY OF STATE

This questionnaire is intended only to provide preliminary information about the property to the Bureau of Historic Preservation.

1. Name and Location of Property
(Include the County)
Historic Nassau County Jail
233 South Third Street
Fernandina Beach, FL 32034
(Nassau County, FL)
2. Name and Address of Owner
Amelia Island Museum of History
233 South Third Street
Fernandina Beach, FL 32034
(Nassau County, FL)
3. Date of Construction or Significant Historic Associations ca.1878-1 story structure,
ca.1935-2nd floor addition, ca.1955-2-story separated addition
4. Type of Property:
☐ Archaeological Site
☐ Residential Building
☐ Public Building
☐ Commercial Building
☒ Other (Describe)
Private, non-profit, open to public
5. Original Use:
Nassau County Jail
6. Present Use:
History Museum
7. Physical Description (Indicate basic design and construction, and general condition at present time.)
Original construction 1-story rectangular, 2nd-story addition ca.
1935 wrapped building in Art Moderne facade. Around 1955 a long
halway was built to connect to a new 2-story structure.
8. Why is the property significant?
Building was used as the Nassau County Jail for almost 100 years.
9. Enclosures:
☒ Current Photos (original, required)
☒ Historic Photos (if available,
photocopy acceptable)
☒ Location Map
10. Name and Address of
Person Submitting
Carmen Godwin, Director
Amelia Island Museum of History
233 South Third Street
Fernandina Beach, FL 32034
11. Telephone (Daytime)
(904) 261-7378 (101)

Date: 3-2-05

Signature: Carmen Godwin

RECEIVED
BUREAU OF HISTORIC PRESERVATION - R.A. GRAY Building
500 BRADFORD STREET - TALLAHASSEE, FLORIDA 32399-0250
TELEPHONE (850) 245-6333 OR 1-800-847-7278
FAX (904) 245-6437

HR3EO60389

Susan Little
904-277-4036
556-9536

Amelia Island Museum of History – Located in the Historic Nassau County Jail Building



1955

1935
Cedar ST

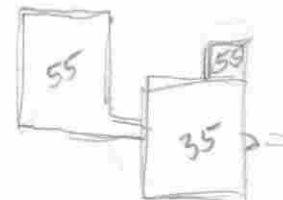


1935

1955

3rd ST

3rd.



Cedar

Historic Photos (ca. 1960)



1935 entrance changed



3rd ST

1955

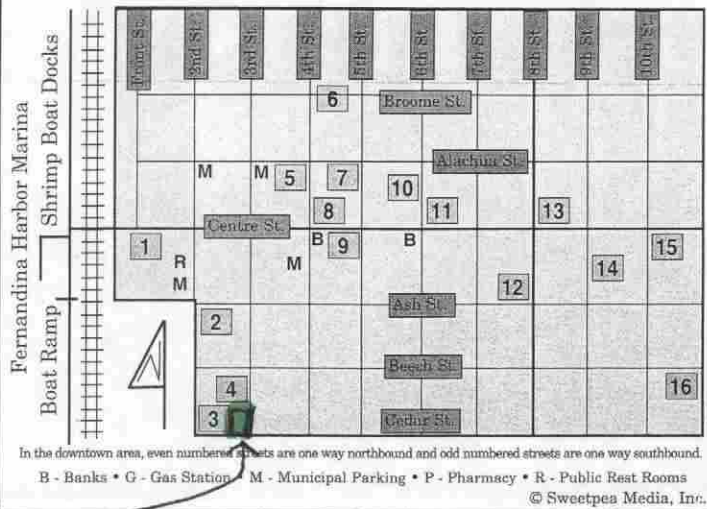


1955



3rd ST

Historic Downtown Fernandina Beach



Downtown Points of Interest

- 1 - Chamber of Commerce - Monday through Friday, 9:00 a.m. to 5:00 p.m. 261-3248
- 2 - City Hall- 277-7305. Police/Fire/Ambulance (Emergency 911. Police non-emergency 277-7342. Fire non-emergency 277-7331)
- 3 - Amelia Community Theatre - 261-6749
- 4 - Amelia Museum Of History - 261-7378
- 5 - Public Library - 277-7365
- 8 - Post Office - 261 -4848
- 9 - Nassau County Courthouse - 321-5709. (Sheriff 911, non -emergency 225-0331)
- 16 - Fernandina Little Theatre - 277-2202

Downtown Churches

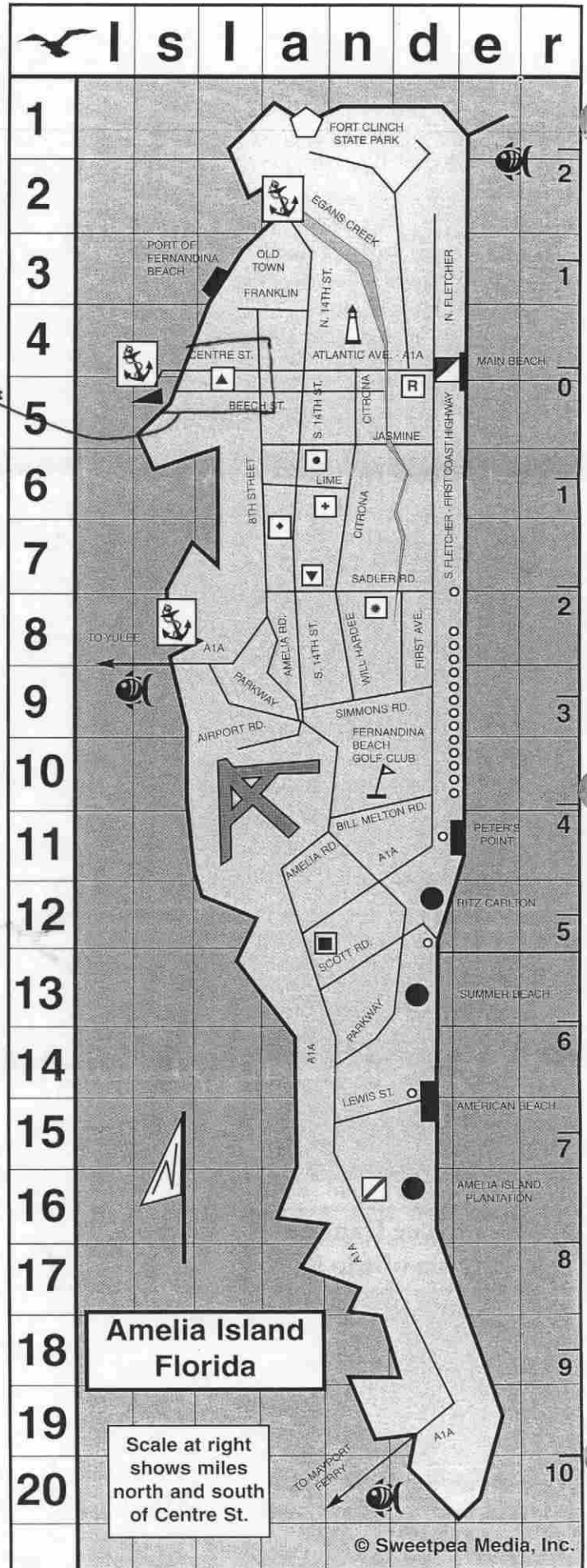
- 6 - St. Michael's Catholic Church - 261-3472
- 7 - First Baptist Church - 261-3617.
- 10 - First Presbyterian Church - 261 -3837
- 11 - Memorial United Methodist Church - 261-5769
- 12 - Trinity United Methodist - 277-6859
- 13 - St. Peter's Episcopal Church - 261-4293
- 14 - First Missionary Baptist Church - 261-4907
- 15 - New Zion Missionary Baptist Church - 261- 0010

Island Points of Interest

- A1 Fort Clinch State Park (277-7274)
- N4 Amelia Island Lighthouse
- D4 Recreation Center (277-7350)
- D10 Fernandina Beach Golf Club (277-7370)
- N6 Baptist Medical Center - Nassau (261-3627)
- 2A & 5S Boat ramps
- E1, I9 & N20 Fishing spots
- A2, S4 & S8 Marinas

Island Shopping

- L4 Historic Downtown
- D4 Beachside Commons
- N6 Eight Flags Shopping Center
- A7 Amelia Plaza Shopping Center
- A7 Island Walk Shopping Center
- N8 Sadler Square Shopping Center
- A12 Palmetto Walk
- D16 The Village Shops at Amelia Island Plantation
- Beach access with paved parking



RESTRICTED

Site#/Manuscript# NA 287 contained one or more of the following items:

☐ Drawings/diagrams depicting internal layout and/or structural elements including Floor Plans, Blueprints, building plans, or schematic drawings.

☐ Other, explain _____

The Site File has determined that the above marked material may be Restricted.
Restricted material is defined by one of the following marked categories:

☒ Florida Statute 119.071 § 3.3(b) & (c) (2007), which states:

(b)1. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency are exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution.

2. This exemption applies to building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by an agency before, on, or after the effective date of this act.

(c) Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout or structural elements of an attractions and recreation facility, entertainment or resort complex, industrial complex, retail and service development, office development, or hotel or motel development, which documents are held by an agency are exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution. This exemption applies to any such documents held by an agency before, on, or after the effective date of this act. Information made exempt by this paragraph may be disclosed to another governmental entity if disclosure is necessary for the receiving entity to perform its duties and responsibilities; to the owner or owners of the structure in question or the owner's legal representative; or upon a showing of good cause before a court of competent jurisdiction.

☐ Other, explain _____

Materials indicated have been removed from the paper file and are housed in a secure location and available to authorized persons in the EDMS. If you need these materials, please see Site File staff.

November 27, 2009

The Director of the National Park Service is pleased to send you the following announcements and actions on properties for the National Register of Historic Places. For further information contact Edson Beall via voice (202) 354-2255, or E-mail: <Edson.Beall@nps.gov> This and past Weekly Lists are also available here: <http://www.nps.gov/history/nr/nrlist.htm>

Our physical location address is:

National Park Service 2280, 8th floor
National Register of Historic Places
1201 "I" (Eye) Street, NW,
Washington D.C. 20005

Celebrate National American Indian Heritage Month:
<http://www.nps.gov/history/nr/feature/indian/Index.htm>

WEEKLY LIST OF ACTIONS TAKEN ON PROPERTIES: 11/16/09 THROUGH 11/20/09

KEY: State, County, Property Name, Address/Boundary, City, Vicinity, Reference Number, NHL, Action, Date, Multiple Name

ARIZONA, MARICOPA COUNTY,
Coronado Neighborhood Historic District, Roughly bounded by Virginia Ave.,
Fourteenth St., McDowell Rd., and Seventh St., Phoenix, 86000206, ADDITIONAL
DOCUMENTATION APPROVED, 11/18/09

CALIFORNIA, EL DORADO COUNTY,
Wakamatsu Tea and Silk Colony Farm,
941 Cold Springs Rd.,
Gold Hill vicinity, 09000397,
LISTED, 10/09/09

FLORIDA, DADE COUNTY,
North Shore Historic District,
Roughly by 87th St., Collins Ave., 73rd., and Hawthorne Ave., Miami Beach,
09000926, LISTED, 11/18/09 (North Beach Community (1919-1963), MPS)

FLORIDA, NASSAU COUNTY,
Nassau County Jail,
233 S. 3rd. St.,
Fernandina Beach, 09000927,
LISTED, 11/18/09

NA 287





City of Fernandina Beach

PLANNING DEPARTMENT

May 29, 2009

Mr. Bob Jones
Florida Department of State
Bureau of Historical Resources
500 South Bronough Street
Tallahassee, FL 32399-0250

Re: Nassau County Jail National Register Nomination

Dear Mr. Jones:

The Historic District Council (HDC) of Fernandina Beach serves as the certified local review board under the Certified Local Government Program. At the May 21, 2009 HDC meeting, Phyllis Davis of the Amelia Island Museum of History presented for the board's review a proposed nomination of the Nassau County Jail to the National Register. The HDC voted favorably in support of the National Register nomination. Attached is the Action Taken from the meeting recording this vote.

If you have any additional questions, please do not hesitate to contact me or HDC Staff, Adrienne Dessy, at the contact information below.

Sincerely,

Suanne Thamm
Chair, Historic District Council
City of Fernandina Beach
Community Development Department
204 Ash Street
Fernandina Beach, FL 32034
P: 904.277.7325
F: 904.277.7324
www.fbfl.us/historicdistrict

Enclosure: 5/21/09 HDC Action Taken

RECEIVED
BUREAU OF
HISTORIC PRESERVATION
2009 JUN - 1 P 12:32



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 21, 2009

Adrienne Dessy
Planner II
City of Fernandina Beach
Community Development Department
204 Ash Street
Fernandina Beach, Florida 32034

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Ms. Dessy:

A Florida National Register Nomination Proposal for the above referenced property has been received by the State Historic Preservation Officer. We solicit your review and recommendation concerning eligibility in accordance with the procedures established by the National Historic Preservation Act [Title I, Section 101 (16 U.S.C. 470a) (c)(2)], which created the basis for the participation of Certified Local Governments in the Florida National Register of Historic Places nomination process.

Before a property within the jurisdiction of the Certified Local Government may be considered by the state to be nominated to the Secretary of the Interior for inclusion in the National Register, the State Historic Preservation Officer shall notify the owner, the applicable chief local elected official, and the local historic preservation commission. The commission, after reasonable opportunity for public comment, shall prepare a report as to whether or not such meets the eligibility criteria. Within sixty days of the notice from the State Historic Preservation Officer, the chief local elected official shall transmit the report of the commission and his recommendation to the State Historic Preservation Officer. If no such report and recommendation are received within sixty days, the State shall proceed with the nomination process. If either the preservation agency or the appropriate local officials support the nomination of the property, the proposal will be scheduled for consideration by the Florida National Register Review Board. If both the commission and the chief local elected official recommend that a property not be nominated to the National Register, the State Historic

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6435

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6452

☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

Dessy
May 21, 2009
Page Two

Preservation Officer shall take no further action, unless within thirty days of the receipt of such recommendation by the State Historic Preservation Officer an appeal is filed with the State. Any party may file an appeal with the State Historic Preservation Officer. If the State Historic Preservation Officer, after hearing the appeal, determines that the property is eligible, he shall proceed with the nomination process. The State Historic Preservation Officer shall include any reports and recommendations from any party along with the nomination submitted to the Keeper of the National Register.

We look forward to your recommendation and comments regarding this property. If we can be of any further assistance to you, please do not hesitate to contact me.

Sincerely,



for Mrs. Barbara E. Mattick
Deputy State Historic Preservation Officer
for Survey and Registration



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

May 20, 2009

Adrienne Dessy
Planner II
City of Fernandina Beach
Community Development Department
204 Ash Street
Fernandina Beach, Florida 32034

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Ms. Dessy:

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Dessy
May 20, 2009
Page Two

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We look forward to your recommendation and comments regarding this property. If we can be of any further assistance to you, please do not hesitate to contact me.

Sincerely,





Mrs. Barbara E. Mattick
Deputy State Historic Preservation Officer
for Survey and Registration

Enclosure



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

May 20, 2009

Alex Buell, Director
Amelia Island Museum of History
333 South Third Street
Fernandina Beach, Florida 32034

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Ms. Buell:

We are pleased to advise you that the above property has been proposed for nomination for listing in the National Register of Historic Places.

You are invited to attend the public meeting at which the nomination proposal will be reviewed by the Florida National Register Review Board. The Board will meet at June 30, 2009, at the R.A. Gray Building, 500 South Bronough Street, Tallahassee, Florida. A copy of the meeting agenda is enclosed. If the Review Board finds that this property meets the criteria for such listing, the State Historic Preservation Officer will submit a formal nomination to the Keeper of the National Register in Washington D.C., who will make the final decision whether or not to list the property.

It is very important to us that you understand the purpose of listing properties in the National Register and what this will mean to you as the owner of a listed property. In addition, you should be aware of your right to object to the listing if your property is privately owned, and how to register that objection if you desire to do so.

The National Register of Historic Places is the Federal government's official listing of historically significant properties throughout the country. It is maintained by the Keeper of the National Register, National Park Service, U.S. Department of the Interior. It includes sites and properties that have been identified and documented as having played a significant role in the prehistoric occupation or historical development of our nation, states, and local communities.

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☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

There are three basic purposes for listing a property in the National Register. They are:

- 1) to provide official recognition of its historic significance and encourage consideration of its historic value in future development planning,
- 2) to provide the property limited protection from any Federally funded, licensed, or assisted projects that might adversely effect the historic property, and
- 3) to make the property eligible for Federal financial incentives for historic preservation.

Listing your property in the National Register will not, in itself, restrict your rights as a property owner to use and dispose of your property as you see fit. Public visitation rights are not required of owners. The Federal government will not attach restrictive covenants to the properties or seek to acquire them. However, if the future use or redevelopment of the property should require approval or assistance from a Federal agency, the plans for such use or redevelopment would be subject to review by the State Historic Preservation Office and the Advisory Council on Historic Preservation. In that event, we will be happy to furnish information and guidance to help you in planning your activities so as to provide for the preservation of the historic characteristics of the property. This review requirement would also apply to any Federally funded, licensed, or assisted projects undertaken by others that could have an adverse effect on the property.

The enclosed fact sheets explain the criteria for listing properties in the National Register and the results of listing in the National Register, with references to major laws and Federal regulations relating to listed properties. We will be happy to provide additional information and to discuss any questions you may have on protection provisions, financial incentives, or other aspects of the National Register program.

If your property is privately owned, you may object to its being listed in the National Register by sending a notarized statement addressed to me as Deputy State Historic Preservation Officer by June 30, 2009. The statement must certify that you are the sole or part owner, as appropriate, of the private property in question and that you object to its listing in the National Register of Historic Places. It is not necessary to state the reason for your objection, but we would appreciate having that information if you wish to include it.

If the property in question is privately owned, and if you as sole owner, or a majority of the partial owners, object to the listing of their property, it will not be listed. If the majority of the property owners in a district object, the district will not be listed. However, the nomination will be forwarded to the Keeper of the National Register for a determination of eligibility of the property for listing in the National Register. A copy of your statement objecting to the listing of the property will be included. If the property is then determined eligible for listing, the protection from Federally funded, licensed, or assisted activities outlined above will become effective, but the property will not be eligible for the Federal financial incentives for preservation.

Buell
Page Three
May 20, 2009

If the owners of a publicly owned property object to the listing of the property, the nomination will be forwarded to the Keeper of the National Register with a copy of their statement objecting to the listing.

We would certainly like to have your active support for the nomination of your property, as we feel it reflects an important part of Florida's historic heritage. However, any comment you may wish to send me will be appreciated. We also hope that you may be able to attend the Review Board meeting on June 30, 2009.

In the meantime, please do not hesitate to write or call Bob Jones at (850) 245-6333 if you have any questions.

Sincerely,

for 

Mrs. Barbara E. Mattick
Deputy State Historic Preservation Officer
for Survey and Registration

Enclosures



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 20, 2009

Michael J. Czymbor, City Manager
City of Fernandina Beach
City Manager's Office
204 Ash Street
Fernandina Beach, Florida 32304

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Mr. Czymbor:

We are pleased to advise you that the above referenced property has been proposed for nomination for listing in the National Register of Historic Places.

The nomination proposal will be reviewed by the Florida National Register Review Board in a public meeting on June 30, 2009. A copy of the meeting agenda is enclosed. If the Review Board finds that this property meets the criteria for listing established by the National Register, a formal nomination will be submitted to the Keeper of the National Register in Washington, D.C., who will make the final decision.

The enclosed fact sheets explain the criteria for listing and the results of listing in the National Register, with references to the major laws and Federal regulations relating to listed properties. A copy of the nomination and additional information on protection provisions, financial incentives, or other aspects of the National Register Program may be obtained by calling our Survey and Registration Section at (850) 245-6333.

If you wish to comment on whether or not this property should be nominated for listing in the National Register, please send me your comments by June 30, 2009.

Sincerely,

Laura A. Kammerer

for Mrs. Barbara E. Mattick
Deputy State Historic Preservation Officer
for Survey and Registration

Enclosures



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

May 20, 2009

The Honorable Barry Holloway, Chairman
Nassau County Board of County Commissioners
96160 Nassau Place
Yulee, Florida 32097

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Commissioner Holloway:

We are pleased to advise you that the above referenced property has been proposed for nomination for listing in the National Register of Historic Places.

The nomination proposal will be reviewed by the Florida National Register Review Board in a public meeting on June 30, 2009. A copy of the meeting agenda is enclosed. If the Review Board finds that this property meets the criteria for listing established by the National Register, a formal nomination will be submitted to the Keeper of the National Register in Washington, D.C., who will make the final decision.

The enclosed fact sheets explain the criteria for listing and the results of listing in the National Register, with references to the major laws and Federal regulations relating to listed properties. A copy of the nomination and additional information on protection provisions, financial incentives, or other aspects of the National Register Program may be obtained by calling our Survey and Registration Section at (850) 245-6333.

If you wish to comment on whether or not this property should be nominated for listing in the National Register, please send me your comments by June 30, 2009.

Sincerely,

for

Mrs. Barbara E. Mattick
Deputy State Historic Preservation Officer
for Survey and Registration

Enclosures

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☐ Director's Office
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☐ Archaeological Research
(850) 245-6444 • FAX: 245-6452

☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

July 6, 2009

Alex Buell, Director
Amelia Island Museum of History
333 South Third Street
Fernandina Beach, Florida 32034

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Ms. Buell:

It is a pleasure to advise you that the Florida National Register Review Board has recommended that the above referenced property be nominated for listing in the National Register of Historic Places. This recommendation was made at the June 30, 2009 meeting of the Board and is based on its review and evaluation of the nomination proposal.

The Board has returned the nomination proposal, with the review comments and suggestions of the individual members, to our Survey and Registration staff. The staff will review the comments of the Board and prepare a formal nomination to be submitted to the Keeper of the National Register for final consideration.

It may be necessary in preparing the formal nomination to ask you to help us revise some elements of the written material, or to provide some additional information or documentation. If so, we will let you know what is needed.

When the formal nomination has been submitted to and received by the Keeper of the National Register, that office will have forty-five days in which to approve or disapprove the nomination. If the nomination is approved, the property will be listed in the National Register as of the date of approval. The forty-five day review period may be extended, however, if the National Register staff finds technical deficiencies in the nomination requiring correction by our office.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

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☐ Archaeological Research
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☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

Buell
July 6, 2009
Page Two

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If the nomination is disapproved, the National Register staff will notify us and explain the reasons for disapproval. We will in turn notify you and advise you of any action that may be taken to pursue the matter further.

Any person or organization interested in a nomination may petition the Keeper of the National Register during the nomination process either to accept or to reject the nomination. Comments regarding the nomination should be addressed to:

United States Department of the Interior
National Park Service
Cultural Resources
National Register of Historic Places
Mail Stop 2280, Suite 400
1849 C Street, N.W.
Washington, DC 20240

On behalf of Secretary of Kurt S. Browning and the Historic Preservation staff, we appreciate your interest in Florida's historic heritage. Please let us know if you have any questions regarding the nomination process, or if we can be of any other assistance.

Sincerely,


for

Barbara E. Mattick
Chief, Bureau of Historic Preservation
Deputy State Historic Preservation Officer
for Survey & Registration
Interim State Historic Preservation Officer

pc: Sidney P. Johnston



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

July 6, 2009

Michael J. Czymbor, City Manager
City of Fernandina Beach
City Manager's Office
204 Ash Street
Fernandina Beach, Florida 32304

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Mr. Czymbor:

It is a pleasure to advise you that the Florida National Register Review Board has recommended that the above referenced property be formally nominated for listing in the National Register of Historic Places. The Board took this action at its regular meeting on June 30, 2009. We are now in the process of preparing a formal nomination for submission to the Keeper of the National Register in accordance with 36 CFR Part 60.6.

When the formal nomination has been submitted to and received by the Keeper of the National Register, that office will have forty-five days in which to approve or disapprove the nomination. If the nomination is approved, the property will be listed as of the date of approval. The forty-five day review period may be extended, however, if the National Register staff finds technical deficiencies in the nomination requiring correction in our office.

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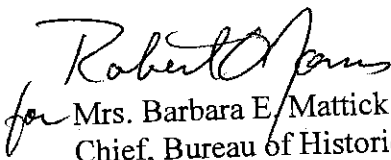
☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437

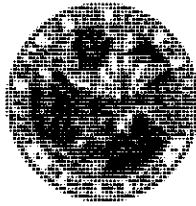
Czymbor
July 6, 2009
Page Two

United States Department of the Interior
National Park Service
Cultural Resources
National Register of Historic Places
Mail Stop 2280
1849 C Street, N.W.
Washington, DC 20240

On behalf of Secretary Kurt S. Browning and the Historic Preservation staff, we appreciate your interest in Florida's historic heritage. Please let us know if you have any questions regarding the nomination process, or if we can be of any other assistance.

Sincerely,


for Mrs. Barbara E. Mattick
Chief, Bureau of Historic Preservation
Deputy State Historic Preservation Officer
for Survey & Registration
Interim State Historic Preservation Officer



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

July 6, 2009

Adrienne Dessy
Planner II
City of Fernandina Beach
Community Development Department
204 Ash Street
Fernandina Beach, Florida 32034

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Ms. Dessy:

It is a pleasure to advise you that the Florida National Register Review Board has recommended that the above referenced property be formally nominated for listing in the National Register of Historic Places. The Board took this action at its regular meeting on June 30, 2009. We are now in the process of preparing a formal nomination for submission to the Keeper of the National Register in accordance with 36 CFR Part 60.6.

When the formal nomination has been submitted to and received by the Keeper of the National Register, that office will have forty-five days in which to approve or disapprove the nomination. If the nomination is approved, the property will be listed as of the date of approval. The forty-five day review period may be extended, however, if the National Register staff finds technical deficiencies in the nomination requiring correction in our office.

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Dessy
July 6, 2009
Page Two

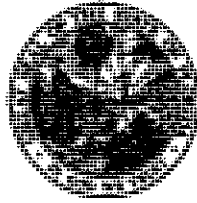
United States Department of the Interior
National Park Service
Cultural Resources
National Register of Historic Places
Mail Stop 2280
1849 C Street, N.W.
Washington, DC 20240

On behalf of Secretary Kurt S. Browning and the Historic Preservation staff, we appreciate your interest in Florida's historic heritage. Please let us know if you have any questions regarding the nomination process, or if we can be of any other assistance.

Sincerely,


for Mrs. Barbara E. Mattick

Chief, Bureau of Historic Preservation
Deputy State Historic Preservation Officer
for Survey & Registration
Interim State Historic Preservation Officer



FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

July 6, 2009

The Honorable Barry Holloway, Chairman
Nassau County Board of County Commissioners
96160 Nassau Place
Yulee, Florida 32097

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Commissioner Holloway:

It is a pleasure to advise you that the Florida National Register Review Board has recommended that the above referenced property be formally nominated for listing in the National Register of Historic Places. The Board took this action at its regular meeting on . We are now in the process of preparing a formal nomination for submission to the Keeper of the National Register in accordance with 36 CFR Part 60.6.

When the formal nomination has been submitted to and received by the Keeper of the National Register, that office will have forty-five days in which to approve or disapprove the nomination. If the nomination is approved, the property will be listed as of the date of approval. The forty-five day review period may be extended, however, if the National Register staff finds technical deficiencies in the nomination requiring correction in our office.

If the nomination is disapproved, the National Register staff will notify us and explain the reasons for disapproval. We will in turn notify you of any action that may be taken to pursue the matter further.

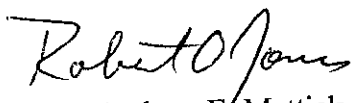
Any person or organization interested in a nomination may petition the Keeper of the National Register during the nomination process either to accept or to reject the nomination. Comments regarding the nomination should be addressed to:

Holloway
July 6, 2009
Page Two

United States Department of the Interior
National Park Service
Cultural Resources
National Register of Historic Places
Mail Stop 2280
1849 C Street, N.W.
Washington, DC 20240

On behalf of Secretary Kurt S. Browning and the Historic Preservation staff, we appreciate your interest in Florida's historic heritage. Please let us know if you have any questions regarding the nomination process, or if we can be of any other assistance.

Sincerely,


for Mrs. Barbara E. Mattick
Chief, Bureau of Historic Preservation
Deputy State Historic Preservation Officer
for Survey & Registration
Interim State Historic Preservation Officer



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

February 7, 2007

Ms. Carmen Godwin
Amelia Island Museum of History
233 South 3rd Street
Fernandina Beach, Florida 32034

Dear Carmen:

I have read the transcript of the Annis Moore-Littles and Cindy Moore interviews. Their association with the jail and events described fall outside the historic period of significance (less than 50 years). However, some of what they relate may relate to earlier activities and ways of running the jail and sheriff's office. Let me review some of these possibilities in the order mentioned in the transcription.

Did a deputy or head deputy traditionally live at the jail with their families? The general description of the inmates as local "good people who had just done something foolish," is a nice characterization for most of the inmates. Is it fair to make that generalization back into the historic period? Did the wife of the deputy traditionally cook, and attend to the welfare and hygiene of the female inmates? Traditionally, did the jail house roughly about 75 people at a time? Traditionally did the inmates do handicrafts? Traditionally was the main hot meal reserved for Sunday? Was the designation of "trustee" a traditional one with work and work-release responsibilities? Traditionally did the sheriff's department gather every Monday to do report and eat together?

Due to time constraints, I will be unable to make major amendments to the proposal that we have already received. I encourage you to review and revise the sections #7 and #8, and email me the edited versions.

If you have any questions please call me at 850-245-6333.

Sincerely,

Robert O. Jones

Historic Preservationist

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

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(850) 245-6300 • FAX: 245-6436

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☐ Northeast Regional Office
(904) 825-5045 • FAX: 825-5044

☐ Central Florida Regional Office
(813) 272-3843 • FAX: 272-2340



FLORIDA DEPARTMENT OF STATE

Sue M. Cobb

Secretary of State

DIVISION OF HISTORICAL RESOURCES

September 5, 2006

Ms. Carmen Godwin
Amelia Island Museum of History
233 South 3rd Street
Fernandina Beach, Florida 32034

RE: Nassau County Jail, Review of FNP submission

Dear Ms. Godwin:

The history of the county jail will make a good National Register nomination. We will need electronic versions of the narrative text to facilitate editing. You may email me the files for sections #7,8,9,10, and photo list if that is easiest. My address is Rjones@dos.state.fl.us. We also need a second set of black and white photos. ✓ or *Sent Sept 15 '06*

Sections #7 and 8 of the narratives are reversed. Section #7 is the physical description that contains the setting description. Section #8 is the history, historical contexts, and statement of significance. Some elements of 7 are in 8, and vice versa. I have tried to mark the text to this effect. Interior descriptions will need to be expanded. A short description of every room, starting with the main entrance, as usually how we do it. The photos you sent indicate variations in floor, wall, and ceiling surfaces.

Architectural Significance is claimed at the end of Section #7(8), but not on the form as criteria C. If architectural significance is claimed it would be as an example of the Moderne Style applied to a jail facility. Section #8 should then contain a narrative for "Architectural Context."

Floor plans are labeled with non-historic uses, while we need historic uses of the spaces. Some historic spaces appear to have been removed with the removal of walls. Please indicate those changes as best you can. Photo locations need to be indicated on floor plans (example enclosed).

If you have any questions please phone me at 850-245-6333.

Sincerely,

Bob Jones

Robert O. Jones

Historic Preservationist

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☐ Central Florida Regional Office
(813) 272-3843 • FAX: 272-2340

Dear Mr. Jones,

Per your request, here are some basic floor plans with outlines of the 2nd floor 1935 addition and the later 1955 additions. I hope this helps in determining whether the 1935 or 1955 additions truly define the building. I appreciate your help. Thank you - and if you need anything else to help clarify, please advise.

Yours,

Carmen Goshin

RECEIVED
BUREAU OF
HISTORIC PRESERVATION
2005 MAR 18 10 31 AM



FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

March 7, 2005

Ms. Carmen Godwin, Director
Amelia Island Museum of History
233 South Third Street
Fernandina Beach, Florida 32034

Dear Ms. Godwin:

I have received your preliminary form for National Register listing of the Nassau County Jail at 233 South Third Street. The jail was built in 1878, added on to in 1935, and again in 1955. From seeing the photographs sent I am having a difficult time judging if the 1935 building has a 1955 addition, or the 1955 addition defines the current building. I cannot tell from the photos what parts of the building I am looking at. Please send a sketch of the property with the footprint of the building. Mark what parts of the building are from 1935 and 1955.

Sincerely,

A handwritten signature in black ink, appearing to read "Bob Jones", is written over the typed name.

Robert O. Jones
Historic Preservationist

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FLORIDA NATIONAL REGISTER REVIEW BOARD COMMENT/VOTE SHEET

Name of Property Nassau County Jail

PART I. Initial Review Comments:

Identification and descriptive information

☒ adequately defines and describes the property
☐ needs

Significance information

☒ adequately identifies and explains areas of significance
☐ needs

Boundary description and Justification

☒ adequately delineates the resource(s) to be nominated
☐ needs

Documentation

☒ includes adequate photos, maps, bibliography and other supporting documents
☒ needs

Section # 8 p. 1 thru 5

PART II. Final Recommendations and Comments:

After formal consideration of the nomination proposal, it is my recommendation that:

☒ the property be nominated under NR Criteria

☒ A (Historic), ☐ B (Person), ☒ C (Architecture/Design), ☐ D (Potential to yield information) at the
☒ Local, ☐ State, ☐ National level(s) of significance.

☐ although the property appears to be eligible, the nomination proposal
should be revised and resubmitted for review by the Board.

☐ does not meet the eligibility criteria due to
☐ lack of documented historically significant associations
☐ loss of historic integrity

COMMENTS (use back if necessary):

Much of the materials in
this docu needs to show proper citation throughout
the proposal -

Titus Brown
Printed name of Board Member

[Signature]
Signature of Board Member

29 June 09
Date

FLORIDA NATIONAL REGISTER REVIEW BOARD COMMENT/VOTE SHEET

Name of Property Massau County Jail

PART I. Initial Review Comments:

Identification and descriptive information

☒ adequately defines and describes the property
☐ needs

Significance information

☒ adequately identifies and explains areas of significance
☐ needs

Boundary description and Justification

☒ adequately delineates the resource(s) to be nominated
☐ needs

Documentation

☒ includes adequate photos, maps, bibliography and other supporting documents
☐ needs

PART II. Final Recommendations and Comments:

After formal consideration of the nomination proposal, it is my recommendation that:

☒ the property be nominated under NR Criteria
☒ A (Historic), ☐ B (Person), ☒ C (Architecture/Design), ☐ D (Potential to yield information) at the
☒ Local, ☐ State, ☐ National level(s) of significance.

☐ although the property appears to be eligible, the nomination proposal
should be revised and resubmitted for review by the Board.

☐ does not meet the eligibility criteria due to
☐ lack of documented historically significant associations
☐ loss of historic integrity

COMMENTS (use back if necessary):

Marion M. Army
Printed name of Board Member

Marion M. Army
Signature of Board Member

6/30/09
Date

FLORIDA NATIONAL REGISTER REVIEW BOARD COMMENT/VOTE SHEET

Name of Property Nassau County Jail

PART I. Initial Review Comments:

Identification and descriptive information

☒ adequately defines and describes the property
☐ needs

Significance information

☒ adequately identifies and explains areas of significance
☐ needs

Boundary description and Justification

☒ adequately delineates the resource(s) to be nominated
☐ needs

Documentation

☐ includes adequate photos, maps, bibliography and other supporting documents
☒ needs **ADD ARCHITECTURAL STYLE** **ADD SECONDARY SOURCES**

PART II. Final Recommendations and Comments:

After formal consideration of the nomination proposal, it is my recommendation that:

☒ the property **be nominated** under NR Criteria
☒ **A** (Historic), ☐ **B** (Person), ☒ **C** (Architecture/Design), ☐ **D** (Potential to yield information) at the
☒ **Local**, ☐ **State**, ☐ **National** level(s) of significance.

☐ although the property appears to be eligible, the nomination proposal
should be revised and resubmitted for review by the Board.

☐ **does not meet the eligibility criteria** due to
☐ lack of documented historically significant associations
☐ loss of historic integrity

COMMENTS (use back if necessary):

JUDITH A BENSE
Printed name of Board Member

[Signature]
Signature of Board Member

6/30/09
Date

FLORIDA NATIONAL REGISTER REVIEW BOARD COMMENT/VOTE SHEET

Name of Property NASSAU Country Club

(2)

PART I. Initial Review Comments:

Amelia Island

Identification and descriptive information

☒ adequately defines and describes the property
☐ needs

A/C 1938

Significance information

☒ adequately identifies and explains areas of significance
☐ needs

ADDs - 1954/2007

Boundary description and Justification

☒ adequately delineates the resource(s) to be nominated
☐ needs

placed on a museum in 1986

Documentation

☒ includes adequate photos, maps, bibliography and other supporting documents
☐ needs

PART II. Final Recommendations and Comments:

After formal consideration of the nomination proposal, it is my recommendation that:

☐ the property be nominated under NR Criteria

☒ A (Historic), ☐ B (Person), ☐ C (Architecture/Design), ☐ D (Potential to yield information) at the ☒ Local, ☐ State, ☐ National level(s) of significance.

☐ although the property appears to be eligible, the nomination proposal should be revised and resubmitted for review by the Board.

☐ does not meet the eligibility criteria due to

☐ lack of documented historically significant associations
☐ loss of historic integrity

COMMENTS (use back if necessary):

As usual Adney's research is exhaustive - he goes beyond what is necessary. I especially appreciated the narrative on the evolution of gasla (joints).

Printed name of Board Member

Signature of Board Member

Date

6-3-07

FLORIDA NATIONAL REGISTER REVIEW BOARD COMMENT/VOTE SHEET

Name of Property NASSAU COUNTY JAIL

PART I. Initial Review Comments:

Identification and descriptive information

☒ adequately defines and describes the property / *Modify description from "over" to*
needs *1938 Art Moderne*

Significance information

☒ adequately identifies and explains areas of significance
needs

Boundary description and Justification

☒ adequately delineates the resource(s) to be nominated
needs

Documentation

☒ includes adequate photos, maps, bibliography and other supporting
documents
needs

PART II. Final Recommendations and Comments:

After formal consideration of the nomination proposal, it is my recommendation that:

☒ the property be nominated under NR Criteria
☒ A (Historic), ☐ B (Person), ☒ C (Architecture/Design), ☐ D (Potential to yield information) at the
☒ Local, ☐ State, ☐ National level(s) of significance.

☐ although the property appears to be eligible, the nomination proposal
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☐ does not meet the eligibility criteria due to
☐ lack of documented historically significant associations
☐ loss of historic integrity

COMMENTS (use back if necessary): *1870's - 1890's 1938 < 54 additions*

PICK GONZALEZ, AIA

Printed name of Board Member

[Signature]
Signature of Board Member

6.30.09

Date

FMSF NOTE TO IMAGE VIEWER

Some material contained in the corresponding paper manuscript has not been scanned.

Check material affected:

☐ Blueprints

☐ Map

☐ Site Forms

☒ Other, specify 2 pages Floor Plans

This material can be viewed at the Florida Master Site File.

**NASSAU COUNTY JAIL
1969-1977**

**Oral History Interview
November 4, 1999**

Interviewees: **Annis Moore-Littles
Cindy Moore**

Interviewers: **Suanne Thamm
Marlene Schang**

Background

In 1969 Nassau County Sheriff Herb McKendree (1969-1980) asked Deputy Bobby Moore to take charge of the Nassau County Jail. On January 7, 1969, Moore moved into the jail with his wife, Annis, and 8 year-old daughter, Cindy. In 1977 the Moores left and were replaced by Mr. & Mrs. Wendell Brooks. The new county jail was built a few years later in Yulee.

*head deputy &
family lived there
genealogy*

About 1979 a group attempted unsuccessfully to turn the former jail into a museum. In 1986 the building was transformed into the Amelia Island Museum of History under the leadership of Deon Lawrance Jaccard.

Both Mrs. Moore-Littles and her daughter spoke of their years at the jail with warmth and humor. They indicated that "times were different back then", and that for the most part the prisoners were good people who had just done something foolish -- like getting drunk on a Saturday night. There were many "repeat customers". Cindy felt that the inmates looked out for her and protected her. She played on the grounds and had friends visit her, just like other children.

Mrs. Moore-Littles was cook for the inmates on Sundays and holidays and was matron presiding over the female prisoners. As matron, Mrs. Moore-Littles was required to deal with women of limited mental ability who possessed little knowledge of hygiene. This was a time before social workers, and the jail staff tried to fulfill that role in addition to seeing that prisoners completed their jail sentences.

Methodology

The interviewees provided significant detail on the jail building. They shared many interesting stories about life in the jail and described characters they encountered. The information presented is summarized here. Mrs. Moore-Littles and Cindy reviewed this transcript for its accuracy. An audio-tape of the session may be found in the collections of the Amelia Island Museum of History.

General Information on Prisoners

The Nassau County Jail housed generally 75-80 inmates at any given time. The highest number was 150 on a Sunday morning, following a raid on a poker party at American Beach. The jail only held prisoners who were sentenced to serve up to a year. Anyone sentenced to serve a longer term was transported to the correctional facility at Lake Butler. Prisoners were transported between the jail and the courthouse in patrol cars.

general

general

The most common offense of prisoners was drunk and disorderly conduct. There were some drug problems, mostly marijuana. Cindy recalled smelling marijuana in the jail. The prisoners did not wear uniforms.

general

The prisoners did handicrafts in jail to pass the time. Cindy has a stool that was made for her by an inmate. Another inmate made miniature covered wagons.

general

The prisoners behaved around the jailer's family, even looking out for Cindy. Cindy noted that she was not allowed to wear shorts around the jail.

Prison Meals

As wife of the jailer, Mrs. Moore-Littles prepared the Sunday and holiday meals. Mrs. Guest, who lived across Cedar Street from the jail, was the regular cook. The daily menu consisted of:

Breakfast:	scrambled eggs, grits, homemade biscuits, milk and coffee
Lunch:	dried lima beans, cornbread and water
Dinner:	sandwiches (ham, banana, bologna, peanut butter) and milk

On Sunday, fried chicken was served with turkey prepared on holidays. The Griffin Egg Company in Callahan provided eggs. Most of the food came from local grocery stores. Sometimes fresh produce was brought in from local farms.

Health and Spiritual Matters

Many of the prisoners were infested with lice or crabs. The matron had to scrub down the female inmates as they were booked. Local doctors attended the prisoners as required. Dr. Bayard Brittan and Dr. Bailey Dickens served as prison doctor at various times. Dr. Dickens was known as "Dr. Big Foot" by African Americans. If prisoners had dental problems, a dentist was summoned to pull (not fill) the teeth. Ministers visited the jail on Sundays. There were state inspectors to ensure the jailer provided a clean and healthy environment for the prisoners with clean sheets, a warm jail in the winter and good meals.

Trusties

Prisoners who were on good behavior were called "trusties" because they could be trusted. If prisoners did good deeds, they received "good time" toward an earlier release. The trusties were not locked in at night. The jailer could go to Judge Weatherford to lessen sentences. The trusties served meals, washed dishes, cleaned patrol cars and did laundry at the jail. They were also allowed to leave the jail on work-release programs during the week, returning to the jail on Saturday and Sunday. If trusties earned money, they were required to pay Nassau County \$3.00 daily for their keep.

general

Deputies

In 1969 Nassau County had 6 deputy sheriffs. Bobby Moore, as jailer, was the Chief Deputy. He later became First Lieutenant under Ronnie Daugherty (1981-1985). The new county jail is named after Bobby Moore. On Monday, the deputies reported to the jail to do their paperwork and eat together. There was no separate gun room or arsenal at the jail. The deputies kept their guns in their patrol cars with machine guns in the trunks.

general

Fernandina Beach - Nassau County Relations

The City and the County law enforcement people never got along well. The City had a small lock-up for its prisoners, but all female prisoners were held at the Nassau County Jail.

Segregation

The prisoners were segregated in the jail by sex and race. Two of the six deputies - Tim Albertie and Ben Sessions - were African American. Sheriff McKendree ended the practice of segregation of the deputies by race during meals.

Location and Grounds

When the Moores moved into the jail in 1969, the property was completely surrounded with a high fence topped with barbed wire. The area occupied by today's Museum parking lot was once a garage in which inmates worked on vehicles and washed patrol cars.

While the Moores lived in the jail, Cedar Street was opened west of Third Street because the Nassau County School Board took possession of a building behind the jail. The building was thought to have been a church before the School Board took it over. That building today houses the Amelia Community Theater. When Cedar Street was opened, a large fig tree was cut down, much to the dismay of Cindy Moore who used to play in it.

Murders

1. In the early 1970s, a Mr. Barber hired Leroy Fullard to kill Barber's wife. Fullard got the wrong house and thus killed the wrong woman. Both men were sentenced to serve in the state penitentiary. Barber died in prison. Whenever Fullard comes up for parole, the family of the murdered woman appears to speak against the parole. Fullard is still incarcerated.
2. A battered woman was brought to Mrs. Moore-Littles. Her face was all bruised. It was learned that she had killed her attacker, who was her husband. The court ruled it was self-defense.
3. In American Beach, a man by the name of Green killed a female by the name of Brown.

less than
50

Escapes 1969-1977

1. Three trusties were shelling peas and butter beans on the grounds one day. That night they just walked off - they were tired of shelling peas and beans. Because their time was almost up, they were not pursued.
2. A juvenile escaped via the bathroom window off the Dispatch Room.
3. A man in a wheel chair had been incarcerated. The deputies had to carry him and his chair up the jail stairs to his cell. When the man was carried to the courthouse, he rose from his wheel chair and literally ran away.
4. James Blount escaped from the courthouse but was later found.

less than
50

Scandals

1. There were 3 City Commissioners who were convicted of bribery and sentenced to 6 months which they served on the work release program. One of them took a dump truck of chicken manure and unloaded it at the *News Leader*.
2. Mercury Kavouklis was a "fine attorney" who was convicted of taking money from his clients' accounts.

less than
50

Shoot Out in Yulee - Sheriff McKendree's patrol car was an Oldsmobile. How he loved that Oldsmobile. The Tropic Motel in Yulee was robbed and McKendree gave chase. There was lots of gunfire. The robbers were caught but not before they had put 10-15 bullet holes in the Oldsmobile. The car was kept in the jail garage for awhile and was a local attraction.

American Beach - Although she was apologetic in stating it, Mrs. Moore-Littles said that problems at American Beach produced the most inmates. Weekends got very rowdy at the beach.

general trend

Female Prisoners

As matron, Mrs. Moore-Littles personally supervised all female prisoners. Personal hygiene among the new arrivals was a problem. Lice and crabs had to be dealt with regularly. Usually large women did not present a problem - they tended to be docile. However, small women could be exceptionally tough and put up fights at being jailed and

Deed recorded on January 10, 1922 states:

Lot 19 in Block 273 will be sold for \$100 by Fernandina Dock and Realty Company to
The Board of County Commissioners of and for Nassau County, Florida and their
successors in office.

DEED BOOK B-3 P 180

NO.

This Indenture, Made and entered into on this the Tenth day of January,
in the year of our Lord one thousand nine hundred and twenty-two,
THE FERNANDINA DOCK AND REALTY COMPANY, a body corporate under the laws of the State of Florida, having its principal
office in the City of Fernandina, County of Nassau, State of Florida, party of the first part, and
The Board of County Commissioners of and for Nassau County, Florida and their
successors in office,
County of Nassau and State of Florida,
of the of
part ies of the second part.

Witnesseth, That the said party of the first part, for and consideration of
One hundred (\$100.) DOLLARS,
lawful money of the United States of America, to it in hand paid by the said part ies of the second part at or before the
enscailing and delivery of these presents, the receipt whereof is hereby acknowledged, has given, granted, aliened, bargained, sold,
transferred, conveyed and confirmed, and does by these presents give, grant, alien, bargain, sell, transfer, remise, release, convey
and confirm unto the said parties of the second part, and their successors and assigns forever, all that certain
lot or parcel of land, situate, lying and being in the City of Fernandina, County of Nassau, and State of Florida,
and known and described on the official plat of said city (as lithographed and issued by the Florida Railroad Company in 1857,
and enlarged, revised and reissued by The Florida Town Improvement Company in 1887 and 1901) as
Lot numbered Nineteen (19), in Block TWO HUNDRED AND SEVENTY-THREE (273).

Internal Revenue Stamp affixed to Deed \$.50

To Have and to Hold The above-granted, bargained and described premises, together with all and singular the rights and
privileges, immunities, easements and appurtenances thereunto belonging, or in anywise appertaining, unto the said part ies of
the second part, and their successors and assigns, as their absolute property in
fee simple forever.

And the said THE FERNANDINA DOCK AND REALTY COMPANY, for itself and assigns, and for all others claiming by
through or under it, does covenant and agree, that at the time of the execution and delivery of these presents the said Company
is seized of a good and indefeasible fee simple in and to the above premises, and has good right to convey the same, as it has con-
veyed the same, free and discharged from all incumbrances and liens of any and every nature and description, and that the said
part ies of the second part, their successors and assigns, shall quietly and peaceably, and may at all
times hereafter, have, use, occupy, possess and enjoy the above-described premises against all persons whatsoever lawfully claiming
the same; and that it will at any and at all times make such further covenants, conveyances and assurances, at the expense of
the said part ies of the second part, as they the said parties of the second part their successors and assigns, or
counsel learned in the law may require.

In Witness Whereof, The said party of the first part has caused its corporate seal to be hereunto affixed, as the act and deed
of said Company, and these presents to be subscribed by its President, the day and year first above written.

Signed, sealed and delivered in presence of

H.D. Avery,

M.M. Maner,

Fred C. Winton,

C.S. Binnicker,

Witnesses as to W.E. Page, Secretary,

THE FERNANDINA DOCK AND REALTY COMPANY,

By Jno. G. McGiffin, Vice-President.

Attest: W. E. Page, Secretary.

(Corporate Seal)

State of Florida,
County of Nassau.

I HEREBY CERTIFY that on this day personally appeared before me W.E.
Page, to me well known and known to me to be the Secretary of the Fernandina
Dock and Realty Company, a corporation, and he acknowledged the attestation
of the foregoing conveyance as the Secretary of said Corporation, and af-
fixed the corporate seal thereto.

Witness my hand and official seal at Fernandina, Fla, in the County
of Nassau and State of Florida, this 12th day of January, A.D. 1922.

(Seal of Notary)

Fred C. Winton (SEAL)
Notary Public, State of Florida.
My commission expires July 21, 1924.

ation of the fore-
and deed of said

A.D. 1922.
(SEAL)

3.

andina Dock and
the public records

In Witness Whereof, I have hereunto set my hand
of January, A.D. 19022.

(Seal)

J.E. Burgess
Clerk.

Deed recorded on June 21, 1937 states:

Fernandina Dock and Realty Company releases and assigns forever all those certain lots parcels of land, situate, lying and being in the City of Fernandina, County of Nassau and State of Florida, and known and described on the official plat of said City (as lithographed and issued by the Florida Railroad Company in 1857, and enlarged, revised and reissued by the Florida Town Improvement Company in 1887 and 1901) as Lots 15, and 16, in block 273, subject to all outstanding liens, State and county and city Taxes. (assigns to Nassau County Commissioners).

DEED BOOK 63 - p. 280

THE FERNANDINA DOCK AND REALTY COMPANY,

TO

DEED.

BOARD OF COUNTY COMMISSIONERS.

THIS INDENTURE, Made and entered into on this the Twenty-first day of June, in the year of our Lord one thousand nine hundred and Thirty-seven between the Fernandina Dock and Realty Company, a body corporate under the laws of the State of Florida, having its principal office in the City of Fernandina, County of Nassau, State of Florida, party of the first part, and ^{The} Board of County Commissioners, of Nassau County, Florida and their successors in office, County of Nassau and State of Florida, parties of the second part.

WITNESSETH: That the said party of the first part, for and in consideration of One Dollars, lawful money of the United States of America, to it in hand paid by the said parties of the second part at or before the ensealing and delivery of these presents, the receipt whereof is hereby acknowledged, has given, granted, aliened, bargained, sold, transferred, conveyed and confirmed, and does by these presents give, grant, alien remise, release, convey and confirm unto the said parties of the second part, and its successors and assigns forever, all those certain lots parcels of land, situate, lying and being in the City of Fernandina, County of Nassau and State of Florida, and known and described on the official plat of said City (as lithographed and issued by the Florida Railroad Company in 1857, and enlarged, revised and reissued by The Florida Town Improvement Company in 1887 and 1901) as Lots 15 and 16, in Block 273, subject to all outstanding liens, State and County and City Taxes.

TO HAVE AND TO HOLD The above granted, bargained and described premises, together with all and singular the rights and privileges, immunities, easements and appurtenances thereunto belonging, or in anywise appertaining, unto the said parties of the second part, and its successors and assigns, as its absolute property in fee simple forever.

And the said The Fernandina Dock and Realty Company, for itself and assigns, and for all others claiming by, through or under it, does covenant and agree, that at the time of the execution and delivery of these presents the said Company is seized of a good and indefeasible fee simple in and to the above premises, and has good right to convey the same, as it has conveyed the same, free and discharged from all incumbrances and liens of any and every nature and description excepting the accrued taxes and that the said parties of the second part, its successors and assigns, shall quietly and peaceably, and may at all times hereafter, have, use, occupy, possess and enjoy the above-described premises against all persons whatsoever lawfully claiming the same; and that it will at any and at all times make such further covenants, conveyances and assurances, at the expense of the said parties of the second part, as it the said parties of the second part, its successors and assigns, or counsel learned in the law may require.

IN WITNESS WHEREOF, The said party of the first part has caused its corporate seal to be hereunto affixed, as the act and deed of said Company, and these presents to be subscribed by its President, the day and year first above written.

Signed, sealed and delivered
in the presence of:

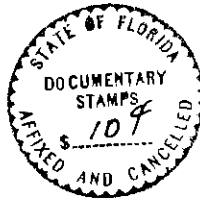
J. C. La Viere

Elizabeth P. Sares

THE FERNANDINA DOCK AND REALTY COMPANY,

By W. A. Davis
President.

ATTEST: Linwood Jeffreys
Secretary.



STATE OF FLORIDA, }
COUNTY OF NASSAU. } SS.

I HEREBY CERTIFY, That on this day before me, the undersigned, a Notary Public in and for the State of Florida at Large, duly commissioned and qualified, personally appeared W. A. Davis, President of The Fernandina Dock and Realty Company, a corporation, the corporate party of the first part in and to the above deed of conveyance or written instrument, and also personally appeared before me Linwood Jeffreys, the Secretary of the said corporation; the said persons being severally well known to me and known by me to be the same individuals who as such President and as such Secretary executed the above deed on behalf of said corporation; and he, the said president, acknowledged that as such President he subscribed the said corporate name to said deed or instrument on behalf and by authority of said corporation, and he, the said Secretary, acknowledged that he affixed the seal of said corporation to said deed and attested the same by subscribing his name as Secretary of said corporation, by authority and on behalf of said corporation, and each of the two persons above named acknowledged that they, as such President and Secretary, delivered said deed or instrument by authority and on behalf of said corporation and that all such acts were done freely and voluntarily and for the uses and purposes in said deed set forth and that such instrument is the free act and deed of said corporation, and each of said persons further acknowledged and declared that he knows the seal of said corporation, and that the seal affixed to said instrument is the corporate seal of the corporation aforesaid,

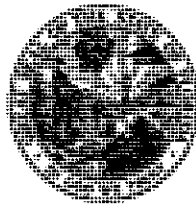
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, this 25 day of June A. D. 1937, in the City of Fernandina, County of Nassau and State of Florida.

(Seal of Notary)

W. S. Whitney
Notary Public for the State of Florida at
Large.
My Commission expires Mar. 30, 1939.

Recorded June 25th, 1937.

G. C. Burgess.
CLERK.



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

December 9, 2009

Michael J. Czymbor, City Manager
City of Fernandina Beach
City Manager's Office
204 Ash Street
Fernandina Beach, Florida 32304

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Mr. Czymbor:

It is a pleasure to advise you that the above referenced property was officially listed in the National Register of Historic Places on November 18, 2009.

The enclosed fact sheet outlines the results of listing in the National Register with reference to major Federal and State laws and regulations related to listed properties. Local planning agencies should be aware of the review requirements pertaining to any Federally or State assisted activities that may have an impact on listed properties. If you have any questions, please feel free to contact Historic Preservationist Bob Jones at 850-245-6333 or 1-800-847-7278.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott M. Stroh III".

Mr. Scott M. Stroh III
State Historic Preservation Officer

A handwritten signature in black ink, appearing to read "Barbara E. Mattick".

Mrs. Barbara E. Mattick, PhD.
Deputy State Historic Preservation Officer
for Survey & Registration

SMS/BEM/ajw

Enclosure

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
(850) 245-6300 • FAX: 245-6435

☐ Archaeological Research
(850) 245-6444 • FAX: 245-6452

☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

December 9, 2009

The Honorable Barry Holloway, Chairman
Nassau County Board of County Commissioners
96160 Nassau Place
Yulee, Florida 32097

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Commissioner Holloway:

It is a pleasure to advise you that the above referenced property was officially listed in the National Register of Historic Places on November 18, 2009.

The enclosed fact sheet outlines the results of listing in the National Register with reference to major Federal and State laws and regulations related to listed properties. Local planning agencies should be aware of the review requirements pertaining to any Federally or State assisted activities that may have an impact on listed properties. If you have any questions, please feel free to contact Historic Preservationist Bob Jones at 850-245-6333 or 1-800-847-7278.

Sincerely,

Mr. Scott M. Stroh III
State Historic Preservation Officer

Mrs. Barbara E. Mattick, PhD.
Deputy State Historic Preservation Officer
for Survey & Registration

SMS/BEM/ajw

Enclosure

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FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

December 9, 2009

Adrienne Dessy
City of Fernandina Beach
Community Development Department
204 Ash Street
Fernandina Beach, Florida 32034

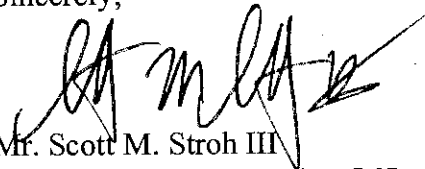
Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

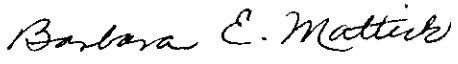
Dear Ms. Dessy:

It is a pleasure to advise you that the above referenced property was officially listed in the National Register of Historic Places on November 18, 2009.

The enclosed fact sheet outlines the results of listing in the National Register with reference to major Federal and State laws and regulations related to listed properties. Local planning agencies should be aware of the review requirements pertaining to any Federally or State assisted activities that may have an impact on listed properties. If you have any questions, please feel free to contact Historic Preservationist Bob Jones at 850-245-6333 or 1-800-847-7278.

Sincerely,


Mr. Scott M. Stroh III
State Historic Preservation Officer


Mrs. Barbara E. Mattick, PhD.
Deputy State Historic Preservation Officer
for Survey & Registration

SMS/BEM/ajw

Enclosure

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FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

December 9, 2009

Phyllis Davis, Director
Amelia Island Museum of History
333 South Third Street
Fernandina Beach, Florida 32034

Re: Nassau County Jail, 333 South Third Street, Fernandina Beach, Nassau County, Florida

Dear Ms. Davis:

It is a pleasure to advise you that the above referenced site was officially listed in the National Register of Historic Places on November 18, 2009. The enclosed fact sheet outlines the results of listing in the National Register.

On behalf of Secretary of State Kurt S. Browning and our historic preservation staff, I congratulate you on achieving this formal recognition of the historic significance of this property. We appreciate your interest in preserving this important element of Florida's cultural resources.

Sincerely,

Mr. Scott M. Stroh III
State Historic Preservation Officer

Mrs. Barbara E. Mattick, PhD.
Deputy State Historic Preservation Officer
for Survey & Registration

SMS/BEM/ajw

pc: Sidney P. Johnston

Enclosure

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☒ Historic Preservation
(850) 245-6333 • FAX: 245-6437



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

January 20, 2010

Mr. Walter J. Fufidio
Planning Director
Nassau County Growth Management Department
96161 Nassau Place
Yulee, Florida 32097

RE: Nassau County Jail, 233 South Third Street, Fernandina Beach, Florida

Dear Mr. Fufidio:

I am writing you to confirm that the actual address officially listed on the National Register of Historic Places nomination for the Nassau County Jail is 233 South Third Street and the previous address listed on prior correspondence was in error. Thank you for bringing this to our attention.

If you have any further questions, please do not hesitate to contact me at (850) 245-6333 or ajwaber@dos.state.fl.us. On behalf of Secretary of State Kurt S. Browning, we appreciate your continued interest in preserving Florida's historic heritage.

Sincerely,

A handwritten signature in black ink that reads "Andrew Waber". The signature is fluid and cursive, with the first name "Andrew" and last name "Waber" clearly distinguishable.

Andrew Waber
Historic Sites Specialist
Survey & Registration Section

pc: Adrienne Dessy
Phyllis Davis

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
850.245.6300 • FAX: 850.245.6435

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☒ Historic Preservation
850.245.6333 • FAX: 850.245.6437



Nassau County Growth Management
Department
96161 Nassau Place
Yulee, Florida 32097

Walter J. Fufidio, AICP
Planning Director

RECEIVED
BUREAU OF
HISTORIC PRESERVATION

2010 JAN 20 A 10:45

January 14, 200

Adrienne Dessy, Planner
City of Fernandina Beach

RE: National Register of Historic Places

Dear Adrienne,

Enclosed please find a copy of correspondence from the Division of Historical Resources confirming that the Former Nassau County Jail – currently the Amelia Island Museum- has been listed on the National Register of Historic Places. I believe the confirmation letter incorrectly lists the address as 333 South 3rd Street.

Please share this information with The Historic District Council and use as otherwise deemed necessary.

Sincerely,

A handwritten signature in cursive script that reads "Walter Fufidio".

Walter Fufidio
Nassau County Planning Director

Cc: Scott M. Stroh, Division of Historical Resources
Phyllis Davis, Amelia Island Museum
Daniel Salmon, Nassau County Building Maint.
Growth Management Staff

FERNANDINA
(904) 491-7328
FAX (904) 491-3611



S 2ND ST

BEECH ST

3rd Street

FERNANDINA

S 3RD ST

CEDAR ST

S 4TH ST

126

407

408

406

402

216

218

222

230

403

407

409

0.031mi

301

208

208

210

209

211

233

235

209



FLORIDA DEPARTMENT OF STATE
Dawn K. Roberts
Interim Secretary of State
DIVISION OF HISTORICAL RESOURCES

December 21, 2010

Ms. Phyllis Davis
Director
Amelia Island Museum of History
233 South Third Street
Fernandina Beach, Florida 32034

Dear Ms. Davis:

Congratulations! It is a pleasure to forward the enclosed certificate honoring the official listing of the Nassau County Jail in the National Register of Historic Places on November 18, 2009. This is a proper tribute to the historic significance of this property.

We hope that you will display this certificate in an appropriate location as a permanent reminder of the historical significance of this property. We will be happy to answer any questions you may have regarding the National Register program, and to work with you in any way we can to preserve this important cultural resource.

On behalf of Interim Secretary of State Dawn K. Roberts and our historic preservation staff, I salute you on achieving this formal acknowledgement. We appreciate your interest in preserving this important element of Florida's cultural resources.

Sincerely,

Barbara E. Mattick

Barbara E. Mattick, Ph.D.
Chief, Bureau of Historic Preservation
Deputy State Historic Preservation Officer
for Survey & Registration

BEM/ajw

Enclosure

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NASSAU
COUNTY

Nassau Island
Museum of
History
Unlock the past



NASSAU
COUNTY

MUSEUM OF HISTORY

Museum of History
Nassau County Courthouse
1700 North Main Street
Ft. Lauderdale, FL 33301
(954) 462-1234
www.nassauhismuseum.com

















Old Town Fernandina and Fort San Carlos - 1821



This scale model of the original town of Fernandina (Old Town) is an interpretation of a spring inventory and map of the town. The map was created just prior to the U.S. acquisition of Florida from Spain in 1821.

George J. F. Clarke planned the town in 1821, following the Spanish "Law of the Indies" (1542). This series of planning regulations prescribed the placement of fortifications and plazas, the arrangement of streets and the basic shape of town. In Old Town, two lot types, the still-used local planning ordinance, the plaza (48 1/2 feet by 93 feet) and the half-plaza (24 1/2 feet square). A person could sit a pig at least this size supports a better spread and the family will shelter, warm, and feed from vines and domesticated animals.

Fort San Carlos, located the western edge of the Plaza de la Constitución from Plaza San Carlos. It protected the town from attack or an invasion of eight cannons.

The Old Town model uses simple forms, and all open demonstration to preserve the importance of the town plan over time. The town's layout is a testament to the town's history, and although there's been much change since 1821, the town's layout is still a testament to the town's history.

As the town grew, the Spanish in the Western Hemisphere, Old Town Fernandina was placed on the National Registry of Historic Places in 1987.

Museum Shoppe



County

Tourism

Water

Timber

Boat Builders

Tools of the Trade

Netmakers and Ship Charters

The Net House



Heritage Hall

Egans Creek Waterworks Co.

Yassini Co.
Jailhouse

CAUTION
CLOSED

Hall

Restrooms

Nassau Co.
Jailhouse

ks Co.







NOT AN EXIT
Door Will
Sound Alarm

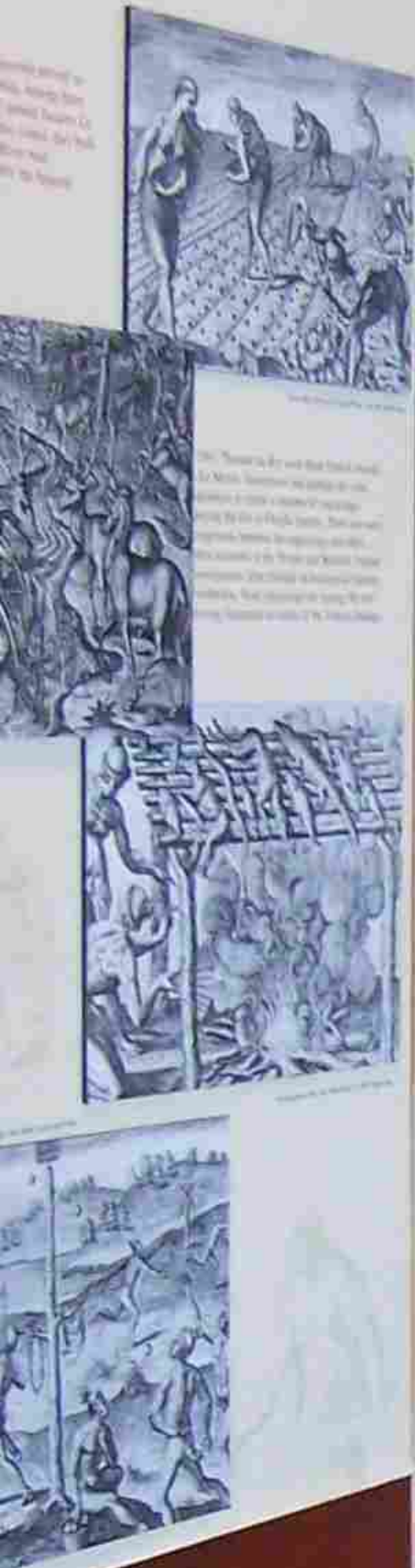
EXIT



CLOSED

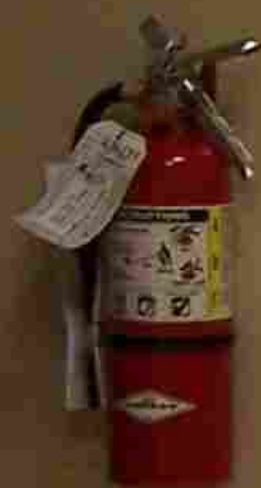


abious Depiction





EXIT





FIRE
PULL HERE





EXIT







PROUD
TO BE
#3

FL
IT'S THE LAW!
The Law
DISCRIMINATION

Occupational Safety & Health Notices
IT'S THE LAW!

WORKERS' COMP V

03325









EXIT

FIRE
PULL STATION











STAPLES

STAPLES

EXHIBIT

SMIRNOFF

DSP-MI-1
80 PROOF
10.5 LITERS

AVON

SKIN-SO-FAST Bug Guard Plus
Enter to win a Ford Expedition

CAMELOT

CAMELOT





OLD NASSAU County JAIL (2)

CAMERA FACING WEST

ORIGINAL JAIL FRONT DOOR

NASSAU

COUNTY JAIL



OLD NASSAU COUNTY JAIL (3)

LETTERS ABOVE OLD
FRONT DOOR - in
picture 2

CAMERA FACING WEST



④

OLD NASSAU COUNTY JAIL

ORIGINAL Building with
Small 1955 addition

CAMERA FACING SOUTH



⑤

OLD NASSAU County JAIL
Current MUSEUM ENTRANCE
ORIGINAL Building with
Second Floor addition
1955 WING on left
CAMERA facing NORTH



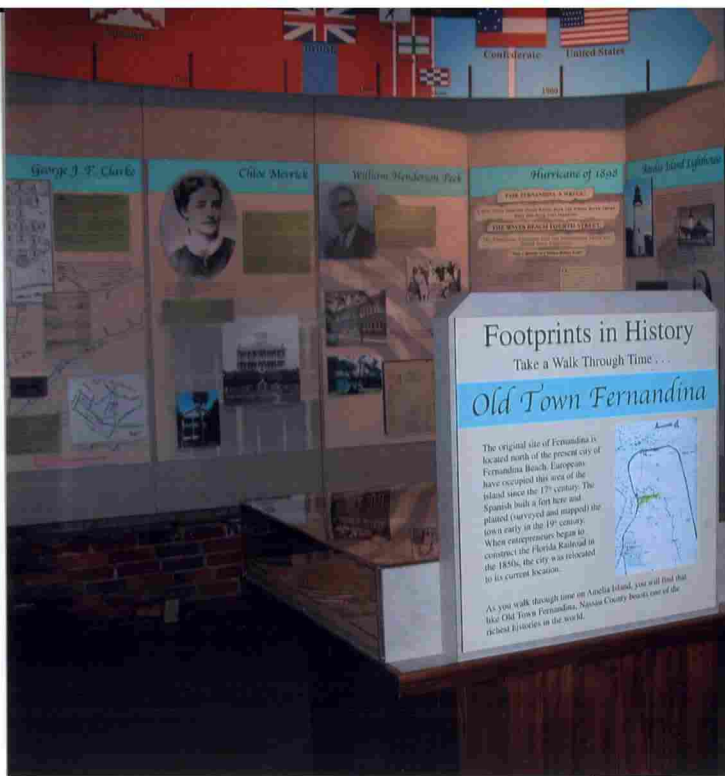
⑥
OLD NASSAU COUNTY JAIL

ABOVE MUSEUM ENTRANCE

ART MODERNE ADDED

IN 1935

CAMERA FACING NORTH



Footprints in History

Take a Walk Through Time . . .

Old Town Fernandina

The original site of Fernandina is located north of the present city of Fernandina Beach. Europeans have occupied this area of the island since the 17th century. The Spanish built a fort here and planted (surveyed and mapped) the town early in the 19th century. When entrepreneurs began to construct the Florida Railroad in the 1880s, the city was relocated to its current location.



As you walk through time on Annis Island, you will find that like Old Town Fernandina, Nassau County boasts one of the richest histories in the world.

⑦
Old NASSAU COUNTY JAIL

INSIDE ENTRANCE DOOR
1st floor

CAMERA FACING NORTHWEST

WAS JAIL Keeper's quarters



⑧

Old Nassau County Jail

2nd floor - cell door

camera facing NORTHWEST



⑨

OLD NASSAU COUNTY JAIL

2nd floor

jail cell

camera facing NORTH



Old NASSAU county JAIL (10)

2nd floor

Area for black male

Prisoners - now library/
archives

Camera facing Southeast



OLD NASSAU County JAIL ⑪

1st Floor -

Exposed brick from
original 1878 building.

Shows wooden pieces
every 9 layers of brick



00 NASSAU COUNTY JAIL ①

OVERVIEW SHOT

CAMERA FACING NORTHWEST



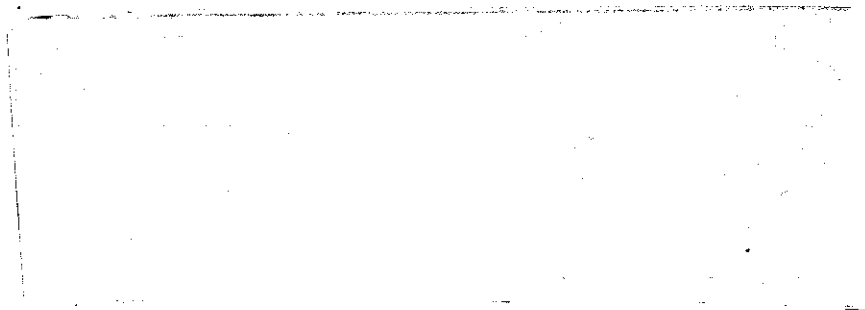
POINT OF INTEREST (12)

SAME BRICK WORKMANSHIP
IN OLD NASSAU County
Court House - circa 1892

located at CENTRE + 5th
Fernandina Beach



NA 287 Brick Structure sound. Windows
in desperate need



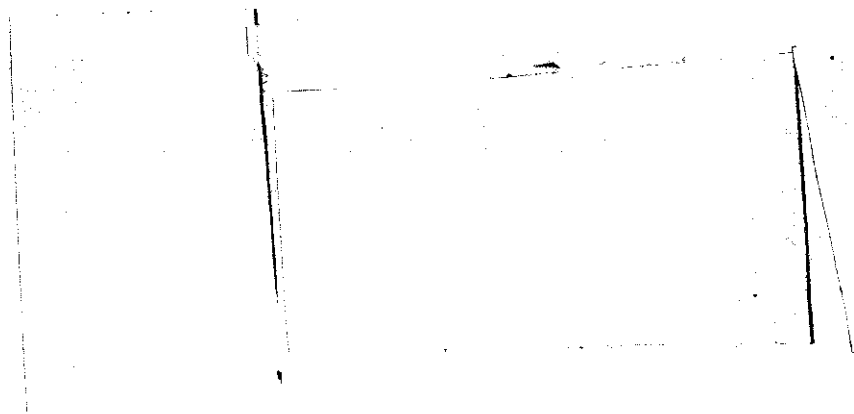


NA 287 Second Floor Exhibit Room
Ready For Rehabilitation



NA 287

Proposed Site of Restrooms



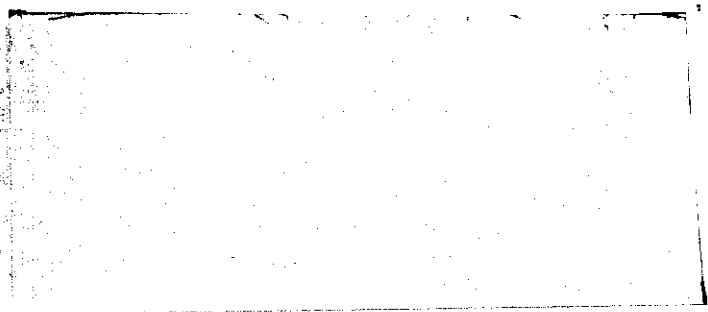


NA 287 Exterior metalwork needs to be
renewed.





NA287 1st Floor: 2nd Floor
hallways in need of Sand-
blasting see Attachment A.2





NA287 1st Floor & 2nd Floor
Hallways in Need of Sandblasting
See Attachment A-2



NA 287 Sandblasting of walls in exhibition room
completed. Sub-floor in need of covering.

Please see Attachment A-1.



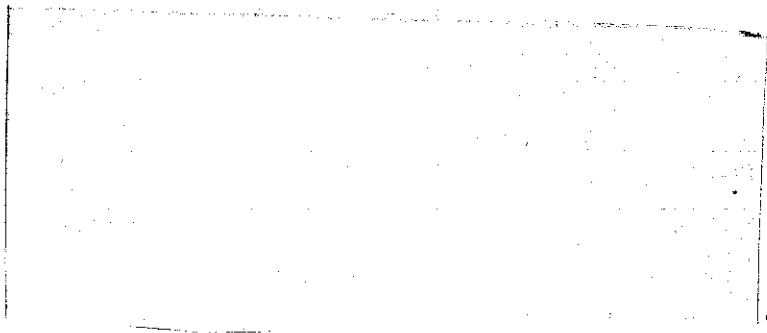
NA 287 Exterior metalwork
needs to be renewed.



NA 287 Sandblasting of walls
in exhibition room completed. Sub-
Floor in need of covering. Please
See Attachment A-I.



NA 287 1st Floor Ceilings painted
awaiting track lighting





Nassau Cty. Jail/
Fla. Museum Transp. History

NA 287













































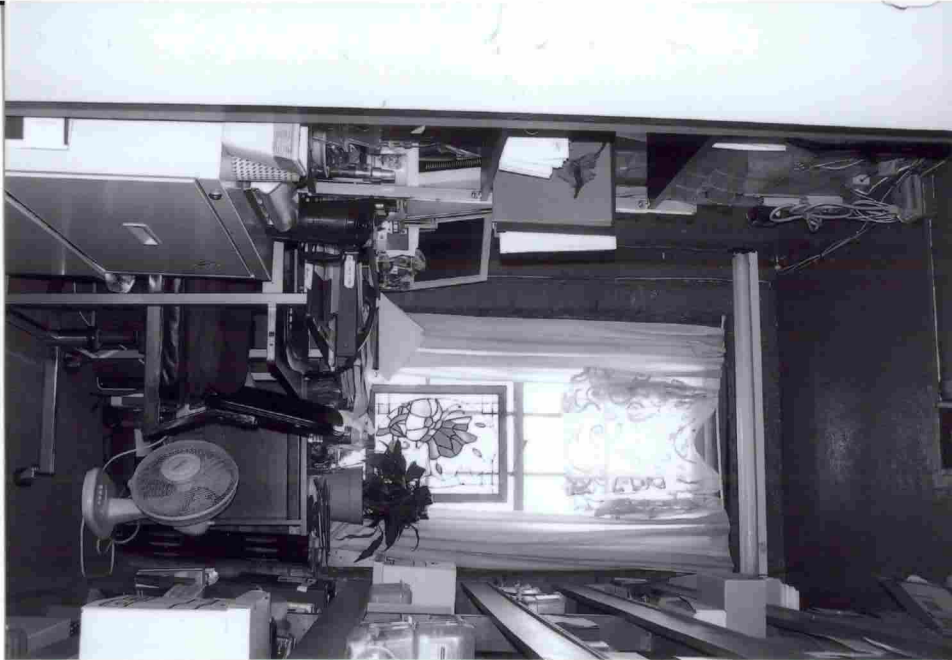


























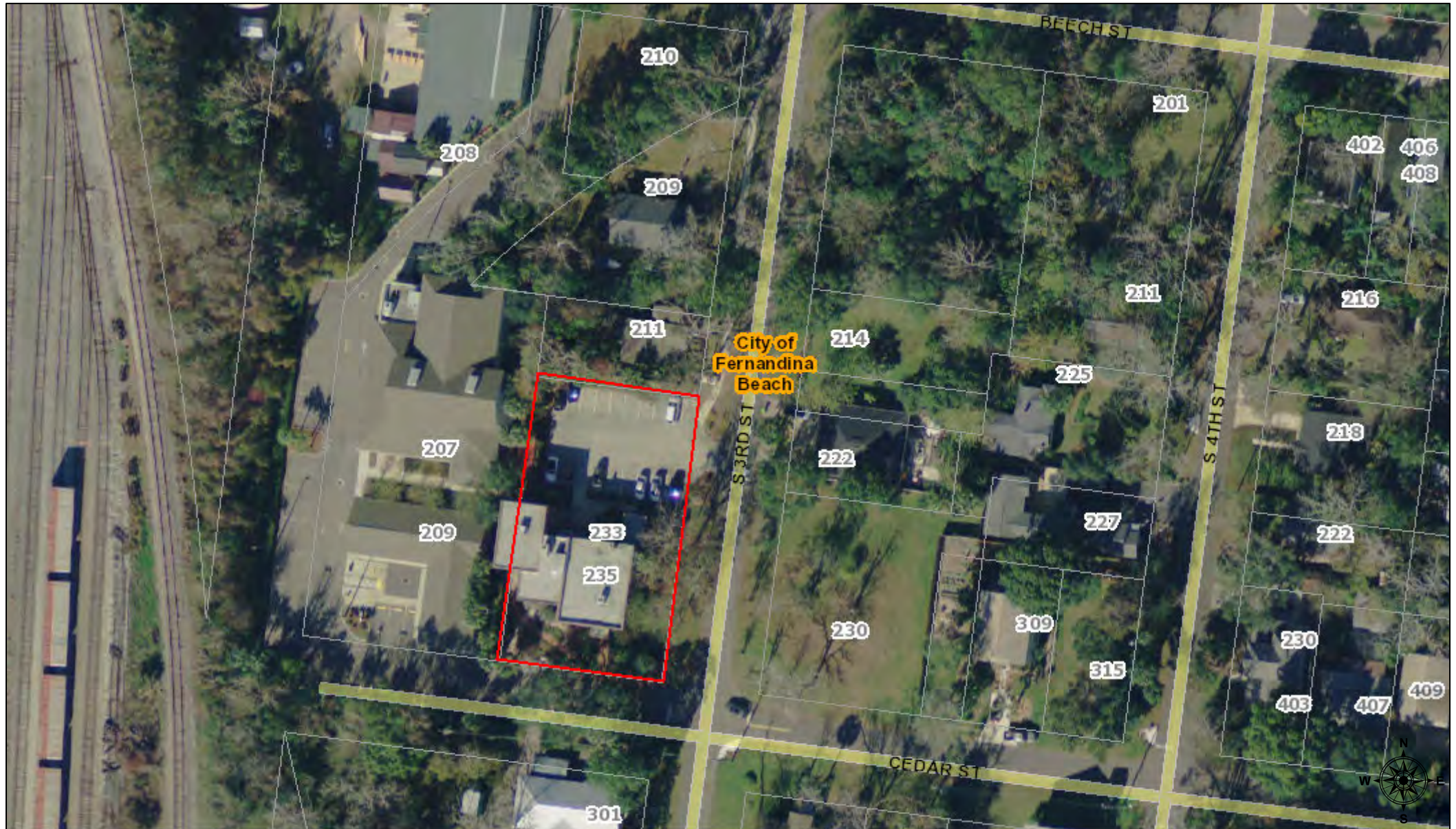


HDC 2019-32

EXHIBIT 2

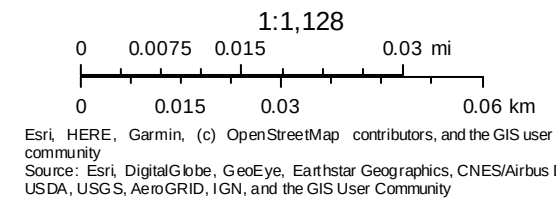
Locator Map/ Underlying Lots of Record Map

233 S. 3rd St Nassau County Jail



August 8, 2019

911 Address Labels



233 S. 3rd St Underlying Lots of Record



August 8, 2019

911 Address Labels

1:564

0 0.00475 0.0095 0.019 mi

0 0.0075 0.015 0.03 km

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

HDC 2019-32

EXHIBIT 3

Boundary Expansion Vote



Historic District Boundary Expansion Vote

INCLUSION OF THE NASSAU COUNTY JAIL/ AMELIA ISLAND MUSEUM OF HISTORY (233 S. 3RD STREET) INTO THE FERNANDINA BEACH DOWNTOWN HISTORIC DISTRICT

- The addition of this building as a non-contributing structure to the Downtown Historic District will impose design review on certain permitted activities.
- The ordinance adding this building to the Downtown Historic District will contain requirements which must be met in order to alter, renovate or demolish the building. These requirements are identified in Chapter 8 of the City of Fernandina Beach Land Development Code and the City of Fernandina Beach Downtown Historic District Design Guidelines.
- The owners of this property will have the right to vote as to whether they wish to have this building included in the historic district.
- At the hearing, the proposed historic district design guidelines for reviewing certain permitted activities will be discussed and voted on by the Historic District Council.
- If the building is included in the Historic District, owners shall be required to obtain a Certificate of Approval before certain work is done on the property.
- Per section 11.04.01 all testimony presented by the applicant, any affected party; any witness for a party, or the staff (other than legal advice given by the City attorney) shall be given under oath.
- A copy of the application may be inspected in the office of the Department of Planning & Conservation, City Hall, 204 Ash Street, between the hours of 8:00AM – 5:00PM, Monday through Friday. The application will be considered in a quasi-judicial proceeding. Copies of the quasi-judicial procedures are available at the Office of the City Clerk and will be available at the meeting. For information on the application, please contact the Department of Planning & Conservation at 310-3480.

As owner of the subject property I vote to:

☒ **INCLUDE** this property in the Fernandina Beach Downtown Historic District
or

☐ **NOT INCLUDE** this property in the Fernandina Beach Downtown Historic District

Susan E. Martin, Board Chair
Owner's Name Signed

Susan E. Martin
Owner's Name Printed

8/1/19
Date

STATE OF FLORIDA

COUNTY OF NASSAU

Subscribed and sworn to before me this 1ST day of Aug, 2019

Linda Herron Linda Herron 4-21-20
Notary Public Signature Printed Name My Commission Expires

Personally Known ☒ OR Produced Identification FL DL

ID Produced: _____



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www.fbfl.us

Equal Opportunity Employer

HDC 2019-32

EXHIBIT 4

Draft Ordinance

ORDINANCE 2019-~~XX~~

AN ORDINANCE OF THE CITY OF FERNANDINA BEACH, FLORIDA, EXPANDING THE BOUNDARY OF THE HISTORIC DISTRICT TO INCLUDE THE OLD NASSAU COUNTY JAIL; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the building known as the Old Nassau County Jail, located at 233 South 3rd Street was built circa 1938 and expanded in 1954; and

WHEREAS, the two-story Art Moderne styled building is noteworthy for its hard-fired red brick walls laid up in a modified Flemish bond, tripartite belt course, a glass block panel, decorative basket weave brick panels, fleur-de-lis cast stone ornamentation and iron cage at the south entrance ; and

WHEREAS, this site had been home to two previous versions of the Nassau County Jail beginning in 1878; and

WHEREAS, the structure served as Nassau County's jail until 1978 and was adapted in 1986 to house the Amelia Island Museum of History; and

WHEREAS, the Nassau County Jail was individually listed on the National Register of Historic Places in November of 2009; and

WHEREAS, on **Month Date, Year**, the Historic District Council of the City of Fernandina Beach recommended the City Commission take action on including the Old Nassau County Jail as a non-contributing resource in the local historic district to ensure its protection; and

WHEREAS, on **Month Date, Year**, the Planning Advisory Board of the City of Fernandina Beach recommended the City Commission take action on including the Old Nassau County Jail in the local historic district to ensure its protection; and

NOW, THEREFORE, BE IT ENACTED BY THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, AS FOLLOWS:

SECTION 1. That the Historic District, as previously established by Ordinance No. 526, and expanded by Ordinance Nos. 749, 846, 95-12, 97-24, and 201-24, is hereby restated and amended to read as follows:

DISTRICT BOUNDARIES:

A) There is established a Historical District area in the city comprising all of the area within the city limits contained in the following boundaries: begin at the northeast corner of Front and Centre streets; then cross Centre Street and run south along the east curb line of Front Street to a point parallel with the south elevation of 102 Centre Street; then run east along the south property lines of the buildings fronting on the south side of Centre Street and South 2nd Street along the rear property lines of the buildings fronting on the south side of the 200 block of Centre Street to the point said line intersects the west property lines of the buildings fronting on the west side of South 3rd Street; then run south along said lines to the north curb of Ash Street; then crossing Ash Street to the south curb of Ash Street; then run west along the south curb of Ash Street to the east curb of Second Street; then run south to the south property line of 204 Ash Street; then run east along the south property line of 204 Ash Street; then run east along the south property line of 218 Ash Street; then run east along said line, crossing South 3rd Street and continue along the south property line of 302 Ash Street to the southeast corner of the property; then run north along the east property line of 302 Ash Street, continuing to the north curb of Ash Street; then run east along the north curb of Ash Street to the northeast corner of Ash and South 4th Streets; then run south along the east curb of South 4th Street, crossing Ash and Beech streets, to a point parallel with the south property line of 402 Beech Street; then run east along the south property lines of the structures fronting on the south side of Beech Street, continuing to the east curb of South 5th Street; then run south along the east curb of South 5th Street to the northeast corner of South 5th and Cedar streets; then run east along the north curb of Cedar Street to a point parallel with the west property line of 301 South 6th Street; then crossing Cedar Street, run along the west property lines of the buildings fronting on the west side of the 300 block of South 6th Street to the north curb of Date Street; then continuing across Date Street, run along the west property line of 401 South 6th Street to the southwest corner of the property; then run east along the south property line of 401 South 6th Street and continue to the east curb of South 6th Street; then run south along the east curb of 6th Street to a point parallel with the south property line of 602 Date Street; then run east along the south property line of 602 Date Street and continue east along the south property line of 606 Date Street to the southeast corner of said property; then run north along the east property line of 606 Date Street, continuing across Date Street to its north curb; then run north along the north curb of Date Street to the northeast corner of Date and South 7th streets; then run south along the east curb of South 7th Street to the northeast corner of South 7th and Elm Streets; then run east along the north curb of Elm Street to a point parallel with the east property line of 430 South 7th Street; then run north along the east property lines of the buildings fronting on the west side of the 400 block of South 7th Street to the south curb of Date Street; then continue north, crossing Date Street, along the east property lines of the buildings fronting on the east side of the 300 block of South 7th Street to the point said line intersects the southwest corner of the property line of 303 South 8th Street; then run east

along the south property line of 303 South 8th Street to the west curb of South 8th Street; then run north along the west curb of South 8th to the northwest corner of South 8th and Beech streets; then run east along the north curb of Beech Street to the southeast corner of the property line of 801 Beech Street; then run north along the east property line of 801 Beech Street and continue to a point parallel with the south property line of 115 South 9th Street; then run east along the south property line of 115 South 9th Street to the west curb of South 9th Street; then run north along the west curb of South 9th Street to a point parallel with the northeast corner of the property line of 115 South 9th Street; then run east, crossing South 9th Street and continuing along a line south of 112 South 9th Street; then continue across South 10th Street to the southwest corner of the property line of 116 South 10th Street; then run east along the south property line of 116 South 10th Street to the southeast corner of the said property; then run north along the east property lines of the buildings fronting on the east side of the 100 block of South 10th Street and continue north, crossing Ash Street and along the east property lines of the buildings fronting on the east side of the first block of South 10th Street to the south curb of Centre Street (Atlantic Avenue); then run west along the south curb of Atlantic Avenue to a point parallel with the east property line of 909 Atlantic Avenue; then run north, crossing Atlantic Avenue, along the east property line of 909 Atlantic Avenue to the northeast corner of the property; then run west along the north property line of 909 and 901 Atlantic Avenue and continue west across North 9th Street along the north property line of 801 Atlantic Avenue to the east curb of North 8th Street; then run south along the east curb of North 8th Street to the southeast corner of 8th Street and Atlantic Avenue; then run west, crossing 8th Street to the beginning of Centre Street and run west along the south curb of Centre Street to the southwest corner of Centre and 7th Streets; then run north along the west curb of North 7th Street to the southwest corner of North 7th and Alachua streets; then run west along the south curb of Alachua Street to a point parallel with the northeast corner of the property line of 30 North 6th Street; then run north, crossing Alachua Street along the east property lines of the buildings fronting on the east side of the 100 block of North 6th Street to the south curb of Broome Street; then run west along the south curb of Broome Street to the southwest corner of Broome and North 6th streets; then run north along the west curb of North 6th Street to a point parallel with the north property line of 515 Broome Street; then run west along said property line and continue west along the north property line of 511 Broome Street to its northwest corner; then run north along the east property line of 506 Calhoun Street to the south curb of Calhoun Street; then run west along the south curb of Calhoun Street to a point parallel with the northwest corner of the property line of 506 Calhoun Street; then run north, crossing Calhoun Street and continuing along the east property lines of the buildings fronting on the east side of the 300 block North of 5th Street to the northeast corner of the property line of 320 North 5th Street; then run west along the north property line of 320 North 5th Street to the east curb of North 5th street; then run south along the east

curb of North 5th Street to a point parallel with the north property line of 307 North 5th street; then run west, crossing North 5th Street, along the north property line of 307 North 5th Street to the northwest corner of the property; then run south along the west line of said property to the southwest corner of said property; then run west along the north property line of 304 Calhoun Street and continue to the west curb of North 4th street; then run north along the west curb of North 4th Street to the southwest corner of North 4th and Dade streets; then run west along the south curb of Dade Street to a point parallel with the east property line of 412 North 3rd Street; then run north, crossing Dade Street and continue along the east property lines of the buildings fronting on the east side of North 3rd Street to the southwest corner of the property line of 310 Escambia Street; then run east along the south line of said property; then run north along the east line of said property to the south curb of Escambia Street; then run west along the south curb of Escambia Street to the west curb of North 3rd Street; then run north along the west curb of North 3rd Street to a point parallel with the north property line of 501 North 3rd Street; then run west along said line to the northwest corner of the property; then run south along the west property lines of the buildings fronting on the west side of North 3rd Street to the northeast corner of the property line of 209 Dade Street; then run west along the north line of said property to its northwest corner; then run south along the west property line of 209 Dade Street to the north curb of Dade Street; then run east along the north curb of Dade Street to the northeast corner of Dade and North 3rd Streets; then run south along the east curb of North 3rd Street to a point parallel with the north property line of 227 North 3rd Street; then run west along said line to its northwest corner; then run south along the west property lines of the buildings fronting on the west side of the 200 block of North 3rd Street to the point where said line intersects the northeast corner of the property line of 211 Broome Street, then run west along the north property line of 211 Broome Street and continue along the north property line of 209 Broome Street to the northwest corner of said property; then run south along the west property line of 209 Broome Street to the north curb of Broome Street; then run east along the north curb of Broome Street to a point parallel with the southeast corner of the property line of 211 Broome Street; then run south, crossing Broome Street and continue along the west property lines of 121 and 117 North 3rd Street to the southwest corner of the property line of 117 3rd Street; then run east along the south property line of 117 North 3rd Street to the east curb of North 3rd Street; then run south along the east curb of North 3rd Street to the southeast corner of North 3rd and Alachua streets; then run west along the south curb of Alachua Street to the southeast corner of Alachua and Front streets; then run south along the east curb of Front Street to the northeast corner of Front and Centre streets, the point of the beginning.

(B) (1) The area of the Historic District, as established by division (A) above, is hereby restated and expanded to include the following tracts,

parcels or areas of land:

(a) Tract A: A portion of that certain property known as "Old Town", more particularly described as follows: All of San Carlos Plaza and all of blocks 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 23, 24, 25, 30, 35, 37, and 222, and those portions of blocks 14, 22, and 31 lying west of North 14th Street; and that portion of water lots, 1, 2, 3, 4, 5, 6, 7, 14, 15, 16, 17 and 18 extending westerly to the mean high water mark; all according to the official plat or plats of the City of Fernandina Beach, Nassau County, Florida.

(b) Tract B: Lot 1, block 244, in the City of Fernandina Beach, Florida.

(c) Tract C: Beginning at the southeast corner of lot 64 of Forrest Hill Subdivision and running west along the southerly property lines of lots 64 and 65 of Forrest Hill Subdivision to the northeast corner of lot 8 of Lighthouse Lane Subdivision; thence south along the easterly property lines of lots 8, 9, 10, and 11 of Lighthouse Lane subdivision to the northerly property line of lot 9 of Lighthouse Circle Subdivision; thence east along the northerly property lines of lots 9, 8, 7 and 6 of Lighthouse Circle Subdivision to the northeast corner of lot 6; thence north along the westerly shoreline of Egan's Creek to the point of beginning. All subdivisions listed are recorded in the Plat Books of Nassau County, Florida.

(d) Tract D: That certain property including the central portion of the downtown waterfront and part of the surrounding neighborhood including lots 2-14 of block 269, lots 6-28 of block 268, water lots 1 and 2, and water lots 25-29 in the City of Fernandina Beach, Florida.

(e) Tract E: That certain City property known as "The Peck Center", consisting of lots 1 through 8 of block 144 and lots 1 through 8 of block 145, inclusive of the intervening public right-of-way associated with Fir Street, in the City of Fernandina Beach, Florida.

(f) Tract F: That certain property known as the "Old Nassau County Jail", consisting of lots 15 through 21 of block 273 in the City of Fernandina Beach, Florida.

(2) The above expanded Historic District and additional parcels, tracts or areas of land shall henceforth be subject to all the provisions and

regulations established and set forth in the Land Development Code.

SECTION 2. SEVERABILITY. If any section, subsection, sentence, clause, phrase of this Ordinance, or the particular application thereof, shall be held invalid by any court, administrative agency or other body with appropriate jurisdiction, the remaining sections, subsections, sentences, clauses and phrases under application shall not be affected thereby.

SECTION 3. EFFECTIVE DATE. This Ordinance shall be deemed effective after its passage and approval upon second and final reading.

ADOPTED this **Xth** day of **MONTH**, 2019.

CITY OF FERNANDINA BEACH

First Name Last Name
Commissioner - Mayor

ATTEST:

APPROVED AS TO FORM:

Caroline Best
City Clerk

Tammi E. Bach
City Attorney

NOTICE OF PUBLIC HEARING
CITY COMMISSION
CITY OF FERNANDINA BEACH

NOTICE IS HEREBY GIVEN that a Public Hearing is scheduled for **Tuesday, April 7, 2020, at 6:00 PM** in the City Commission Chambers, 204 Ash Street Fernandina Beach, Florida to consider the following application:

ORDINANCE 2020-09

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, EXPANDING THE BOUNDARY OF THE HISTORIC DISTRICT TO INCLUDE THE OLD NASSAU COUNTY JAIL; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

Interested parties may appear at said hearing and be heard as to the advisability of any action, which may be considered. Any persons with disabilities requiring accommodations in order to participate in this program or activity should contact 310-3115, TTY/TDD 711 or through the Florida Relay Service at 1-800-955-8771 at least 24 hours in advance to request such accommodation.

IF ANY PERSON DECIDES TO APPEAL ANY DECISION MADE BY THE BOARD/COMMISSION WITH RESPECT TO ANY MATTER CONSIDERED AT SUCH HEARING, S/HE WILL NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE, WHICH RECORD INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED.

For information, please contact the Staff of the City Clerk's Office, 204 Ash Street, between the hours of 8:00 AM – 5:00 PM, Monday through Friday, (904) 310-3115.

Note:

Please run as a DISPLAY in the March 25, 2020 edition of the News Leader.

Please send proof of publication to:

*City Clerk's Office
City Hall, 204 Ash Street
Fernandina Beach, FL 32034
904-310-3115*

NOTICE OF PUBLIC HEARING
CITY COMMISSION
CITY OF FERNANDINA BEACH

NOTICE IS HEREBY GIVEN that a Public Hearing is scheduled for **Tuesday, April 21, 2020, at 6:00 PM** in the City Commission Chambers, 204 Ash Street Fernandina Beach, Florida to consider the following application:

ORDINANCE 2020-09

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF FERNANDINA BEACH, FLORIDA, EXPANDING THE BOUNDARY OF THE HISTORIC DISTRICT TO INCLUDE THE OLD NASSAU COUNTY JAIL; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

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For information, please contact the Staff of the City Clerk's Office, 204 Ash Street, between the hours of 8:00 AM – 5:00 PM, Monday through Friday, (904) 310-3115.

Note:

Please run as a DISPLAY in the April 8, 2020 edition of the News Leader.

Please send proof of publication to:

*City Clerk's Office
City Hall, 204 Ash Street
Fernandina Beach, FL 32034
904-310-3115*

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Discussion
Marina

ITEM TYPE: Discussion

REQUESTED ACTION:

SYNOPSIS: This item is placed on the agenda at the request of Commissioner Ross.

FISCAL IMPACT: To be determined based upon City Commission direction.

CITY ATTORNEY COMMENTS: N/A

CITY MANAGER RECOMMENDATION(S): N/A

Dale L. Martin, City Manager 4/8/2020

Date: January 21, 2020

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION:

COST CENTERS

CRITICAL • Police • Emergency Medical Services • Ocean Rescue • Fire • Utility Water • Utility Sewer • Utility Stormwater • Trash Removal • Streets • Facilities Management [Vehicles, Buildings] • Building Department • Code Enforcement • Humane Society [Animal Control]	INFRASTRUCTURE • City Hall • Peck Center • MLK • Parks • Green Infrastructure [Greenway, Tree Canopy, Open Space Acquisition] • Library [Building Only] • Lighthouse • Cemetery • Beach Boardwalk • Beach Walkovers • Dune system • Parking Lots • Downtown • Shore Line Protection & Stabilization • Front Street • Fire House [New] Police Fire Stations • Parking Lots • Storm Water • Roads • Sewer and water
SUPPORT CRITICAL • Comptroller – Finance Department • Information Technology [IT] • Human Resources • City Manager [includes grant manager] • City Clerk • City Attorney • City Commission • Planning [HDC, BOA, Comp Plan, LDC, PAB]	OBLIGATIONS • Marina Debt • Golf Course Debt • Utility Fund Debt • Airport Dept • Beach Re-nourishment • Beach Maintenance • Fire Pension • Police Pension • General Pension • Cemetery • Grant Conditions [Marina, Airport] • Lighthouse • Voter approved debt • Incidental Take Permit [Future?]
DISCRETIONARY • Recreation • Youth Programs • Aquatics • Main Street • Marina • Golf Course • Airport • Non-profits support • New Parks	INSURANCE • General • Marina [?]

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Discussion
Beaches

ITEM TYPE: Discussion

REQUESTED ACTION:

SYNOPSIS: This item is placed on the agenda at the request of Vice Mayor Kreger.

FISCAL IMPACT: N/A

CITY ATTORNEY COMMENTS: N/A

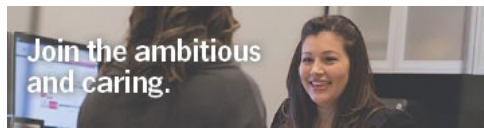
CITY MANAGER RECOMMENDATION(S): N/A

Dale L. Martin, City Manager 4/14/2020

Date: December 04, 2019

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION:



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Supes Talk County COVID Response, E... »

Monday, April 6, 2020

MEDICAL / HEALTH / OUTDOORS

L.A. Times: Scientists Concerned over Potential COVID-19 Exposure from Beach Walks and Swimming

POSTED BY JENNIFER FUMIKO CAHILL

ON MON, APR 6, 2020 AT 12:35 PM

The *Los Angeles Times* is reporting potential COVID-19 infection risk at California beaches, not just from other people out for walks and surfing, but from the ocean and its spray.

The piece quotes Kim Prather, an atmospheric chemist at the Scripps Institution of Oceanography, who "worries SARS-CoV-2 could enter the ocean from sewage spills and outfalls, and then reenter the atmosphere." Prather's concern about beach exposure to the virus, about which scientists are still learning, is not just about swimming in potentially polluted ocean waters, but the particulates and "microscopic pathogens" that could wash into the ocean from rains and be delivered by spray from waves carried on the wind.

She also says, "I wouldn't go in the water if you paid me \$1 million right now."

click to enlarge



about the author



Jennifer Fumiko Cahill

jennifer@northcoastjournal.com

@jfumikocahill

Follow 462 followers

Bio:

Jennifer Fumiko Cahill is the arts and features editor of the *North Coast Journal*.

more from the author

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by Jennifer Fumiko Cahill

NCJ Preview with Access Humboldt
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Redwood Acres Fair Canceled
by Jennifer Fumiko Cahill

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HSU Faces \$20 Million Deficit; CR's Situation Dire, Too
by Thadeus Greenon

One New COVID-19 Case Brings County Tally to 50
by Thadeus Greenon

Wear a Mask! OK, But What Kind?
by Julie Cart, CalMatters



PHOTO BY JASON MARAK

A parking lot sign at Trinidad Head.

Another scientist, Charles Gerba of the University of Arizona, who's been studying viruses in wastewater, says it's unclear how long COVID-19 can survive in saltwater.

Humboldt local Jennifer Savage, Surfrider's policy manager for California, is also quoted, in the piece, in support of beach closures around the state for the sake of public health, though those changes have been driven by concern over maintaining social distance. While Redwood State and National Parks have closed their parking lots, beaches in Humboldt County remain open with some restrictions for parking.

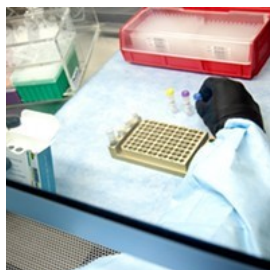
Like 259 Share Tweet Save Favorite Share

Tags: beaches, COVID-19, coronavirus, pollution, wastewater, Image

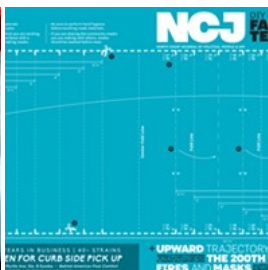
speaking of...



HSU Faces \$20 Million Deficit; CR's Situation Dire, Too
Apr 7, 2020



One New COVID-19 Case Brings County Tally to 50
Apr 7, 2020



Wear a Mask! OK, But What Kind?
Apr 7, 2020

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by Thadeus Greenson

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by Kimberly Wear

CITY COMMISSION AGENDA ITEM
City of Fernandina Beach



SUBJECT: Discussion
Land Development Code (LDC) Amendment

ITEM TYPE: Discussion

REQUESTED ACTION:

SYNOPSIS: Discussion to include the option of amending the Land Development Code to expand the wetland protection zone and setback line from wetlands.

This item is placed on the agenda at the request of Commissioner Ross.

FISCAL IMPACT: N/A

CITY ATTORNEY COMMENTS: N/A

CITY MANAGER RECOMMENDATION(S): N/A

Dale L. Martin, City Manager 3/16/2020

Date: March 16, 2020

Submitted By: Nicole Bednar, Administrative Services Manager

COMMISSION ACTION:

Item 10.7 LDC Amendment

Discuss the merits of increasing the buffering requirements from 25 feet to at least 50 feet for wetlands and from 50 feet to 100 feet for natural bodies of water and whether to refer to the PAB for further action

FERNANDINA BEACH LAND DEVELOPMENT CODE GENERAL PROVISIONS CHAPTER 1

Wetland and wetland transition area shall have the meaning set forth in the Fernandina Beach Comprehensive Plan.

Wetland protection zone means the jurisdictional wetland and the land area within twenty-five (25) feet of the wetland boundary.

Comprehensive Plan

Wetlands – Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological, or reproductive adaptations, have the ability to grow, reproduce, or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto. *POLICY REFERENCES: 1.03.01 (pg. 1-6), 1.07.14 (pg. 1-18), 4.05.16 (pg. 4-9), Goal 5, 6.06.02 (pg. 6-5), 6.09.07 (pg. 6-8), 6.10.08 (pg. 6-9)*

Wetland Transition Area – An ecological transition zone from uplands to wetlands which is an integral portion of the wetlands ecosystem, providing temporary refuge for wetlands fauna during high water episodes, critical habitat for animals dependent upon but not resident in wetlands, and slight variations of wetland boundaries over time due to hydrologic or climatologic effects; and a sediment and storm water control zone to reduce the impacts of development upon wetlands and wetlands species. Wetland transition areas are commonly protected through the use of buffer requirements. *POLICY REFERENCES: 5.08.03 (pg. 5-15), 5.08.09 (pg. 5-16), 5.08.10 (pg. 5-16)*

3.03.03 Development Within Wetlands

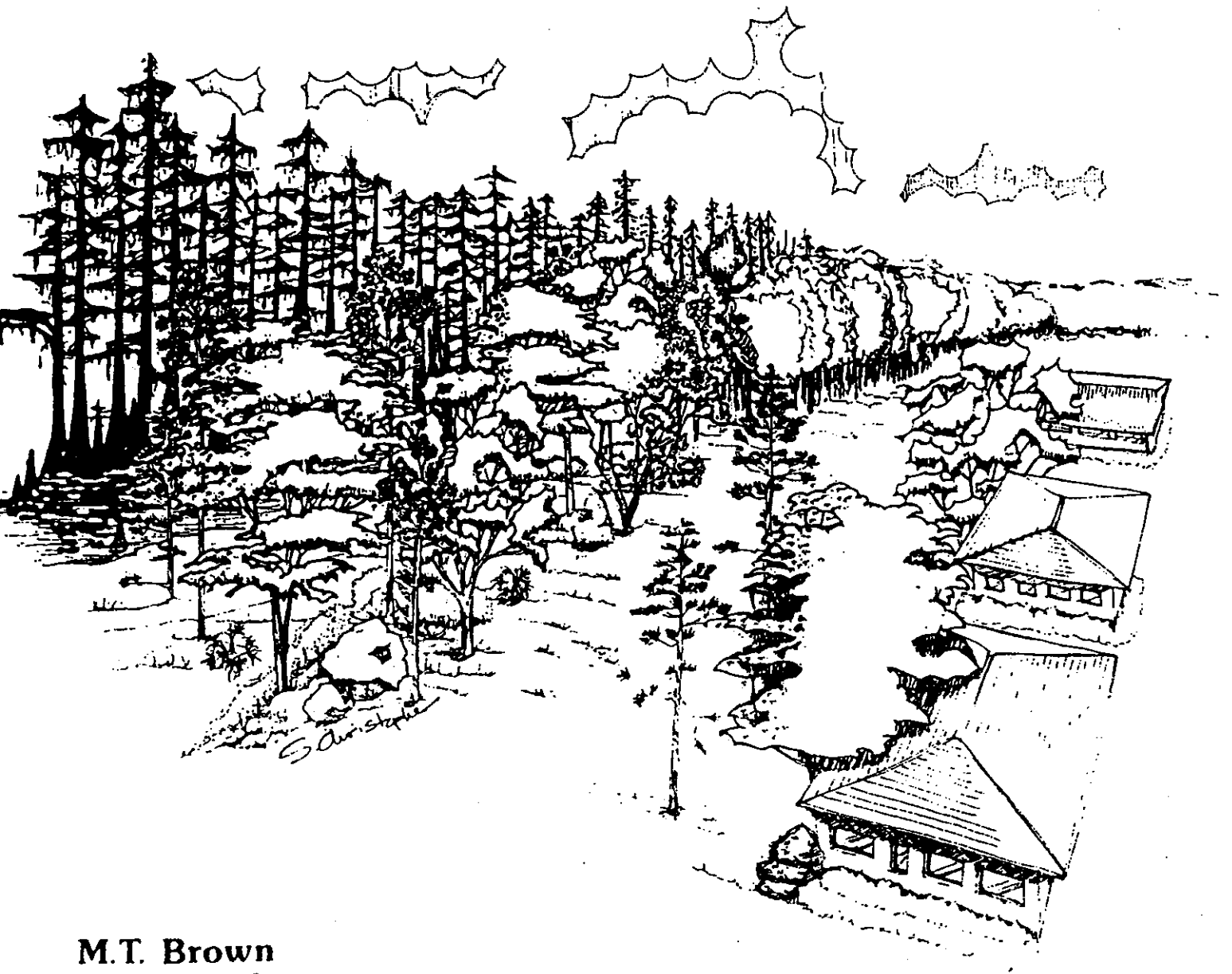
Except as expressly provided in this section, no development activity shall be permitted in a wetlands area, as defined in Section 3.03.01.

A. Wetlands shall be preserved in their natural state. No fill shall be placed in a wetland, and the wetland shall not be altered.

B. Buffering requirements for development adjacent to wetlands or natural water bodies:

1. All new development and redevelopment adjacent to jurisdictional wetlands or surface water bodies shall be required to provide a buffer zone of native vegetation at least ~~twenty-five (25)~~ fifty (50) feet wide around wetlands and ~~fifty (50)~~ one-hundred (100) feet from natural water bodies to prevent erosion, retard runoff, and provide areas for habitat. All new construction that is a water dependent or water related use within the CRA and I-W zoning is exempt from the required buffers established by this Section;

Buffer Zones for Water, Wetlands and Wildlife in East Central Florida



M.T. Brown
J.M. Schaefer
and
K.H. Brandt

**BUFFER ZONES
FOR WATER, WETLANDS, AND WILDLIFE
IN EAST CENTRAL FLORIDA**

**prepared for the
East Central Florida Regional Planning Council**

by

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PREFACE

Developing a methodology for determining buffer requirements for water, wetlands, and wildlife is a complex undertaking when one considers the complexities of the landscape and the various activities associated with urbanization. Our tasks from the outset of this project and a previous project (Brown and Schaefer, 1987) were to simplify the complexity of the world, while retaining some measure of reality, and to develop meaningful and realistic recommendations for wetland buffers based on those simplifications. To those ends, we have identified three goals for determining buffer widths: (1) minimization of impacts from groundwater drawdown, (2) protection against sedimentation and turbidity, and (3) protection of habitat needs of wetland-dependent wildlife. To further simplify the world, we have classified the landscape into six landscape associations, a classification of land types that is based on ecosystems, hydrology, and landscape position. The classification scheme minimizes some of the complexity of the real-world landscape and makes application of buffer standards less arduous. In all, the goal was to develop a rational methodology that was not overly complicated and yet was defensible on scientific grounds.

Early discussions regarding the purpose of this study were centered on developing a methodology for determination of buffers for regionally significant wetlands¹ within the area of the East Central Florida Regional Planning Council (ECFRPC). Later discussions refined the purpose to include not only a methodology, but also generalized buffers for the region that could be applied at the regional level--in essence, some basic, minimum buffer requirements as presumptive minimum standards. Still later discussions added the need to develop a step-by-step procedure so that buffers might be calculated by all landowners within the region with a minimum of training and data required.

As the focus of the program shifted, the intended use of this document shifted. In the beginning, it was considered a report to the ECFRPC so that the Planning Council might develop buffer standards for regionally significant wetlands. As the program changed, the report included recommendations for generalized buffers based on the developed methodology, and finally, the report became a public document that gives step-by-step procedures for the determination of buffer requirements for all wetlands within the ECFRPC. To the extent that it was possible, we have tried to accommodate these shifting purposes. However, the changing focus has added significantly to the length and complexity of the report; to the extent that it now requires some minor explanation of its organization.

In Section I, Table 1-1 summarizes our recommendations for generalized, minimum buffer requirements that may be used as presumptive minimum standards applied regionwide. These recommendations are organized by landscape associations. Appendix A gives descriptions and maps of the associations within the ECFRPC. Use these descriptions and maps to determine where the differing standards apply.

In Section II, a discussion of the rationale and the methodology used to calculate buffer widths and detailed buffer recommendations are given. Use this section to develop regionwide minimum standards.

Section III contains step-by-step procedures and required data for the determination of buffer requirements. This section is included for the purpose of determining more refined buffer requirements than those provided in Table 1-1 or Section II should individual site conditions warrant. Background and derivations of the formulae in Section III are given in Appendices A, B, C, D, and E.

In summary, we suggest that the ECFRPC adopt a regulatory framework that uses the minimum presumptive standards for buffer requirements given in Section II but, that also allows for site-by-site determination of buffer requirements should site conditions warrant a more detailed evaluation.

¹Regionally significant wetlands are defined by the ECFRPC as generally, wetlands greater than 5 acres (see Section 1).

ACKNOWLEDGEMENTS

This project was supported by funds provided by the East Central Florida Regional Planning Council, Winter Park, Florida. It was funded as an extension of earlier work that was supported by the St. Johns River Water Management District. The present study builds upon methods developed in that earlier project.

Literature review was conducted by Ms. Theresa Snyder, drafting by Mr. Ken McMurry. The authors are especially grateful to Ms. Linda Crowder for word processing and Ms. Kristina Gaidry for word processing and editorial assistance. Cover art was done by Sandy Christopher.

Michael Gilbrook, contract officer for the East Central Florida Regional Planning Council, was extremely patient and supportive.

BUFFER ZONES FOR WATER, WETLANDS, AND WILDLIFE IN EAST CENTRAL FLORIDA

SECTION I: Recommended Buffer Requirements

Introduction

This report builds upon previous work in the development of a methodology for the determination of buffer zones for water, wetlands, and wildlife (Brown and Schaefer, 1987). This report also further develops and refines the methods of earlier work, recommends standards and criteria, suggests minimum buffer requirements, and proposes site-specific measurements that could be used to determine buffers on a site-by-site basis. The criteria for the determination of buffer zones were designed to address the concerns identified in Policy 43.8 (as amended on 5-18-88) of the East Central Florida Comprehensive Regional Policy Plan (ECFCRPP):

In order to protect the quality and quantity of surface waters and provide habitat for semi-aquatic or water-dependent terrestrial species of wildlife, buffer zones should be established landward of regionally significant wetlands...

Regionally significant wetlands include:

those wetlands which are Florida Department of Environmental Regulation jurisdictional as defined by s. 17-4.002, F.A.C; isolated wetlands five acres or more in area; and wetlands which provide significant habitat for species which are listed as endangered, threatened or species of special concern by the Florida Game and Fresh Water Fish Commission or Florida Department of Agriculture and Consumer Services, or which are assigned State Element Ranks of S1 or S2 by the Florida Natural Areas Inventory (ECFCRPP, page 150).

Policy 43.8 further states that:

the landward extent of buffer zones around wetlands shall be determined based on scientific evaluation of site specific conditions, including the nature of the existing soils, vegetation, topography, hydrology, water quality, wildlife diversity and the resource protection status of receiving waters.

The purpose of setting aside buffer zones between a wetland and a developed upland area is to protect the integrity of the wetland's water supply, its water quality, and associated wetland-dependent wildlife. A

buffer can be thought of as a zone of transition between two different land uses that separates and protects one from the other. Based on consideration of our previous work in this area (Brown and Schaefer, 1987), three goals have been identified that can be used to determine buffer sizes for wetland protection: minimization of groundwater drawdown in wetlands, minimization of sediment transport into wetlands, and protection of wildlife habitat. This report provides estimates of buffer sizes necessary to achieve these goals in the area comprised of the six counties in the ECFRPC's area (Brevard, Lake, Orange, Osceola, Seminole, and Volusia; see Figure 1-1). Also included are detailed descriptions of the methodologies and step-by-step procedures for calculating buffer requirements are given so that buffer sizes may be calculated on a site-by-site basis if desired.

Buffer Widths and Landscape Associations

To achieve some measure of sensitivity to the varying conditions found throughout the east central Florida landscape, the region was classified into several landscape associations that could be used to determine minimum buffer requirements. A landscape association is an assemblage of ecological communities having distinct topographic, geologic, and hydrologic conditions and landscape position. Six landscape associations were identified in the region:

- 1) Pine flatwoods/isolated wetlands
- 2) Pine flatwoods/flowing water wetlands
- 3) Pine flatwoods/hammocks/hardwood swamps
- 4) Sandhill communities/isolated or flowing-water wetlands
- 5) Pine flatwoods/salt marshes
- 6) Coastal hammocks w/salt marshes

A description of each association, maps of associations by county of the ECFRPC, and soils information that is important for evaluation of site-specific buffer determinations are given in Appendix A.

Soil properties, groundwater hydrology, topography, and wildlife characteristics of each landscape association were evaluated to determine generalized buffer requirements. The physical conditions and wildlife characteristics that are typical of each association overlap to a large degree, and therefore, when average conditions are used to determine buffer requirements for each association, there are few differences. Table 1-1 gives the minimum and maximum buffer requirements to minimize groundwater drawdown and sedimentation and to protect wetland-dependent wildlife for each of the landscape associations in the east central Florida region. To determine the appropriate buffer to meet each of the three goals, turn to the appropriate part of Section II.

Average conditions found for soils and hydrology are very similar for all associations except sandhills. Topography differs from one association to the next and in fact, differences in topography are the main variable controlling groundwater buffers. Therefore, differences in buffer widths for drawdown protection in Table 1-1 are mostly related to differences in topography. The landscape associations offer a convenient means of summarizing the data because they simplify much of the complexity of the landscape. Instead of dealing with 10-20 types of ecological communities and innumerable combinations of each, the associations offer a classification scheme with six components.

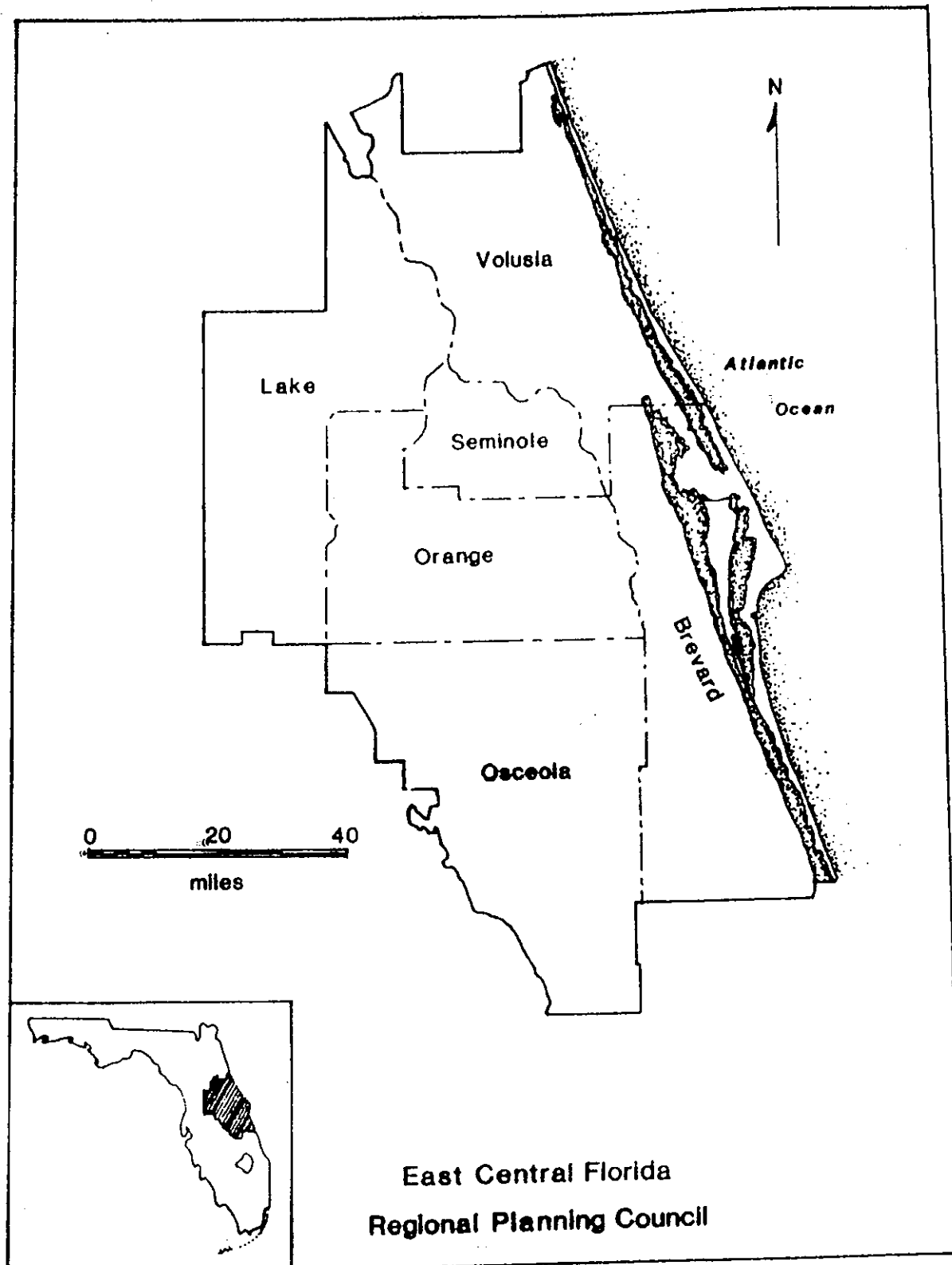


Figure 1-1. Map showing the counties of the East Central Florida Regional Planning Council.

Table 1-1. Minimum and maximum recommended buffer widths in feet for landscape associations of the east central Florida region for protection of water quality and quantity and wetland-dependent wildlife habitat.

Landscape Association	Minimize Groundwater Drawdown ²		Control Sedimentation ³		Protect Wildlife Habitat ⁴	
	Min.	Max.	Min.	Max.	Min.	Max.
	(feet)		(feet)		(feet)	
1. Flatwoods/ isolated wetlands	100	550	75	375	322	550
2. Flatwoods/ flowing-water wetlands	100	550	75	375	322	550
3. Flatwoods/ hammocks/hardwood swamps	50	250	75	375	N/A	550
4. Sandhills/ wetlands	20	250	75	375	322	732
5. Flatwoods/ salt marshes	100	550	75	375	322	N/A
6. Coastal hammocks/ salt marshes	100	550	75	375	322	N/A

²Buffer width depends on the extent of groundwater drawdown and slope of the groundwater table. The buffer widths were calculated using 1-foot and 5-foot drawdowns at the source of drawdown, a zero-inch allowable drawdown at the wetland edge, and a circular wetland of 5 acres (radius of 263 ft). Recommended buffers for 2- and 3-foot drawdowns are given in Table 2-1. The following slopes were assumed for the groundwater table: landscape association (LA)#1 = 1%; LA#2 = 1-2%; LA#3 = 2%; LA#4 = 2-4%; LA#5 = 1%, and LA#6 = 1%.

³Minimum widths are based on the settling velocity of sand; maximum widths are based on the settling velocity of silt. The buffer width for sand is measured from the upland/wetland boundary while the buffer for silt is measured from edge of open water through wetland to the upland (i.e., buffers for silt include the wetland).

⁴The minimum width is based on minimum habitat requirements of species associated with marsh ecosystems; the maximum width is based on minimum habitat requirements for wetland-dependent wildlife species associated with the various forested wetland ecosystems.

It is important to recognize the following qualifiers when using the suggested buffer widths in

Table 1-1:

1. The buffer widths given are estimates of buffer requirements using average conditions for each landscape association. Detailed site-specific data could be gathered and more refined buffer widths determined on a site-by-site basis.
2. The data used to calculate the buffer widths and the values of other parameters in this report are derived from maps, literature, and other general sources. They are not derived from field investigations.
3. Wildlife buffers begin at the waterward edge of the forested wetland or upland habitat that is adjacent to the aquatic system. Marsh buffers are measured landward from the landward edge of the marsh vegetation. A minimum 50-foot-upland strip should also be included in each buffer for semi-aquatic reptile nesting and overwintering.
4. Buffer sizes set out in this report will not ensure the maintenance of minimum viable populations of wildlife species.

Recommended Buffer Widths

The suggested minimum and maximum buffer widths given in Table 1-1 are for illustrative purposes. Tables in Section II give recommended buffers that can be used to set presumptive regulatory standards for the region. In addition, it is recommended that the Council consider including a provision in any buffer rule that would give permit applicants the option of collecting site-specific data and determining buffer widths using the methods described in Section III of this report.

Section II describes in some detail the rationale behind the recommended buffer widths; however, some explanation here may help to minimize confusion. The original objective of this project was to develop a single recommended buffer width for each landscape association, but soon it became apparent that a single number contained too many hidden assumptions and minimized too much of the important variability in the landscape. Thus, recommended buffer widths are based on physical attributes of the site. To determine which buffer width applies to a site requires some knowledge of the site and its intended use and the following procedure:

1. Determine the landscape association the site occupies (use Appendix A maps).
2. Determine the extent of groundwater drawdown planned and slope of groundwater table (average terrain slope may suffice).
*READ REQUIRED DRAWDOWN BUFFER WIDTH FROM TABLE 2-1; Section II.
3. Determine soil type and USDA soil class from soils map.
*READ REQUIRED SEDIMENTATION BUFFER WIDTH FROM TABLE 2-2; Section II.
4. Determine vegetative cover of each wetland on the site.
*READ REQUIRED WILDLIFE HABITAT BUFFER WIDTH FROM TABLE 2-5; Section II.
5. The widest of the three buffers should be used.

This method provides a relatively simple yet reasonable means of tailoring the buffer width to the most important site conditions and anticipated site engineering. The recommended widths are conservative (that is,

buffer widths given in this report are the maximum widths necessary to achieve each goal). As a result, many development applicants may opt to collect site-specific data and apply the methods given in Section III to determine buffer requirements.

A much simpler approach, but one that is not recommended, is the adoption of a single presumptive buffer width of, say, 200 or 500 feet. However a single presumptive buffer would probably increase the use of Section III methods, defeating the attractiveness of a single numeric buffer width.

Saltwater and Freshwater Wetlands

Saltwater wetlands differ significantly from freshwater wetlands in species composition because of interactions of landscape position and the driving energies of tides and waves. Nevertheless, the relationship to groundwater, potential sedimentation, and wildlife of freshwater and saltwater wetlands are similar. Therefore, strategies for determining buffers for the interface of upland and saltwater wetlands are the same as those employed for inland freshwater wetlands. The following rationale may help to explain the reason for treating saltwater and freshwater wetlands similarly for the purposes of determining buffer requirements.

A lens of fresh groundwater that is particularly sensitive to changes in flow direction exists at the interface between uplands and saltwater wetlands. As long as a positive freshwater head in the uplands is maintained, salty groundwater movement toward the upland is minimized. However, increased drainage or pumpage in upland areas adjacent to saltwater wetlands causes rapid movement of saltwaters toward the upland. Thus, groundwater drawdown in uplands adjacent to saltwater wetlands is of primary concern.

Sedimentation and turbidity are of equal concern in saltwater and freshwater systems. No differences between saltwater wetlands and their counterparts farther inland were discerned related to potential impacts from for sedimentation or responses to turbidity. Sedimentation in saltwater wetlands as in freshwater wetlands acts to fill the wetland, suffocating vegetation and raising ground surface elevation. Turbidity in the water column reduces light penetration and can significantly reduce primary production in saltwater as well as in freshwater. As a result the same relationships used in freshwater wetlands have been applied to the saltwater wetlands.

Finally, while there is some knowledge concerning differences in wildlife utilization of saltwater and freshwater wetlands, data related to their precise habitat requirements of wildlife using saltwater wetlands are insufficient to distinguish between them for the purpose of setting buffer widths. Thus, with the exception of turtle nesting requirements, the wildlife habitat requirements developed for freshwater wetlands have been applied to saltwater systems.

SECTION II: Rationale for Buffer Determination

This section provides a rationale for each of the buffer goals (minimize groundwater drawdown, control sediment and turbidity, and protect wildlife habitat). Each subsection presents a brief rationale, explains the methodology, and gives recommended buffer widths. Appendices to this volume contain further explanatory information, formulae, and data that may be used to evaluate buffer requirements on a site-by-site basis using the procedures in Section III.

Recommended buffer widths are based on a synthesis of all pertinent information that must be considered when developing a regulatory framework, not the least of which are: (1) a rational limit to what can be reasonably expected of a buffer, (2) detection limits of the equipment that might be used to measure parameters and impacts, (3) the limits of knowledge and understanding concerning negative impacts of anthropogenic activities on wetland structure and function, and (4) the variability of nature. Often, when developing a framework for regulating natural resources, some suggested standards may seem arbitrary on the surface, e.g., trapping 95% of sediments in a buffer instead of 100% or requiring 50 feet of sandy soil around wetlands for nesting of certain wildlife species. They are arbitrary in the sense that 94% may be just as acceptable a sediment deposition rate as 95%, or 51 feet an acceptable wildlife nesting zone. Some parameter values have been rounded off so that they can be easily identified and remembered. The real issue is that detection limits and marginal return factors suggest that measuring a parameter beyond the suggested limits is probably not feasible given a reasonable amount of time and money. Furthermore, not enough is known about some parameters (the nesting habits of most wildlife species, for example) to predict the exact requirements for upland nesting zones. To expect greater precision is unwarranted and unreasonable.

Recommendations for various coefficients and constants used to determine buffer requirements are based on analysis of the conditions and parameters found in the region and best judgment related to what is reasonable, what is understood about wetland structure and function, what is known about the detection limits of current measurement techniques, marginal returns on investments of time and energy, and what is known about the variability of nature.

Groundwater Drawdown

The interplay of surface water in wetlands with groundwater in surrounding uplands is not at all simple. To understand how lowered groundwater levels in surrounding lands will affect surface water levels in adjacent wetlands, a significant amount of detailed data on the structure and composition of the soils immediately under and in the immediate vicinity of the wetland is required. In addition, data on surface water levels within the wetland, groundwater levels in adjacent uplands, and rainfall need to be collected for at least one year. As a result of these data requirements, the use of less data-intensive methods and generalized parameters is attractive

and may lead to acceptable results given the limits of precision dictated by the methods and initial generalizations.

The diagram in Figure 2-1 illustrates the effect of drainage structures (ditches, drainage tiles, etc.) on groundwater levels in the vicinity of a wetland. The degree to which groundwater levels are lowered depends on characteristics of intervening soils, the depth of the drainage structure, and the capacity for outfall from the structure to some lower elevation. In some cases outfall is by a gravity connection to some structure or water body of lower elevation. In others, pumps are used to remove water to maintain lowered water table elevations.

The suggested buffer widths for the minimization of groundwater drawdown effects on wetland hydroperiod given in this report are based on a generalized model that requires a minimum of data collection. Under some circumstances, individual projects and conditions at particular sites may warrant a more detailed examination of drawdown effects. Under these circumstances, more complex hydrological models and detailed data may result in the determination of different buffer requirements. The use of other models should be encouraged when warranted by site conditions, but only if they are valid representations of site conditions and are driven by sufficient, reliably obtained data.

The Function of Groundwater Drawdown Buffers

The purpose of minimizing groundwater drawdown is to maintain an acceptable wetland hydroperiod after development. Lowered groundwater tables in areas surrounding wetland communities can decrease surface water depth and shorten periods of standing water within wetlands. Since the greatest single driving force determining wetland community organization is hydrology, actions that alter hydrology have direct effects on the integrity of wetland communities. Lowered water levels and shortened hydroperiods cause a shift in community structure toward species characteristic of drier conditions. The maintenance of hydroperiod is probably the single most critical variable in maintaining viable wetland communities.

Characteristic hydroperiods of wetland communities depend on the community type. Some wetland types have water depths of 3 feet or more and remain inundated for most of the year. Others have water depths of 1 foot or less and are inundated for relatively short periods of time during the year. Depths and periods of inundation within any given wetland determine its species composition. Species adapted to one hydrologic regime are often not well-adapted to a different one. Complete loss of water has obvious impacts on wetland community organization and may be caused by groundwater manipulations in adjacent uplands that lower water tables enough to "drain" wetlands.

Because water levels in wetlands are not static, predicting the impact of lowered water levels and shorter periods of inundation on the community organization of a wetland ecosystem is not an easy task. To illustrate the complexity of the problem, a model of wetland hydrology was developed that, when simulated on computer, generates curves that represent water levels within a typical wetland.

Figure 2-2 is a diagram of a simulation model of wetland hydrology that shows inflows of water from rainfall and runoff; surface water storage in the wetland; losses of water from evaporation, transpiration, and surface water outflows; and the interaction between surface water and groundwater. Figure 2-3 displays simulation results for a series of years are given where the different curves represent different rainfall patterns.

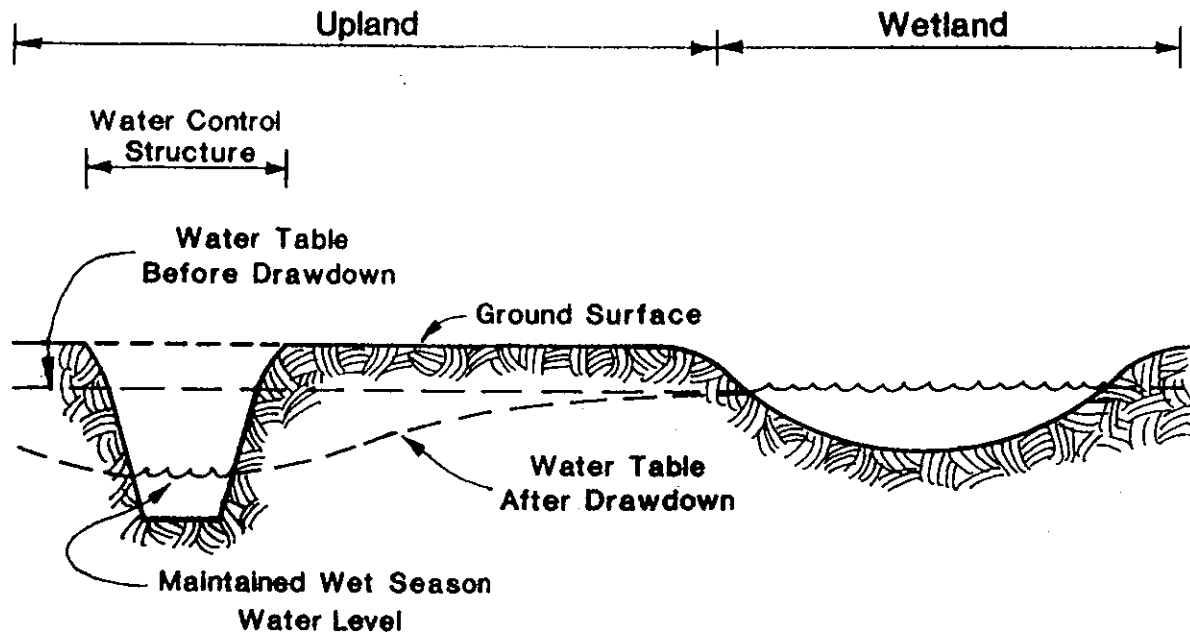


Figure 2-1. Diagram illustrating the effect of a water control structure on groundwater table. With increasing distance between the control structure and the wetland, negative impacts and wetland hydrology may be minimized.

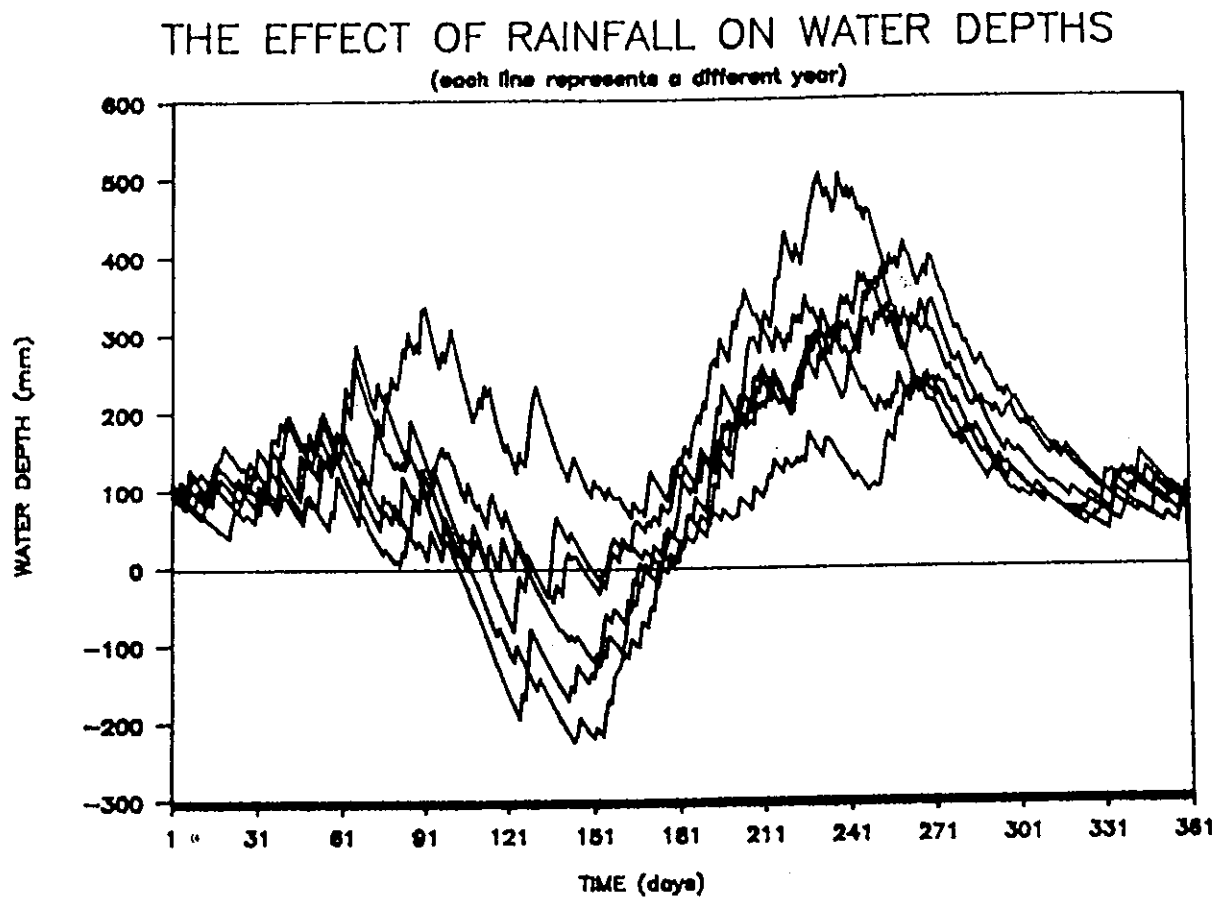


Figure 2-3. Simulation results of the wetland hydrology model in Figure 2-2 showing the variation in surface water levels within a wetland typical of central Florida. The variation from year to year is due to differences in yearly rainfall simulating wet and drought years.

The simulation shows how water levels vary depending on how much rain falls during the year. The variation in rainfall is a key factor in determining characteristic hydroperiod, since it illustrates the transient nature of wetland hydrology. What may be a characteristic hydroperiod during one year is not necessarily characteristic the next. Thus, the problem of predicting the impact on community structure of a drawdown of several inches or even 1 foot is compounded by the fact that water levels are not static and vary from year to year and within each year.

The simulation results in Figure 2-4 show the effects of lowered groundwater levels in the landscape surrounding a wetland community. Rainfall is held constant for each simulation, and groundwater levels are decreased in increments of 1 foot. The top curve shows the normal condition. Each succeeding curve results from an additional 1 foot of groundwater drawdown in the surrounding landscape. Each succeeding drawdown lowers water levels within the wetland and shortens the length of time that the wetland is inundated. The largest difference between succeeding curves is between the normal condition and 1-foot drawdown; the second biggest difference is between the 1- and 2-foot drawdown. Thereafter, additional lowering of the groundwater table does not have as great an effect as the initial 1 or 2 feet, since water levels within the wetland are now maintained for very short periods immediately after rainfall events. Comparison of these curves with the normal fluctuations of water levels that result in yearly variation in rainfall suggest that a 1-foot drawdown in the surrounding landscape is sufficient to cause a marked lowering of water levels within the wetland and that drawdowns of less than 1 foot are probably not discernable from the normal variation.

The effects of drainage structures on groundwater elevations diminish with distance from the structure. In other words, structures farther away from a wetland will have smaller impacts on water table elevations than structures in closer proximity. Thus, it is possible to determine how far a drainage structure must be from a wetland so that drawdown in the wetland is minimized.

Buffer Requirements to Minimize Impacts from Groundwater Drawdown

Appendix B is a report by Dr. Wendy D. Graham of the Department of Agricultural Engineering, University of Florida, which describes a procedure for determining the distance required between a ditch or other water control structure that lowers groundwater levels and the edge of a wetland so as to minimize the drop in water levels in the wetland. The complexities of groundwater hydrology have made it necessary to make several assumptions that limit the applicability of this method. In particular, a continuous horizontal impervious layer must exist beneath the wetland/upland system, and the depth from the soil surface to the top of the impervious layer must be known. As a result of these assumptions, the model has limited applicability in areas where there is no impervious lower boundary to the surficial aquifer or where the layer is extremely deep. Impermeable layers are frequently absent in sandhill landscapes. Under these conditions the model cannot be used; however, when these conditions prevail, groundwater levels are usually not close to the surface and thus, groundwater drawdown is not of concern. Where an impervious layer is known to exist, the model may be used to determine buffer widths.

Determination of a buffer width that will protect wetland hydrology is based on the model described in Appendix B. A model was sought that would simply and accurately represent the relationships between water levels within wetlands and groundwater levels in the surrounding landscape. The simplifying assumptions in the model have reduced requirements for detailed data to a minimum. The main data needed are: the depth to the

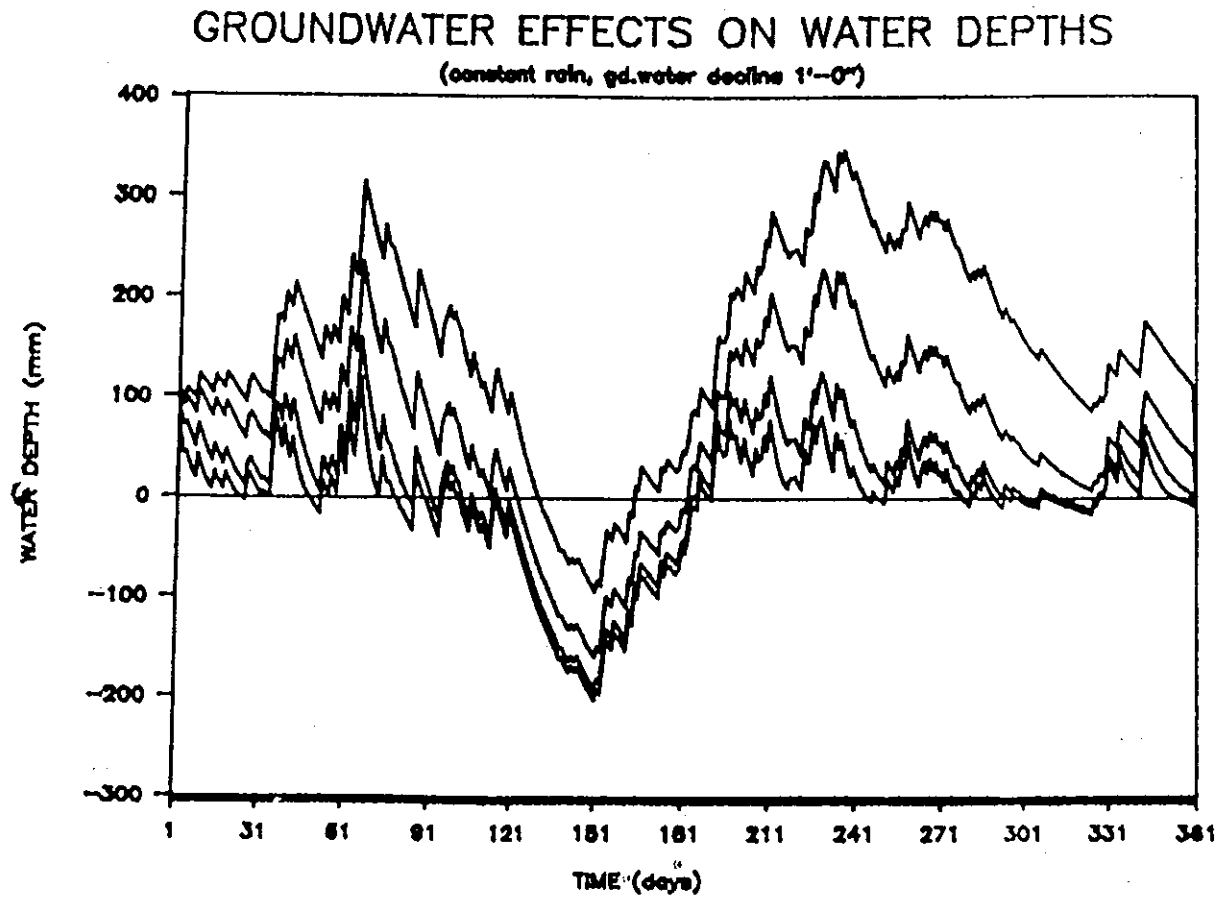


Figure 2-4. Simulation results of the groundwater hydrology model showing the effect on surface water levels within the wetland of increased groundwater drawdowns on the surrounding landscape. Each curve represents a different groundwater level drawdown. The top curve is the normal condition; the next curve down represents a drawdown of 1 foot; the curve below that represents a 2-foot drawdown; and so on.

impermeable, lower boundary of the surficial aquifer, the size of the wetland (radius), the wet season elevation of water in the center of the wetland, the pre-construction wet-season slope of the surficial aquifer (assume the ground surface slope), and the amount of drawdown at the water control structure. Figures 2-5 and 2-6 show a series of curves for a circular wetland of 5 acres (263 feet in radius) that were generated using the model in Appendix B for various surficial-aquifer slopes. In the most general sense, as demonstrated by the graphs, required buffer widths are quite sensitive to slope. Sensitivity of the model to depth to the lower limit of the aquifer depends on the size of the wetland in question. A sensitivity analysis of the model showed that for wetlands smaller than 5 acres, depth to impermeable layer was somewhat significant, but it had little influence on solutions for larger wetlands. Similarly, when all other model variables are held constant, varying the size of the wetland had no effect on buffer width except for wetlands smaller than 5 acres (263-foot radius).

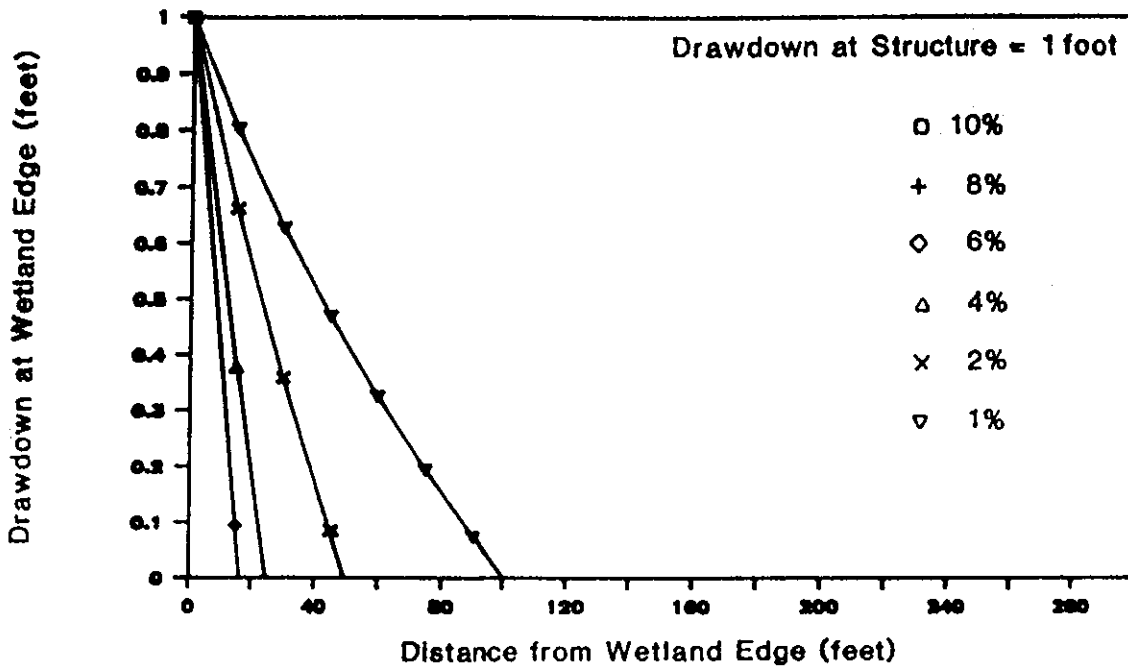
The curves given in Figure 2-5 show drawdown effects in all landscape associations, for varying degrees of slope of the surficial aquifer for a 1-foot (top graph) and 2-foot (bottom graph) drawdown at the surface water control structure. The horizontal axis shows required distance from wetland edge⁵, and the vertical axis represents drawdown at the wetland edge. The buffer required to ensure no drawdown at the wetland edge varies from 200 feet (for a 2-foot drawdown at the structure and 1% slope) to approximately 20 feet (for a 1-foot drawdown at the structure and 10% slope). Figure 2-6 illustrates the consequences of drawdowns of 3 and 5 feet. The shape of the curve is the same, but the magnitude of drawdown at the wetland edge is greater, and the required buffer width to minimize drawdown at the wetland edge is greater. In this case, to ensure zero drawdown at the wetland edge, a buffer width of approximately 550 feet is required for a drawdown of 5 feet in areas with groundwater slopes of 1%. The minimum buffer required for a 3-foot drawdown is 30 feet in areas with surficial aquifer slopes of 10%.

Changes in water levels will affect fringing areas of a wetland, altering hydrologic conditions in the transition zone between upland, and wetland. While those impacts are always potentially present, they are of greater importance in wetlands of smaller size, since with larger size, the effects of groundwater drawdown are somewhat mitigated by the hydrologic storage within the wetland. Thus, smaller wetlands require buffers of greater dimension. Small wetlands have lower capacity to ameliorate the effects of lowered groundwaters in the surrounding landscape. Buffer widths for wetlands smaller than 5 acres will be greater than those given in Table 2-1. The 5-acre limit used in this report was chosen since wetlands of less than 5 acres generally are not considered of regional significance by the ECFRPC.

The buffer recommendations given in Table 2-1 are based on typical slopes assumed for each landscape association. However, where greater resolution is warranted because of site specific conditions, the methodology explained in Section III of this document may be used to calculate required buffer widths.

⁵The wetland edge can be determined using any of several methods for demarcating the boundary between uplands and wetlands. The best methods are those developed by the Florida Department of Environmental Regulation, the Army U.S. Corps of Engineers, and the St. Johns River Water Management District. Under most circumstances, all determinations are quite similar. We suggest, for consistency, that the methodology employed by the St. Johns River Water Management District be used to establish the wetland edge when determining buffer requirements in the east central Florida region.

EFFECT OF GROUNDWATER SLOPE ON DRAWDOWN



EFFECT OF GROUNDWATER SLOPE ON DRAWDOWN

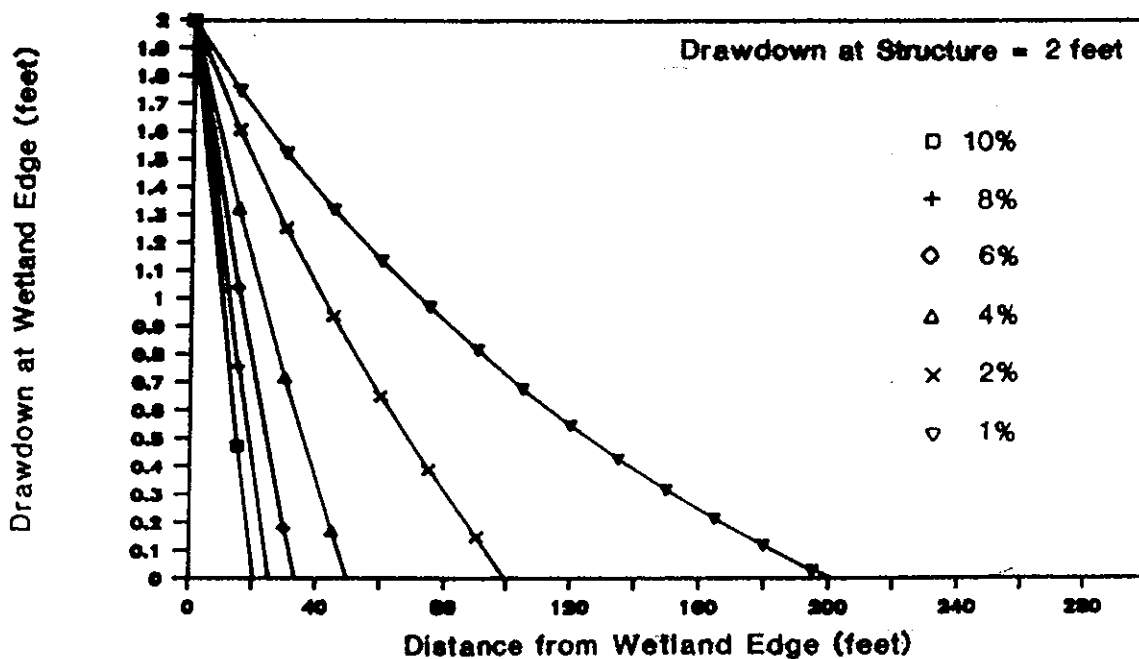
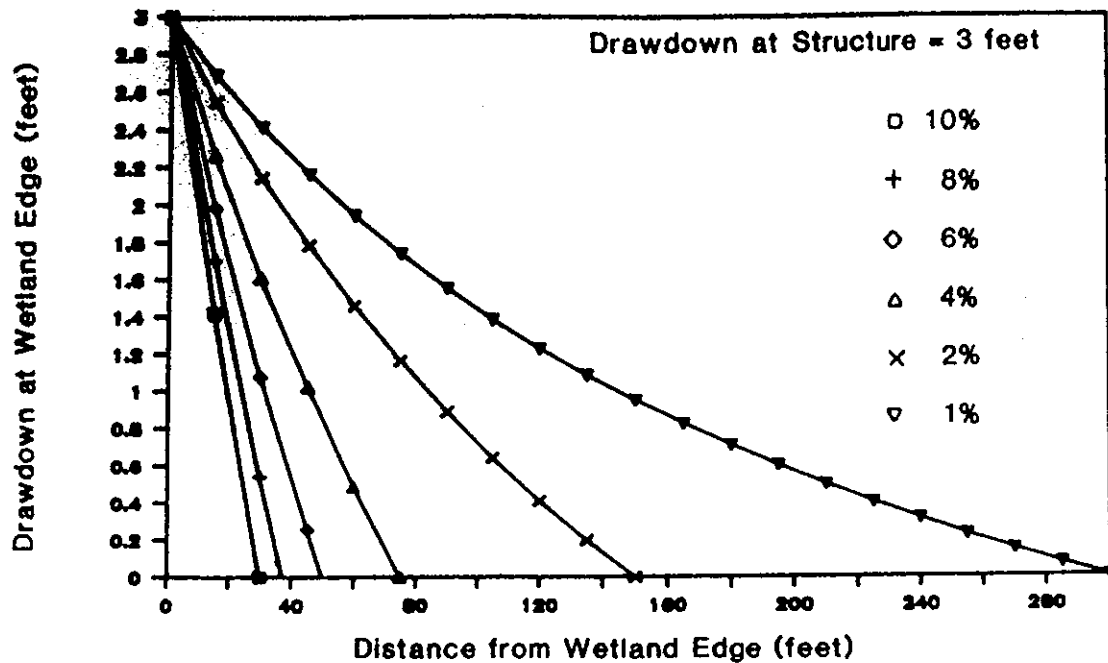


Figure 2-5.

Graphs of drawdown versus distance from wetland edge for 1-foot drawdown (top) and 2-foot drawdown (bottom). Each line in the graphs illustrate a different slope of the groundwater table. The appropriate buffer distance from wetland edge for differing water table slopes is read as the intersection of graph lines with the horizontal axis.

EFFECT OF GROUNDWATER SLOPE ON DRAWDOWN



EFFECT OF GROUNDWATER SLOPE ON DRAWDOWN

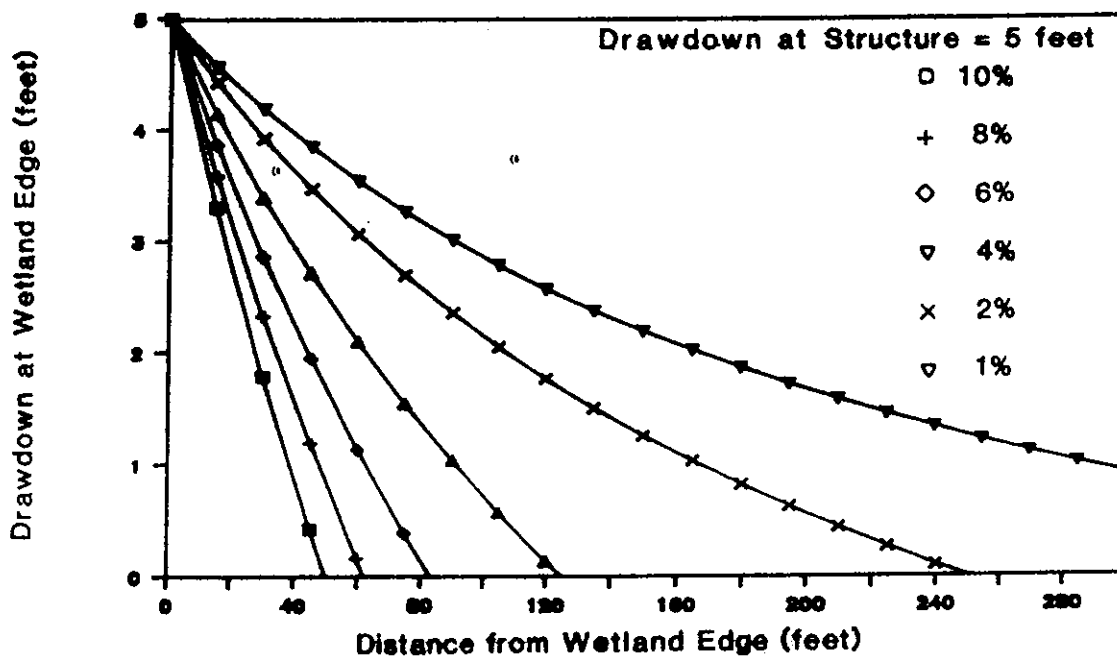


Figure 2-6.

Graphs of drawdown versus distance from wetland edge for 3-foot drawdown (top) and 5-foot drawdown (bottom). Each line in the graphs illustrates a different slope of the groundwater table. The appropriate buffer distance from the wetland edge for differing water table slopes is read as the intersection of graph lines with the horizontal axis.

Table 2-1. Recommended wetland buffers to minimize water table drawdown for landscape associations of the east central Florida planning region.

Landscape Association #	Slope ¹ (%)	Drawdown at structure ²			
		1 ft.	2 ft.	3 ft.	5 ft.
1 Flatwoods w/isolated wetlands	1	100	200	300	550
2 Flatwoods w/flowing-water wetlands	1	100	200	300	550
	2	50	100	150	250
3 Flatwoods and/or hammocks w/hardwood swamps	2	50	100	150	250
4 Sandhill communities w/isolated or flowing-water wetlands	2	50	100	150	250
	4	25	50	75	125
	6	20	35	50	85
5 Flatwoods w/salt marshes	1	100	200	300	550
6 Coastal hammocks w/salt marshes	1	100	200	300	550

¹The slopes given are estimates of the slope of the surficial aquifer characteristic of each association based on averages of topographic relief of the various associations. Where more than one slope is given, variation of topographic relief within associations was sufficient to require listing several slopes.

²At the present time, the St. Johns River Water Management District allows a maximum 5-foot, groundwater drawdown at any one point within project boundaries and an overall average drawdown of 3 feet.

Sediment and Turbidity Control

A naturally vegetated buffer zone can catch and retain sediment carried by overland flow from construction sites and developed landscapes. Vegetated buffers are far more effective than sediment screens or hay bales, which are vulnerable to accidental breaching by heavy equipment and to blowouts from the brief but intense rainstorms characteristic of the region. If adequate stormwater control systems are installed and if buffer zones between wetlands and construction sites are incorporated into such systems, buffer zones for sediment and turbidity control are needed only temporarily, (i.e., between the time the land is cleared and the time it is revegetated and detention ponds or other runoff control systems are put in place). Buffers for sediment protection are assumed to be unimportant after construction is complete if the developed lands immediately adjacent to the wetland in question have an adequately designed and maintained stormwater control system and if the lands used for sediment buffers are incorporated into the system.

The Function of Sediment and Turbidity Control Buffers

A sediment buffer is necessary to ensure that sediment eroded from surrounding uplands and deposited in a wetland does not act to fill the area, thereby creating an upland from deposited material where there once was a wetland. Additionally, a turbidity buffer is required where surface waters may be degraded by turbidity associated with very fine-grained silt or clay particles. A distinction is drawn between sediment control and turbidity control since the effects and required buffers are quite different. The term "sediment," is defined in this report to mean relatively large-grained sand material (0.05 - 2.0 mm diameter) that because of its size will settle in relatively short distances. Because of their small size, silt particles (0.002 - 0.05 mm in diameter) have greater mobility, require long settling times and distances, and pose significant threats to water clarity. As a result of these differences, silt turbidity control buffers are different from sediment control buffer requirements.

Buffers for sediment control are necessary whenever upland erosion and subsequent deposition of eroded materials in a wetland is possible. Under most circumstances, eroded sediment is large-grained and will settle out in a relatively short distance. As a result, the required buffers are small.

Buffers for turbidity control are necessary whenever downstream water clarity may be degraded by suspended silt that may result from erosion of adjacent upland locations. Since silt is small-grained and does not settle out in short distances, the required buffers are of relatively large widths under most circumstances.

The important differences that must be addressed in determining buffer requirements are in the pathways of interaction and the threats that each pose. Sediment can fill a wetland, thereby compromising its function; but sedimentation can be easily avoided by using upland buffers as sediment traps. On the other hand, silt creates turbidity which reduces water transparency and, thus, interferes with photosynthesis of submerged vegetation and phytoplankton in the water column. Turbidity is of great concern in lakes and streams and it is a very difficult problem to remedy. In vegetated wetlands turbidity is of little concern since there is only minor photosynthesis from submerged vegetation or phytoplankton in the water column.

Buffers to protect water bodies against turbidity are not required if the adjacent wetland is isolated (i.e., not connected to a body of open water) and is 100% vegetated with emergent or floating vegetation. For

wetlands connected to lakes, rivers, streams, or other water bodies, the buffer width for turbidity should be measured from the water edge and should include the wetland. In other words, wetlands are good filters of fine-grained silts and buffers necessary for water-quality purposes should include the wetland's filtering action. Because Florida soils have low percentages of silts and clays, and because disturbances that cause erosion are typically temporary (e.g., construction), it is highly unlikely that including a wetland in a turbidity buffer will result in damage to the wetland from excessive siltation.

Buffer Requirements to Minimize Impacts From Sediment and Turbidity

The graph in Figure 2-7 shows the relationship between percentages of various kinds of sediment trapped by a buffer and the length of the buffer. The curves were derived from a methodology that first determines the expected volume of runoff (using TR-55 [SCS, 1986]) and then calculates the length of the vegetated strip required to settle out sediments of varying sizes. The methodology is explained in Section III.

The efficiency of a buffer is directly proportional to the size and specific gravity of the particles eroded from upland areas and carried by the flowing water (all other things being equal). In general the smaller the material being carried, the farther it will travel before water velocity is sufficiently reduced to cause it to settle out. Under most circumstances in central Florida, particles carried by surface runoff are sands and aggregates of sand particles of varying sizes and, to a lesser extent, silt particles. Under rare conditions eroded material may contain significant amounts of clay particles. Clay particles are the smallest in size (< 0.002 mm diameter); primary silt particles are next smallest ($0.002 - 0.05$ mm diameter); then fine sand ($0.05 - 0.25$ mm diameter); and finally medium to coarse sands ($0.25 - 2.0$ mm diameter). The smaller the particles, the farther they travel and the greater their potential for causing sedimentation of wetlands and turbidity of downstream waters.

Determination of the buffer requirement is related to the type of wetland and/or receiving waters that are downslope and the particle size that is characteristic of the soils subject to erosion. Appropriate distances between the waterward edge of the wetland and the upland edge of the buffer can be read from Figure 2-7 and are summarized in Table 2-2. Where well washed medium to coarse-grained sands are characteristic of the soil material, the buffer width should be approximately 75 feet to allow for deposition of nearly 100% of the material within the buffer. For soils having higher proportions of fine sands, the buffer width should be 200 feet to allow for deposition of 100% of the material. In soils where larger quantities of silts are expected and where there are downstream water bodies that would suffer from increases in turbidity, the buffer width should be 500 feet (measured from water edge and including the wetland) to deposit approximately 95% of silt material. Where there is the potential for suspension of clay particles in runoff waters that may adversely affect streams and lakes, additional measures for protection against turbidity (such as settling or holding ponds, filter fabric barriers, or sand filtration systems) should be employed during construction, since the required width of a vegetated buffer under these circumstances makes them impractical.

The use of a 95% deposition rate for silts is based on the marginal rates of return from further increases in buffer widths related to percent of sediment deposited. While it may be desirable to trap 100% of silt leaving a construction site prior to its entry into a watercourse, the practicality of doing so is questionable. Because of the exponential nature of the curves in Figure 2-7, the buffer required to trap 100% of the silt leaving a site would be approximately 700 feet wide. Buffers greater than 500 feet wide, have significant declines in their

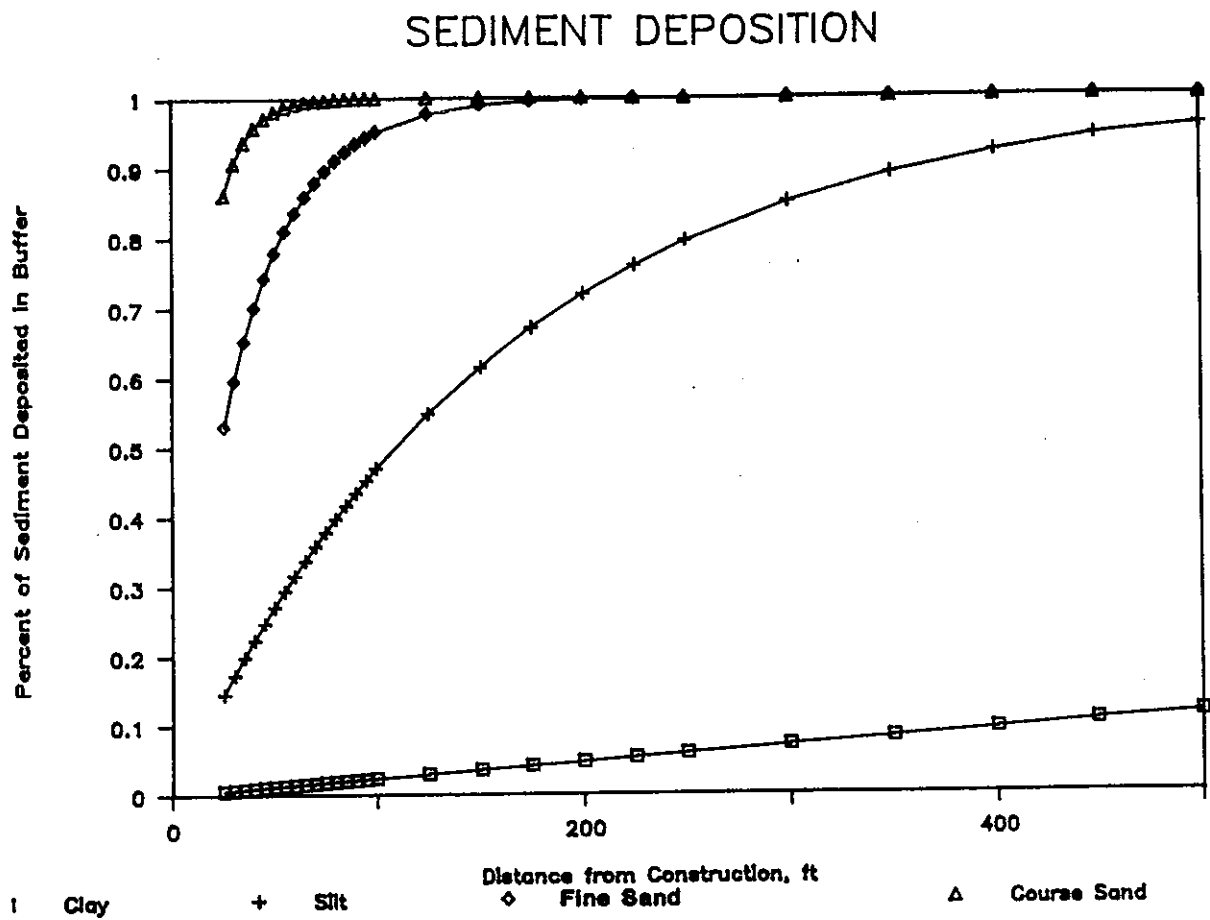


Figure 2-7. Graphs of percent sediment deposition versus distance. Each line illustrates the buffer widths necessary to deposit sediments of differing sizes to minimize sedimentation in wetlands.

Table 2-2. Recommended wetland buffers to minimize sedimentation in wetlands and to control turbidity in adjacent open waters.

USDA Soil Type	Buffer requirements
Clay	Sedimentation and turbidity control cannot be met with buffer requirements alone.
Silt	450 feet measured from open water/wetland boundary through the wetland to the upland.
Fine sand	200 feet from wetland/upland boundary.
Coarse sand	75 feet from the wetland/upland boundary.

marginal effect, especially when compared to the amount of material that remains after 95% has been deposited. Thus, widths greater than 500 feet were deemed impractical.

The curves in Figure 2-7 are based on soil conditions, rainfall, and antecedent conditions that are typical of the region and to the conditions that would be expected during construction. That is, the soil hydrologic group is D, the soils are newly graded, and the rainfall event is a 5-year storm of 6.5 inches in a 24-hour period. Thus, the recommended buffer widths are based on more or less average expected conditions, except for soil hydrologic group. The characteristics of soil hydrologic group D (since this is the dominant soil group in the region) have been used to calculate the runoff which drives potential erosion and subsequent sedimentation. Computed runoffs and the resulting buffer widths will be smaller for soils of hydrologic groups A, B, or C.

Wetland Wildlife Habitat Buffers

The major topics discussed in this section include: The intended purpose of wetland wildlife habitat buffers; wetland habitat quality and quantity; adverse impacts of animal and human activities; impacts of noise; recommended wetland wildlife habitat buffers; and limitations of wetland wildlife habitat buffers.

The Intended Purpose of Wetland Wildlife Habitat Buffers

The specific charge of the wildlife component of this study was to develop a methodology for determining the upland boundaries of these proposed wetland buffers that would "provide habitat for semi-aquatic or water-dependent terrestrial species of wildlife." One interpretation of the intent of such buffers, as broadly defined in Policy 43.8 of the ECFRPP, is to maintain the biological integrity of regionally significant wetlands by protecting sufficient habitat to ensure that all wildlife species currently using these resources will be perpetuated. At the opposite end of the spectrum of logical translations would be one that identified the role of these buffers as that of providing satisfactory protection from human-related activities to the extent that only a token remnant of the original wildlife community would continue to use these wetlands.

One application of these buffer determination procedures is to assist in DRI reviews by the ECFRPC staff. Because the amount of habitat area needed to maintain a full complement of wildlife species currently utilizing a wetland may exceed the size of an entire proposed development project, a conservative interpretation of the habitat provision mentioned in Policy 43.8 is desired. The use of buffers is just one of several methods proposed by the ECFRPC to be used in the achievement of the following Regional Goal.

"Provide for the protection, enhancement and management of the region's environmentally sensitive and/or significant ecosystems in order to maintain their ecological, economic, aesthetic and recreational values." (ECFRPP, page 147)

Isolated ephemeral wetlands (wetlands that periodically do not hold any standing water) are included in this analysis of wetland wildlife habitat buffers. Sufficient evidence now are available to suggest that ephemeral wetlands support very distinct wildlife communities from permanent wetlands. For example, oak toads, chorus frogs, little grass frogs, and several other frog and toad species are found almost exclusively in isolated, ephemeral wetlands that do not contain fish and other predators (Table 2-3).

Wetland Habitat Quality

Food, cover, and water are life-sustaining elements for all wildlife species. If every requirement for an animal is available in a particular area, the area is considered to be good quality habitat for that species; if one or more of a species' requirements are not available, the area is not suitable.

Some habitats are more suitable (of greater quality) than others and produce greater densities of wildlife than those of poorer quality. Much of the variability observed in numbers of species and numbers of individuals between populations in similar or different habitat types results from differences in available food, cover, water, and other requirements (Black and Thomas, 1978). Habitats with a high suitability (abundant food, cover, and readily available water resources) have a greater potential to support more individuals per area. The number of individuals within a population for which a particular area is able to supply all energetic and physiological requirements over a long period of time, barring no major perturbations, is called carrying capacity (Smith, 1974). Numbers of species and numbers of individuals within species often fluctuate due to a variety of causes including diseases, catastrophic events, predation, and competition. However the carrying capacity potential of an area remains relatively unchanged. Therefore, the extent of a buffer required to perpetuate populations is highly dependent on the long-term quality of the habitat in question.

By far, the most common cause of wildlife population reduction is natural landscape alteration through agriculture, silviculture, or construction activities. Altering or changing natural conditions to which species are adapted often harms native wildlife communities by destroying key conditions that make a given habitat suitable. An obvious example is the removal of snags (dead trees) that provide essential nesting structures, food sources, and perches for many birds, mammals, reptiles, and amphibians. A common misconception is that no harm is done because there are plenty of other undeveloped areas containing the same requirements. On the contrary, other areas that have the necessary elements for a particular species are probably already occupied at a saturation level, leaving no room for individuals that are ousted by development occurring elsewhere. Therefore, the most effective method of protecting wetland wildlife resources would be to preserve areas in their most natural conditions.

Brown and Schaefer (1987) suggested some minimum standards for an area to be considered suitable for a full spectrum of wildlife along the Wekiva River. This ideal approach is the method used by the Habitat Evaluation Procedure that currently is being developed and validated (U.S. Fish and Wildlife Service, 1980). However, due to the severe paucity of habitat requirement data for Florida species, selection of evaluation (indicator) species and further application of this strategy would not be defensible at this time.

Table 2-3. Occurrence and ephemeral wetland dependence of amphibians in east central Florida landscape associations.

Flatwoods/isolated wetlands

Frogs and Toads

Oak Toad*
Ornate Chorus Frog*
Little Grass Frog*
Pinewoods Treefrog*
Squirrel Treefrog*
Eastern Narrowmouth Toad*

Green Treefrog
Southern Cricket Frog
Bullfrog
Pig Frog
River Frog
Southern Leopard Frog

Amphibian Predators

Southern Dusky Salamander
Dwarf Salamander
Eastern Lesser Siren
Greater Siren

Flatwoods/flowing water wetlands

Frogs and Toads

Green Treefrog
Southern Cricket Frog
Bullfrog
Pig Frog
River Frog
Southern Leopard Frog

Amphibian Predators

Southern Dusky Salamander
Dwarf Salamander
Eastern Lesser Siren
Greater Siren
Dwarf Siren

Flatwoods/mesic hammock/hydric hammock/hardwood swamp

Frogs and Toads

Little Grass Frog*
Pinewoods Treefrog*
Squirrel Treefrog*

Green Treefrog
Southern Cricket Frog
Bullfrog
Pig Frog
Southern Leopard Frog

Amphibian Predators

Striped Newt*

Dwarf Salamander
Slimy Salamander
Eastern Lesser Siren
Greater Siren
Two-toed Amphiuma
Peninsula Newt
Southern Dusky Salamander

Table 2-3. Continued.

Flatwoods/mesic hammock/hydric hammock/hardwood swamp

Frogs and Toads	Amphibian Predators
River Frog	Dwarf Siren
Southern Toad	
Southern Spring Peeper	

Sandhill/isolated wetlands

Frogs and Toads	Amphibian Predators
Oak Toad*	Striped Newt*
Gopher Frog*	
Barking Treefrog*	
Pinewoods Treefrog*	
Squirrel Treefrog*	
Eastern Narrowmouth Toad*	
Eastern Spadefoot Toad*	
 Bullfrog	
Pig Frog	
River Frog	
Southern Toad	

* Principal or exclusive breeding habitat is ephemeral, isolated wetlands (Heyer et al., 1975; Wilbur, 1980; Woodward, 1983; Morin, 1983; Caldwell, 1987; Moler and Franz, 1987; Ashton and Ashton, 1988).

Until an accurate and easily applied method to specifically quantify habitat suitability is developed, the following qualitative assessment of habitat quality can be easily determined on each proposed development site.

1. **High Quality:** If an area is still in a relatively natural state, and large enough to provide requirements for at least one pair of most species associated with the habitat type occupying the area, it is suitable for those species.
2. **Medium Quality:** If an area has been cleared for agricultural or silvicultural purposes but no permanent structures such as roads and buildings have been constructed, it still has some current wildlife value and a potential for increased future wildlife habitat values. Because these areas can be converted easily back into native habitat, they should not be excluded from any buffer areas.
3. **Low Quality:** If an area has been cleared and developed with roads, buildings, and other permanent structures, its suitability for wildlife dependent on the original natural habitat type would be minimal.

Wetland Habitat Quantity

Every animal requires a certain amount of space to carry out life functions such as feeding, courtship, and nesting. The quantity of habitat needed is highly variable even within species. Differences are associated with many factors including: sex and age, time of year, availability and distribution of food and cover, and social structures. In general, larger species tend to require greater quantities of habitat. Also, species with more unpredictable and unevenly distributed food resources require more space to satisfy their nutritional needs.

The spatial arrangement of an adequate supply of the proper food, cover, and water habitat components for a given individual will determine how much area it needs to survive. For example, a semi-aquatic turtle that depends on the availability of sandy upland soils for nesting and overwintering would have larger area needs if the closest upland was 600 feet from the river than if it was only 50 feet away.

The importance of stream and river-associated habitats as wildlife corridors has received much attention. However, to effectively function as an area through which animals will travel and gain access to larger connected habitat areas, the corridor must be of sufficient size and quality to provide essential requirements for animals to be attracted to it. Cursorial (non-flying) animals are especially unlikely to disperse across unsuitable terrain (Frankel and Soule, 1981).

Brown and Schaefer (1987) presented spatial requirement information for many wetland-dependent species found along the Wekiva River. Since then we have greatly expanded this data base and have adopted a more exact strategy to determine habitat quantity requirements.

The Use of Wildlife Guilds in Determining Habitat Quantity. Habitat is the place occupied by a specific population within a community of populations (Smith, 1974), and often can be characterized by a dominant plant form or some physical characteristic (Ricklefs, 1973). Each species requires a particular habitat or a combination of habitat types (ecological communities) to supply the space, food, cover, and other requirements for survival. Thus wildlife species are products of their habitats.

The specific habitat types found within the six major landscape associations identified in this study were reviewed earlier in this report. More detailed ecological descriptions of the non-coastal vegetation communities can be found in Brown and Schaefer (1987).

To assess the value of wetland buffers or any other conservation/management scheme, it is important to understand the wildlife communities that may be potentially benefited or adversely impacted. A guilding technique has been used to describe semi-aquatic and wetland-dependent wildlife communities that utilize various habitat types in east central Florida.

The first step in this method involved developing wildlife species lists (Appendix C) based on checklists published by the Florida Game and Fresh Water Fish Commission; the Florida Breeding Bird Atlas Guide to Breeding Ranges, Seasons, and Habitats; the Rare and Endangered Biota of Florida series; several other references; and personal knowledge. All vertebrate, semi-aquatic and wetland-dependent species known to breed in east central Florida are listed by taxonomic class. The majority, but not all migrant species that are found in this region during non-breeding seasons also are included. Of the 706 species identified by the Florida Game and Fresh Water Fish Commission to occur in the state, 166 or 24% are listed. The largest taxonomic grouping was birds (95) and the smallest was mammals (11).

The next step determined which habitat types were utilized by these species. These species were further divided into appropriate feeding and breeding zones (guilds) within each habitat type. The guilding technique for describing and evaluating impacts on wildlife communities was first proposed by Root (1967). He defined a guild as a group of species that exploit the same class of environmental resources in a similar way. Guilding is a functional as opposed to a taxonomic classification of species.

To identify appropriate guilds, a common approach used in other guilding studies was followed (Short and Burnham, 1982; Verner, 1984). Feeding sources and breeding requirements were selected as the basis for organizing wildlife information. Both axes of the matrix were partitioned by physical strata, because of the importance of strata in describing the form and function of ecological communities (Appendix D). Seven strata were selected to describe utilization of food resources in habitats. One additional guild, "breeds elsewhere," was added to the breeding requirements.

Appropriate feeding and breeding strata used by each species were compiled and then species were assigned to these guilds within each habitat type (Appendix D). Four wetland habitats (salt marshes, fresh water marshes, cypress swamps, and hardwood swamps) and three upland habitats (hammocks, flatwoods, and sandhills) were identified as those utilized by the species in Appendix C. Species that use more than one habitat were placed in all relevant habitat matrices. However, each species was not represented more than once within each habitat type.

From these data, a simple two-dimensional species-habitat matrix was developed with feeding resources along the y-axis and physical features of the habitat required for breeding along the x-axis. This matrix resulted in a possible 56 (7 x 8) feeding and breeding combinations for each habitat type. The number of species utilizing each feeding/breeding guild block is shown in Appendix E. The number in the center of each block signifies the number of different species in that guild as indicated in Appendix D. The number in the upper-right corner of a block indicates the number of listed (endangered, threatened, special concern) species in the guild (See Appendix C).

Many species/habitat relationships can be derived from these matrices. Only some of the major interpretations are pointed out here. Flatwoods support the most species (110) and salt marshes the least (60).

The ground feeding and ground breeding zones in most habitats are utilized by more species than other zones. Water column zones are most heavily utilized in both salt and fresh water marshes. Tree canopies are more heavily utilized as breeding zones than feeding zones.

All habitats supported at least 6 listed species. Flatwoods lead this category with 12. A major feeding strata for listed species in all habitats is the water column zone.

Several semi-aquatic and wetland-dependent species must have access to upland or transitional habitat regardless of the landward extent of the wetlands. Many examples can be seen in the Appendix E matrices. Of the 90 semi-aquatic and wetland-dependent species found in the sandhills (the most xeric of all habitats), 45 (50%) depend on non-aquatic areas for feeding and 77 (86%) for breeding. Not as obvious are those species that make seasonal shifts in their feeding requirements. Amphibian species associated with ephemeral wetlands in these habitats usually have larger home ranges during the adult stage to increase the probability of finding suitable breeding areas. Some may travel several miles between breeding ponds (Franz et al., 1988). However, frogs and toads living in permanent water bodies will not receive the same benefits from migrating far away from their dependable water source. Elimination of these adjacent habitats could extirpate numerous species from ephemeral wetland systems.

Trees are not as important in marshes as in other habitats, although, members of the heron family need this strata for breeding. Much of the food energy produced in salt marshes is utilized by species that do not breed in these systems.

If allowances are made for the large proportion of salt marsh species that breed elsewhere, the species distribution pattern between the two marshes are similar. Some of the most important guilds in these systems are the ground surface breeding zone combinations with the ground and water column feeding zones, and the tree canopy breeding and water column feeding guild. The majority of the ground breeders in the fresh water marsh are amphibians and reptiles, while ground breeding birds become more important in the salt marsh. Birds from the heron family make up all of the tree nesting and water column feeding species. Both marshes support relatively large numbers of listed species: 8 in the fresh water system and 11 in the salt marsh.

The next step in the analysis of habitat quantity involved assigning spatial requirement values to each species and then compiling these values for each habitat (Appendix F). Spatial data were obtained from references listed in Appendix C. Several spatial requirement data types including the following were used: distance from humans tolerated before taking flight, home range diameter, nest location landward from the waterward extent of the forest, maximum distance found from closest water source, maximum distance from closest water to nest, and distance between captures of the same individual. If spatial requirement data were not found for a species, values were assigned from species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

Because analysis of the guild matrices in Appendix E suggested that trees were not used as much by species in marsh systems as those in forested systems, the spatial requirements of these two groups were compared. A nonparametric Wilcoxon Scores 2-sample statistical test run with SAS PC showed that spatial requirements of species in marsh habitats are less than that of species in forested habitats (Table 2-4; $P = 0.001$). The mean and median values for salt marshes are about half that of any other habitat.

In all habitats, the median value is only about one-third of the mean (Table 2-4). In other words, the majority of species in each habitat have relatively low spatial requirement values, but a few species also have extremely large habitat area needs. By illustrating these habitat quantity or spatial values, we can show where

Table 2-4. Mean spatial requirements for semi-aquatic and wetland-dependent wildlife species in various habitats.

Habitat Type	Number of Species	Mean Spatial Requirement (ft)	Standard Deviation	Median
Salt Marshes	60	544.4	1,464.6	180
Fresh Water Marshes	87	1,005.3	1,715.4	300
Cypress Swamps	91	1,302.6	2,503.1	350
Hardwood Swamps	86	1,309.6	2,538.2	350
Hammocks	103	1,451.7	2,603.9	370
Flatwoods	110	1,479.3	2,597.3	387.5
Sandhills	90	1,774.1	2,848.4	614.5

the increase in the percent of species per spatial requirement unit slows down in each habitat. The salt marsh curve begins to level off at approximately 300 feet whereas the curves for the other habitats don't level off until about 500 feet (Figures 2-8, 2-9, 2-10, 2-11, 2-12, 2-13, 2-14).

Habitat Quantity Summary. We used a guilding technique to describe semi-aquatic and wetland-dependent wildlife communities that occur in east Central Florida and to determine the quantity of habitat needed to protect the ecological integrity of the significant wetlands in this area. Spatial requirements of species in marshes are generally less than that of species in forested habitats. Although trees are used less in marsh systems, they provide important breeding areas for several listed species. As a group, sandhill species have the greatest spatial needs. Spatial requirements for all species considered in this study are presented in Appendix F.

Adverse Impacts of Animal and Human Activities in Altered Habitats

The negative impacts of induced edges in a forested system and of the noise and domestic animal problems associated with development adjacent to natural habitat areas have been reported by Brown and Schaefer (1987). Some of the major points will be highlighted here.

Induced edges created by human manipulation of natural vegetation (especially forested areas) encourages non-forest-dwelling species to penetrate into the forest and prey on and compete with forest adapted species. Whitcome et al. (1976) provided evidence that, in areas along forest edges avian brood parasites (brown-headed cowbirds), nest predators (small mammals, grackles, jays, and crows), and non-native nest hole competitors (e.g., starlings) are usually abundant. Gates and Gysel (1978) found that a field-forest edge attracts a variety of open-nesting birds, but such an edge functions as an "ecological trap." Birds nesting near the edge had smaller clutches and were more subject to higher rates of predation and cowbird parasitism than those nesting in either adjoining habitats. This abnormally high predation rate is related to the artificially high densities of many opportunistic animals near forest edges and in disturbed habitats including suburbs; (Wilcove et al., 1986). Every forest tract has a "core area" that is relatively immune to deleterious edge effects and is always far smaller than the total area of the forest (Temple, 1986). Relatively round forest tracts with small edge-to-interior ratios would thus be more secure, whereas thin, elongated forests (such as those along unbuffered riparian strips) may have very little or no core area and would be highly vulnerable to negative edge effects.

Direct impacts of human activities on wildlife is a newly evolving science. Hiking and camping affect wildlife through trampling of habitat (Liddle, 1975), disturbance of animals (Ward et al., 1973; Aune, 1981) and less directly through discarded food or other items (Foin et al., 1977). Klein (1989) documented effects of visitor use on avian species at Ding Darling Refuge, Florida. A majority of the species that she classified as most sensitive to humans (reacted negatively to human presence) occur in east central Florida. These include: pied-billed grebe, white ibis, willet, sanderling, dunlin, and blue-winged teal. The average minimum distance from humans tolerated by these species was 260 feet (Appendix F).

There are several accounts of disturbances affecting waterbirds. Some duck species and the great crested grebe did not winter in one reservoir since it was opened to sailboats, even though these species were observed elsewhere in the vicinity (Batten, 1977). Rodgers and Burger (1981) reported that human activities in waterbird colonies may delay nesting for some pairs, eliminate late-nesting pairs, or cause late-nesting pairs to shift to other less suitable nesting sites. Wintering eagles were more disturbed by infrequent activities than by regular activities (Stalmaster and Newman, 1978). Tremblay and Ellison (1979) reported that visits to black-crowned night heron colonies just before or during laying provoked abandonment of newly constructed nests and either predation of eggs or abandonment of eggs followed by predation. This study also concluded that herons did not nest in areas where human interference occurred. Ellison and Cleary (1978) found similar results with double-crested cormorants.

Human disturbance or even occupancy also may be preventing listed species from using otherwise useful habitat areas. For example, bald eagles on the northern Chesapeake Bay tended to avoid developed shoreline areas during daytime and selected areas that on average were over 1,500 feet from houses than were randomly selected points ($P < 0.001$; D. Buehler, J. Fraser, and J. Chase, unpub. data).

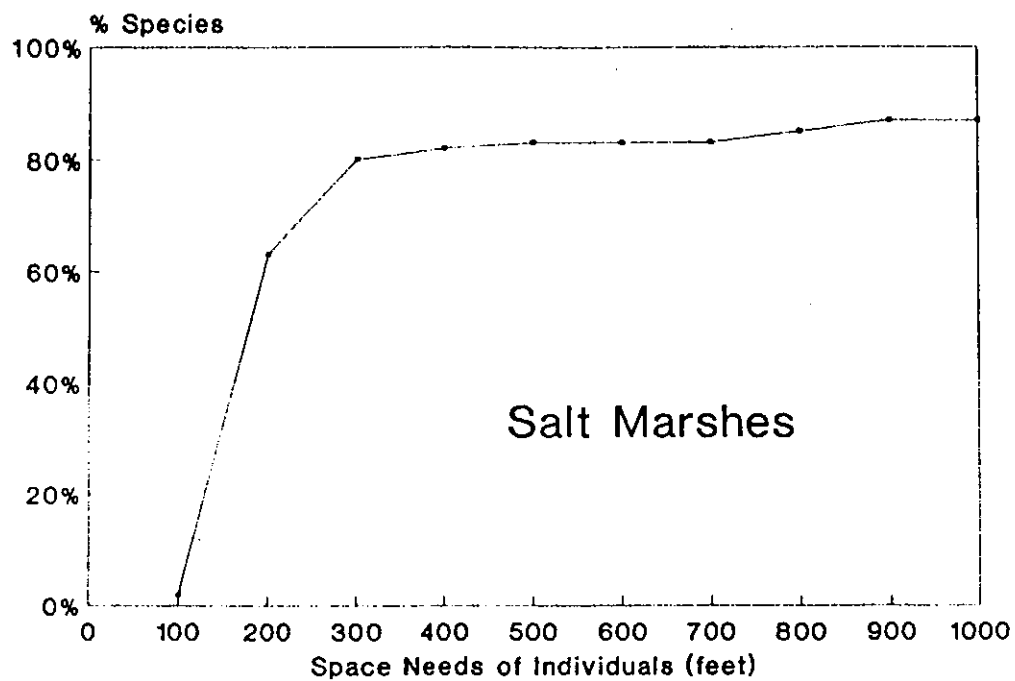


Figure 2-8. Percentages of semi-aquatic and wetland-dependent wildlife species that occur in salt marshes and have individual space needs equal to or less than the respective 100-foot intervals. Calculations were not made beyond 1,000 feet.

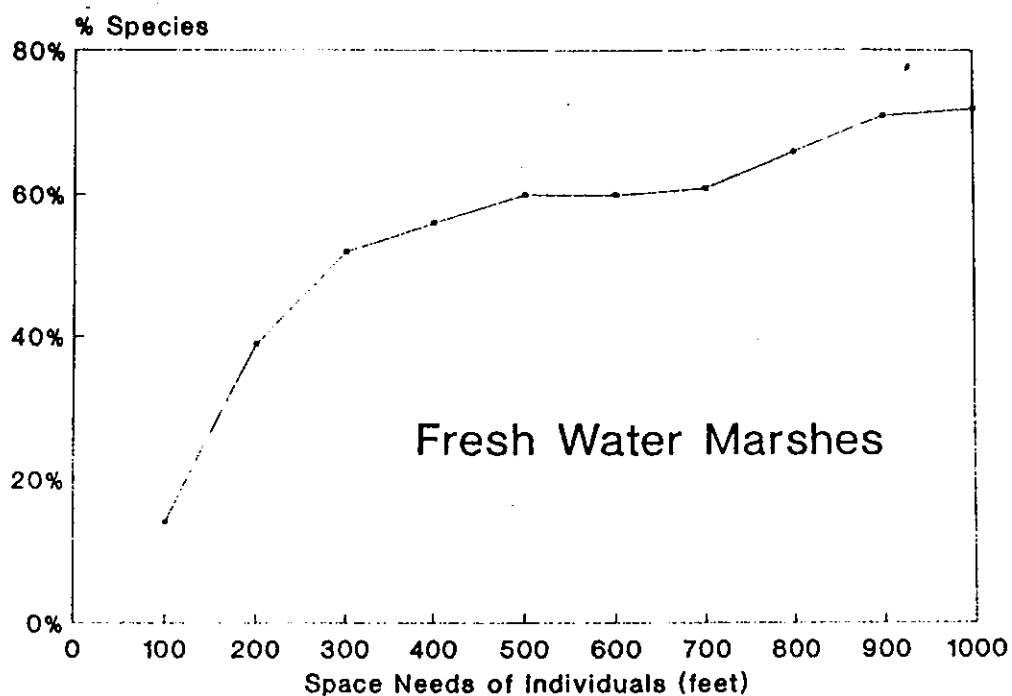


Figure 2-9. Percentages of semi-aquatic and wetland-dependent wildlife species that occur in freshwater marshes and have individual space needs equal to or less than the respective 100-foot intervals. Calculations were not made beyond 1,000 feet.

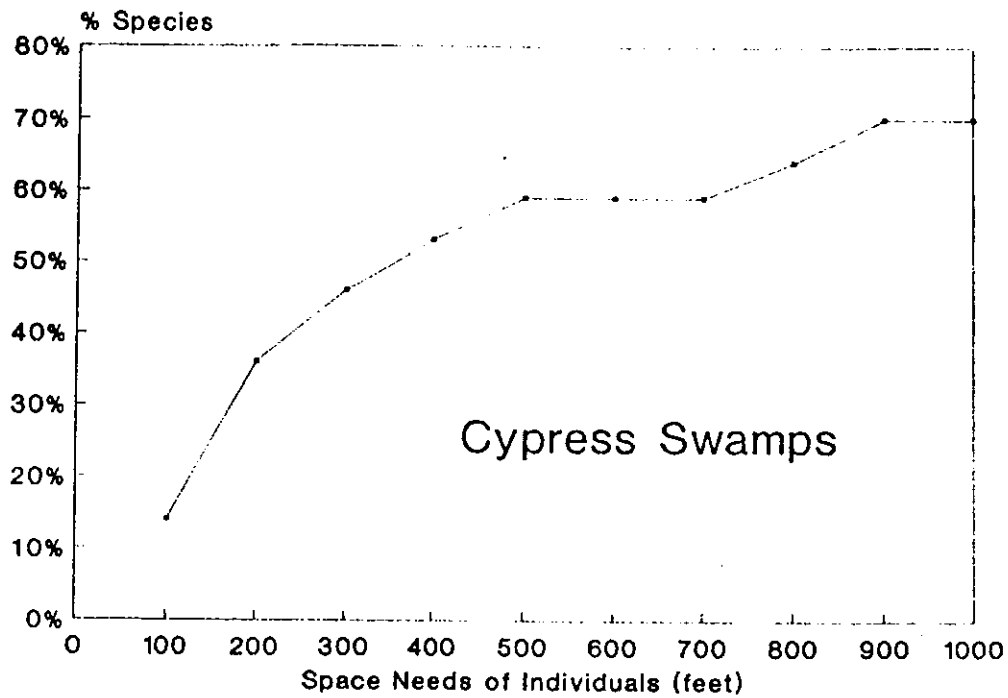


Figure 2-10. Percentages of semi-aquatic and wetland-dependent wildlife species that occur in cypress swamps and have individual space needs equal to or less than the respective 100-foot intervals. Calculations were not made beyond 1,000 feet.

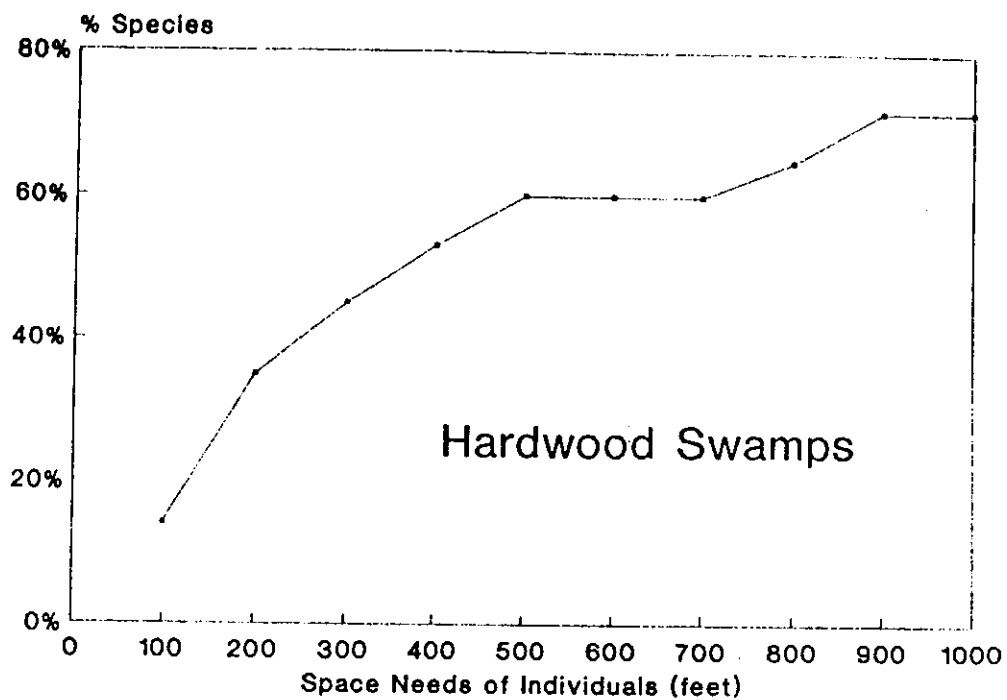


Figure 2-11. Percentages of semi-aquatic and wetland-dependent wildlife species that occur in hardwood swamps and have individual space needs equal to or less than the respective 100-foot intervals. Calculations were not made beyond 1,000 feet.

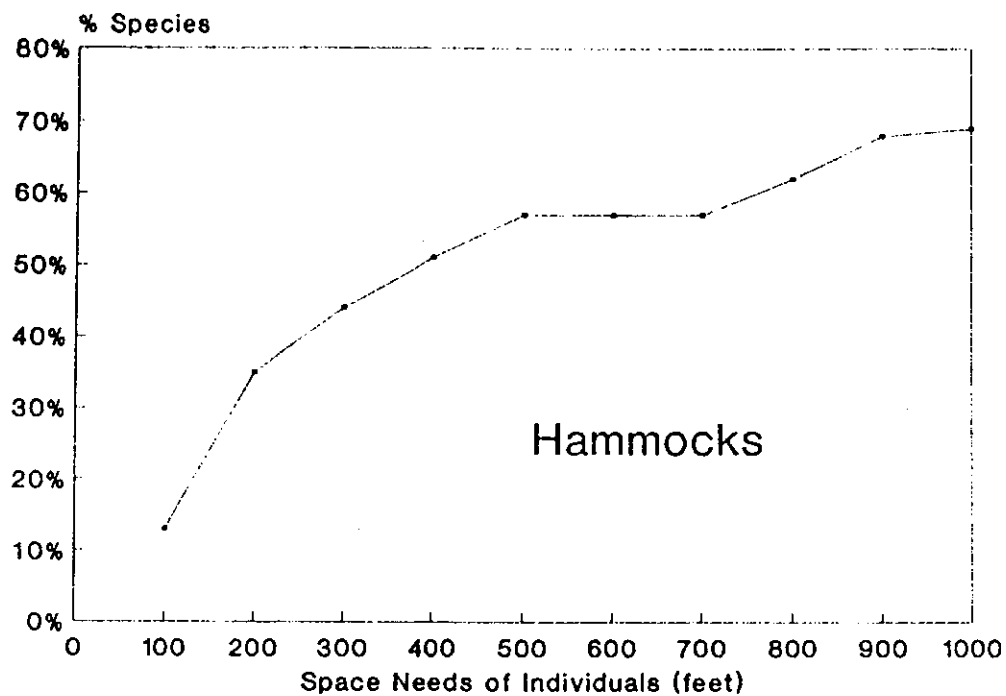


Figure 2-12. Percentages of semi-aquatic and wetland-dependent wildlife species that occur in hammocks and have individual space needs equal to or less than the respective 100-foot intervals. Calculations were not made beyond 1,000 feet.

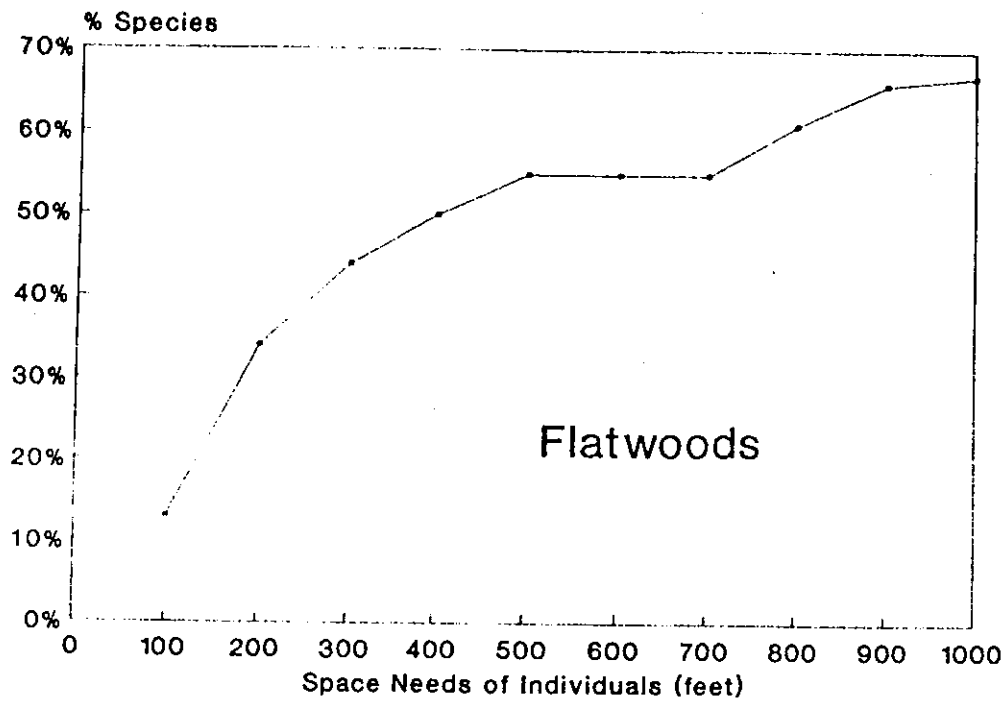


Figure 2-13. Percentages of semi-aquatic and wetland-dependent wildlife species that occur in flatwoods and have individual space needs equal to or less than the respective 100-foot intervals. Calculations were not made beyond 1,000 feet.

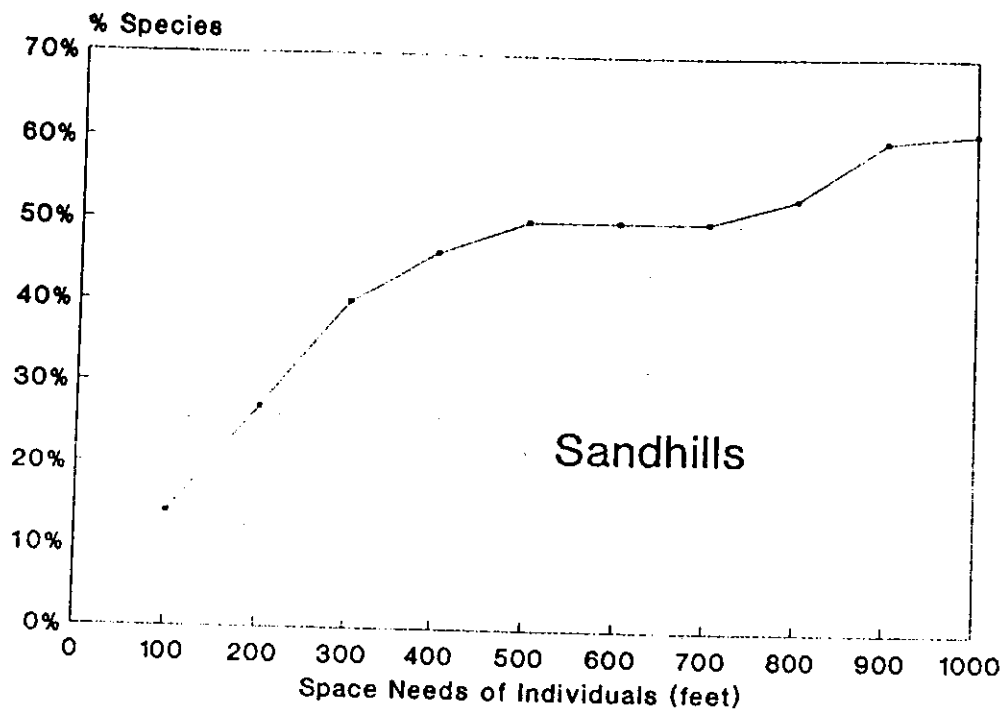


Figure 2-14. Percentages of semi-aquatic and wetland-dependent wildlife species that occur in sandhills and have individual space needs equal to or less than the respective 100-foot intervals. Calculations were not made beyond 1,000 feet.

Predation and harassment of wildlife by free-ranging domestic cats and dogs are other detrimental effects of development adjacent to significant wildlife habitat areas. Several authors have documented the occurrence to wildlife prey in the diets of free-ranging cats and dogs and the effects of their predatory behavior on individual wildlife animals and populations (Errington, 1936; Korschgen, 1957; Smith, 1966; Gilbert, 1971; Jackson, 1971; Gill, 1975). Local extinctions of the Anastasia beach mouse along Florida's coast (Stephen R. Humphery, pers. comm., 1989); a dove on a South Pacific island (Jehl and Parkes, 1983); and diving petrels, broad-billed prions, yellow-crowned parakeet, robin, fern-bird, brown creeper, Stewart Island snipe and banded rail in New Zealand (Fitzgerald and Veitch, 1985) have been attributed to cat predation. Churcher and Lawton (1989) concluded from their study that domestic cats kill at least twenty million birds a year in Britain. Cats and dogs can be especially devastating on ground feeding and ground breeding species. These guilds in Appendix E represent the majority of semi-aquatic and wetland-dependent wildlife species in east central Florida.

Edge effects thoroughly described by Brown and Schaefer (1987) have been shown to negatively impact wildlife species within at least 300 feet of forest boundaries. Studies of nature reserve boundaries have provided data that support the need for zones of decreasing land use toward the boundary of reserves (Unesco, 1974; Dasmann, 1988; Schonewald-Cox, 1988). The core of these areas must be protected from cats, dogs, human activities, noise, predators, exotic competitors, parasitism and other detrimental effects of development.

Impacts of Noise

Brown and Schaefer (1987) presented some general arguments suggesting that certain sound levels were detrimental to wildlife and offered a formula for determining vegetation buffers width necessary to adequately reduce noise. In this report, a more complete synthesis of noise impacts on wildlife is provided as well as some state-of-the-art information related to noise abatement.

Sound is a physical phenomenon and defined as an oscillation in pressure of a medium measured in decibels (dB); (American National Standards Institute, 1971). Sometimes, sound is noise which is defined as unwanted or undesirable sound (U.S. Environmental Protection Agency, 1978). This annoyance factor of sound negatively impacts all hearing animals. Along with air and water contaminants, noise has been recognized as a serious pollutant.

The physiological impacts of noise on people is well documented. Short-term exposure to very high sound levels (120 to 130 dB) and long-term exposure to lower levels (80 dB) can cause temporary or permanent changes in human ability to hear (Carelstan, 1972), and increased blood pressure, elevated rates of heartbeat and respiration, muscle tension, hormone release, cardiovascular disorders and increased susceptibility to disease (Alexandre and Barde, 1981). Long-term exposure above 55 dB interferes with activity and causes annoyance for people in outdoor settings (U.S. Environmental Protection Agency, 1974). However, the physiological and behavioral impacts on wildlife are little known.

Noise associated with construction, operation, and maintenance of developments can cause harmful impacts on wildlife. Animals that rely on their hearing for courtship and mating behavior, prey location, predator detection, homing, etc., will be more threatened by increased noise than will species that utilize other sensory modalities. However, due to the complex interrelationships that exist among all the organisms in an ecosystem, direct interference with one species will indirectly affect many others.

Unfortunately, few data are available that demonstrate the effects of noise on wildlife . Much of what is found in the literature lacks specific information concerning sound intensity, spectrum, and duration of exposure. There have been no systematic studies with experimental designs that show definite relationships between specific noise disturbances for various species and different sound levels. Brandt and Brown (1988) conducted an extensive literature search on this topic and found that most of our current knowledge of sound impacts on wildlife are based on observations of animal reactions to aircraft overflights and laboratory studies. Because such little research emphasis has been given to this topic, it is not surprising that results are inconclusive and sometimes contradictory.

The following studies have reported negative impacts of noise on wildlife.

- Gulls near Kennedy Airport in New York flew into the air when SSTs passed overhead (average sound level = 108.2 dB; Burger, 1981a).
- Eagles responded to gunshots by flushing from their roosts (Edwards 1969 in Stalmaster and Newman, 1978).
- Gulls destroyed eggs when white pelicans flushed from their nests in response to sonic booms (Graham, 1969 in Memphis State University, 1971).
- Airboats evoked severe flushing and panic flights in a colony of wading birds and these responses did not subside until the boats either left the colony vicinity or were turned off (Black et al., 1984).
- Speeding motorboats caused osprey to flush and kick eggs out of their nests (Ames and Mesereau, 1964).
- Titus and VanDruff (1981) reported that loon hatching and rearing successes were greater in areas where motorboats did not occur.
- Mancini et al. (1988) reported that sound pressure levels above 90 dB are likely to cause adverse effects in mammals.
- Caged wild rats and mice exposed to sounds from 60 to 140 dB decreased nesting near the sound source and even died at the highest intensities (Spock et al., 1967 in Memphis State University, 1971).
- Exposure to dune buggy noise (95 dB): 1) reduced hearing acuity in the desert kangaroo rat to levels below that required for adequate detection of predatory snakes; 2) caused spadefoot toads to emerge from their burrows during suboptimal conditions; 3) reduced hearing acuity in the Mojave fringe-toed lizard (Bondello and Brattstrom, 1979).
- Sound producing stimuli also have been reported to be successful animal damage control techniques for nuisance rodents, bats, rabbits, deer and birds (Diehl, 1969; Crummet, 1970; Hill, 1970; Messersmith, 1970).
- Although there were individual differences, noise was more disruptive than any other visitor-action besides approach on foot for brown pelicans, anhingas, double-crested cormorants, tricolored herons, and white ibis at the Ding Darling Refuge (Klein, 1989).

Several accounts have described situations when wildlife apparently were not affected by various noise sources.

- Snail kites near an airport in Colombia showed no difference in distribution or breeding success from kites that nested elsewhere (Snyder et al., 1978 in Manci et al., 1988).
- Gulls nesting at Jamaica Bay Refuge near Kennedy Airport in New York did not usually respond to subsonic aircraft (average sound of 91.8 dB; Burger, 1981b).
- Grubb (1978) found no observable response to low-flying aircraft generating up to 88 dB at ground level in a heron rookery in St. Paul.
- Gyrfalcons did not respond to helicopters at 600 meters above the ground (Platt, 1977 in Ellis, 1981).
- No impact was detected from a study of military overflights on a wading bird colony (55 dB to 100 dB; Black et al., 1984).
- Great blue herons seemed to become habituated to repeated exposure to boats passing by their rookery (Vos et al., 1985).
- Sea otters were not "repelled" by loud sounds (120 dB) projected underwater (Davis et al., 1987).
- Deer were not disturbed while grazing near a Texas heliport (Fletcher, 1971 in Luz and Smith, 1976).

Few studies have attempted to separate the effects of sound from the effects of the activity causing the sound. Eagles were more tolerant of sounds from concealed sources than they were of sounds from sources within view (Stalmaster and Newman, 1978). Birds in California's Channel Islands were more sensitive to visual stimuli and to combined visual and auditory stimuli than they were to sound stimuli alone (Cooper and Jehl, 1980). Gyrfalcons temporarily left their nests in response to helicopters flying at 160 meters above ground, but did not respond to helicopters that were not visible (Platt, 1977 in Ellis, 1981).

Some studies have shown disturbance impacts on other types of wildlife. No gyrfalcons nested in the test area in the year following exposure to helicopters (Platt, 1977 in Ellis, 1981). Of 40 bird species studied, 43% were less numerous than normal within 2.5 km of an Alaska exploratory oil well (Connors and Risebrough, 1979 in Hanley et al., 1981). Van der Zande et al. (1980) found that breeding densities of three grassland bird species were significantly reduced within 500 meters of quiet rural roads and 1,600 meters of busy highways in the Netherlands.

While general understanding and consequences of noise impacts on wildlife are not very specific, a few conclusions are obvious. Short-term exposure to loud sounds can cause physiological changes in animals just as it does in humans. Chronic lower level sounds (55 dB) are annoying to humans and also probably make an area relatively less desirable to wildlife. Some, but not all, species can adapt to some sounds. Human activity also disturbs wildlife and can have similar effects such as nest abandonment. Noise and human activity will negatively impact semi-aquatic and wetland-dependent wildlife from the landward side as well as the water side if the water is used for recreational purposes.

Recommended Wetland Wildlife Habitat Buffers

To be effective at providing habitat so that significant wetlands can protect their ecological values, buffers should be delineated and maintained in such a way so that they protect: the quality of the wetland habitat; the quantity of habitat that will provide sufficient space for species; and the wildlife in these buffers from adverse impacts of adjacent land-uses.

Protecting Wetland Habitat Quality. The best approach to maintaining and protecting wetland habitat quality is to leave it in as natural a state as possible. Wetlands and any adjacent upland buffer areas should not be used as recreational areas. The information we have presented regarding human disturbance impacts on wildlife at Ding Darling Refuge and other recreational areas indicates that human use of an area is most often incompatible with wildlife protection goals. Construction of nature trails and boardwalks only encourage further human encroachment into wetlands that are the focus of protection.

All areas in and adjacent to significant wetlands that have been cleared for agricultural or silvicultural purposes within a designated buffer area should be converted back into native habitat. These land-use practices also should be banned from buffer areas. The wetland wildlife habitat buffers are relatively narrow strips meant to serve the purpose of shielding wetlands from adjacent adverse land-use impacts. Silvicultural and agricultural activities will alter the natural habitat and create obstacles to dispersing wildlife using these buffer corridors and reduce the overall quality of the wetland habitat.

Protecting Wetland Habitat Quantity. Based on a limited amount of data, Brown and Schaefer (1987) recommended a wetland wildlife habitat buffer zone consisting of the diameter of a one-acre circle (236 feet) plus a 300-foot negative impact zone of suitable habitat situated landward from the waterward edge of the forest canopy. A 50-foot buffer landward from the wetlands jurisdictional line also was recommended to allow species such as semi-aquatic turtles access to uplands to nest and/or overwinter. Suggestions for protecting wetland habitat quantity are presented next for each major habitat type within the six landscape associations in east Central Florida.

Although hammocks, flatwoods, and sandhills are not "wetland" habitats, there are many situations in the landscape where wetlands do not occur as transitional areas between aquatic and upland systems. In these cases, semi-aquatic and water-dependent wildlife species associated with the aquatic system still use the adjacent terrestrial areas which need to be protected if the aquatic system is to maintain its ecological function.

Indicator species were used to determine the extent of buffers that would be most effective in accomplishing the goal of protecting wetland habitats and also that would be feasible to administer.

Indicator species were selected for each habitat type based on the following criteria.

- the spatial requirement for the indicator species as listed in Appendix F must fall within the following lower and upper limits:
 - lower limit: median spatial value for the habitat (at least 50% of the spatial requirements of all species in the habitat must be satisfied).

- upper limit: 1,000 feet (to reduce the probability that properties adjacent to significant wetlands would be totally undevelopable).
- the indicator species must represent one of the important guilds in the habitat.
- the indicator species' needs must overlap with those of listed species in the same habitat.
- the indicator species must be characteristic of the habitat (i.e., found at most locations where the habitat type occurs).

Once the indicator species was selected for a given habitat, the spatial requirement of that species as recorded in Appendix F was designated as the recommended buffer. The theory behind this process is that if the needs of species that satisfy these criteria are addressed, then many other species also will receive similar protection. Validation of this method does not require that the indicator species be present on each specific site within an identified habitat. Indicator species only reflect the space needs of individuals within species that are adapted to a particular habitat type.

The extent of the wildlife buffers recommended in this section include portions of wetlands if they occur between the aquatic and upland systems. The waterward buffer line should start at the interface between the aquatic and the wetland or upland habitat. If the wetland is narrower than the recommended buffer, then the buffer will extend landward into the upland. If the wetland is wider, then an upland buffer of 50 feet should be maintained in all situations to conserve nesting and over-wintering habitat for semi-aquatic reptiles. Buffers along flowing water wetlands also provide travel corridors for wildlife and connectivity of habitat systems.

The snowy egret was chosen as the indicator species for both marsh systems (Table 2-5). It typically nests in trees or tall shrubs from 5 to 30 feet above the ground or water on the periphery of marshes. Like other egrets, the snowy feeds on fish and other aquatic organisms in the water column. The snowy egret is listed as a Species of Special Concern. It uses both saltwater and freshwater marshes and also represents guilds within these two systems that contain several listed species. The spatial requirements of this species were determined by combining the results of two separate studies. Maxwell and Kale (1977) reported that the snowy egret tended to nest about 82 feet landward from the waterward edge of the tree canopy adjacent to aquatic systems. Klein (1989^d) found that the minimum distance from humans tolerated by snowy egrets was 240 feet. A 322-foot buffer in salt marshes will provide enough habitat for individuals in about 81% of the total wetland species in this habitat. The same buffer applied to fresh water marshes will be sufficient for only about 53% of the species.

All herons are highly susceptible to disturbance and nest abandonment during the early stages of incubation. Because these heronries are highly visible from the waterward perspective (looking back toward the trees along the marsh edge), some protection should be given to these breeding areas by restricting access to these wetlands from February through July.

The indicator species for the cypress and hardwood swamps is the Prothonotary Warbler. It is the only cavity-nesting warbler in Florida. Prothonotary warblers usually nest in old woodpecker holes from 5 to 30 feet above water or ground. Like other warblers, it feeds on insects. It belongs to the tree canopy breeding guild which contains five listed species, the majority in these habitat types. The spatial requirements for this species (Appendix F) were obtained from a study being supervised by Dr. Schaefer in Alachua County. Preliminary results of a current study (Schaefer, personal communication) show that the warbler was not found in natural riparian vegetation strips up to 450 feet wide in developed areas but was recorded in similar habitats within the 6000-acre, rural San Felasco Hammock State Park. Because this study did not examine a large continuum of

Table 2-5. Wetland wildlife habitat buffers for various habitats based on spatial requirements of indicator species (see Appendix F.).

Habitats (Landscape Associations)	Indicator Species	Median Spatial Requirement in Habitat	Habitat Quality	Wildlife Buffer*
Salt Marshes (5,6)	Snowy Egret	180 feet	High - Med. Low**	322 feet < 322 feet
Freshwater Marshes (1,2,4)	Snowy Egret	300 feet	High - Med. Low	322 feet < 322 feet
Cypress Swamps (1,2,3)	Prothonotary Warbler	350 feet	High - Med. Low	550 feet < 550 feet
Hardwood Swamps (2,3)	Prothonotary Warbler	350 feet	High - Med. Low	550 feet < 550 feet
Hammocks (3,6)	Prothonotary Warbler	370 feet	High - Med. Low	550 feet < 550 feet
Flatwoods (1,2,3,5)	Prothonotary Warbler	387.5 feet	High - Med. Low	550 feet < 550 feet
Sandhills (4)	Eastern Hognose Snake	614.5 feet	High - Med. Low	732 feet < 732 feet

* Measured from the waterward edge of the forested wetland or upland habitat that is adjacent to the aquatic system. Marsh buffers are measured landward from the landward edge of marsh vegetation. A 50-foot upland strip for semi-aquatic reptile nesting and over-wintering should be included in each buffer.

** In situations where the habitat area adjacent to the wetland is already developed, the buffer should be as wide as possible up to the wildlife buffer width for high - medium habitat quality areas.

riparian widths, a minimum forest habitat width was not determined. Nevertheless, a sensitivity to development has been demonstrated. Based on this information, a conservative estimate of the amount of habitat needed to protect one breeding pair would be a 550-foot wide forest strip. Buffers of 550 feet would address the spatial needs for individuals in about 60% of all species in these habitats.

The eastern hognose snake is a good indicator species of the sandhills. It feeds almost exclusively on toads that it finds buried in sandy soil. Like more than half of the wildlife found in this habitat, the hognose obtains all of its resources from the ground surface. Unlike the other habitats, a greater percentage of listed species also are highly dependent on this stratum. The spatial requirements for this species were determined from a study that recorded an average distance between captures of the same individual as 732 feet. A 732-foot buffer in sandhill wetlands will provide adequate space for individuals in more than 50% of the species in this habitat.

Protecting Wetland Habitats from Adverse Animal and Human Activities. One serious consideration in the forested habitats is the large proportion of species that are utilizing the ground zone for feeding and breeding. These species are the most susceptible to cat and dog predation and influences of vegetation trampling and other human-related activities. If the buffer is to be effective at protecting habitat for most of the species under consideration, much can be accomplished by addressing the needs of species in these guilds. Restricting human use of these buffers and encouraging enforcement of domestic animal leash laws are highly recommended.

Four listed species use the forest ground zone either for breeding or feeding and another six use the tree canopy for breeding. Adequate protection of these forested areas adjacent to significant wetlands will help to ensure their continued existence in an environment that already has caused them to be in jeopardy of extinction.

Protecting Wetland Wildlife from Noise Impacts. Wildlife in significant wetlands can be protected from sound disturbances generated in adjacent areas through the use of sound ordinances, barriers, educational programs, and buffers. This report focuses on the latter.

Three factors will determine the amount of buffer necessary to abate noise to an acceptable level: threshold level established for noise in habitat areas adjacent to development; sound level at the source; and amount of sound attenuated from the source to the habitat occupied by species that need protection.

In response to a Congressional directive initiated by the Noise Control Act of 1972, the Environmental Protection Agency identified a range of yearly sound levels sufficient to protect public health and welfare from the effects of environmental noise in different areas (U.S. Environmental Protection Agency, 1978). A maximum sound level of 55 dB was determined for "outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use."

The continuous traffic noise at distances of greater than a mile or two from any reasonably busy road is about 45 dB (Harrison, 1974). This is commonly accepted as a reasonable noise level for sleeping areas in the suburbs of cities (Myles et al., 1971).

Dailey and Redman (1975) reported the following background noise levels in a wilderness area:

- 35 dB under low wind conditions (3 to 5 miles/hour) in forested areas.
- 45 dB three feet from the bank of a stream with small rapids.
- 30 dB under low wind conditions (3 to 5 miles/hour) in an open meadow.

Harrison (1974) recommended that 15 dB below prevailing background noise was required to muffle human-caused sounds in wilderness areas. For example, in a forested area with a background noise level of 35 dB, a level of 20 dB must be achieved before any other noise is effectively masked by the sound of the stream.

Tables 2-6 and 2-7 also can be used to establish a threshold noise level for properties adjacent to significant wetlands. Based on this information, efforts should be made to minimize any noise that would exceed the sound level recommended by the Federal Highway Administration for areas where serenity and quiet are of extraordinary significance (57 dB; Table 2-7) and that a maximum threshold and not an average daily sound level should be used..

There are many human-produced sounds in developed areas. Some of these are shown in Table 2-8. Loud and sudden intrusive noises such as chain saws, motorcycles, and rifles from the landward side and motorboats from the water will have the most severe impacts on semi-aquatic and wetland-dependent wildlife.

Several factors affect how far a sound will travel outdoors: distance, rain, frequency of the sound, fog, snow, wind, temperature, atmospheric turbulence, molecular absorption, and ground surface features including vegetation (Dailey and Redman, 1975). All of these factors except distance have extremely variable and, for the most part, minimal impacts on sound. As noise spreads out from its source, its sound pressure level will decrease as the distance from the source increases. This decreasing loudness or attenuation of a noise is at a rate of 6 dB for each doubling of distance from the source. This phenomenon is known as "spherical spreading" (Beranek, 1960). For example, a noise measured at 100 dB at 50 feet from the source will be 94 dB at 100 feet, 88 dB at 200 feet, 82 dB at 400 feet, etc. as a result of spherical spreading (assuming no other attenuation). This relationship can be shown by the following equation:

$$L_x = L_o - 20 \log_{10} (D_x/D_o)$$

where: L_x is the decibel level of the source to be calculated at a desired distance

L_o is the decibel level of the source at a given distance

D_x is the distance from the source for which L_x is to be calculated

D_o is the given distance at L_o is measured

When D_x , the distance from the source, is unknown, the following equation would apply:

$$D_x = D_o \times 10^{(L_o - L_x)/20}$$

Vegetation in some situations may help to attenuate noise, but estimates of the magnitude of attenuation by forests vary from -1.5 dB (actually increasing the level) per 100 feet (Harrison, 1974) to as much as 10 dB per 100 feet of forest depth (Myles et al., 1971) and 15 dB per 100 feet (Robinette, 1972). The Federal Highway Administration (1979) reported that the amount of sound attenuated by any forest does not exceed 10 dB regardless of the forest width. Robinette (1972) reported that a tree belt would attenuate highway traffic noise from about 90 dB to almost 60 dB within 450 feet (15 dB per 100 feet). Noise attenuation over dense brush such as a marsh is almost negligible and over water is negative (increases the level; Harrison, 1974). Therefore, motorboat sound will not be attenuated at all until it reaches the shore. This probably eliminates otherwise suitable nesting habitats for many of the listed herons. These birds prefer to nest along the waterward edge of a forest canopy.

The buffers recommended in this report to satisfy space needs of wildlife will not be sufficient to minimize loud and sudden noises that may be detrimental to wildlife in these significant wetlands.

Table 2-6. Examples of average outdoor day/night sound levels measured at various locations (EPA 1978).

Outdoor location	Decibels (dB)
Apartment next to freeway	87
3/4 mile from major airport	86
Downtown construction activity	79
Urban high density apartment	78
Urban row housing on major avenue	68
Old urban residential area	59
Wooded residential	51
Agricultural crop land	44
Rural residential	39
Wilderness ambient	35

Table 2-7. Federal Highway Administration abatement criterion guidelines for traffic noise impact assessment with respect to recommended average sound levels for various land uses (FHWA 1982 in Greiner, Inc., 1988).

Description of Activity Category	Decibels (dB)
Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	57
Picnic areas, recreation areas, playground, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67
Developed lands, properties or activities not included above.	72

Table 2-8. Examples of development-related noise levels produced by various sources.

Noise Source	Decibels (dB)	Reference
Residual	40	EPA, 1971
Dog barking	50	EPA, 1971
Cars on nearby blvd.	55	EPA, 1971
Airplane overflight	65	EPA, 1971
Local cars	65	EPA, 1971
Buses	82	EPA, 1972
Trucks	85	EPA, 1972
Home shop tools	85	EPA, 1972
Lawn mowers	87	EPA, 1972
Motorcycles	95	EPA, 1972
Motor boat (45hp)	95	EPA, 1972
Chain saw	100	EPA, 1972
Two-man saw	55*	Harrison, 1974
Man shouting loudly	67*	Harrison, 1974
Pickup truck	73*	Harrison, 1974
Chopping wood	75*	Harrison, 1974
Rock drill	75*	Harrison, 1974
Pick and shovel	76*	Harrison, 1974
350-cc motorcycle	80*	Harrison, 1974
Chain saw	93*	Harrison, 1974
Small portable welder	95*	Harrison, 1974
.22 caliber pistol	107*	Harrison, 1974
30-06 rifle	130*	Harrison, 1974

Table 2-8. Continued.

Noise Source	Decibels (dB)	Reference
Four-person conversation	48**	Dailey and Redman, 1975
Guitar	52**	Dailey and Redman, 1975
Four people singing	60**	Dailey and Redman, 1975
Chopping wood	64**	Dailey and Redman, 1975
Pounding tent stakes	66**	Dailey and Redman, 1975
Clattering pans	66**	Dailey and Redman, 1975
Harmonica	72**	Dailey and Redman, 1975
125-cc trail bike	74**	Dailey and Redman, 1975
Safety whistle	76**	Dailey and Redman, 1975
Yelling	78**	Dailey and Redman, 1975
30-06 rifle	136**	Dailey and Redman, 1975

* dB levels at 100 feet

** dB levels at 50 feet

The effectiveness of vegetation noise buffers depends on many factors including plant shape, foliage thickness, and height of vegetation. As a result of the unpredictability of determining noise attenuation, a specific noise buffer is not recommended, but the following is suggested to properly address adverse impacts of noise on wetland wildlife:

- to educate the public about the impacts of noise on wildlife in regionally significant wetlands,
- to adopt a noise threshold level for significant wetlands,
- to require a noise attenuation assessment on a site by site basis between proposed development sites and adjacent significant wetlands,
- to consider the use of physical noise barriers or dense plantings such as those used by highway departments, and
- to consider adopting sound ordinances wherever necessary.

Limitations of Wetland Wildlife Buffers

Just discussed are the confines of buffers in reducing loud disturbing noises. Buffers also have other limitations. Buffers recommended in this report will address spatial needs of individuals in only half of the semi-aquatic and wetland-dependent wildlife species in east central Florida. They will also help to reduce some of the adverse impacts of animal and human activities in adjacent areas. These buffers are an important part but not a complete conservation plan that will achieve Regional Goal 43, to protect the ecological values of significant ecosystems.

The most serious problem confronting Florida's wildlife is fragmentation of natural habitat areas into small, isolated parcels that are not large enough to sustain viable populations. Growth management decisions must focus on maintaining the biological integrity of systems by designing areas that will perpetuate functional communities and not merely token remnants.

In order to develop a conservation strategy that addresses the need to ensure continued perpetuation of all currently existing wildlife populations within a large geographic area, minimum viable or minimum functional population considerations must be made. A minimum viable population is the lowest number of individuals that can ensure the capability of the population to persist through time dealing successfully with agents of extinction (Shaffer, 1981). Put in more specific terms, a minimum viable population can be defined as the smallest population that will give a 99% probability of surviving at least 1,000 years (Shaffer, 1981). Too small a population is subject to extirpation due to the accumulation of detrimental genetic make-up through inbreeding (Ralls and Ballou, 1983).

It is important to note that the process of extirpation for longer-lived species may take several decades. Therefore, the impacts of some ineffective land-use decisions will not be realized for several generations.

Reed et al. (1986) recommended an effective population size of more than 50 for short-term survival of species and 500 for long-term population and species survival. Frankel (1983) warned that populations as large as 300 individuals may be needed to provide for minimum levels of persistence for populations confronted with consistently harsh conditions over 200 years. Land managers and planners should of course aim above the minimum levels whenever possible because the consequences of falling below are extreme and these population models have not been substantially validated.

Once the minimum viable population size is determined then the minimum area required to support that population can be calculated by extrapolating the home range size of the average individual. In landscapes with isolated wetland habitats, area requirements should be satisfied in large contiguous blocks. In flowing water wetlands that are situated between two larger habitat islands, area requirements may be satisfied merely by providing the appropriate link or wildlife corridor.

The buffers recommended in this report pertain to the protection of wetland habitats to the extent that they will merely satisfy requirements of some individuals. However, this does not mean that the needs of far-ranging individuals and of populations should be ignored. Local comprehensive planning efforts must effectively design systems that will provide large minimum area requirements such as 300,000 acres for black bears and 60,000 acres for indigo snakes. These goals probably cannot be achieved within one county's jurisdiction. Therefore, cooperative approaches are necessary to assure the perpetuation of populations of semi-aquatic and water-dependent wildlife species in east central Florida.

SECTION III: Calculating Site-Specific Buffers

This section provides the methods for determining buffer requirements for a specific site. For each case, it gives a brief rationale, explains the method, and lists data requirements and sources. It is important to note that the methods for calculating buffer requirements for protection against groundwater drawdown and control of sediment and turbidity are designed to be as simple as possible so that a minimum of data is required.

In most cases, the required buffer width is measured from the boundary between the wetland and the upland. For convenience, the methodology employed by the St. Johns River Water Management District for determining wetland/upland boundaries should be used to establish the wetland edge since many of the wetlands for which a buffer is applicable will have been surveyed by SJRWMD personnel.

Groundwater Drawdown

The impact of lowered groundwater level in lands surrounding wetlands alters the length of time of wetland inundation (hydroperiod) and the depths of inundation. Both hydroperiod and depth of inundation affect the species composition of vegetation and wildlife and, ultimately the "health" of the entire ecosystem. The following are consequences of drainage of wetlands: (1) drained wetlands are more prone to damaging fires, (2) their organic substrates (peat or muck) oxidize away when exposed to air, (3) wetland trees easily topple when exposed roots die, and (4) drained wetlands are more prone to invasion by exotic vegetation and upland species. The protection of wetland function and structure is probably best accomplished by protecting hydroperiod and depth of inundation.

There are numerous approaches to determining the drawdown of surficial aquifers from open ditches, sub-surface drains, or other drainage structures. Some are more complex than others, and, while they may yield very detailed information about hydraulic effects of drainage structures, their use requires significant amounts of time and energy. The most appropriate method in this context is the simplest one that provides the necessary information and has sufficient rigor that its results merit confidence.

Two methods are discussed here and are considered appropriate for the calculation of site-specific wetland drawdown buffers. The first was developed by Dr. Wendy Graham of the University of Florida Department of Agricultural Engineering (see Appendix B) and the second by the Southwest Florida Water Management District, Resource Regulation Department (Miller and Weber, 1989). The two methods are applicable for different conditions and require different input data. The SWFWMD method assumes a horizontal groundwater flow having a small surficial aquifer slope $[(dh/dx)^2 \ll 1.0]$. While this condition can be met in many flatwoods situations, slopes can often exceed 5% in other landscapes. The "Graham method" assumes a surficial aquifer sloped toward the wetland or a horizontal surficial aquifer. Under horizontal surficial aquifer conditions, both methods yield similar results.

Calculating Wetland Drawdown Buffer: Method 1

Use this method when the surficial aquifer slopes toward the wetland or when the slope of the surficial aquifer is nearly horizontal.

Figure 3-1 illustrates the impact of a drainage structure on the surficial aquifer near a wetland. The magnitude of the impact is related to the drawdown in the drainage canal or structure and is the difference between pre-development and post-development levels. The equation that may be used to determine the magnitude of drawdown and thus the effective width of a buffer is as follows:

$$S(x) = \frac{h_c^2 - h_o^2}{L_c} x + h_o^2^{1/2} - \frac{(h_c - s_c)^2 - h_o^2}{L_c} x + h_o^2^{1/2} \quad (3.1)$$

where:

- h_o = height of the surficial aquifer at the center of the wetland in wet season (feet)
- h_c = height of the surficial aquifer at the proposed canal location before development in wet season (feet)
- L_c = distance between the center of the wetland system and the center of the canal
- s_c = surficial aquifer table drawdown at the drainage structure

The formula requires that an impervious layer exists below the surficial aquifer, and all heights are measured relative to this layer. In larger wetlands (equal to or greater than 5 acres), the drawdown formula is not sensitive to the depth of the impervious layer. Therefore, for the purposes of this calculation, a convenient depth may be assumed, and field measurement is not required.

The required data are:

- a) distance from center of wetland to wetland edge,
- b) the slope of the surficial aquifer, and
- c) drawdown at the drainage structure.

Distance from the center of the wetland to the wetland edge can be measured from aerial photographs or measured in the field.

Slope can be determined through field measurement by measuring the difference in elevation of groundwater in excavated soil pits at two or more locations along a line perpendicular to the wetland edge. In most flatwood situations, the slope can be assumed to be equivalent to the slope of the ground surface.

Drawdown at the drainage structure is usually given by engineering requirements of the site.

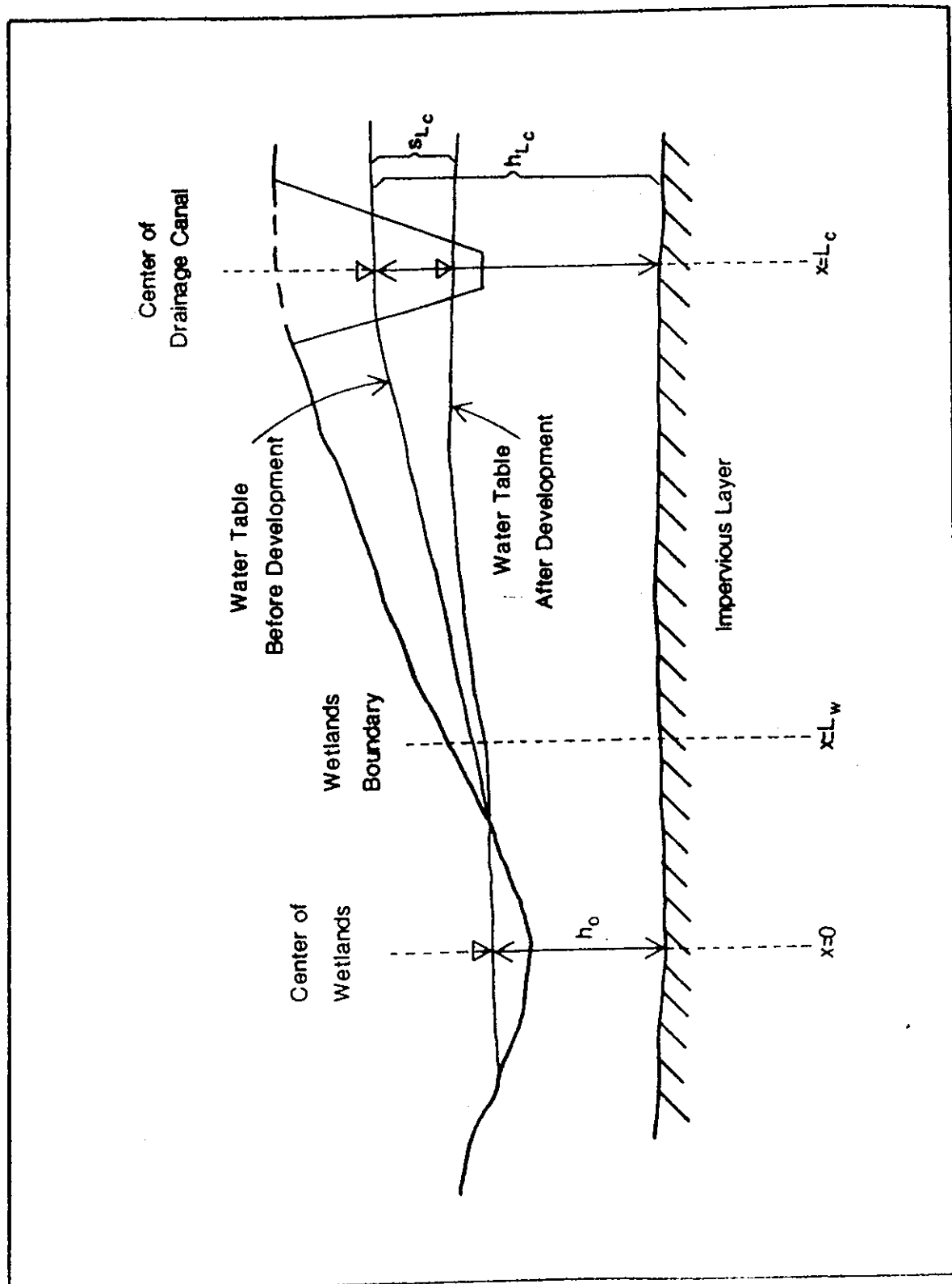


Figure 3-1. Diagram illustrating the effects of groundwater drawdown on wetland water levels in areas of sloped groundwater tables. Letters refer to variables in Equation 3.1.

Because equation 3.1 depends on the predevelopment level of the surficial aquifer, it cannot be rewritten to calculate buffer width directly. The only way to find the required buffer distance is to substitute various buffer distances in the equation until the drawdown at the wetland edge approaches zero.

Calculating Wetland Drawdown Buffer: Method 2.

Referring to Figure 3-2, the required buffer distance can be calculated for flatwoods situations where the surficial aquifer is nearly level and flow is horizontal using a two-dimensional analytical equation that is used to estimate the spacing of soil drains. Called the Hooghoudt equation, this steady state equation is based on the Dupuit-Forchheimer assumption and on Darcy's law. For the derivation and explanation of assumptions, see Miller and Weber, 1989. The derived equation applicable to the determination of required wetland buffers is as follows:

$$d = \frac{[K(M)^2 + 2AM]^{1/2}}{q} \quad (3.2)$$

where:

- K = average hydraulic conductivity above the impermeable layer (in/hr.). For practical purposes, hydraulic conductivity is equal to permeability.
- M = vertical distance of surficial aquifer above maintained water level in drainage structure at wetland edge (assume wet season water level at the ground surface). (feet)
- A = depth to impermeable layer below bottom of drainage structure. (feet)
- q = drainage coefficient, rate of water removal and uniform replenishment, or effective rainfall (in/hr). Calculate as difference between yearly rainfall and evapotranspiration.
- d = setback distance for drainage structures to prevent drawdown of existing seasonal high surficial aquifer level in the wetland.

The required data include:

Hydraulic Conductivity - The USDA-SCS county soil surveys give permeabilities by soil type, and these are summarized in Appendix A for soils within the Region. For practical purposes hydraulic conductivity can be assumed to equal permeability. Where multi-layer soils exist, use a weighted mean of the given permeabilities and soil strata depths.

Normal Wet Season High Water Table (NWSHWT) - assume that wet season high surficial aquifer level intersects the ground surface at the wetland edge.

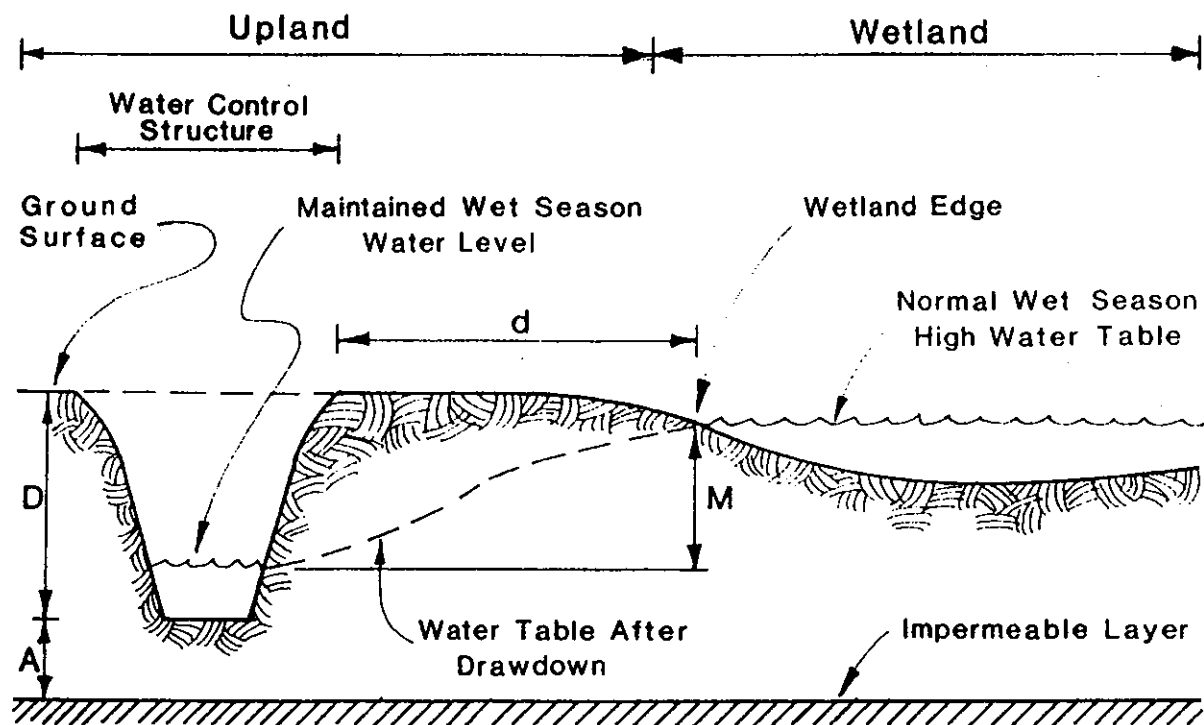


Figure 3-2. Diagram illustrating the effects of groundwater drawdown on wetland water levels in areas having nearly horizontal groundwater tables. Letters refer to variables in Equation 3.2.

Depth to water level (D) after drawdown - Depth below the ground surface to the maintained wet season water level in the drainage structure.

Vertical distance (M) - The difference between NWSHWT and the maintained water level in the drainage structure (D).

Depth to impermeable layer (A) - In the absence of geotechnical information showing a layer having hydraulic conductivity of less than one tenth of the overlying material, depth (A) may be assumed to equal 0.5 depth (D). If no impermeable layer is encountered in test borings to a depth equal to depth (D) below the drainage structure bottom, then depth (A) may cautiously be assumed to equal depth (D).

Drainage coefficient (q) - Annual net effective rainfall is estimated by subtracting yearly evapotranspiration (ET) from annual rainfall. In central Florida rainfall averages approximately 54 inches per year and ET is estimated to be about 87% of rainfall or about 47 inches. Net effective rainfall, then, is equal to 7 inches/yr or 0.0007991 in/hr.

Sediment and Turbidity Control

Sediment deposition in wetland ecosystems results in significant impacts to wetland structure and function. Accumulations of sediment tend to fill the wetland, displacing vegetation and altering water storage capacity. Increased turbidity caused by silts and clays washing from disturbed lands are less a problem in wetland ecosystems but represent a serious impact to aquatic systems. Thus, sedimentation in wetlands should be avoided and release of turbid waters to aquatic environments controlled.

To minimize the potential for wetland sedimentation, upland buffers of undisturbed natural vegetation can act to slow the velocity of sediment-laden runoff waters, causing deposition of sediments prior to release to the wetland. Buffers of upland and wetland combined can act as filters and silt traps to minimize negative impacts of silt on aquatic ecosystems. The following methods can be used to determine the buffer required to minimize sediment impacts on wetlands and turbidity impacts on aquatic systems.

Calculating Sediment and Turbidity Control Buffers

Calculating sediment buffer widths involves ascertaining the soil type of the area immediately adjacent to the wetland, the soil hydrologic group, and USDA soil classification. Runoff volume is estimated using methods described in SCS TR-55 and buffer width is calculated using equations explained below. The procedure is as follows:

1. Determine soil type of the site from USDA-SCS county soils survey.

2. From SCS soils survey or from Table A-1 in Appendix A, obtain soil hydrologic group and USDA soil type.
3. Using procedures described in SCS TR-55 "Urban Hydrology for Small Watersheds," calculate peak discharge from one acre of newly graded soil of the appropriate hydrologic group. The size is set at 300 feet along the slope and 145.2 feet wide. This length is important since channelized flow may occur on longer slopes (SCS, 1986).
4. Calculate the first-order reaction coefficient for deposition using the following formula (Foster, 1982):

$$\alpha = \frac{0.5 V_f}{q} \quad (3.3)$$

where:

V_f = fall velocity (feet/sec). Use the following fall velocities (adapted from Flanagan et al., 1986), depending on USDA soil type (from Table A-1):

Clay soils = 0.000010 ft/sec

Loamy soils and mucks = 0.000263 ft/sec

Fine sands = 0.001093 ft/sec

Sands = 0.002500 ft/sec

q = peak discharge of surface runoff per unit width per unit time (ft³/sec . ft⁻¹)
(from TR-55)

5. Calculate the length of the buffer strip required using the following equation adapted from Foster (1982):

$$L = \ln \frac{(1 - SD)}{\alpha} \quad (3.4)$$

6. If the soil type is fine or coarse sand, the required buffer is measured from the boundary between the wetland and the upland. Wetland edge is determined using methods adopted by the St. Johns River Water Management District."
7. If the soil type is silt or clay and there is a body of open water adjacent to the wetland, the required buffer is determined using the larger of either of the following measures:
 - a) measured as that required for fine sand in step 6 above, or
 - b) measured from the edge of open water toward the upland including any adjacent wetlands.

Wetland Wildlife Habitat Buffers

Landscape alterations associated with development and other human-related activities adversely affect wildlife resources and their habitats. Some of specific problems include fragmenting habitats into small parcels not adequate to retain the ecological balance and function of the original system and disturbing wildlife by activities and noises that prevent them from using critical nesting and feeding areas.

The intended purpose of the recommended wetland wildlife habitat buffers is to provide habitat for semi-aquatic and wetland-dependent wildlife and to protect the ecological values of significant wetlands. In order to most effectively achieve this purpose buffers should adhere to certain quality and quantity standards, and should address potential domestic animal and human-related disturbances (including noise).

Calculating Wetland Wildlife Habitat Buffers

The procedure for calculating wetland wildlife habitat buffers is as follows:

1. Determine the habitat type of the particular regionally significant wetland that is on or waterward from the proposed development site (see Appendix G). For landscape situations where there is no vegetated wetland transitional area (e.g., marsh or swamp), the habitat determination should be made for the upland habitat (e.g., flatwoods, hammock, sandhill) that is adjacent to the aquatic system.
2. Determine the quality of the habitat.

High -	The area is still in a relatively natural state.
Medium -	The area has been cleared for agricultural or silvicultural purposes but no permanent structures such as roads and buildings have been constructed.
Low -	The area has been cleared and developed with roads, buildings, and other permanent structures.
3. Select the buffer width found in Table 3-1 for the previously determined habitat type and quality.
4. Note that the wildlife buffers can include wetland as well as upland habitats. The wetland wildlife habitat buffer should begin at the waterward edge of the forested wetland or upland habitat that is adjacent to the aquatic system. A minimum 50-foot upland strip for semi-aquatic reptile nesting and overwintering also should be included in each buffer (i.e., if the marsh or swamp wetland is wider than the recommended buffer, a 50-foot-wide upland buffer strip should be added to the landward edge of the wetland).
5. If no trees are adjacent to the marsh (e.g., open flatwoods) a 322-foot buffer is needed to prevent disturbance from human activities (minimum distance from humans tolerated, see Appendix F).
6. Marsh areas frequently occur along flowing water systems (e.g., rivers). These marshes do not function as separate habitats unless they are large enough to support most wildlife species associated with marsh communities. For separate buffer considerations, these marshes must be at least 5 acres in size and vegetation must extend waterward from the waterward edge of the adjacent upland or forested wetland community for at least 50 feet.

Table 3-1. Recommended wetland wildlife buffer widths for various habitats of high, medium and low quality.

Habitat	Quality	Buffer Width
Salt and Freshwater Marshes	High	322 feet
	Medium	322 feet and revegetate buffer into natural habitat
	Low	as wide as possible up to 322 feet
Cypress and Hardwood Swamps, Hammocks, and Flatwoods	High	550 feet
	Medium	550 feet and revegetate buffer into natural habitat
	Low	as wide as possible up to 550 feet
Sandhills	High	732 feet
	Medium	732 feet and revegetate buffer into natural habitat
	Low	as wide as possible up to 732 feet

Calculating Noise Attenuation Requirements

The procedure for calculating noise attenuation requirements is as follows:

1. Obtain information on the local noise threshold policies for significant wetlands (assuming that such policies will be forthcoming).
2. Assess the maximum (not average) current or potential (if site is proposed for development) noise level for the site.
3. Assess the amount of noise attenuated under proposed conditions following development from the site to the waterward edge of the wetland (or upland if no wetland is present).
Measurements of sound attenuated through vegetated areas should be conducted during the winter when most deciduous foliage is absent. There are several standardized methods for assessing noise levels (U.S. Department of Transportation, 1981; U.S. Department of Housing and Urban Development, 1984). The former reference includes information relating to the instrumentation, equipment operation, personnel, measurement procedure, and computation procedure for a noise measuring project.
4. Determine the width of a vegetated buffer or some other attenuation means (e.g., barriers) that would be necessary to reduce the maximum expected sound level to the acceptable threshold.

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GLOSSARY

BIOTA - The animal and plant life of a particular region considered as a total ecological entity.

BUFFER - A zone of transition between two different land uses that separates and protects one from another. In this report, the word "buffer" refers to the zone between a wetland and a developed or developable area.

CARRYING CAPACITY - The size of a population that an environment or habitat can support indefinitely.

COMMUNITY, ECOLOGICAL - A natural assemblage of plants and animals that live in the same environment, are mutually sustaining and interdependent, and are constantly fixing, utilizing, and dissipating energy.

COMMUNITY, WILDLIFE - All of the populations of different species of animals that live in the same environment.

CURSorial - Adapted to or specialized for running as opposed to flying, crawling, etc.

DIVERSITY, BIOLOGICAL - The composition of a particular environment or habitat as it relates to the plant and animal species present and their relative abundance.

DRAWDOWN - The lowering of the upper surface of a water table.

EQUILIBRIUM NUMBER - The number of species supportable in a given area over the long term.

EXTIRPATION - Extinction of a species from a particular area (not its entire range) where it formerly occurred.

GENETIC VIABILITY - The probability of survival from egg to adult.

GROUNDWATER - Water below ground level in completely saturated soil. Not confined (under pressure), the source of which is rainfall, and the elevation of which rises and falls.

HABITAT, WILDLIFE - The area or type of environment in which an organism or biological population normally lives or occurs.

HYDRAULIC CONDUCTIVITY (K) - The coefficient which quantifies the resistance of a porous medium (i.e., saturated soil) to fluid flow. This coefficient depends on properties of the fluid and the medium and has units of length per time. In the United States, K is often expressed as the flow in gallons per day through an area of one square foot under a gradient of one foot per foot at 60° F.

HYDRIC - Characterized by, relating to, or requiring an abundance of moisture. Compare mesic and xeric.

HYDROPERIOD - The length of time during which there is standing water in a wetland.

INSULARITY - Of or relating to the extent that a specific habitat area is surrounded by dissimilar landuses that in an ecological sense isolates it from natural animal and plant dispersion mechanisms.

INTEGRITY, BIOLOGICAL - All of the plants and animals that are characteristic of an area and all of the processes that result from interactions between these species and their environment.

LANDSCAPE ASSOCIATION - An assemblage of ecological communities with similar topography and geology which are hydrologically connected.

LANDSCAPE DYNAMICS - The areal and functional relationships between different parts of the landscape, e.g., the distribution, sizes, and topographic and hydrologic connections among ecosystems in a landscape association.

LIFE REQUISITES - Those components of a habitat that an organism needs to survive.

MESIC - Midway between very wet and very dry.

MODEL, COMPUTER SIMULATION - A representation of any kind of system (such as an ecosystem, a set of wildlife populations, or a landscape association) written in a computer language that shows changes over time and responses to different sets of conditions.

OVERSTORY - The layer of foliage (leaves and branches) formed by the largest trees in a forested area.

PHREATIC AQUIFER - An unconfined saturated permeable geologic unit which is capable of transmitting a significant amount of water under typical conditions.

POPULATION, MINIMUM VIABLE - The smallest number of individuals that will give 99% probability of the species surviving in a particular area for at least 1,000 years.

RIPARIAN - Of or relating to living or located on the bank of a flowing watercourse (as a river or stream) and also an isolated water source such as a pond or lake.

SAND, PRIMARY - Unweathered soil particles between .05 and 2.0 mm in diameter.

SEED SCARIFICATION - Processes required to prepare seeds for germination.

SEEPAGE, GROUNDWATER - Slow, vertical or horizontal movement of groundwater in the soil.

SEMI-AQUATIC - Adapted for living near water and needing water to survive but living in water all of the time such as fish.

SILTS, PRIMARY - Unweathered soil particles between .002 and .05 mm in diameter.

SILVICULTURE - Activities of man involving regeneration, tending, and harvesting a forest.

SPECIES RICHNESS - The number of different species in an area.

STEADY-STATE SYSTEM - A system in which short-term effects have been damped out over time and which therefore does not vary over time.

SUCCESSION, VEGETATIONAL - The process of change in the types of plants occupying an area as plants mature, are replaced, and otherwise respond to the environment.

SURFICIAL AQUIFER - Water below ground level in completely saturated soil. Not confined (under pressure), the source of which is rainfall, and the elevation of which rises and falls.

TAXA - Plural of taxon.

TAXON - A group of organisms constituting one of the categories in taxonomic classification of living organisms such as class, order, family, genus, species.

TERRITORY, BREEDING - An area usually including the nesting or denning site and possibly a variable foraging range that is preempted by an individual male animal and defended against the intrusion of rival individuals.

TURBIDITY - The concentration in water of suspended solids (such as silts, clays, and small particles of organic matter).

UNDERSTORY - The foliage lying beneath the tallest trees consisting mainly of seedling trees, small trees, shrubs, and herbaceous plants.

VEGETATION AREAS, TRANSITIONAL - Areas that contain plants that are characteristic of identifiable adjacent plant communities.

VERTEBRATE - Of or relating to the taxonomic subphylum "vertebrata" that comprises bilaterally symmetrical animals with a segmented spinal column or in primitive forms with a persistent notochord, a tubular dorsal nervous system divisible into brain and spinal cord, an anterior head bearing a mouth and the major sense organs, an internal articulated skeleton of bone and cartilage, respiration by gills or lungs, and not more than two pairs of limbs which may be modified as grasping, walking, swimming or flying organs in different members of the division, and that includes the mammals, birds, reptiles, amphibians, fishes, elasmobranchs, and cyclostomes and sometimes the lancelets.

WATER-DEPENDENT - Of or relating to the need for water as a necessary habitat component for survival.

WATER TABLE - Water below ground level in completely saturated soil. Not confined (under pressure), the source of which is rainfall, and the elevation of which rises and falls.

WETLAND - Lands transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface.

WETLANDS, EPHEMERAL - Areas temporarily or seasonally supporting wetland conditions.

WETLANDS, JURISDICTIONAL - Wetlands that can be legally regulated by government.

XERIC - Of or relating to an extremely low amount of moisture available for the support of plant life.

APPENDIX A:

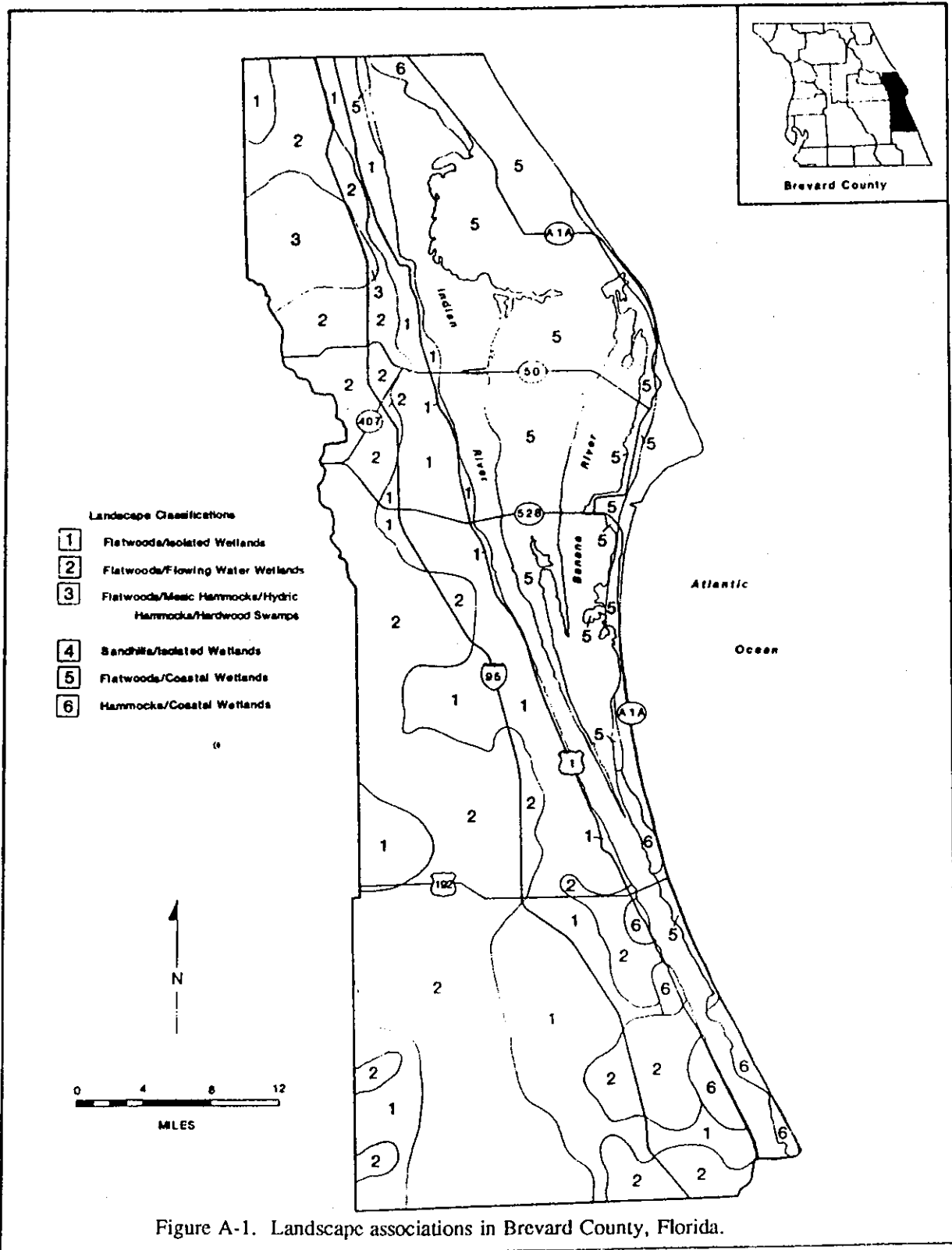
Landscape Associations of East Central Florida

Appendix A: Landscape Associations of East Central Florida

The number of associations used for delineating buffer zones must be small enough to minimize methodological complexity and large enough to represent ecological and hydrological factors accurately. Based on analysis of vegetation and land use maps of the St. Johns River Water Management District,¹ six landscape associations were identified in the East Central Florida region: (1) pine flatwoods/isolated wetlands, (2) pine flatwoods/flowing water wetlands, (3) pine flatwoods/hammock/hardwood swamps, (4) sandhills/isolated and or flowing-water wetlands, (5) pine flatwoods/salt marshes, and (6) coastal hammock/salt marshes. Landscape associations selected for buffer-zone delineation were designed to reflect differences in the three goals of the buffer determination procedure--minimization of groundwater drawdown, sediment and turbidity control, and protection of wildlife habitat. The critical factors distinguishing these groups for purposes of calculating buffer widths are the differences in drainage and in topography.

Following are descriptions of the components of the six landscape associations. Figures A-1 through A-6 are maps of landscape associations in each of the six counties of the region. Table A-1 lists typical soil series of the components of the associations and some of the soil characteristics used in calculating buffer widths.

¹ Maps prepared by the Center for Wetlands under joint contractual agreement with the Jacksonville Area Planning Board and the St. Johns River Water Management District, 1973.



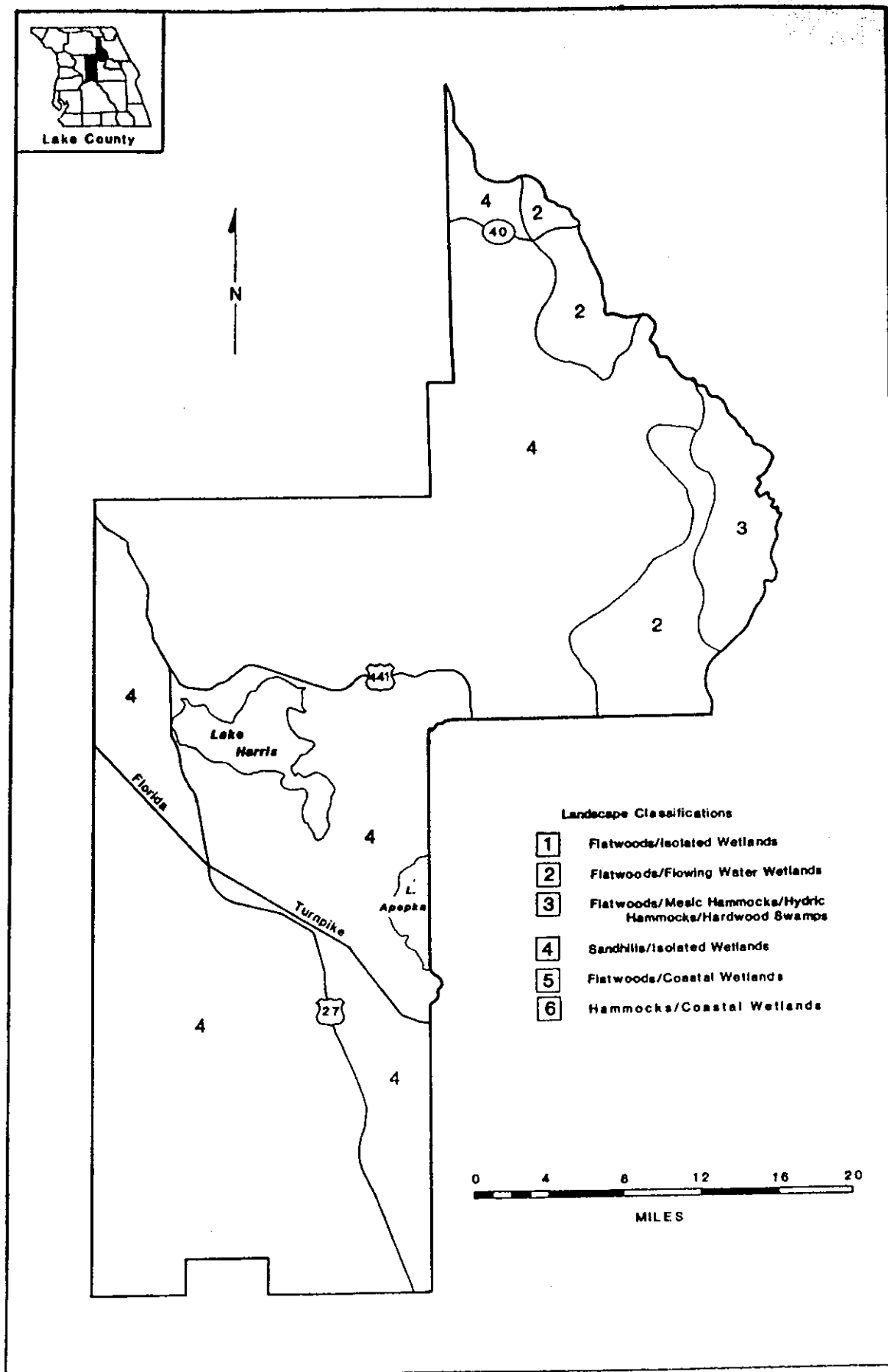


Figure A-2. Landscape associations in Lake County, Florida.

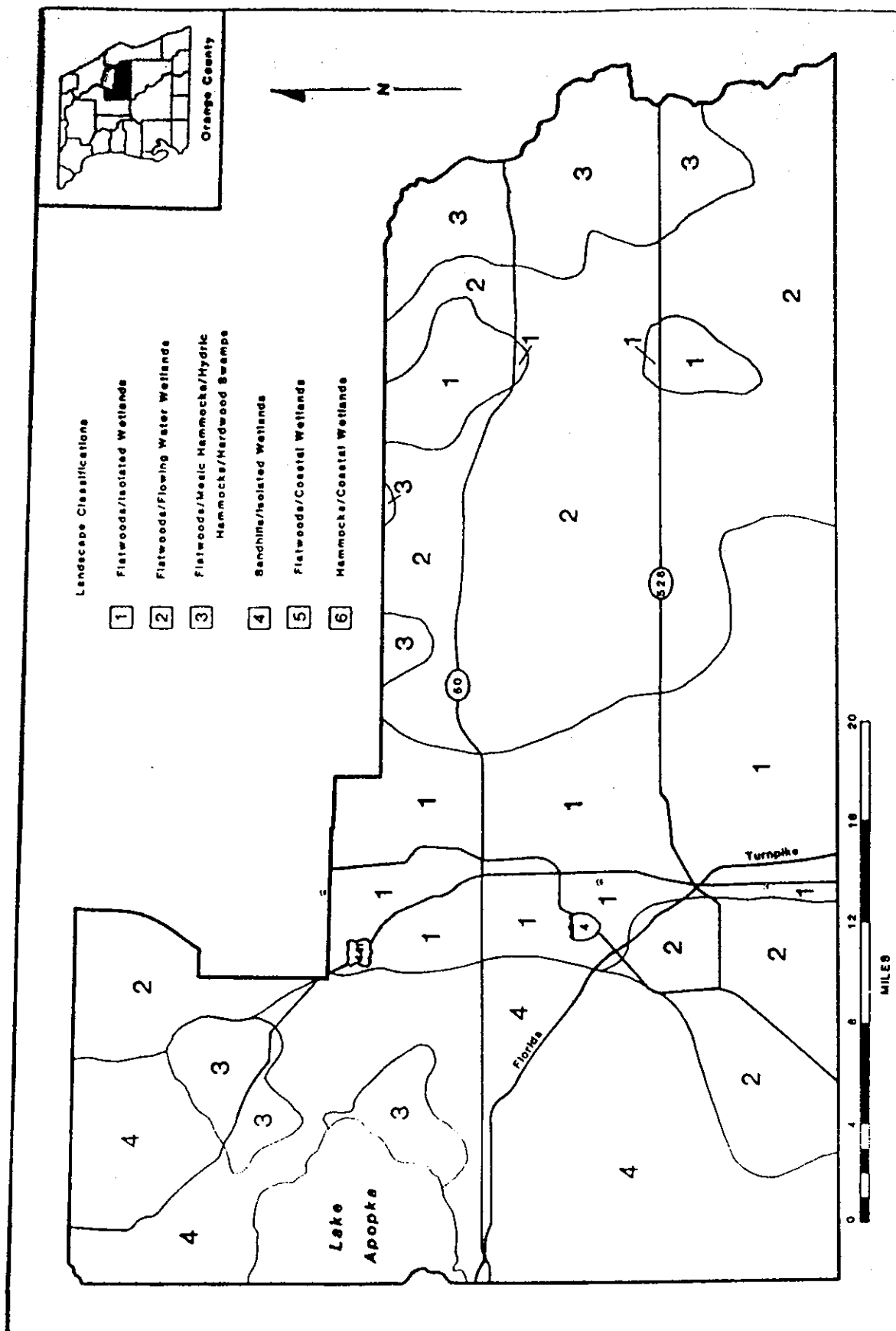


Figure A-3. Landscape associations in Orange County, Florida.

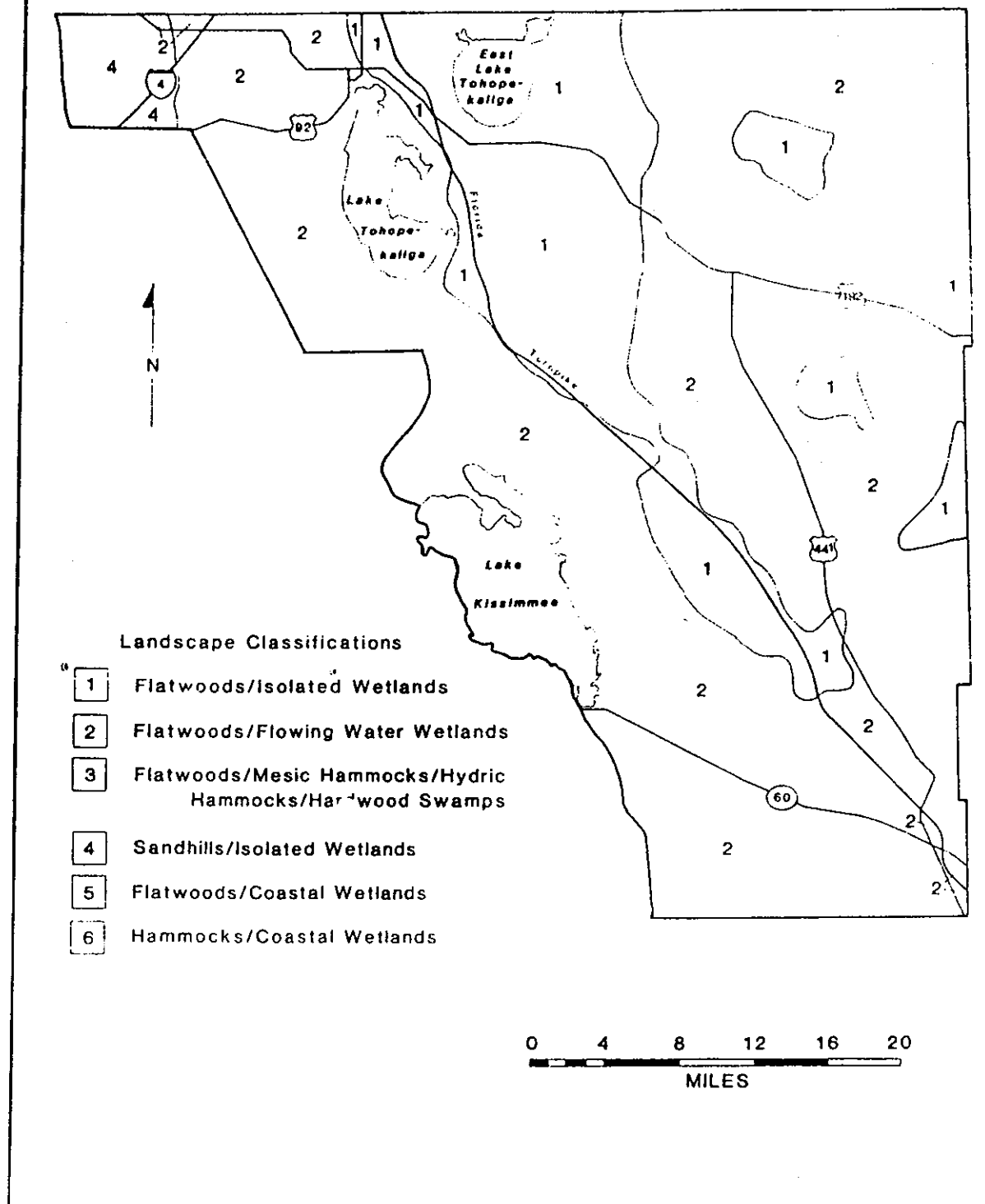


Figure A-4 Landscape associations in Osceola County, Florida

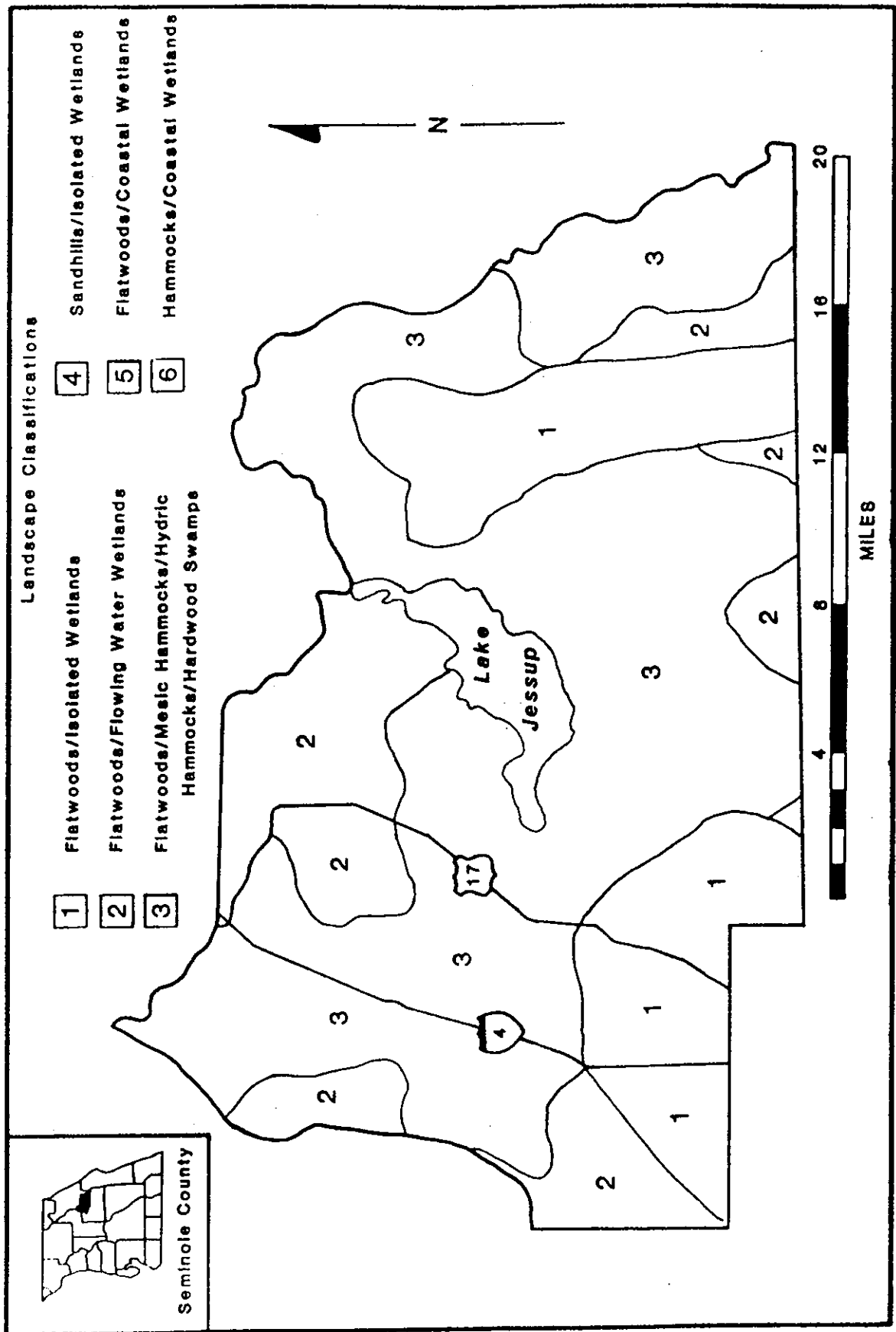


Figure A-5. Landscape associations in Seminole County, Florida.

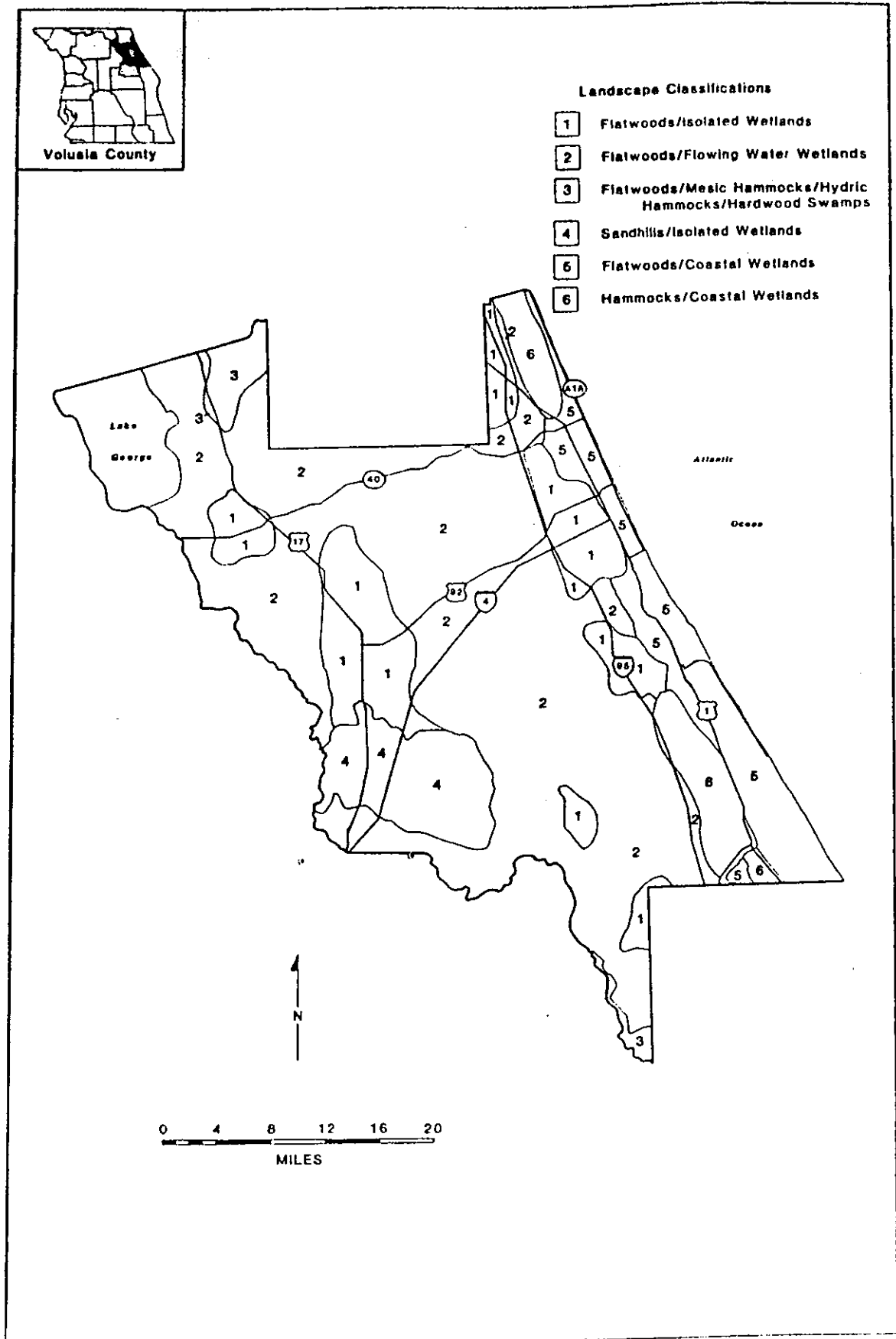


Figure A-6. Landscape associations in Volusia County, Florida.

Landscape Association 1. Pine flatwoods/isolated wetlands

Pine flatwoods are so named because of the flat topography on which this association is typically found. The lack of gradient results in frequent flooding during the summer rainy season (Brown, 1980). Many of the grassy scrub areas shown on the 1973 maps were probably once pine flatwoods that have been converted to grassy scrub by tree harvest, increased drainage, and/or greater fire frequency (Brown, 1980).

Interspersed throughout the flatwoods are topographically low areas, which are occupied by patches of wetlands of various types. These include cypress domes, bayheads, and wet prairie (Brown and Schaefer, 1987), as well as shallow and deep freshwater marshes (Brown, 1980).

Cypress domes are dominated by pond cypress (*Taxodium distichum* var. *nutans*). Dominant tree species in bayheads include redbay (*Persea borbonia*), sweetbay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), blackgum (*Nyssa sylvatica* var. *biflora*), red maple (*Acer rubrum*), pond pine (*Pinus serotina*), and slash pine (*Pinus elliottii*). Typical wet prairie plants include St. John's wort (*Hypericum fasciculatum*), primrose willow (*Ludwigia* spp.), elderberry (*Sambucus simpsonii*), panicum grasses (*Panicum* spp.), soft rush (*Juncus effusus*), spike rush (*Eleocharis cellulosa*), and pickerelweed (*Pontederia cordata*).

Deepwater marshes are usually dominated by free-floating plants such as water hyacinth (*Eichhornia crassipes*) and water lettuce (*Pistia stratiotes*) or rooted aquatic plants such as water lily (*Nymphaea odorata*) and spatterdock (*Nuphar luteum*). Shallow marshes may be dominated by one of the following species: pickerelweed, sawgrass (*Cladium jamaicense*), arrowhead (*Sagittaria* spp.), fire flag (*Thalia geniculata*), cattail (*Typha* spp.), spike rush, bulrush (*Scirpa* spp.), or maidencane (*Panicum hemitomon*); some marshes contain patches or mixtures of some or all of these species (Brown and Starnes, 1983).

Landscape Association 2. Flatwoods/flowing water wetlands

The soils in this category are poorly drained and have higher percentages of clay and organic matter than do those of the flatwoods/isolated wetland association, and the topography is more variable. Flowing water wetlands include both bald cypress (*Taxodium distichum*) and hardwood forests growing along sloughs and rivers. Common hardwood species include red maple (*Acer rubrum*), water tupelo (*Nyssa aquatica*), swamp black gum (*Nyssa sylvatica* var. *biflora*), sweet gum (*Liquidambar styraciflua*), pop ash (*Fraxinus caroliniana*), Florida elm (*Ulmus floridana*), and cabbage palm (*Sabal palmetto*) (Brown, 1980).

The seasonal flooding that is characteristic of flowing water wetlands provides the nutrients needed for plant growth. Water levels fluctuate about 2.5 feet in an average year, but the range may be as large as 5 feet (Brown and Starnes 1983). Flooding is also important for seed distribution, seed scarification, and elimination of upland plant species (Brandt and Ewel, 1989).

For a description of flatwoods, see Landscape Association 1 above.

Landscape Association 3. Pine flatwoods/hammocks/hardwood swamps

Poorly drained to moderately well-drained, sandy soils and level to sloping topography characterize this landscape association. Between flatwoods and mesic hammock in relatively higher zones and hardwood swamp or marsh in lower zones are hydric hammocks, which also occur on the banks of spring runs such as the Wekiva River.

Mesic hammocks are the most diverse of the upland communities in the East Central Florida region and may contain between 8 and 35 tree species. Overstory species in mesic hammock include southern magnolia (Magnolia grandiflora), laurel oak, red bay (Persea borbonia), pignut (Carya glabra), American holly (Ilex opaca), water oak (Q. nigra), black cherry (Prunus serotina), and live oak (Quercus virginiana). The canopy is so dense that little sunlight reaches the forest floor. Soils are moderately well drained to somewhat poorly drained. Rainfall is the major water source for mesic hammocks, although seepage and runoff may provide water to some stands (Brown, 1980).

Soils in hydric hammocks are generally shallow and sandy, and limestone (either in bedrock or in nodules in the soil) is always present (Vince et al., 1989). Hardpans (weakly cemented Bh horizons) do not occur in hydric hammocks, but clay layers that support surficial water tables occur in some hammocks (Vince et al., 1989).

High water tables are characteristic; hydric hammock soils are saturated most of the year (Brown and Schaefer, 1987). Sources of water to hydric hammocks include groundwater seepage, rainfall, stream overflows, and aquifer discharge (Vince et al., 1989); groundwater seepage from uplands is the major source of water for the hydric hammocks bordering the Wekiva River. The relative contribution of rainfall, overland flow, and aquifer discharge are probably greater in other hydric hammocks elsewhere in the East Central Florida region.

Hydric hammocks have the most diverse flora of any wetland in East Central Florida. Species include popash (Fraxinus caroliniana), live oak (Quercus virginiana), laurel oak (Quercus laurifolia), water oak, Southern magnolia, red bay, sweetbay, tulip poplar (Liriodendron tulipifera), red maple, red cedar (Juniperus silicicola), cabbage palm, slash pine, and blue beech (Carpinus caroliniana) (Brown and Starnes, 1983).

Hardwood swamps are characterized by seasonal flooding of the flowing waters along which they are found. Species composition depends upon the flow rate, water quality, and turbidity of the adjacent waterway. The most common species are red maple (Acer rubrum), water tupelo (Nyssa aquatica), swamp black gum (Nyssa sylvatica var. biflora), sweet gum (Liquidambar styraciflua), bald cypress (Taxodium distichum), pop ash (Fraxinus caroliniana), Florida elm (Ulmus floridana), and cabbage palm (Sabal palmetto) (Brown, 1980). Soils associated with this community are nearly level, very poorly drained, and dark in color. They are either organic or have coarse- to medium-textured surfaces underlain by finer textured material (Brown and Starnes, 1983).

For a description of flatwoods, see Landscape Association 1 above.

Landscape Association 4. Sandhills/isolated or flowing-water wetlands

Relative to the other three landscape classes in the East Central Florida region, the sandhills/wetlands complex has the greatest topographic relief and the greatest degree of soil drainage. We use the term "sandhills" to include both pine sandhill and sand pine scrub communities.

Sandhill soils are well-drained, deep sands. The top of the surficial water table is often 6 feet or more below the soil surface.

Typical plants of pine sandhills are longleaf pine (Pinus palustris), turkey oak (Quercus laevis), and wiregrass (Aristida stricta); sand pine scrub is characterized by sand pine (Pinus clausa), Chapman oak (Quercus chapmanii), myrtle oak (Quercus myrtifolia), dwarf live oak (Quercus minima), and rosemary (Ceratiola ericoides). In sand pine scrubs, the understory is sparse and interspersed with patches of bare sand. The dominant overstory species is sand pine (Pinus clausa) (Brown, 1980).

Wetlands associated with sandhills include both isolated wetlands (see landscape association 1) and, particularly along parts of the Wekiva River, flowing-water wetlands (see landscape association 2).

Landscape Association 5. Pine flatwoods/salt marshes

Salt marshes, which are characterized by grasses, sedges, and rushes, is generally found on the east side of the Atlantic coastal strand and along coastal waterways such as the Indian River.

Salt marsh soils are nearly level and are covered with salt water or brackish water during daily high tides. They are very poorly drained, mucky or sandy clay loams. Salt marsh vegetation is often zoned in accordance with the average salinity and depth of flooding to which the zones are exposed. Black needlerush (Juncus roemerianus) and seashore saltgrass (Distichlis spicata) are tolerant of variable conditions and are found throughout the marsh. Smooth cordgrass (Spartina alterniflora) is found in regularly flooded areas and is often the dominant East Coast salt marsh plant; marshhay cordgrass (Spartina patens), marsh elder (Iva imbricata), saltwort (Batis maritima), and sea oxeye (Borrichia spp.) are typical of higher areas that are less frequently flooded (Soil Conservation Service, 1987).

See landscape association 1 for a description of flatwoods.

Landscape Association 6. Coastal hammocks/salt marshes

Coastal hammocks are found inland of Atlantic beaches and along bays, sounds, and coastal waterways. They are topographically variable but for the most part along the wetland/upland interface they are level to very slightly sloping. Soils are deep and sandy; drainage is generally very poor in lower areas to moderate in higher areas.

Trees and shrubs, which are often stunted from wind, include cabbage palm, sand live oak (Quercus virginiana var. maritima), live oak, marsh elder, saw palmetto, and Spanish bayonet (Yucca aloifolia); in the southerly portion of the region is also found coconut palm (Cocos nucifera), the exotic Australian pine (Casuarina equisetifolia), sea grape (Coccoloba uvifera), and coco plum (Chrysobalanus icaco). Grasses and herbs include sea purslane (Sesuvium portulacastrum), blanket flower (Gaillardia pulchella), several grasses of the genus Panicum, and wild grape (Vitis spp.) (Soil Conservation Service, 1987).

See landscape association 5 for a description of salt marshes.

Table A-1. Soils typical of ecological associations of the Wekiva River Basin

<u>LANDSCAPE ASSOCIATION COMPONENT</u>			
<u>Ecological Type</u>		Erosion Factor	
Soil Series (Hydrol. Group) <i>USDA Soil Type</i>	Permeability	(tons/acre/ unit rainfall)	High Water Table depth (ft) months
Depth from surface (in)	(in/hr)		
<u>FLATWOODS</u>			
<u>South Florida flatwoods</u>			
<i>Adamsville (C) Sand</i>			
0-4	6.0-20	.10	2.0-3.5 Jun-Nov
4-80	6.0-20	.10	
<i>EauGallie (D) Fine sand</i>			
0-18	6.0-20	.10	0-1.0 Jun-Oct
18-30	0.6-6.0	.15	
30-45	6.0-20	.10	
45-54	0.06-2.0	.20	
54-80	0.6-6.0	.15	
<i>Immokalee (D) Fine sand</i>			
0-4	6.0-20	.10	0-1.0 Jun-Nov
4-42	6.0-20	.10	
42-52	0.6-2.0	.15	
52-80	6.0-20	.10	
<i>Malabar (D) Fine sand</i>			
0-18	6.0-20	.10	0-1.0 Jun-Nov
18-30	6.0-20	.10	
30-42	6.0-20	.10	
42-58	<0.2	.24	
58-80	2.0-20	.15	
<i>Myakka (D) Fine sand</i>			
0-28	6.0-20	.10	0-1.0 Jun-Nov
28-45	6.0-20	.10	
45-80	0.6-6.0	.15	
<i>Ona (D) Fine sand</i>			
0-6	6.0-20	.10	0-1.0 Jun-Nov
6-15	0.6-2.0	.15	
15-80	6.0-20	.10	
<i>Pineda (D) Fine sand</i>			
0-37	6.0-20	.10	0-1.0 Jun-Nov
37-80	<0.2	.24	
<i>Pompano (D) Fine sand</i>			
	6.0-20	.10	0-1.0 Jun-Nov
<i>St. Johns (D) Sand</i>			
0-12	6.0-20	.10	0-1.0 Jun-Apr
12-24	6.0-20	.10	
24-44	0.2-2.0	.15	
44-80	6.0-20	.10	

Table A-1. Continued.

LANDSCAPE ASSOCIATION COMPONENT

<u>Ecological Type</u>		Erosion Factor		High Water Table depth (ft) months
Soil Series (Hydrol. Group) <i>USDA Soil Type</i>	Permeability (in/hr)	(tons/acre/ unit rainfall)		
Depth from surface (in)				
Smyrna (D) <i>Fine sand</i> continued.				
0-17	6.0-20	.10	0-1.0 Jul-Oct	
17-27	0.6-6.0	.15		
27-80	6.0-20	.10		
Wabasso (D) <i>Sand</i>				
0-18	6.0-20	.10	0-1.0 Jun-Oct	
18-21	0.6-2.0	.15		
21-70	<0.2	.24		
70-80	6.0-20	.10		
<u>ISOLATED WETLANDS</u>				
<u>Cypress swamp</u>				
Basinger, depressional (D) <i>Fine sand</i>				
0-6	>20	.10	+2-1.0 Jun-Feb	
6-25	>20	.10		
25-35	>20	.10		
35-80	>20	.10		
Chobee (frequently flooded) (D) <i>Sandy loam</i>				
0-7	2.0-6.0	.15	0-1.0 Jun-Feb	
7-50	<0.2	.32		
50-80	0.2-6.0	.20		
Delray (D) <i>Loamy fine sand</i>				
0-12	6.0-20	.10	0-1.0 Jun-Mar	
12-50	6.0-20	.10		
50-80	0.6-6.0	.24		
Felda, depressional (D) <i>Sand</i>				
0-4	6.0-20	.10	+2-1.0 Jun-Dec	
4-28	6.0-20	.10		
28-36	0.6-6.0	.24		
36-80	6.0-20	.17		
Floridana (frequently flooded) (D) <i>Fine sand</i>				
0-17	6.0-20	.10	0-1.0 Jun-Feb	
17-28	6.0-20	.10		
28-80	<0.2	.24		
Nittaw (frequently flooded) (D) <i>Muck</i>				
0-4	6.0-20	-	0-1.0 Jun-Nov	
4-9	6.0-20	.10		
9-80	0.06-0.2	.32		

Table A-1. Continued.

<u>LANDSCAPE ASSOCIATION COMPONENT</u>				
<u>Ecological Type</u>			Erosion Factor	
Soil Series (Hydrol. Group)	USDA Soil Type	Permeability (in/hr)	(tons/acre/ unit rainfall)	High Water Table depth (ft) months
Samsula (D) <i>Muck</i>				
0-26		6.0-20		+2-1.0 Jan-Dec
26-80		6.0-20	.17	
Freshwater Marsh and Ponds				
Basinger, depressional (D) <i>Fine sand</i>				
0-6		>20	.10	+2-1.0 Jun-Feb
6-25		>20	.10	
25-35		>20	.10	
35-80		>20	.10	
Brighton (D) <i>Muck</i>		6.0-20	.10	+1-1.0 Jan-Dec
Canova (D) <i>Peat</i>				
0-10		6.0-20	.10	+2-0 Jan-Dec
10-27		6.0-20	.10	
27-30		0.6-6.0	.28	
30-38		0.6-2.0	.28	
38-80		0.6-6.0	.28	
Chobee (D) <i>Sandy loam</i>				
0-7		2.0-6.0	.15	0-1.0 Jun-Feb
7-50		<0.2	.32	
50-80		0.2-6.0	.20	
Delray (D) <i>Loamy fine sand</i>				
0-12		6.0-20	.10	0-1.0 Jun-Mar
12-50		6.0-20	.10	
50-80		0.6-6.0	.24	
EauGallie (D) <i>Fine sand</i>				
0-18		6.0-20	.10	0-1.0 Jun-Oct
18-30		0.6-6.0	.15	
30-45		6.0-20	.10	
45-54		0.06-2.0	.20	
54-80		0.6-6.0	.15	
Emeralda (D) <i>Fine sand</i>				
0-7		6.0-20	.10	0-1.0 Jun-Feb
7-12		6.0-20	.15	
12-41		<0.2	.24	
41-80		<0.2	.24	
Felda, depressional (D) <i>Sand</i>				
0-4		6.0-20	.10	+2-1.0 Jun-Dec
4-28		6.0-20	.10	
28-36		0.6-6.0	.24	
36-80		6.0-20	.17	

Table A-1. Continued.

<u>LANDSCAPE ASSOCIATION COMPONENT</u>			
<u>Ecological Type</u>		Erosion Factor	High Water Table
Soil Series (Hydrol. Group) <i>USDA Soil Type</i>	Permeability (in/hr)	(tons/acre/ unit rainfall)	depth (ft) months
Floridana (D) <i>Fine sand</i>			
0-17	6.0-20	.10	0-1.0 Jun-Feb
17-28	6.0-20	.10	
28-80	<0.2	.24	
Gator (D) <i>Muck</i>			
0-28	6.0-20	-	+2-1.0 Jun-Dec
28-80	2.0-6.0	.17	
Holopaw (D) <i>Fine sand</i>			
0-50	6.0-20	.10	0-1.0 Jun-Feb
50-80	0.6-2.0	.24	
Hontoon (D) <i>Muck</i>	6.0-20	-	+2-1.0 Jan-Dec
Immokalee (D) <i>Fine sand</i>			
0-4	6.0-20	.10	0-1.0 Jun-Nov
4-42	6.0-20	.10	
42-52	0.6-2.0	.15	
52-80	6.0-20	.10	
Malabar (D) <i>Fine sand</i>			
0-18	6.0-20	.10	0-1.0 Jun-Nov
18-30	6.0-20	.10	
30-42	6.0-20	.10	
42-58	<0.2	.24	
58-80	2.0-20	.15	
Manatee (D) <i>Loamy fine sand</i>			
0-10	2.0-6.0	.10	0-1.0 Jun-Feb
10-52	0.6-2.0	.24	
52-80	0.6-2.0	.24	
Myakka (D) <i>Fine sand</i>			
0-28	6.0-20	.10	0-1.0 Jun-Nov
28-45	6.0-20	.10	
45-80	0.6-6.0	.15	
Nittaw (D) <i>Muck</i>			
0-4	6.0-20	-	0-1.0 Jun-Nov
4-9	6.0-20	.10	
9-80	0.06-0.2	.32	
Okeelanta (D) <i>Muck</i>			
0-25	6.0-20	-	+1-0 Jun-Jan
25-80	6.0-20	.15	
Pineda (D) <i>Fine sand</i>			
0-37	6.0-20	.10	0-1.0 Jun-Nov
37-80	<0.2	.24	

Table A-1. Continued.

<u>LANDSCAPE ASSOCIATION COMPONENT</u>				
<u>Ecological Type</u>		Erosion Factor		
Soil Series (Hydrol. Group) <i>USDA Soil Type</i>	Permeability (in/hr)	(tons/acre/ unit rainfall)	High Water Table depth (ft) months	
Depth from surface (in)				
Pompano (D) <i>Fine sand</i>	6.0-20	.10	0-1.0 Jun -Nov	
St. Johns (D) <i>Sand</i>				
0-12	6.0-20	.10	0-1.0 Jun-Apr	
12-24	6.0-20	.10		
24-44	0.2-2.0	.15		
44-80	6.0-20	.10		
Samsula (D) <i>Muck</i>				
0-26	6.0-20	-	+2-1.0 Jan-Dec	
26-80	6.0-20	.17		
Sanibel (D) <i>Muck</i>				
0-14	6.0-20	.10	+1-1.0 Jun-Feb	
14-80	6.0-20	.10		
Terra Ceia (D) <i>Muck</i>	6.0-20	-	+1-1.0 Jan-Dec	
Wabasso (D) <i>Sand</i>				
0-18	6.0-20	.10	0-1.0 Jun-Oct	
18-21	0.6-2.0	.15		
21-70	<0.2	.24		
70-80	6.0-20	.10		
Wauberg (D) <i>Fine sand</i>				
0-8	>6.0	.15	0-1.0 Jun-Dec	
8-28	>6.0	.15		
28-60	<0.2	.28		
60-80	<0.2	.24		
<u>FLOWING WATER WETLANDS</u> (see also Cypress swamps, above)				
<u>Swamp hardwoods</u>				
Basinger, depressional (D) <i>Fine sand</i>				
0-6	>20	.10	+2-1.0 Jun-Feb	
6-25	>20	.10		
25-35	>20	.10		
35-80	>20	.10		
Chobee (D) <i>Sandy loam</i>				
0-7	2.0-6.0	.15	0-1.0 Jun-Feb	
7-50	<0.2	.32		
50-80	0.2-6.0	.20		
Emeralda (D) <i>Fine sand</i>				
0-7	6.0-20	.10	0-1.0 Jun-Feb	
7-12	6.0-20	.15		
12-41	<0.2	.24		
41-80	<0.2	.24		

Table A-1. Continued.

LANDSCAPE ASSOCIATION COMPONENT**Ecological Type**

Soil Series (Hydrol. Group) <i>USDA Soil Type</i>	Permeability (in/hr)	Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
Soil Series (Hydrol. Group) <i>USDA Soil Type</i>	Permeability (in/hr)	Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
Floridana (D) <i>Fine sand</i>			
0-17	6.0-20	.10	0-1.0 Jun-Feb
17-28	6.0-20	.10	
28-80	<0.2	.24	
Gator (D) <i>Muck</i>			
0-28	6.0-20	-	+2-1.0 Jun-Dec
28-80	2.0-6.0	.17	
Hontoon (D) <i>Muck</i>	6.0-20	-	+2-1.0 Jan-Dec
Manatee (D) <i>Loamy fine sand</i>			
0-10	2.0-6.0	.10	0-1.0 Jun-Feb
10-52	0.6-2.0	.24	
52-80	0.6-2.0	.24	
Nittaw (D) <i>Muck</i>			
0-4	6.0-20	-	0-1.0 Jun-Nov
4-9	6.0-20	.10	
9-80	0.06-0.2	.32	
Okeelanta (D) <i>Muck</i>			
0-25	6.0-20	-	+1-0 Jun-Jan
25-80	6.0-20	.15	
Pompano (D) <i>Fine sand</i>	6.0-20	.10	0-1.0 Jun-Nov
Samsula (D) <i>Muck</i>			
0-26	6.0-20	-	+2-1.0 Jan-Dec
26-80	6.0-20	.17	
Terra Ceia (D) <i>Muck</i>	6.0-20	-	+1-1.0 Jan-Dec
<u>Slough</u>			
Basinger (D) <i>Fine sand</i>			
0-6	>20	.10	+2-1.0 Jun-Feb
6-25	>20	.10	
25-35	>20	.10	
35-80	>20	.10	
Felda (D) <i>Sand</i>			
0-4	6.0-20	.10	+2-1.0 Jun-Dec
4-28	6.0-20	.10	
28-36	0.6-6.0	.24	
36-80	6.0-20	.17	
Holopaw (D) <i>Fine sand</i>			
0-50	6.0-20	.10	0-1.0 Jun-Feb
50-80	0.6-2.0	.24	

Table A-1. Continued.

LANDSCAPE ASSOCIATION COMPONENTEcological Type

Soil Series (Hydrol. Group) <i>USDA Soil Type</i>	Permeability (in/hr)	Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
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Malabar (D) Fine sand

0-18	6.0-20	.10	0-1.0 Jun-Nov
18-30	6.0-20	.10	
30-42	6.0-20	.10	
42-58	<0.2	.24	
58-80	2.0-20	.15	

Pineda (D) Fine sand

0-37	6.0-20	.10	0-1.0 Jun-Nov
37-80	<0.2	.24	

Wabasso (D) Sand

0-18	6.0-20	.10	0-1.0 Jun-Oct
18-21	0.6-2.0	.15	
21-70	<0.2	.24	
70-80	6.0-20	.10	

Cabbage palm flatwoodsPinellas (D) Fine sand

0-18	6.0-20	.10	0-1.0 Jun-Nov
18-34	6.0-20	.17	
34-46	0.6-2.0	.24	
46-80	6.0-20	.10	

MESIC HAMMOCK/HYDRIC HAMMOCK/HARDWOOD SWAMP (see also Swamp hardwoods, above)Wetland Hardwood HammocksFelda (occasionally flooded) (D) Sand

0-22	6.0-20	.10	0-1.0 Jul-Mar
22-42	0.6-6.0	.24	
42-80	6.0-20	.10	

Holopaw (D) Fine sand

0-50	6.0-20	.10	0-1.0 Jun-Feb
50-80	0.6-2.0	.24	

Pompano (D) Fine sand

	6.0-20	.10	0-1.0 Jun-Nov
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Wabasso (D) Sand

0-18	6.0-20	.10	0-1.0 Jun-Oct
18-21	0.6-2.0	.15	
21-70	<0.2	.24	
70-80	6.0-20	.10	

Table A-1. Continued.

LANDSCAPE ASSOCIATION COMPONENTEcological Type

Soil Series (Hydrol. Group) <i>USDA Soil Type</i>	Permeability (in/hr)	Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
<u>Oak hammock</u>			
Adamsville (C) <i>Sand</i>			
0-4	6.0-20	.10	2.0-3.5 Jun-Nov
4-80	6.0-20	.10	
Tavares (A) <i>Fine sand</i>			
0-6	>6.0	.10	3.5-6.0 Jun-Dec
6-80	>6.0	.10	
<u>SANDHILL</u>			
<u>Sand Pine Scrub</u>			
Archbold (A) <i>Fine sand</i>	>20	.10	3.5-6.0 Jun-Nov
Astatula (A) <i>Fine sand</i>			
0-3	>20	.10	>6.0
3-80	>20	.10	
Pomello (C) <i>Fine sand</i>			
0-40 in.	>20	.10	2.0-3.5 Jul-Nov
40-55 in.	2.0-6.0		
55-80 in.	6.0-20		
St. Lucie (A) <i>Fine sand</i>	>20	.10	>6.0
<u>Longleaf pine/turkey oak hills</u>			
Apopka (A) <i>Fine sand</i>			
0-65	6.0-20	.10	>6.0
65-80	0.6-2.0	.24	
Astatula (A) <i>Fine sand</i>			
0-3	>20	.10	>6.0
3-80	>20	.10	
Candler (A) <i>Sand</i>			
3-5	6.0-20	.10	>6.0
5-74	6.0-20	.10	
74-80	6.0-20	.10	
Lake (A) <i>Fine sand</i>	>6.0	.10	>6.0
Orlando (A) <i>Fine sand</i>			
0-19	6.0-20	.10	4.0-6.0 Jun-Dec
19-80	6.0-20	.10	
Tavares (A) <i>Fine sand</i>			
0-6	>6.0	.10	3.5-6.0 Jun-Dec
6-80	>6.0	.10	

Table A-1. Continued.

LANDSCAPE ASSOCIATION COMPONENT**Ecological Type**

Soil Series (Hydrol. Group) <i>USDA Soil Type</i>	Permeability (in/hr)	Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
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SALT MARSH**Turnbull (D) *Muck***

14-0	6.0-20	-	+2-1.0
0-36	<0.06	-	Tidally flooded
36-80	6.0-20	-	year-round

Turnbull variant (C) *Sand*

0-50	6.0-20	.17	1.0-3.0
50-55	0.6-2.0	.17	Tidally flooded
55-60	0.06-0.2	.32	year-round

COASTAL HAMMOCK**Astatula (A) *Fine sand***

0-3	>20	.10	>6.0
3-80	>20	.10	

Canaveral (C) *Sand*

0-9	>20	.15	1.0-3.0 Jun-Nov
9-80	>20	.15	

Daytona (B) *Sand*

0-36	>20	.17	3.5-5.0 Jul-Nov
36-47	2.0-6.0	.20	
47-80	>20	.17	

Palm Beach (A) *Sand*

0-80	>20	.15	>6.0
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Paola (A) *Fine sand*

0-30	>20	.15	>6.0
30-80	>20	.15	

Soil Conservation Service. 1980. Soil survey of Volusia County, Florida. U.S. Department of Agriculture Soil Conservation Service.

Soil Conservation Service. 1987. Interim report: Seminole County Florida Soil Survey maps and interpretations. U.S. Department of Agriculture Soil Conservation Service.

Soil Conservation Service. 1987. Interim report: Orange County Florida Soil Survey maps and interpretations. U.S. Department of Agriculture Soil Conservation Service.

Soil Conservation Service. 1987. 26 Ecological Communities of Florida (revised). Florida Chapter, Soil and Water Conservation Society of America, Gainesville, Florida. Four landscape associations, which share some of the same soil series as mapped by the U.S. Soil Conservation Service.

APPENDIX B:

Wetlands Buffer Determination for Water Quantity Conservation

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Appendix B: Wetlands Buffer Determination for Water Quantity Conservation

The depth to the groundwater table immediately upland of the wetland line is an important indicator of groundwater interaction with nearby wetlands. When the water table is near the ground surface in the upland region and slopes toward the wetland, the wetland area is fed by discharging groundwaters. Excavations such as drainage canals in these uplands may intercept groundwater flows and have the potential to decrease the quantity of groundwater reaching the downslope wetland (Wang and Overman, 1981). If the wetland is perched above the main zone of saturation, it can serve to recharge the aquifer. Drainage canals in the uplands surrounding these wetlands may cause the wetland to drain in the direction of the excavation. Where either of these conditions is present, a buffer zone may be warranted to ensure that proposed drainage canals do not significantly diminish the quantity of water entering the wetland.

Figure 1 illustrates the impact of a drainage canal on the surficial aquifer near a wetland. The construction of drainage canals lowers the water table throughout the wetland/upland region, thereby diverting recharge waters away from the wetland. The magnitude of the dewatering impact is related to the drawdown in the drainage canal, the distance between the canal and the wetland, the average hydraulic conductivity of the surficial aquifer, the average depth of the surficial aquifer, and the prior water table geometry. The steady-state drawdown effects of a proposed drainage canal can be estimated analytically if the surficial aquifer is modeled as a homogeneous one-dimensional system. The ordinary differential equation governing this simplified system can be written (Bear, 1972):

$$\frac{\partial}{\partial x} Kh \frac{\partial h}{\partial x} = 0 \quad (1.1)$$

$$h = h_0 \text{ at } x = 0 \quad (1.2)$$

$$h = h_{L_c} \text{ at } x = L_c \quad (1.3)$$

where

K = average saturated hydraulic conductivity of the aquifer,

h = hydraulic head (height of the water table above the impervious bottom layer),

h_0 = height of the water table at the center of the wetland ($x = 0$),

h_{L_c} = height of the water table at the proposed canal location before development ($x = L_c$),

L_c = distance between the center of the wetland system and the center of the canal, and

x = horizontal distance measured from the center of the wetland system

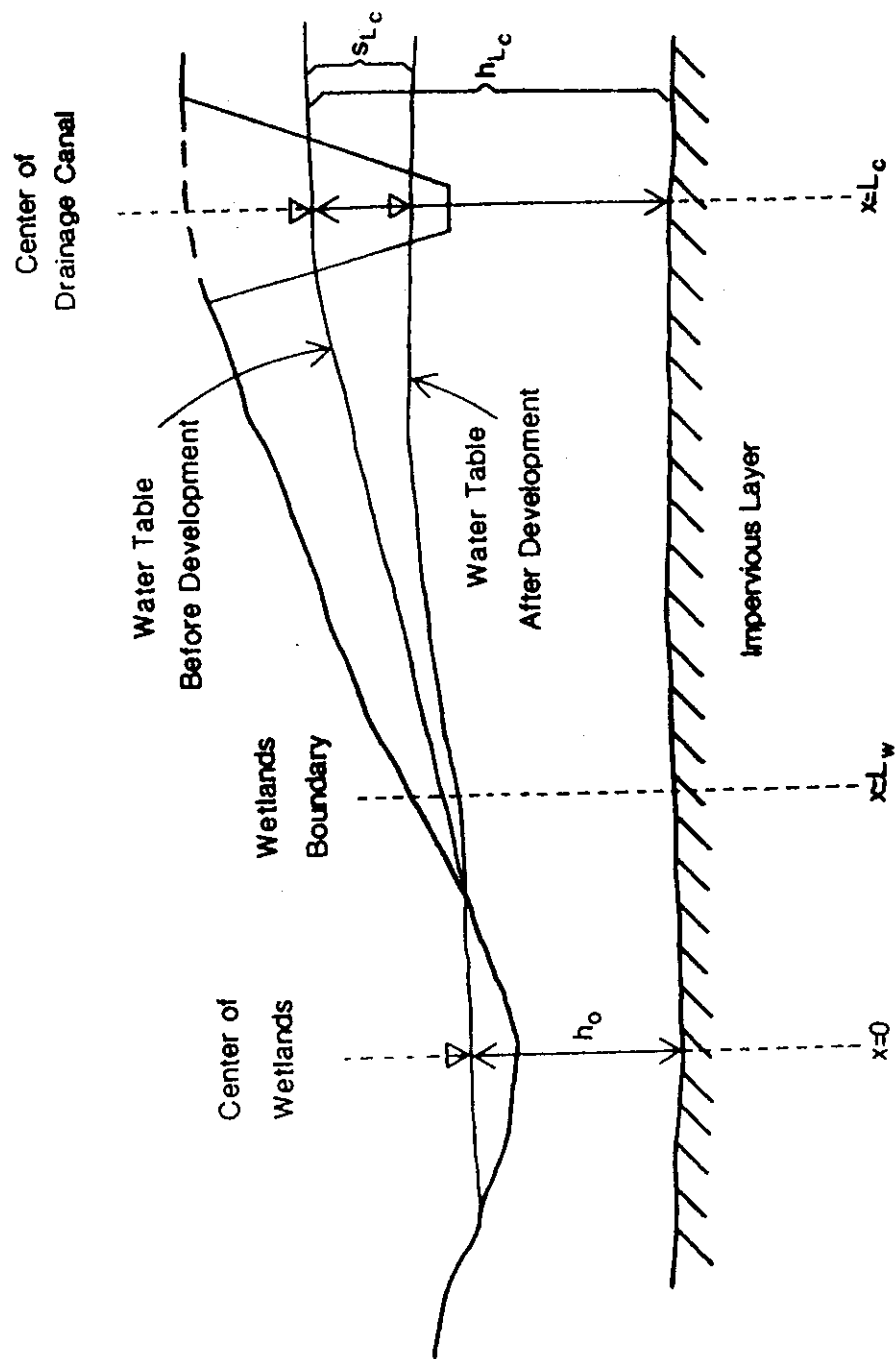


Figure B-1. The impact of a drainage canal on the surficial aquifer near a wetland.

The solution to equation (1.1) gives the water table height at any distance (x) from the center of the wetland system [$h_b(x)$]. The solution also gives the subsurface recharge to (or discharge from) the wetland (Q_b). Solution techniques for this type of equation may be found in any elementary ordinary differential equations textbook (e.g., Ross, 1974). The solution to equation 1 may be written:

$$[h_b(x)]^2 = \frac{h_{Lc}^2 - h_o^2}{L_c} x + h_o^2 \quad (2.1)$$

$$Q_b = -\frac{K}{2} \frac{h_{Lc}^2 - h_o^2}{L_c} \quad (2.2)$$

where the subscript "b" indicates the condition before development.

After canal development the boundary conditions on the governing system of equations change to the following:

$$\frac{\partial}{\partial x} Kh \frac{\partial h}{\partial x} = 0 \quad (3.1)$$

$$h = h_o \text{ at } x = 0 \quad (3.2)$$

$$h = h_{Lc} - s_{Lc} \text{ at } x = L_c \quad (3.3)$$

where

s_{Lc} = water table drawdown at the drainage canal.

The water table height (h_a) and subsurface recharge after canal development (Q_a) can be expressed:

$$[h_a(x)]^2 = \frac{(h_{Lc} - s_{Lc})^2 - h_o^2}{L_c} x + h_o^2 \quad (4.1)$$

$$Q_a = -\frac{K}{2} \frac{(h_{Lc} - s_{Lc})^2 - h_o^2}{L_c} \quad (4.2)$$

where the subscript "a" indicates the condition after development.

The drawdown between the canal and the wetland due to development can thus be written:

$$\begin{aligned} s(x) &= h_b(x) - h_a(x) \\ &= \frac{h_{Lc}^2 - h_o^2}{L_c} x + h_o^2^{1/2} - \frac{(h_{Lc} - s_{Lc})^2 - h_o^2}{L_c} x + h_o^2^{1/2} \end{aligned} \quad (5)$$

The percent flow lost from the wetland may also be calculated:

$$\% Q_{\text{loss}} = 1 - \frac{Q_a}{Q_b} * 100 = 1 - \frac{(h_{L_c} - s_{L_c})^2 - h_o^2}{h_{L_c}^2 - h_o^2} * 100 \quad (6)$$

Use of equations 1 through 6 implies the following assumptions:

1. The system can be described as a homogeneous steady-state phreatic aquifer.
2. The Dupuit approximation applies. This assumes that the slope of the phreatic surface is small and therefore the groundwater flow is approximately horizontal.
3. A continuous horizontal impervious layer exists beneath the wetland/upland system.
4. The wetland and drainage canal are parallel and of infinite extent.
5. There is no significant recharge to the aquifer between the drainage canal and the wetland system.
6. The height of the water table at the center of the wetland remains constant after development (i.e., drainage water is diverted back to the head of the wetland).

Given these assumptions, equations 5 and 6 may be used to estimate the drawdown at the wetland boundary and the flow lost from the wetland due to a proposed canal located at a known distance ($x = L_c$). However, since these equations depend on the prior head elevation at the proposed canal location [$h_{L_c}(L_c)$], a simple expression cannot be written to calculate directly the required buffer distance (L_c) which achieves the desired wetlands boundary drawdown $s(L_w)$. Therefore, to determine an appropriate buffer distance, the drawdown at the wetland boundary must be calculated for a series of proposed buffer distances. Then a graph can be constructed of drawdown versus buffer distance, and the buffer distance that achieves the desired drawdown can be selected. Example 1 illustrates this procedure.

Example 1. Assume that the following hydrogeologic conditions exist:

Height of water table above impermeable layer at wetland center (h_o)	10.0 ft
Distance from wetland center to wetland boundary (L_w)	50.0 ft
Prior head elevation at the wetland boundary ($h_b(L_w)$)	10.4 ft
Proposed drawdown at drainage canal [$s_{L_c}(L_c)$]	3.0 ft
Average saturated hydraulic conductivity (K)	1.0 ft/day

Further assume that the prior head elevation above the impermeable layer has been measured at the following proposed canal locations:

x	$h_b(x)$
200 ft	11.5 ft
400 ft	12.8 ft
600 ft	13.9 ft
800 ft	15.0 ft
1000 ft	16.0 ft

For a design drawdown at the drainage canal (S_{L_w}) of 3 ft, the resulting drawdown at the wetland boundary and the percent flow loss from the wetland for this series of proposed canal locations are:

L_c (ft)	$h_b(L_w)$ (ft)	$h_s(L_w)$ (ft)	$s(L_w)$ (ft)	Q_b^* (ft)	Q_s^* (ft ² /day)	$\%Q_{loss}$ (ft ² /day)
200	10.4		9.65	0.75	-0.08	0.07
400	10.4		9.98	0.42	-0.08	0.005
600	10.4		10.08	0.32	-0.08	0.016
800	10.4		10.14	0.25	-0.08	-0.028
1000	10.4		10.17	0.23	-0.08	-0.035
						187.5
						106.3
						80.0
						65.0
						56.3

*Negative flows indicate flow toward the wetland from the upland. Positive flows indicate flow away from the wetland toward the upland.

Figure 2 shows a graph of drawdown at the wetlands boundary versus buffer distance for the sample problem. This curve indicates that a buffer distance of approximately 350 feet is required to limit the drawdown at the wetlands boundary to .5 feet. Figure 3 shows the percent flow lost from the wetland versus buffer distance for the sample problem. This graph indicates that canals located within approximately 400 feet of the wetland center will induce flows from the wetland to the canal. Canals located farther than 400 feet from the wetland will reduce recharge to the wetland but will not reverse the natural flow direction.

Tradeoff curves like those shown in Figures 2 and 3 could provide planners with information on the relative benefits of alternative buffer distances and, therefore, should be a valuable aid in the process of determining buffer widths. To determine buffer width guidelines for a particular wetlands landscape classification, a series of such curves could be constructed using data that typify each system. When calculating the buffer distance needed for a specific site, however, it is highly recommended that wetland boundaries, hydraulic conductivity, water table elevation, and depth to impermeable layer be measured at the site.

Obviously, a real-world wetland system will not be perfectly described by the assumptions listed above. The steady-state assumption implies that the transient (or seasonal) drawdown effects of ditching are not as great a concern as the magnitude of the maximum drawdown. Therefore, average high water table conditions should be used in the analysis to ensure minimal wet-season effects. An approximate continuous impervious layer should exist between the wetland/upland system for this method to be applicable. The assumption that the wetland and the upland are hydrologically connected in this relatively simple manner considerably reduces the model's complexity and the data input requirements.

The assumption that the drainage canal and the wetland are parallel and of infinite extent is necessary to maintain the one-dimensional nature of the model. In essence, this assumption presumes that the water table equipotentials parallel the wetland boundary and that all drawdown effects are produced by activities directly up-gradient of the wetland edge. Perhaps the most limiting assumption of the analysis is that the height of the water table at the center of the wetland remains constant after development. For this to hold, the total quantity of water entering the wetland must remain relatively constant. If the wetland is fed primarily by upland groundwater, the drainage water collected from upland canals must be diverted back to the head of the wetland for this assumption to hold. If the water table at the center of the wetland is lowered after development, this model will underpredict the drainage effect.

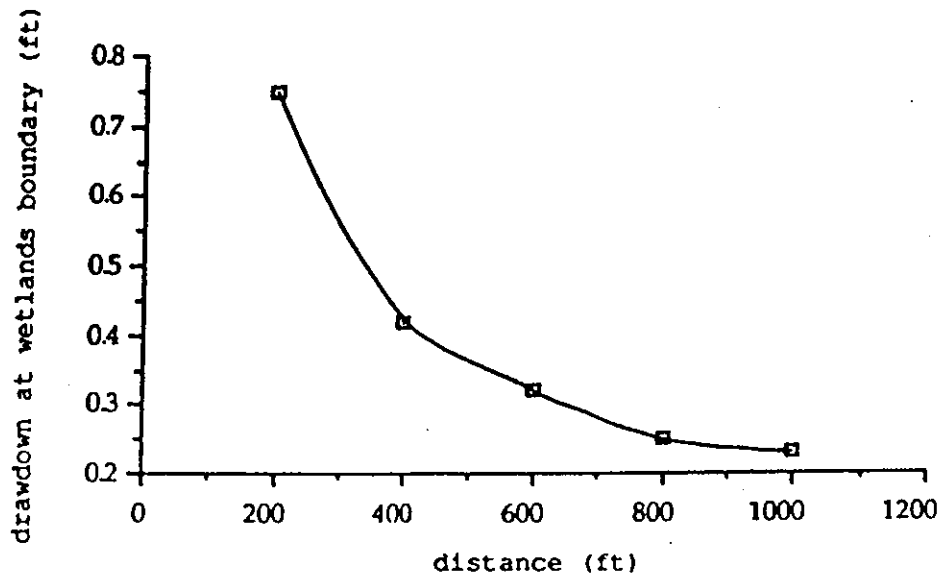


Figure 2: Drawdown at Wetlands Boundary versus Buffer Distance

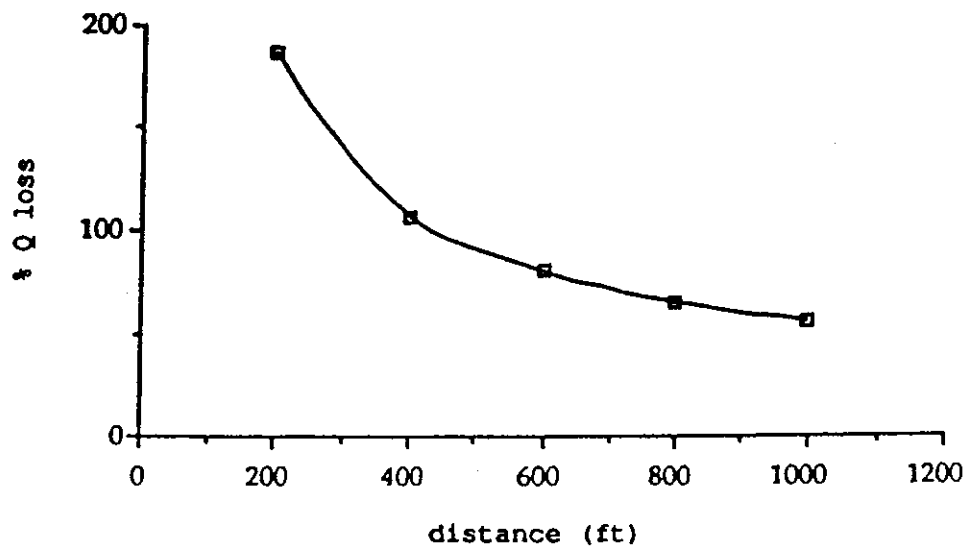


Figure 3: Percent Flow Loss versus Buffer Distance

The extent to which these assumptions are satisfied indicates the reliability of predictions based on such a simplified model. If field conditions indicate that many of the above assumptions are not applicable to a particular wetland, a more detailed multi-dimensional numerical groundwater flow model may be required to predict accurately the drawdown effects of ditching.

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APPENDIX C:

**Semi-aquatic and wetland-dependent wildlife species that occur in East Central Florida
organized by taxonomic classes.**

**Reference lists of the main sources used to determine species' requirements
follow each table.**

References for Table C-1: Amphibians

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Table C-1. Semi-aquatic and wetland dependent wildlife species of East Central Florida:
AMPHIBIANS

Species	Scientific Name	References
Toad Family		
A 1. Oak toad	(<u>Bufo quercicus</u>)	Wright, 1949
A 2. Southern toad	(<u>Bufo terrestris</u>)	Wright, 1949
Treefrog Family		
A 3. Southern cricket frog	(<u>Acris gryllus</u>)	Burt, 1938; Wright, 1949; Mecham, 1964
A 4. Green treefrog	(<u>Hyla cineria</u>)	Burt, 1938; Garton and Brandon, 1975
A 5. Spring peeper	(<u>Hyla crucifer</u>)	Delzell, 1958
A 6. Pinewoods treefrog	(<u>Hyla femoralis</u>)	Martof et al., 1980
A 7. Barking treefrog	(<u>Hyla gratiosa</u>)	Martof et al., 1980
A 8. Squirrel treefrog	(<u>Hyla squirella</u>)	Goin and Goin, 1957
A 9. Little grass frog	(<u>Limnaeodius ocularis</u>)	Ashton and Ashton, 1988
A10. Ornate chorus frog	(<u>Pseudacris ornata</u>)	Martof et al., 1980
Narrowmouth Toad Family		
A11. Eastern narrowmouth toad	(<u>Gastrophryne carolinensis</u>)	Ashton and Ashton, 1988
Spadefoot Toad Family		
A12. Eastern spadefoot toad	(<u>Saphiopus holbrookii holbrookii</u>)	Green and Pauley, 1987; Moler, 1988
True Frogs		
A13. Gopher frog+	(<u>Rana areolata</u>)	Wright, 1949
A14. Bullfrog	(<u>Rana catesbeiana</u>)	Bury and Wheland, 1984
A15. Pig frog	(<u>Rana grylio</u>)	Burt, 1938; Martof et al., 1980; Lamb, 1986
A16. River frog	(<u>Rana heckscheri</u>)	Martof et al., 1980
A17. Southern leopard frog	(<u>Rana utricularia</u>)	McCoy, 1978
Lungless Salamander Family		
A18. Southern dusky salamander	(<u>Desmognathus auriculatus</u>)	Mohr, 1935
A19. Dwarf salamander	(<u>Eurycea quadridigitata</u>)	Martof et al., 1980
Newt Family		
A20. Striped newt	(<u>Notophthalmus perstriatus</u>)	Carr and Goin, 1955

+ Endangered, threatened, or special concern species

References for Table C-1: Amphibians

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Table C-2. Semi-aquatic and wetland dependent wildlife species of East Central Florida: **REPTILES**

Species	Scientific Name	References
Alligator Family		
R 1. American alligator+	<u>(Alligator mississippiensis)</u>	Joanen and McNease, 1970, 1972; Metzen, 1977
Snapping Turtle Family		
R 2. Common snapping turtle	<u>(Chelydra serpentina)</u>	Loncke and Obbard, 1977; Obbard and Brooks, 1980, 1981; Graves and Anderson, 1987
Box and Water Turtle Family		
R 3. Chicken turtle	<u>(Deirochelys reticularia)</u>	Ernst and Barbour, 1972
R 4. Diamondback terrapine	<u>(Malaclemys terrapine)</u>	Ashton and Ashton, 1985
R 5. Florida cooter	<u>(Pseudemys floridana)</u>	Martof et al., 1980
R 6. Florida redbelly turtle	<u>(Pseudemys nelsoni)</u>	Martof et al., 1980
R 7. Florida box turtle	<u>(Terrapene carolina bauri)</u>	Ashton and Ashton, 1985
R 8. Slider turtle	<u>(Trachemys scripta)</u>	Cagle, 1950; Moll and Legler, 1971; Morreale and Gibbons, 1986
Mud and Musk Turtle Family		
R 9. Striped mud turtle	<u>(Kinostemon baurii)</u>	Ernst and Barbour, 1972; Ernst et al., 1972
R10. Florida mud turtle	<u>(Kinostemon subrubrum steindachneri)</u>	Ernst and Barbour, 1972
R11. Stinkpot turtle	<u>(Sternotherus odoratus)</u>	Ernst and Barbour, 1972
Softshell Turtle Family		
R12. Florida softshell turtle	<u>(Apalone ferox)</u>	Ernst and Barbour, 1972
Iguanidae Family		
R13. Green anole	<u>(Anolis carolinensis)</u>	Burt, 1939
Skink Family		
R14. Broadhead skink	<u>(Eumeces laticeps)</u>	Ashton and Ashton, 1985
Colubrid Family		
R15. Florida scarlet snake	<u>(Cemophora coccinea coccinea)</u>	Palmer, 1970
R16. Southern black racer	<u>(Coluber constrictor priapus)</u>	Ashton and Ashton, 1985
R17. Southern ringneck snake	<u>(Diadophis punctatus punctatus)</u>	Ashton and Ashton, 1985
R18. Yellow rat snake	<u>(Elaphe obsoleta quadrivittata)</u>	Ashton and Ashton, 1985
R19. Eastern Indigo snake+	<u>(Drymarchon corais couperi)</u>	Allen and Neill, 1952; Lawler, 1976; Moler, 1985
R20. Eastern mud snake	<u>(Farancia abacura abacura)</u>	Mount, 1975; Trutnau, 1979
R21. Rainbow snake	<u>(Farancia crytrogramma)</u>	Mount, 1975; Martof et al., 1980

Table C-2. Continued.

Species	Scientific Name	References
R22. Eastern hognose snake	(<u>Heterodon platyrhinos</u>)	Platt, 1969; Moler, 1988
R23. Eastern kingsnake	(<u>Lampropeltis getulus getulus</u>)	Ashton and Ashton, 1985
R24. Scarlet kingsnake	(<u>Lampropeltis triangulum elapsoides</u>)	Macartney et al., 1988
R25. Atlantic salt marsh snake+	(<u>Nerodia fasciata taeniata</u>)	Ashton and Ashton, 1985
R26. Green water snake	(<u>Nerodia cyclopion</u>)	Trutnau, 1979; Macartney et al., 1988
R27. Florida banded water snake	(<u>Nerodia fasciata pictiventris</u>)	Trutnau, 1979
R28. Brown water snake	(<u>Nerodia taxispilota</u>)	Trutnau, 1979
R29. Rough green snake	(<u>Opheodrys aestivus</u>)	Macartney et al., 1988
R30. Striped crayfish snake	(<u>Regina alleni</u>)	Godley, 1980
R31. Glossy crayfish snake	(<u>Regina rigida</u>)	Ashton and Ashton, 1985
R32. North Florida swamp snake	(<u>Seminatrix pygaea pygaea</u>)	Dowling, 1950
R33. Florida brown snake+	(<u>Storeria dekayi victa</u>)	Macartney et al., 1988
R34. Redbelly snake	(<u>Storeria occipitomaculata</u>)	Ashton and Ashton, 1985
R35. Peninsula ribbon snake	(<u>Thamnophis sauritus sackenii</u>)	Macartney et al., 1988
R36. Eastern garter snake	(<u>Thamnophis sirtalis sirtalis</u>)	Macartney et al., 1988
Viper Family		
R37. Cottonmouth	(<u>Agkistrodon piscivorus</u>)	Allen and Neill, 1950; Mount, 1975; Macartney et al., 1988
R38. Timber rattlesnake	(<u>Crotalus horridus</u>)	Ashton and Ashton, 1985
R39. Dusky pigmy rattlesnake	(<u>Sistrurus miliarius barbouri</u>)	Ashton and Ashton, 1985

+ Endangered, threatened, or special concern species

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Table C-3. Semi-aquatic and wetland dependent wildlife species of East Central Florida: **BIRDS**

Species	Scientific Name	References
Grebe Family		
B 1. Pied-billed grebe*	(<u>Podilymbus podiceps</u>)	Pough, 1951
Pelican Family		
B 2. Brown pelican*+	(<u>Pelecanus occidentalis</u>)	Harrison, 1975
Cormorant Family		
B 3. Double-crested cormorant	(<u>Phalacrocorax auritus</u>)	Siegel-Causey and Hunt, Jr., 1986
Anhinga Family		
B 4. Anhinga*	(<u>Anhinga anhinga</u>)	Allen, 1961; Hamel et al., 1982
Waterfowl Family		
B 5. Wood duck*	(<u>Aix sponsa</u>)	Johnsgard, 1975
B 6. American widgeon	(<u>Anas americana</u>)	Girard, 1941; Keith, 1961; Johnsgard, 1975; Potter et al., 1980
B 7. Northern shoveler	(<u>Anas clypeata</u>)	Palmer, 1976
B 8. Green-winged teal	(<u>Anas carolinensis</u>)	Palmer, 1976
B 9. Blue-winged teal*	(<u>Anas discors</u>)	Bennett, 1938
B10. Mottled duck*	(<u>Anas fulvigula</u>)	Johnsgard, 1975
B11. Mallard*	(<u>Anas platyrhynchos</u>)	Mulhern et al., 1985
B12. Ring-necked duck	(<u>Anhinga collaris</u>)	Mendall, 1958
B13. Hooded merganser*	(<u>Lophodytes cucullatus</u>)	Hamel et al., 1982
Kite, Hawk and Eagle Family		
B14. Short-tailed hawk*	(<u>Buteo brachyurus</u>)	Hamel et al., 1982
B15. Red-shouldered hawk*	(<u>Buteo lineatus</u>)	Portnoy and Dodge, 1979; Hamel et al., 1982
B16. Northern harrier*	(<u>Circus cyaneus</u>)	Hamel et al., 1982
B17. Swallow-tailed kite*	(<u>Elanoides forficatus</u>)	Hamel et al., 1982
B18. Bald eagle*+	(<u>Haliaeetus leucocephalus</u>)	U.S. Fish and Wildlife Service, 1984; Jaffee, 1980; Anthony and Isacs, 1981; Peterson, 1986
B19. Snail kite*+	(<u>Rostrhamus sociabilis</u>)	Hamel et al., 1982
Osprey Family		
B20. Osprey*	(<u>Pandion haliaetus</u>)	Austin-Smith and Rhodenize, 1983

Table C-3. Continued.

Species	Scientific Name	References
Falcon Family		
B21. Peregrine falcon+	(<u>Falco peregrinus</u>)	Bent, 1961; Kale, 1978
Turkey Family		
B22. Wild turkey*	(<u>Meleagris gallopavo</u>)	Hamel et al., 1982
Heron and Bittern Family		
B23. Great blue heron*	(<u>Ardea herodias</u>)	Hancock and Kushlan, 1984
B24. American bittern*	(<u>Botaurus lentiginosus</u>)	Hamel et al., 1982
B25. Cattle egret*	(<u>Bubulcus ibis</u>)	Maxwell and Kale, 1977
B26. Green-backed heron*	(<u>Butorides striatus</u>)	Hancock and Kushlan, 1984
B27. Great egret*	(<u>Casmerodius albus</u>)	Graber et al., 1978; AOU Checklist, 1983
B28. Little blue heron*+	(<u>Egretta caerulea</u>)	Hancock and Kushlan, 1984
B29. Snowy egret*+	(<u>Egretta thula</u>)	Maxwell and Kale, 1977, Hancock and Kushlan, 1984
B30. Tricolored heron*+	(<u>Egretta tricolor</u>)	Maxwell and Kale, 1977; Hancock and Kushlan, 1984 "
B31. Least bittern*	(<u>Ixobrychus exilis</u>)	Hamel et al., 1982
B32. Black-crowned night heron*	(<u>Nycticorax nycticorax</u>)	Beaver, 1980
B33. Yellow-crowned night heron*	(<u>Nycticorax violacea</u>)	Palmer, 1976
Wood Ibis Family		
B34. Wood stork*+	(<u>Mycteria americana</u>)	Kale, 1978
Ibis and Spoonbill Family		
B35. White ibis*	(<u>Eudocimus albus</u>)	Kushlan, 1976; Hamel et al., 1982
Crane Family		
B36. Sandhill crane*+	(<u>Grus canadensis</u>)	Ambruster, 1987
Limpkin Family		
B37. Limpkin*+	(<u>Aramus guarauna</u>)	Hamel et al., 1982

Table C-3. Continued.

Species	Scientific Name	References
Rail, Gallinule, and Coot Family		
B38. American coot*	(<u>Fulica americana</u>)	Hamel et al., 1982
B39. Common moorhen*	(<u>Gallinula chloropus</u>)	Hamel et al., 1982
B40. Black rail*	(<u>Laterallus jamaicensis</u>)	Hamel et al., 1982
B41. Purple gallinule*	(<u>Porphyryla martinica</u>)	Meanley, 1963
B42. Clapper rail*	(<u>Rallus longirostris</u>)	Lewis and Garrison, 1983
B43. King rail*	(<u>Rallus elegans</u>)	Meanley and Wetherbee, 1962
Oystercatcher Family		
B44. American oystercatcher*+	(<u>Haematopus palliatus</u>)	Levings et al., 1986
Stilt Family		
B45. Black-necked stilt*	(<u>Himantopus mexicanus</u>)	Potter et al., 1980
Plover Family		
B46. Killdeer*	(<u>Charadrius vociferus</u>)	Harrison, 1975
B47. Wilson's plover*	(<u>Charadrius wilsonia</u>)	Harrison, 1975
Sandpiper Family		
B48. Spotted sandpiper	(<u>Actitis macularia</u>)	Potter et al., 1980
B49. Sanderling	(<u>Calidris alba</u>)	Hall, 1960; Parmelee, 1970
B50. Western sandpiper	(<u>Calidris mauri</u>)	Potter et al., 1980
B51. Least sandpiper	(<u>Calidris minutilla</u>)	Potter et al., 1980
B52. Willet*	(<u>Catoptrophorus semipalmatus</u>)	Ryan and Renken, 1987
B53. Dunlin	(<u>Erolia alpina</u>)	Potter et al., 1980
B54. Short-billed dowitcher	(<u>Limnodromus griseus</u>)	Hall, 1960
B55. Long-billed dowitcher	(<u>Limnodromus scolopaceus</u>)	Potter et al., 1980
B56. Lesser yellowlegs	(<u>Tringa flavipes</u>)	Hall, 1960; McElroy, 1974
B57. Greater yellowlegs	(<u>Tringa melanoleuca</u>)	Hall, 1960; McElroy, 1974
Woodcock and Snipe Family		
B58. Common snipe	(<u>Gallinago gallinago</u>)	Potter et al., 1980
B59. American woodcock	(<u>Scolopax minor</u>)	Sheldon, 1967
Gull and Tern Family		
B60. Laughing gull*	(<u>Larus atricilla</u>)	Burger and Shisler, 1980
B61. Ring-billed gull	(<u>Larus delawarensis</u>)	Collins, 1959
B62. Least tern*+	(<u>Sterna antillarum</u>)	McElroy, 1974
B63. Fosters tern	(<u>Sterna forsteri</u>)	Collins, 1959
B64. Gull-billed tern	(<u>Sterna nilotica</u>)	Collins, 1959; Potter et al., 1980
B65. Royal tern*	(<u>Thalasseus maximus</u>)	Buckley and Buckley, 1977

Table C-3. Continued.

Species	Scientific Name	References
Skimmer Family		
B66. Black skimmer*	(<u>Rynchops niger</u>)	McElroy, 1974
Cuckoo Family		
B67. Yellow-billed cuckoo*	(<u>Coccyzus americanus</u>)	Smith unpub.
Owl Family		
B68. Barred owl*	(<u>Strix varia</u>)	Smith unpub.
Hummingbird Family		
B69. Ruby-throated hummingbird*	(<u>Archilochus colubris</u>)	Harrison, 1975
Kingfisher Family		
B70. Belted kingfisher*	(<u>Ceryle alcyon</u>)	Cornwell, 1963; Potter et al., 1980
Woodpecker Family		
B71. Ivory-billed woodpecker+	(<u>Campephilus principalis</u>)	Tanner, 1942; Potter et al., 1980
B72. Pileated woodpecker*	(<u>Dryocopus pileatus</u>)	Hamel et al., 1982
B73. Downy woodpecker*	(<u>Picoides pubescens</u>)	Schroeder, 1982a
Flycatcher Family		
B74. Eastern wood pewee*	(<u>Contopus virens</u>)	Harrison, 1975
B75. Acadian flycatcher*	(<u>Empidonax virescens</u>)	Smith unpub.
Swallow Family		
B76. Tree swallow	(<u>Tachycineta bicolor</u>)	McElroy, 1974
Crow Family		
B77. Fish crow*	(<u>Corvus ossifragus</u>)	Hamel et al., 1982
Wren Family		
B78. Marsh wren*	(<u>Cistothorus palustris</u>)	Bent, 1948; Gutzwiller and Anderson, 1987
B79. Sedge wren	(<u>Cistothorus platensis</u>)	Hamel et al., 1982
Thrush Family		
B80. Wood thrush	(<u>Hylocichla mustelina</u>)	Brackbill, 1943; Hamel et al., 1982

Table C-3. Continued.

Species	Scientific Name	References
Pipit Family		
B81. Water pipit	(<u>Anthus spinoletta</u>)	Hamel et al., 1982
Wood Warbler Family		
B82. Yellow-throated warbler*	(<u>Dendroica dominica</u>)	Hamel et al., 1982
B83. Pine warbler*	(<u>Dendroica pinus</u>)	Robbins, 1979; Schroeder, 1982b
B84. Common yellow throat*	(<u>Geothlypis trichas</u>)	Stewart, 1953
B85. Swainson's warbler	(<u>Limnithlypis swainsonii</u>)	Hamel et al., 1982
B86. Northern parula*	(<u>Parula americana</u>)	Tassone, 1981
B87. Prothonotary warbler*	(<u>Protonotaria citrea</u>)	Smith unpub
B88. Louisiana waterthrush	(<u>Sciurus motacilla</u>)	Tassone, 1981
B89. Northern waterthrush	(<u>Sciurus noveboracensis</u>)	Hamel et al., 1982
B90. Hooded warbler*	(<u>Wilsonia citrina</u>)	Smith unpub.
Blackbird Family		
B91. Red-winged blackbird*	(<u>Agelaius phoeniceus</u>)	Case and Hewitt, 1963; Orians, 1973, 1980
B92. Rusty blackbird	(<u>Euphagus carolinus</u>)	Orians 1980
Sparrow Family		
B93. LeConte's sparrow	(<u>Ammodramus leconteii</u>)	Potter et al., 1980
B94. Seaside sparrow*	(<u>Ammodramus maritima</u>)	Post, 1974; Harrison, 1975
B95. Swamp sparrow	(<u>Melospiza georgiana</u>)	Hamel et al., 1982

* Breeds in East Central Florida

+ Endangered, threatened, or special concern species

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Table C-4. Semi-aquatic and wetland dependent wildlife species of East Central Florida: **MAMMALS**

Species	Scientific Name	References
Shrew Family		
M 1. Southeastern shrew	(<u>Sorex longirostris</u>)	Layne, 1978
Twilight Bat Family		
M 2. Eastern pipistrelle	(<u>Myotis subflavus</u>)	Southall, 1988
Rabbit Family		
M 3. Marsh rabbit	(<u>Sylvilagus palustris</u>)	Collins, 1959
Squirrel Family		
M 4. Gray squirrel	(<u>Sciurus carolinensis</u>)	Flyger, 1960; Doebel, 1967; Cordes and Barkalow, 1972; Allen, 1987
New World Mice, Rats, and Voles		
M 5. Round-tailed muskrat	(<u>Neofiber alleni</u>)	Layne, 1978
M 6. Marsh rice rat	(<u>Oryzomys palustris</u>)	Southall, 1988
Bear Family		
M 7. Black bear	(<u>Ursus americanus</u>)	Taylor, 1971; U.S. Forest Service, 1975; Garshelis, 1978; Landers et al., 1978; Smith, 1985; Rogers and Allen, 1987
Raccoon Family		
M 8. Raccoon	(<u>Procyon lotor</u>)	Johnson, 1970
Weasels and Skunks		
M 9. River otter	(<u>Lutra canadensis</u>)	Melquist and Hornocker, 1983; Chandler, 1988
M10. Mink	(<u>Mustela vison</u>)	Mitchell, 1961; Gerell, 1974; Melquist et al., 1981; Allen, 1986
Cat Family		
M11. Bobcat	(<u>Felis rufus</u>)	Hall and Newsom, 1976; Miller and Speake, 1979; Miller, 1980; Buie, 1980; Boyle and Fendley, 1987

+ Endangered, threatened or special concern species

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APPENDIX D:

Feeding and breeding zones (guilds) used by semi-aquatic, and wetland-dependent wildlife species in various wetlands and habitat types adjacent to significant wetlands in East Central Florida.

Table D-1. Wildlife species characteristic of **SALT MARSHES**.

Feeding Zone	GUILDS	
	Breeding Zone	Species*
Shrubs or grasses	Shrubs or grasses	B78, B91, B94
Shrubs or grasses	Breeds elsewhere	B21, B76, B79, B92, B93, B95
Ground surface	Ground surface	B16, B60, M6
Ground surface	Tree bole	M8
Ground surface	Breeds elsewhere	B61, B77
Water surface	Ground surface	R1, B66
Water surface	Shrubs or grasses	B38, B40, B42, B43
Water surface	Breeds elsewhere	B6, B8, B9, B10
Water column	Ground surface	R4, R6, R25, B45, B62, B65
Water column	Shrubs or grasses	B2
Water column	Tree canopy	B20, B23, B26, B27, B28, B29, B30, B32, B33
Water column	Breeds elsewhere	B3, B18, B63, B64
Water bottom	Ground surface	R10, B44, B46, B47, B52
Water bottom	Breeds elsewhere	B48, B49, B50, B51, B53, B54, B55, B56, B57, B58

* See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

Table D-2. Wildlife species characteristic of **FRESHWATER MARSHES**.

Feeding Zone	GUILDS	
	Breeding Zone	Species*
Tree canopy	Tree canopy	M2
Tree bole	Water surface	A7
Shrubs or grasses	Shrubs or grasses	B78, B79, B84, B91, B93, B94
Shrubs or grasses	Breeds elsewhere	B21, B76, B95
Ground surface	Water column	A3
Ground surface	Water surface	A2, A4, A15, A16, A17, A19
Ground surface	Ground surface	R16, R18, R20, R36, R39, B16, B36, M3
Ground surface	Breeds elsewhere	B15, B58, B77, M8
Water surface	Ground surface	R1, R37, B9, B10, B11, M5
Water surface	Shrubs or grasses	B38, B39, B41, B43
Water surface	Tree bole	B5
Water surface	Breeds elsewhere	B6, B7, B8, B81
Water column	Ground surface	A18, R2, R3, R4, R5, R6, R8, R9, R12, R26, R27, R28, R32, B45, B70, M9, M10
Water column	Shrubs or grasses	B1, B4, B19, B24, B31, B38, B39
Water column	Tree bole	B13
Water column	Tree canopy	B23, B26, B27, B28, B29, B32, B33, B35, B37
Water column	Breeds elsewhere	B12, B18, B20, B34
Water bottom	Ground surface	R10, R11, R30, B46, B47

* See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

Table D-3. Wildlife species characteristic of CYPRESS SWAMPS.

Feeding Zone	GUILDS	
	Breeding Zone	Species*
Tree canopy	Tree bole	B87
Tree canopy	Tree canopy	B17, B67, B74, B75, B82, B86, M2
Tree canopy	Breeds elsewhere	B85
Tree bole	Water surface	A5
Tree bole	Ground surface	R13, R29
Tree bole	Tree bole	B72, B73
Shrubs or grasses	Ground surface	R35
Shrubs or grasses	Shrubs or grasses	B84, B90
Shrubs or grasses	Tree canopy	B69
Shrubs or grasses	Breeds elsewhere	B92, B95
Ground surface	Water bottom	A8
Ground surface	Water column	A3, A9, A10, A20
Ground surface	Water surface	A1, A4, A11, A13, A14, A16, A17, A19
Ground surface	Ground surface	R15, R17, R18, R20, R23, R36, R38, R39, M1, M6, M7
Ground surface	Tree bole	B68, M8
Ground surface	Tree canopy	B14, B15, B25, B77
Ground surface	Breeds elsewhere	B80, B88, B89
Water surface	Ground surface	R1, R37
Water surface	Tree bole	B5
Water surface	Breeds elsewhere	B6, B7, B8
Water column	Ground surface	A18, R2, R3, R4, R5, R6, R8, R9, R12, R26, R27, R28, R31, R32, M9, M10
Water column	Shrubs or grasses	B4
Water column	Tree canopy	B18, B20, B23, B26, B27, B28, B29, B32, B33, B34, B35, B37
Water bottom	Ground surface	R10, R11, R30

* See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

Table D-4. Wildlife species characteristic of **HARDWOOD SWAMPS**.

GUILDS		
Feeding Zone	Breeding Zone	Species*
Tree canopy	Tree bole	B87
Tree canopy	Tree canopy	B17, B67, B74, B75, B82, B86, M2
Tree canopy	Breeds elsewhere	B85
Tree bole	Water surface	A5, A6, A7
Tree bole	Ground surface	R13
Tree bole	Tree bole	B72, B73
Shrubs or grasses	Ground surface	R35
Shrubs or grasses	Shrubs or grasses	B84, B90
Shrubs or grasses	Tree canopy	B69
Shrubs or grasses	Breeds elsewhere	B92, B95
Ground surface	Water bottom	A8
Ground surface	Water column	A3, A10
Ground surface	Water surface	A2, A11, A14, A15, A16, A17, A19
Ground surface	Ground surface	R14, R15, R18, R20, R23, R33, M1, M7
Ground surface	Tree bole	B68, M8
Ground surface	Tree canopy	B14, B15, B25, B77
Ground surface	Breeds elsewhere	B80, B88, B89
Water surface	Ground surface	R1, R37
Water surface	Tree bole	B5
Water surface	Breeds elsewhere	B6, B7, B8
Water column	Ground surface	A18, R2, R3, R4, R5, R6, R8, R9, R12, R26, R27, R28, R31, R32, M9, M10
Water column	Shrubs or grasses	B4
Water column	Tree canopy	B18, B20, B23, B26, B27, B28, B29, B32, B33, B34, B35, B37
Water bottom	Ground surface	R10, R11, R30

* See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

Table D-5. Wildlife species characteristic of HAMMOCKS.

GUILDS		
Feeding Zone	Breeding Zone	Species*
Tree canopy	Tree bole	B87
Tree canopy	Tree canopy	B17, B67, B74, B75, B82, B86, M2, M4
Tree canopy	Breeds elsewhere	B85
Tree bole	Water surface	A5, A6
Tree bole	Ground surface	R13, R29
Tree bole	Tree bole	B71, B72, B73
Shrubs or grasses	Ground surface	R35
Shrubs or grasses	Shrubs or grasses	B84, B90
Shrubs or grasses	Tree canopy	B69
Ground surface	Water bottom	A8
Ground surface	Water column	A3, A9, A10, A20
Ground surface	Water surface	A2, A4, A11, A14, A15, A16, A17, A19
Ground surface	Ground surface	R7, R14, R16, R17, R18, R19, R20, R21, R22, R23, R24, R33, R34, R36, R38, B22, M1, M7, M11
Ground surface	Tree bole	B68, M8
Ground surface	Tree canopy	B14, B15, B25, B77
Ground surface	Breeds elsewhere	B59, B80, B88, B89
Water surface	Ground surface	R1, R37, B9, B10, B11
Water surface	Tree bole	B5, B13
Water column	Ground surface	A18, R2, R3, R4, R5, R6, R8, R9, R12, R26, R27, R28, R31, R32, B12, B70, M9, M10
Water column	Shrubs or grasses	B1, B4
Water column	Tree canopy	B23, B26, B27, B28, B29, B32, B33, B34, B35, B37
Water bottom	Ground surface	R10, R11, R30

* See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

Table D-6. Wildlife species characteristics of FLATWOODS.

GUILDS		
Feeding Zone	Breeding Zone	Species*
Tree canopy	Tree bole	B87
Tree canopy	Tree canopy	B17, B67, B74, B75, B82, B83, B86, M2
Tree canopy	Breeds elsewhere	B85
Tree bole	Water surface	A6
Tree bole	Ground surface	R13, R29
Tree bole	Tree bole	B71, B72, B73
Shrubs or grasses	Ground surface	R35
Shrubs or grasses	Shrubs or grasses	B84, B90
Shrubs or grasses	Tree canopy	B69
Shrubs or grasses	Breeds elsewhere	B21
Ground surface	Water bottom	A8
Ground surface	Water column	A3, A9, A10, A20
Ground surface	Water surface	A1, A2, A4, A11, A13, A14, A15, A16, A17, A19
Ground surface	Ground surface	R7, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R33, R34, R36, R39, B16, B22, B36, M1, M7, M11
Ground surface	Tree bole	B68, M8
Ground surface	Tree canopy	B14, B15, B25, B77
Ground surface	Breeds elsewhere	B59, B80, B88, B89
Water surface	Ground surface	R1, R37, B9, B10, B11
Water surface	Tree bole	B5, B13
Water column	Ground surface	A18, R2, R3, R4, R5, R6, R8, R9, R12, R26, R27, R28, R31, R32, B12, B70, M9, M10
Water column	Shrubs or grasses	B1, B4
Water column	Tree canopy	B18, B20, B23, B26, B27, B28, B29, B32, B33, B34, B35, B37
Water bottom	Ground surface	R10, R11, R30

* See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

Table D-7. Wildlife species characteristic of SANDHILLS.

GUILDS		
Feeding Zone	Breeding Zone	Species*
Tree canopy	Tree canopy	B82, B83, B86, M2, M4
Tree bole	Water surface	A6, A7
Tree bole	Ground surface	R13, R29
Tree bole	Tree bole	B72, B73
Shrubs or grasses	Ground surface	R35
Shrubs or grasses	Shrubs or grasses	B84
Ground surface	Water bottom	A8
Ground surface	Water column	A12, A20
Ground surface	Water surface	A1, A2, A4, A11, A13, A14, A15, A16
Ground surface	Ground surface	R7, R15, R16, R17, R18, R19, R20, R21, R22, R24, R33, R34, R36, R39, B22, M7, M11
Ground surface	Tree bole	M8
Ground surface	Tree canopy	B14, B25, B77
Water surface	Ground surface	R1, R37, B9, B10, B11
Water surface	Tree bole	B5, B13
Water surface	Breeds elsewhere	B6, B7, B8
Water column	Ground surface	R2, R3, R4, R5, R6, R8, R9, R12, R26, R27, R28, R31, R32, B70, M9, M10
Water column	Shrubs or grasses	B1, B4
Water column	Tree canopy	B18, B20, B23, B26, B27, B28, B29, B32, B33, B34, B35, B37
Water column	Breeds elsewhere	B3, B12
Water bottom	Ground surface	R10, R11, R30, B46

* See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

APPENDIX E:

Combined feeding and breeding guild matrices for semi-aquatic and wetland-dependent wildlife species that occur in various habitat types in East Central Florida. The number in the center of a block signifies the number of different species in that guild (see Appendix E). The number in the upper-right corner of a block indicates the number of listed (endangered, threatened, special concern) species in the guild (see Appendix D).

SALT MARSHES

Feeding Zone	Tree canopy								0
	Tree bole								0
	Shrubs or grasses				3			6 ¹	9 ¹
	Ground surface				3		1	2	6
	Water surface				2	4		4 ¹	10 ¹
	Water column				6 ²	1 ¹		9 ⁴	20 ⁸
	Water bottom				5 ¹			10	15 ¹
	Totals	0	0	0	16 ³	8 ¹	1	26 ⁴	60 ¹¹
		Water bottom	Water column	Water surface	Ground surface	Shrubs/grasses	Tree bole	Tree canopy	Breeds elsewhere
Breeding Zone									

Figure E-1. Guild matrix with feeding and breeding zones for semi-aquatic and wetland-dependent wildlife species that occur in salt marshes in East Central Florida. The number of species using each feeding/breeding guild (center of square) and the number of listed (endangered, threatened, special concern) species in the guild (upper-right corner) is shown.

FRESH WATER MARSHES

Feeding Zone	Tree canopy						1		1
	Tree bole			1					1
	Shrubs or grasses					6		3	9
	Ground surface		1	6	8	1		4	19
	Water surface				6	3	1	4	14
	Water column				17	7	1	9	38
	Water bottom				5				5
	Totals	0	1	7	36	16	2	10	15
Breeding Zone									
	Water bottom	Water column	Water surface	Ground surface	Shrubs/grasses	Tree bole	Tree canopy	Breeds elsewhere	Totals

Figure E-2. Guild matrix with feeding and breeding zones for semi-aquatic and wetland-dependent wildlife species that occur in fresh water marshes in East Central Florida. The number of species using each feeding/breeding guild (center of square) and the number of listed (endangered, threatened, special concern) species in the guild (upper-right corner) is shown.

CYPRESS SWAMPS

Feeding Zone	Tree canopy						1	7	1	9
	Tree bole			1	2		2			5
	Shrubs or grasses				1	2		1	2	6
	Ground surface	1	4	8	11		2	4	3	33
	Water surface				2 ¹		1		3	6 ¹
	Water column				16	1		5 ¹²		29 ⁵
	Water bottom				3					3
	Totals	1	4	9 ¹	35 ¹	3	6	24 ⁵	9	91 ⁷
		Water bottom	Water column	Water surface	Ground surface	Shrubs/grasses	Tree bole	Tree canopy	Breeds elsewhere	Totals
Breeding Zone										

Figure E-3. Guild matrix with feeding and breeding zones for semi-aquatic and wetland-dependent wildlife species that occur in cypress swamps in East Central Florida. The number of species using each feeding/breeding guild (center of square) and the number of listed (endangered, threatened, special concern) species in the guild (upper-right corner) is shown.

HARDWOOD SWAMPS

Feeding Zone	Tree canopy						1	7	1	9
	Tree bole			3	1		2			6
	Shrubs or grasses				1	2		1	2	6
	Ground surface	1	2	7	8 ¹		2	4	3	27 ¹
	Water surface				2		1		3	6
	Water column				16	1		5 ⁵ 12		29 ⁵
	Water bottom				3					3
	Totals	1	2	10	31 ¹	3	6	22 ⁵	9	86 ⁶
		Water bottom	Water column	Water surface	Ground surface	Shrubs/grasses	Tree bole	Tree canopy	Breeds elsewhere	Totals
Breeding Zone										

Figure E-4. Guild matrix with feeding and breeding zones for semi-aquatic and wetland-dependent wildlife species that occur in hardwood swamps in East Central Florida. The number of species using each feeding/breeding guild (center of square) and the number of listed (endangered, threatened, special concern) species in the guild (upper-right corner) is shown.

HAMMOCKS

Feeding Zone	Tree canopy						1	8	1	10
	Tree bole			2	2		3 ¹			7 ¹
	Shrubs or grasses				1	2		1		4
	Ground surface	1	4	8	2 ²		2	4	4	42 ²
	Water surface				5 ¹		2			7 ¹
	Water column				18	2		4 ⁴	10	30 ⁴
	Water bottom				3					3
	Totals	1	4	10	3 ³	4	8 ¹	4 ⁴	5	103 ⁸
		Water bottom	Water column	Water surface	Ground surface	Shrubs/grasses	Tree bole	Tree canopy	Breeds elsewhere	Totals
Breeding Zone										

Figure E-5. Guild matrix with feeding and breeding zones for semi-aquatic and wetland-dependent wildlife species that occur in hammocks in East Central Florida. The number of species using each feeding/breeding guild (center of square) and the number of listed (endangered, threatened, special concern) species in the guild (upper-right corner) is shown.

FLATWOODS

Feeding Zone	Tree canopy						1	8	1	10
	Tree bole			1	2		3	1		6
	Shrubs or grasses				1	2		1	1	5
	Ground surface	1	4	10	1	22	3	2	4	4
	Water surface					5	1	2		7
	Water column					18	2		5	32
	Water bottom					3				3
	Totals	1	4	11	1	51	4	8	1	12
		Water bottom	Water column	Water surface	Ground surface	Shrubs/grasses	Tree bole	Tree canopy	Breeds elsewhere	Totals
Breeding Zone										

Figure E-6. Guild matrix with feeding and breeding zones for semi-aquatic and wetland-dependent wildlife species that occur in flatwoods in East Central Florida. The number of species using each feeding/breeding guild (center of square) and the number of listed (endangered, threatened, special concern) species in the guild (upper-right corner) is shown.

SANDHILLS

Feeding Zone

Tree canopy							5		5
Tree bole			2	2		2			6
Shrubs or grasses				1	1				2
Ground surface	1	2	1 8	2 17		1	3		3 32
Water surface				1 5		2		3	1 10
Water column				16	2		5 11	2	5 31
Water bottom				4					4
Totals	1	2	1 10	3 45	3	5	5 19	5	9 90
	Water bottom	Water column	Water surface	Ground surface	Shrubs/grasses	Tree bole	Tree canopy	Breeds elsewhere	Totals

Breeding Zone

Figure E-7. Guild matrix with feeding and breeding zones for semi-aquatic and wetland-dependent wildlife species that occur in sandhills in East Central Florida. The number of species using each feeding/breeding guild (center of square) and the number of listed (endangered, threatened, special concern) species in the guild (upper-right corner) is shown.

APPENDIX F:

**Spatial requirements reported for semi-aquatic and wetland-dependent wildlife species
in various wetlands and habitat types adjacent to wetlands in East Central Florida.**

Table F-1. Semi-aquatic and wetland dependent wildlife species of East Central Florida: **SALT MARSHES**

Species Code*		Spatial Requirement (feet)
B 2	20	very tolerant of humans while feeding
B 3	20	very tolerant of humans while feeding
B20	20	very tolerant of humans near nest site
M 6**	30	same as M 5
B23**	60	same as B27 (fairly tolerant of humans)
B26**	60	same as B27 (fairly tolerant of humans)
B47**	60	same as B27 (fairly tolerant of humans)
B48**	60	same as B27 (fairly tolerant of humans)
B76**	60	same as B27 (fairly tolerant of humans)
B60**	60	same as B27 (fairly tolerant of humans)
B61**	60	same as B27 (fairly tolerant of humans)
B77**	60	same as B27 (fairly tolerant of humans)
B30	64	nest location landward from the waterward extent of forest
B27	84	nest location landward from the waterward extent of forest (24) + minimum distance from humans tolerated (60)
B10	120	minimum distance from humans tolerated
B38	120	minimum distance from humans tolerated
B91	165	home range diameter
B92**	165	same as B91
B32**	180	same as B28 (minimum distance tolerated)
B33**	180	same as B28 (minimum distance tolerated)
B46	180	minimum distance from humans tolerated
B44**	180	same as B46
B45**	180	same as B46
B54**	180	same as B46
B55**	180	same as B46
B56**	180	same as B46
B57**	180	same as B46
B58**	180	same as B46
B62**	180	same as B46
B63**	180	same as B46
B64**	180	same as B46
B65**	180	same as B46
B66**	180	same as B46
B78	196	home range diameter
B79**	196	same as B78
B93**	196	same as B78
B94**	196	same as B78
B95**	196	same as B78
B52	240	minimum distance from humans tolerated
B49	240	minimum distance from humans tolerated

Table F-1. Continued.

Species Code*	Spatial Requirement (feet)	
B50	240	minimum distance from humans tolerated
B51	240	minimum distance from humans tolerated
B28	243	nest location landward from the waterward extent of forest (64) + minimum distance from humans tolerated (180)
B 9	300	minimum distance from humans tolerated
B 6	300	minimum distance from humans tolerated
B 8**	300	same as B 6
B21**	300	same B 6 (winter migrant, not tolerant of humans)
B53	300	minimum distance from humans tolerated
B29	322	nest location landward from the waterward extent of forest (82) + minimum distance from humans tolerated (240)
R 4**	497	same as R 2
B16**	795	same as B15
R25**	884	same as R26
R 6**	1,350	same as R 9
R10**	1,350	same as R 9
B18	1,500	secondary restrictive activity zone around eagle nests
B42	1,800	home range diameter
B40**	1,800	same as B42
B43**	1,800	same as B42
M 8	1,851	1/2 of home range diameter (entire home range includes the marsh as well as the adjacent flatwood or hammock forest)
R 1	11,045	home range diameter

*See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

**Because no spatial requirement data were found for these species, the numbers used here represent spatial requirements for species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

Table F-2. Semi-aquatic and wetland dependent wildlife species of East Central Florida: **FRESHWATER MARSHES**

Species Code*		Spatial Requirement (feet)
B 4	20	very tolerant of humans while feeding
B20	20	very tolerant of humans near nest site
M 5	30	home range diameter
B26**	60	same as B27 (fairly tolerant of humans)
B23**	60	same as B27 (fairly tolerant of humans)
M 2**	60	same as B27 (fairly tolerant of humans)
B70**	60	same as B27 (fairly tolerant of humans)
B76**	60	same as B27 (fairly tolerant of humans)
B77**	60	same as B27 (fairly tolerant of humans)
B47**	60	same as B27 (fairly tolerant of humans)
B27	84	nest location landward from the waterward extent of forest (24) + minimum distance from humans tolerated (60)
B37**	84	same as B27
B 5**	120	same as B10
B11**	120	same as B10 (minimum distance tolerated)
B38	120	minimum distance from humans tolerated
B84	135	home range diameter
B10	150	nest location landward from the waterward extent of forest (30) + minimum distance from humans tolerated (120)
B91	165	home range diameter
A 4	180	maximum distance found from closest water
A 3**	180	same as A 4
A18**	180	same as A 4
A19**	180	same as A 4
B24**	180	same as B28 (minimum distance tolerated)
B31**	180	same as B28 (minimum distance tolerated)
B32**	180	same as B28 (minimum distance tolerated)
B33**	180	same as B28 (minimum distance tolerated)
B46	180	minimum distance from humans tolerated
B45**	180	same as B46
B58**	180	same as B46
B81**	180	same as B67
B78	196	home range diameter
B79**	196	same as B78
B93**	196	same as B78
B94**	196	same as B78
B95**	196	same as B78
R37	202	1/2 of home range diameter (entire home range includes the marsh as well as the adjacent forest)
B 1	240	minimum distance from humans tolerated
B35	240	minimum distance from humans tolerated

Table F-2. Continued.

Species Code*	Spatial Requirement (feet)	
B28	243	nest location landward from the waterward extent of forest (63) + minimum distance from humans tolerated (180)
B 6	300	minimum distance from humans tolerated
B 7	300	minimum distance from humans tolerated
B 8**	300	same as B 6
B12**	300	same as B 6
B13**	300	same as B 6
B21**	300	same B 6 (winter migrant, not tolerant of humans)
M10	300	maximum distance of den from closest water
B29	322	nest location landward from the waterward extent of forest (82) + minimum distance from humans tolerated (240)
A15**	350	same as A14
A16**	350	same as A14
A17**	350	same as A14
R 2	497	home range diameter
R 4**	497	same as R 2
R12**	497	same as R 2
R36	698	1/2 of home range diameter (entire home range includes the marsh as well as the adjacent forest)
M 3	700	maximum distance found from shore
B15	795	home range diameter
B16**	795	same as B15
B19**	795	same as B15
R26	884	home range diameter
R27**	884	same as R26
R28**	884	same as R26
R30**	884	same as R26
R32**	884	same as R26
B 9	960	nest location landward from the waterward extent of forest (660) + minimum distance from humans tolerated (300)
R 9	1,350	maximum distance from closest water to winter hibernation site
R 3**	1,350	same as R 9
R 5**	1,350	same as R 9
R 6**	1,350	same as R 9
R10**	1,350	same as R 9
R11**	1,350	same as R 9
R20**	1,395	same as R36

Table F-2. Continued.

Species Code*	Spatial Requirement (feet)
B18	1,500 secondary restrictive activity zone around eagle nests
B34**	1,500 same as B18
B36**	1,500 same as B18
R16**	1,664 same as R24
R18**	1,664 same as R24
R39**	1,664 same as R24
B39**	1,800 same as B42
B41**	1,800 same as B42
B43**	1,800 same as B42
M 8	3,702 home range diameter
A 7**	4,000 same as A 5
R 8	5,280 maximum distance from closest water to nest
R 7**	5,280 same as R 8
A 2**	6,336 same as A13
M 9	6,600 home range diameter
R 1	11,045 home range diameter

*See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

**Because no spatial requirement data were found for these species, the numbers used here represent spatial requirements for species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

Table F-3. Semi-aquatic and wetland dependent wildlife species of East Central Florida: CYPRESS SWAMPS

Species Code*	Spatial Requirement (feet)	
B25	14	nest location landward from the waterward extent of forest
B 4	20	very tolerant of humans while feeding
B20	20	very tolerant of humans near nest site
M 6**	30	same as M 5
R29	51	home range diameter
R13**	51	same as R29
M 2**	60	same as B27 (fairly tolerant of humans)
B23**	60	same as B27 (minimum distance tolerated)
B26**	60	same as B27 (fairly tolerant of humans)
B69**	60	same as B27 (fairly tolerant of humans)
B77**	60	same as B27 (fairly tolerant of humans)
B27	84	nest location landward from the waterward extent of forest (24) + minimum distance from humans tolerated (60)
B37**	84	same as B27
B 5**	120	same as B10
B84	135	home range diameter
B92**	165	same as B91
A 4	180	maximum distance found from closest water
A 8**	180	same as A 4
A 3**	180	same as A 4
A 9**	180	same as A 4
A10**	180	same as A 4
A18**	180	same as A 4
A19**	180	same as A 4
A20**	180	same as A 4
B67	180	minimum forest habitat width
B80**	180	same as B67
B68	180	minimum forest habitat width
B75	180	minimum forest habitat width
B74**	180	same as B75
B88	180	minimum forest habitat width
B89**	180	same as B88
B32**	180	same as B28 (minimum distance tolerated)
B33**	180	same as B28 (minimum distance tolerated)
B95**	196	same as B78
B86	210	minimum forest habitat width
B82**	210	same as B86
B85**	210	same as B86
B35	240	minimum distance from humans tolerated
B28	243	nest location landward from the waterward extent of forest (63) + minimum distance from humans tolerated (180)

Table F-3. Continued.

Species Code*	Spatial Requirement (feet)	
M10	300	maximum distance of den from closest water
B 6	300	minimum distance from humans tolerated
B 7	300	minimum distance from humans tolerated
B 8**	300	same as B 6
B29	322	nest location landward from the waterward extent of forest (82) + minimum distance from humans tolerated (240)
R35	331	home range diameter
A14	350	maximum distance found from permanent water
A16**	350	same as A14
A17**	350	same as A14
M 1**	370	same as M 4
R37	405	home range diameter
B87	> 450	minimum forest habitat width
B90	> 450	minimum forest habitat width
R 2	497	home range diameter
R 4**	497	same as R 2
R12**	497	same as R 2
B73	740	home range diameter
B15	795	home range diameter
B17**	795	same as B15
B14**	795	same as B15
R26	884	home range diameter
R27**	884	same as R26
R28**	884	same as R26
R30**	884	same as R26
R31**	884	same as R26
R32**	884	same as R26
R 9	1,350	maximum distance from closest water to winter hibernation site
R 3**	1,350	same as R 9
R 5**	1,350	same as R 9
R 6**	1,350	same as R 9
R10**	1,350	same as R 9
R11**	1,350	same as R 9
R36	1,395	home range diameter
R20**	1,395	same as R36
B18	1,500	secondary restrictive activity zone around eagle nests
B34**	1,500	same as B18
R15**	1,664	same as R24
R17**	1,664	same as R24

Table F-3. Continued.

Species Code*	Spatial Requirement (feet)
R18**	1,664 same as R24
R23**	1,664 same as R24
R39**	1,664 same as R24
R38	2,756 home range diameter
M 8	3,702 home range diameter
A 5	4,000 maximum distance found from breeding pond
B72	4,221 home range diameter
R 8	5,280 maximum distance from closest water to nest
A13	6,336 distance between captures of same individual
A 1**	6,336 same as A13
A11**	6,336 same as A13
M 9	6,600 home range diameter
R 1	11,045 home range diameter
M 7	17,287 home range diameter

*See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

**Because no spatial requirement data were found for these species, the numbers used here represent spatial requirements for species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

Table F-4. Semi-aquatic and wetland dependent wildlife species of East Central Florida:
HARDWOOD SWAMPS

Species Code*	Spatial Requirement (feet)	
B25	14	nest location landward from the waterward extent of forest
B 4	20	very tolerant of humans while feeding
B20	20	very tolerant of humans near nest site
R13**	51	same as R29
R14**	51	same as R29
M 2**	60	same as B27 (fairly tolerant of humans)
B23**	60	same as B27 (fairly tolerant of humans)
B26**	60	same as B27 (fairly tolerant of humans)
B69**	60	same as B27 (fairly tolerant of humans)
B77**	60	same as B27 (fairly tolerant of humans)
B27	84	nest location landward from the waterward extent of forest (24) + minimum distance from humans tolerated (60)
B37**	84	same as B27
B 5**	120	same as B10
R33	128	distance between captures of same individual
B84	135	home range diameter
B92**	165	same as B91
A 8**	180	same as A 4
A 3**	180	same as A 4
A10**	180	same as A 4
A18**	180	same as A 4
A19**	180	same as A 4
B67	180	minimum forest habitat width
B80**	180	same as B67
B68	180	minimum forest habitat width
B75	180	minimum forest habitat width
B74**	180	same as B75
B88	180	minimum forest habitat width
B89**	180	same as B88
B32**	180	same as B28 (minimum distance tolerated)
B33**	180	same as B28 (minimum distance tolerated)
B95**	196	same as B78
B86	210	minimum forest habitat width
B82**	210	same as B86
B85**	210	same as B86
B35	240	minimum distance from humans tolerated
B28	243	nest location landward from the waterward extent of forest (63) + minimum distance from humans tolerated (180)
M10	300	maximum distance of den from closest water
B 6	300	minimum distance from humans tolerated
B 7	300	minimum distance from humans tolerated
B 8**	300	same as B 6

Table F-4. Continued.

Species Code*		Spatial Requirement (feet)
B29	322	nest location landward from the waterward extent of forest (82) + minimum distance from humans tolerated (240)
R35	331	home range diameter
A14	350	maximum distance found from permanent water
A15**	350	same as A14
A16**	350	same as A14
A17**	350	same as A14
M 1**	370	same as M 4
R37	405	home range diameter
B87	> 450	minimum forest habitat width
B90	> 450	minimum forest habitat width
R 2	497	home range diameter
R 4**	497	same as R 2
R12**	497	same as R 2
B73	740	home range diameter
B15	795	home range diameter
B17**	795	same as B15
B14**	795	same as B15
R26	884	home range diameter
R27**	884	same as R26
R28**	884	same as R26
R30**	884	same as R26
R31**	884	same as R26
R32**	884	same as R26
R 9	1,350	maximum distance from closest water to winter hibernation site
R 3**	1,350	same as R 9
R 5**	1,350	same as R 9
R 6**	1,350	same as R 9
R10**	1,350	same as R 9
R11**	1,350	same as R 9
R20**	1,395	same as R36
B18	1,500	secondary restrictive activity zone around eagle nests
B34**	1,500	same as B18
R15**	1,664	same as R24
R18**	1,664	same as R24
R23**	1,664	same as R24
M 8	3,702	home range diameter
A 5	4,000	maximum distance found from breeding pond
A 6**	4,000	same as A 5
A 7**	4,000	same as A 5

Table F-4. Continued.

Species Code*	Spatial Requirement (feet)	
B72	4,221	home range diameter
R 8	5,280	maximum distance from closest water to nest
A 2**	6,336	same as A13
A11**	6,336	same as A13
M 9	6,600	home range diameter
R 1	11,045	home range diameter
M 7	17,287	home range diameter

*See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

**Because no spatial requirement data were found for these species, the numbers used here represent spatial requirements for species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

Table F-5. Semi-aquatic and wetland dependent wildlife species of East Central Florida: HAMMOCKS

Species Code*	Spatial Requirement (feet)	
B25	14	nest location landward from the waterward extent of forest
B 4	20	very tolerant of humans while feeding
R29	51	home range diameter
R13**	51	same as R29
R14**	51	same as R29
M 2**	60	same as B27 (fairly tolerant of humans)
B23**	60	same as B27 (minimum distance tolerated)
B26**	60	same as B27 (fairly tolerant of humans)
B69**	60	same as B27 (fairly tolerant of humans)
B70**	60	same as B27 (fairly tolerant of humans)
B77**	60	same as B27 (fairly tolerant of humans)
B27	84	nest location landward from the waterward extent of forest (24) + minimum distance from humans tolerated (60)
B37**	84	same as B27
B 5**	120	same as B10
B11**	120	same as B10
R33	128	distance between captures of same individual
R34**	128	same as R33
B84	135	home range diameter
B10	150	nest location landward from the waterward extent of the forest (30) + minimum distance from humans tolerated (120)
A 4	180	maximum distance found from closest water
A 8**	180	same as A 4
A 3**	180	same as A 4
A 9**	180	same as A 4
A10**	180	same as A 4
A18**	180	same as A 4
A19**	180	same as A 4
A20**	180	same as A 4
B67	180	minimum forest habitat width
B80**	180	same as B67
B68	180	minimum forest habitat width
B75	180	minimum forest habitat width
B74**	180	same as B75
B88	180	minimum forest habitat width
B89**	180	same as B88
B32**	180	same as B28 (minimum distance tolerated)
B33**	180	same as B28 (minimum distance tolerated)
B59**	180	same as B46
B86	210	minimum forest habitat width
B82**	210	same as B86

Table F-5. Continued.

Species Code*		Spatial Requirement (feet)
B85**	210	same as B86
B 1	240	minimum distance from humans tolerated
B35	240	minimum distance from humans tolerated
B28	243	nest location landward from the waterward extent of forest (63) + minimum distance from humans tolerated (180)
M10	300	maximum distance of den from closest water
B12**	300	same as B 6
B13**	300	same as B 6
B29	322	nest location landward from the waterward extent of forest (82) + minimum distance from humans tolerated (240)
R35	331	home range diameter
A14	350	maximum distance found from permanent water
A15**	350	same as A14
A16**	350	same as A14
A17**	350	same as A14
M 4	370	home range diameter
M 1**	370	same as M 4
R37	405	home range diameter
B87	> 450	minimum forest habitat width
B90	> 450	minimum forest habitat width
R 2	497	home range diameter
R 4**	497	same as R 2
R12**	497	same as R 2
R22	732	distance between captures of same individual
B73	740	home range diameter
B15	795	home range diameter
B17**	795	same as B15
B14**	795	same as B15
R26	884	home range diameter
R27**	884	same as R26
R28**	884	same as R26
R30**	884	same as R26
R31**	884	same as R26
R32**	884	same as R26
B 9	960	nest location landward from the waterward extent of the forest (660) + minimum distance from humans tolerated (300)
R 9	1,350	maximum distance from closest water to winter hibernation site
R 3**	1,350	same as R 9
R 5**	1,350	same as R 9

Table F-5. Continued.

Species Code*	Spatial Requirement (feet)	
R 6**	1,350	same as R 9
R10**	1,350	same as R 9
R11**	1,350	same as R 9
R36	1,395	home range diameter
R20**	1,395	same as R36
R21**	1,395	same as R36
B34**	1,500	same as B18
R24	1,664	home range diameter
R17**	1,664	same as R24
R18**	1,664	same as R24
R23**	1,664	same as R24
R16**	1,664	same as R24
R38	2,756	home range diameter
M 8	3,702	home range diameter
A 5	4,000	maximum distance found from breeding pond
A 6**	4,000	same as A 5
B72	4,221	home range diameter
B71	4,352	home range diameter
R19	4,654	home range diameter
R 8	5,280	maximum distance from closest water to nest
R 7**	5,280	same as R 8
M11	5,912	home range diameter
A 2**	6,336	same as A13
A11**	6,336	same as A13
M 9	6,600	home range diameter
B22	10,472	home range diameter
R 1	11,045	home range diameter
M 7	17,287	home range diameter

*See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

**Because no spatial requirement data were found for these species, the numbers used here represent spatial requirements for species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

Table F-6. Semi-aquatic and wetland dependent wildlife species of East Central Florida: **FLATWOODS**

Species Code*		Spatial Requirement (feet)
B25	14	nest location landward from the waterward extent of forest
B 4	20	very tolerant of humans while feeding
B20	20	very tolerant of humans near nest site
R29	51	home range diameter
R13**	51	same as R29
R14**	51	same as R29
M 2**	60	same as B27 (fairly tolerant of humans)
B23**	60	same as B27 (minimum distance tolerated)
B26**	60	same as B27 (fairly tolerant of humans)
B69**	60	same as B27 (fairly tolerant of humans)
B70**	60	same as B27 (fairly tolerant of humans)
B77**	60	same as B27 (fairly tolerant of humans)
B27	84	nest location landward from the waterward extent of forest (24) + minimum distance from humans tolerated (60)
B37**	84	same as B27
B 5**	120	same as B10
B11**	120	same as B10
R33	128	distance between captures of same individual
R34**	128	same as R33
B84	135	home range diameter
B10	150	nest location landward from the waterward extent of the forest (30) + minimum distance from humans tolerated (120)
A 4	180	maximum distance found from closest water
A 8**	180	same as A 4
A 3**	180	same as A 4
A 9**	180	same as A 4
A10**	180	same as A 4
A18**	180	same as A 4
A19**	180	same as A 4
A20**	180	same as A 4
B67	180	minimum forest habitat width
B80**	180	same as B67
B68	180	minimum forest habitat width
B75	180	minimum forest habitat width
B74**	180	same as B75
B88	180	minimum forest habitat width
B89**	180	same as B88
B32**	180	same as B28 (minimum distance tolerated)
B33**	180	same as B28 (minimum distance tolerated)
B59**	180	same as B46
B86	210	minimum forest habitat width

Table F-6. Continued.

Species Code*	Spatial Requirement (feet)	
B82**	210	same as B86
B83**	210	same as B86
B85**	210	same as B86
B 1	240	minimum distance from humans tolerated
B35	240	minimum distance from humans tolerated
B28	243	nest location landward from the waterward extent of forest (63) + minimum distance from humans tolerated (180)
M10	300	maximum distance of den from closest water
B12**	300	same as B 6
B13**	300	same as B 6
B21**	300	same B 6 (winter migrant, not tolerant of humans)
B29	322	nest location landward from the waterward extent of forest (82) + minimum distance from humans tolerated (240)
R35	331	home range diameter
A14	350	maximum distance found from permanent water
A15**	350	same as A14
A16**	350	same as A14
A17**	350	same as A14
M 1**	370	same as M 4
R37	405	home range diameter
B87	> 450	minimum forest habitat width
B90	> 450	minimum forest habitat width
R 2	497	home range diameter
R 4**	497	same as R 2
R12**	497	same as R 2
R22	732	distance between captures of same individual
B73	740	home range diameter
B15	795	home range diameter
B16**	795	same as B15
B17**	795	same as B15
B14**	795	same as B15
R26	884	home range diameter
R27**	884	same as R26
R28**	884	same as R26
R30**	884	same as R26
R31**	884	same as R26
R32**	884	same as R26
B 9	960	nest location landward from the waterward extent of the forest (660) + minimum distance from humans tolerated (300)

Table F-6. Continued.

Species Code*		Spatial Requirement (feet)
R 9	1,350	maximum distance from closest water to winter hibernation site
R 3**	1,350	same as R 9
R 5**	1,350	same as R 9
R 6**	1,350	same as R 9
R10**	1,350	same as R 9
R11**	1,350	same as R 9
R36	1,395	home range diameter
R20**	1,395	same as R36
R21**	1,395	same as R36
B18	1,500	secondary restrictive activity zone around eagle nests
B34**	1,500	same as B18
B36**	1,500	same as B18
R24	1,664	home range diameter
R15**	1,664	same as R24
R16**	1,664	same as R24
R17**	1,664	same as R24
R18**	1,664	same as R24
R23**	1,664	same as R24
R39**	1,664	same as R24
M 8	3,702	home range diameter
A 6**	4,000	same as A 5
B72	4,221	home range diameter
B71	4,352	home range diameter
R19	4,654	home range diameter
R 8	5,280	maximum distance from closest water to nest
R 7**	5,280	same as R 8
M11	5,912	home range diameter
A13	6,336	distance between captures of same individual
A 1**	6,336	same as A13
A 2**	6,336	same as A13
A11**	6,336	same as A13
M 9	6,600	home range diameter
B22	10,472	home range diameter
R 1	11,045	home range diameter
M 7	17,287	home range diameter

*See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

**Because no spatial requirement data were found for these species, the numbers used here represent spatial requirements for species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

Table F-7. Semi-aquatic and wetland dependent wildlife species of East Central Florida: SANDHILLS

Species Code*		Spatial Requirement (feet)
B25	14	nest location landward from the waterward extent of forest
B 3	20	very tolerant of humans while feeding
B 4	20	very tolerant of humans while feeding
B20	20	very tolerant of humans near nest site
R29	51	home range diameter
R13**	51	same as R29
M 2**	60	same as B27 (fairly tolerant of humans)
B23**	60	same as B27 (minimum distance tolerated)
B26**	60	same as B27 (fairly tolerant of humans)
B70**	60	same as B27 (fairly tolerant of humans)
B77**	60	same as B27 (fairly tolerant of humans)
B27	84	nest location landward from the waterward extent of forest (24) + minimum distance from humans tolerated (60)
B37**	84	same as B27
B 5**	120	same as B10
B11**	120	same as B10
R33	128	distance between captures of same individual
R34**	128	same as R33
B84	135	home range diameter
B10	150	nest location landward from the waterward extent of the forest (30) + minimum distance from humans tolerated (120)
A 4	180	maximum distance found from closest water
A 8**	180	same as A 4
A20**	180	same as A 4
B46	180	minimum distance from humans tolerated
B32**	180	same as B28 (minimum distance tolerated)
B33**	180	same as B28 (minimum distance tolerated)
B86	210	minimum forest habitat width
B82**	210	same as B86
B83**	210	same as B86
B 1	240	minimum distance from humans tolerated
B35	240	minimum distance from humans tolerated
B28	243	nest location landward from the waterward extent of forest (63) + minimum distance from humans tolerated (180)
M10	300	maximum distance of den from closest water
B 6	300	minimum distance from humans tolerated
B 7	300	minimum distance from humans tolerated
B 8**	300	same as B 6
B12**	300	same as B 6
B13**	300	same as B 6

Table F-7. Continued.

Species Code*		Spatial Requirement (feet)
B29	322	nest location landward from the waterward extent of forest (82) + minimum distance from humans tolerated (240)
R35	331	home range diameter
A14	350	maximum distance found from permanent water
A15**	350	same as A14
A16**	350	same as A14
R37	405	home range diameter
R 2	497	home range diameter
R 4**	497	same as R 2
R12**	497	same as R 2
R22	732	distance between captures of same individual
B73	740	home range diameter
B14**	795	same as B15
R26	884	home range diameter
R27**	884	same as R26
R28**	884	same as R26
R30**	884	same as R26
R31**	884	same as R26
R32**	884	same as R26
B 9	960	nest location landward from the waterward extent of the forest (660) + minimum distance from humans tolerated (300)
R 9	1,350	maximum distance from closest water to winter hibernation site
R 3**	1,350	same as R 9
R 5**	1,350	same as R 9
R 6**	1,350	same as R 9
R10**	1,350	same as R 9
R11**	1,350	same as R 9
R36	1,395	home range diameter
R20**	1,395	same as R36
R21**	1,395	same as R36
B18	1,500	secondary restrictive activity zone around eagle nests
B34**	1,500	same as B18
R24	1,664	home range diameter
R17**	1,664	same as R24
R18**	1,664	same as R24
R15**	1,664	same as R24
R16**	1,664	same as R24
R39**	1,664	same as R24
M 8	3,702	home range diameter

Table F-7. Continued.

Species Code*	Spatial Requirement (feet)
A 6**	4,000 same as A 5
A 7**	4,000 same as A 5
B72	4,221 home range diameter
R19	4,654 home range diameter
R 8	5,280 maximum distance from closest water to nest
R 7**	5,280 same as R 8
M11	5,912 home range diameter
A13	6,336 distance between captures of same individual
A 1**	6,336 same as A13
A 2**	6,336 same as A13
A11**	6,336 same as A13
A12**	6,336 same as A13
M 9	6,600 home range diameter
B22	10,472 home range diameter
R 1	11,045 home range diameter
M 7	17,287 home range diameter

*See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

**Because no spatial requirement data were found for these species, the numbers used here represent spatial requirements for species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

Table F-8. Semi-aquatic and wetland dependent wildlife species of East Central Florida: SPATIAL REQUIREMENTS OF ALL SPECIES ARRANGED BY TAXA

Species Code*	Spatial Requirement (feet)	
A 1**	6,336	same as A13
A 2**	6,336	same as A13
A 3**	180	same as A 4
A 4	180	maximum distance found from closest water
A 5	4,000	maximum distance found from breeding pond
A 6**	4,000	same as A 5
A 7**	4,000	same as A 5
A 8**	180	same as A 4
A 9**	180	same as A 4
A10**	180	same as A 4
A11**	6,336	same as A13
A12**	6,336	same as A13
A13	6,336	distance between captures of same individual
A14	350	maximum distance found from permanent water
A15**	350	same as A14
A16**	350	same as A14
A17**	350	same as A14
A18**	180	same as A 4
A19**	180	same as A 4
A20**	180	same as A 4
R 1	11,045	home range diameter
R 2	497	home range diameter
R 3**	1,350	same as R 9
R 4**	497	same as R 2
R 5**	1,350	same as R 9
R 6**	1,350	same as R 9
R 7**	5,280	same as R 8
R 8	5,280	maximum distance from closest water to nest
R 9	1,350	maximum distance from closest water to winter hibernation site
R10**	1,350	same as R 9
R11**	1,350	same as R 9
R12**	497	same as R 2
R13**	51	same as R29
R14**	51	same as R29
R15**	1,664	same as R24
R16**	1,664	same as R24
R17**	1,664	same as R24
R18**	1,664	same as R24

Table F-8. Continued.

Species Code*		Spatial Requirement (feet)
R19	4,654	home range diameter
R20**	1,395	same as R36
R21**	1,395	same as R36
R22	732	distance between captures of same individual
R23**	1,664	same as R24
R24	1,664	home range diameter
R25**	884	same as R26
R26	884	home range diameter
R27**	884	same as R26
R28**	884	same as R26
R29	51	home range diameter
R30**	884	same as R26
R31**	884	same as R26
R32**	884	same as R26
R33	128	distance between captures of same individual
R34**	128	same as R33
R35	331	home range diameter
R36	1,395	home range diameter
R36	698	1/2 of home range diameter (entire home range includes the marsh as well as the adjacent forest)
R37	202	1/2 of home range diameter (entire home range includes the marsh as well as the adjacent forest)
R37	405	home range diameter
R38	2,756	home range diameter
R39**	1,664	same as R24
B 1	240	minimum distance from humans tolerated
B 2	20	very tolerant of humans while feeding
B 3	20	very tolerant of humans while feeding
B 4	20	very tolerant of humans while feeding
B 5**	120	same as B10
B 6	300	minimum distance from humans tolerated
B 7	300	minimum distance from humans tolerated
B 8**	300	same as B 6
B 9	960	nest location landward from the waterward extent of the forest (660) + minimum distance from humans tolerated (300)
B 9	300	minimum distance from humans tolerated
B10	120	minimum distance from humans tolerated
B10	150	nest location landward from the waterward extent of the forest (30) + minimum distance from humans tolerated (120)
B11**	120	same as B10

Table F-8. Continued.

Species Code*		Spatial Requirement (feet)
B12**	300	same as B 6
B13**	300	same as B 6
B14**	795	same as B15
B15	795	home range diameter
B16**	795	same as B15
B17**	795	same as B15
B18	1,500	secondary restrictive activity zone around eagle nests
B19**	795	same as B15
B20	20	very tolerant of humans near nest site
B21**	300	same B 6 (winter migrant, not tolerant of humans)
B22	10,472	home range diameter
B23**	60	same as B27 (fairly tolerant of humans)
B24**	180	same as B28 (minimum distance tolerated)
B25	14	nest location landward from the waterward extent of the forest
B26**	60	same as B27 (fairly tolerant of humans)
B27	84	nest location landward from the waterward extent of the forest (24) + minimum distance from humans tolerated (60)
B28	243	nest location landward from the waterward extent of the forest (63) + minimum distance from humans tolerated (180)
B29	322	nest location landward from the waterward extent of the forest (82) + minimum distance from humans tolerated (240)
B30	64	nest location landward from the waterward extent of the forest
B31**	180	same as B28 (minimum distance tolerated)
B32**	180	same as B28 (minimum distance tolerated)
B33**	180	same as B28 (minimum distance tolerated)
B34**	1,500	same as B18
B35	240	minimum distance from humans tolerated
B36**	1,500	same as B18
B37**	84	same as B27
B38	120	minimum distance from humans tolerated
B39**	1,800	same as B42
B40**	1,800	same as B42
B41**	1,800	same as B42
B42	1,800	home range diameter
B43**	1,800	same as B42
B44**	180	same as B46
B45**	180	same as B46
B46	180	minimum distance from humans tolerated
B47**	60	same as B27 (fairly tolerant of humans)
B48**	60	same as B27 (fairly tolerant of humans)
B49	240	minimum distance from humans tolerated

Table F-8. Continued.

Species Code*	Spatial Requirement (feet)	
B50	240	minimum distance from humans tolerated
B51	240	minimum distance from humans tolerated
B52	240	minimum distance from humans tolerated
B53	300	minimum distance from humans tolerated
B54**	180	same as B46
B55**	180	same as B46
B56**	180	same as B46
B57**	180	same as B46
B58**	180	same as B46
B59**	180	same as B46
B60**	60	same as B27 (fairly tolerant of humans)
B61**	60	same as B27 (fairly tolerant of humans)
B62**	180	same as B46
B63**	180	same as B46
B64**	180	same as B46
B65**	180	same as B46
B66**	180	same as B46
B67	180	minimum forest habitat width
B68	180	minimum forest habitat width
B69**	60	same as B27 (fairly tolerant of humans)
B70**	60	same as B27 (fairly tolerant of humans)
B71	4,352	home range diameter
B72	4,221	home range diameter
B73	740	home range diameter
B74**	80	same as B75
B75	180	minimum forest habitat width
B76**	60	same as B27 (fairly tolerant of humans)
B77**	60	same as B27 (fairly tolerant of humans)
B78	196	home range diameter
B79**	196	same as B78
B80**	180	same as B67
B81**	180	same as B67
B82**	210	same as B86
B83**	210	same as B86
B84	135	home range diameter
B85**	210	same as B86
B86	210	minimum forest habitat width
B87	> 450	minimum forest habitat width
B88	180	minimum forest habitat width

Table F-8. Continued.

Species Code*	Spatial Requirement (feet)	
B89**	180	same as B88
B90	> 450	minimum forest habitat width
B91	165	home range diameter
B92**	165	same as B91
B93**	196	same as B78
B94**	196	same as B78
B95**	196	same as B78
M 1**	370	same as M 4
M 2**	60	same as B27 (fairly tolerant of humans)
M 3	700	maximum distance found from shore
M 4	370	home range diameter
M 5	30	home range diameter
M 6**	30	same as M 5
M 7	17,287	home range diameter
M 8	3,702	home range diameter
M 8	1,851	1/2 home range diameter (entire home range includes the marsh as well as the adjacent flatwood or hammock forest)
M 9	6,600	home range diameter
M10	300	maximum distance of den from closest water
M11	5,912	home range diameter

*See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

**Because no spatial requirement data were found for these species, the numbers used here represent spatial requirements for species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

Table F-9. Semi-aquatic and Wetland dependent Wildlife species of East Central Florida: SPATIAL REQUIREMENTS OF ALL SPECIES ARRANGED IN ASCENDING ORDER

Species Code*		Spatial Requirement (feet)
B25	14	nest location landward from the waterward extent of the forest
B 2	20	very tolerant of humans while feeding
B 3	20	very tolerant of humans while feeding
B 4	20	very tolerant of humans while feeding
B20	20	very tolerant of humans while feeding
M 5	30	home range diameter
M 6**	30	same as M 5
R29	51	home range diameter
R13**	51	same as R29
R14**	51	same as R29
B23**	60	same as B27 (fairly tolerant of humans)
B26**	60	same as B27 (fairly tolerant of humans)
B47**	60	same as B27 (fairly tolerant of humans)
B48**	60	same as B27 (fairly tolerant of humans)
B60**	60	same as B27 (fairly tolerant of humans)
B61**	60	same as B27 (fairly tolerant of humans)
B69**	60	same as B27 (fairly tolerant of humans)
B70**	60	same as B27 (fairly tolerant of humans)
B76**	60	same as B27 (fairly tolerant of humans)
B77**	60	same as B27 (fairly tolerant of humans)
M 2**	60	same as B27 (fairly tolerant of humans)
B30	64	nest location landward from the waterward extent of the forest
B27	84	nest location landward from the waterward extent of forest (24) + minimum distance from humans tolerated (60)
B37**	84	same as B27
R33	128	distance between captures of same individual
B10	120	minimum distance from humans tolerated
B11**	120	same as B10
B38	120	minimum distance from humans tolerated
B5**	120	same as B10
R33	128	distance between captures of same individual
R34**	128	same as R33
B84	135	home range diameter
B10	150	nest location landward from the waterward extent of forest (30) + minimum distance from humans tolerated (120)
B91	165	home range diameter
B92**	165	same as B91
B46	180	minimum distance from humans tolerated
B44**	180	same as B46
B45**	180	same as B46
B54**	180	same as B46

Table F-9. Continued.

Species Code*	Spatial Requirement (feet)
B55**	180 same as B46
B56**	180 same as B46
B57**	180 same as B46
B58**	180 same as B46
B59**	180 same as B46
B62**	180 same as B46
B63**	180 same as B46
B64**	180 same as B46
B65**	180 same as B46
B66**	180 same as B46
A 4	180 maximum distance found from closest water
A 3**	180 same as A 4
A 8**	180 same as A 4
A 9**	180 same as A 4
A10**	180 same as A 4
A18**	180 same as A 4
A19**	180 same as A 4
A20**	180 same as A 4
B24**	180 same as B28 (minimum distance tolerated)
B31**	180 same as B28 (minimum distance tolerated)
B32**	180 same as B28 (minimum distance tolerated)
B33**	180 same as B28 (minimum distance tolerated)
B68	180 minimum forest habitat width
B67	180 minimum forest habitat width
B80**	180 same as B67
B81**	180 same as B67
B75	180 minimum forest habitat width
B74**	180 same as B75
B88	180 minimum forest habitat width
B89**	180 same as B88
B78	196 home range diameter
B79**	196 same as B78
B93**	196 same as B78
B94**	196 same as B78
B95**	196 same as B78
R37	202 1/2 of home range diameter (entire home range includes the marsh as well as the adjacent forest)
B86	210 minimum forest habitat width
B82**	210 same as B86
B83**	210 same as B86

Table F-9. Continued.

Species Code*		Spatial Requirement (feet)
B85**	210	same as B86
B49	240	minimum distance from humans tolerated
B50	240	minimum distance from humans tolerated
B51	240	minimum distance from humans tolerated
B52	240	minimum distance from humans tolerated
B35	240	minimum distance from humans tolerated
B 1	240	minimum distance from humans tolerated
B28	243	nest location landward from the waterward extent of forest (63) + minimum distance from humans tolerated (180)
B 9	300	minimum distance from humans tolerated
B 6	300	minimum distance from humans tolerated
B 7	300	minimum distance from humans tolerated
B 8**	300	same as B 6
B12**	300	same as B 6
B13**	300	same as B 6
B21**	300	same as B 6 (winter migrant, not tolerant of humans)
B53	300	minimum distance from humans tolerated
M10	300	maximum distance of den from closest water
B29	322	nest location landward from the waterward extent of forest (82) + minimum distance from humans tolerated (240)
R35	331	home range diameter
A14	350	maximum distance found from permanent water
A15**	350	same as A14
A16**	350	same as A14
A17**	350	same as A14
M 4	370	home range diameter
M 1**	370	same as M 4
R37	405	home range diameter
B87	> 450	minimum forest habitat width
B90	> 450	minimum forest habitat width
R 2	497	home range diameter
R 4**	497	same as R 2
R12**	497	same as R 2
R36	698	1/2 of home range diameter (entire home range includes the marsh as well as the adjacent forest)
M 3	700	maximum distance found from shore
R22	732	distance between captures of same individual
B73	740	home range diameter
B15	795	home range diameter
B14**	795	same as B15
B16**	795	same as B15

Table F-9. Continued.

Species Code*		Spatial Requirement (feet)
B17**	795	same as B15
B19**	795	same as B15
R26	884	home range diameter
R25**	884	same as R26
R27**	884	same as R26
R28**	884	same as R26
R30**	884	same as R26
R31**	884	same as R26
R32**	884	same as R26
B 9	960	nest location landward from the waterward extent of forest (660) + minimum distance from humans tolerated (300)
R 9	1,350	maximum distance from closest water to winter hibernation site
R3**	1,350	same as R 9
R 5**	1,350	same as R 9
R 6**	1,350	same as R 9
R10**	1,350	same as R 9
R11**	1,350	same as R 9
R36	1,395	home range diameter
R20**	1,395	same as R36
R21**	1,395	same as R36
B18	1,500	secondary restrictive activity zone around eagle nests
B34**	1,500	same as B18
B36**	1,500	same as B18
R24	1,664	home range diameter
R15**	1,664	same as R24
R16**	1,664	same as R24
R17**	1,664	same as R24
R18**	1,664	same as R24
R23**	1,664	same as R24
R39**	1,664	same as R24
B42	1,800	home range diameter
B39**	1,800	same as B42
B40**	1,800	same as B42
B41**	1,800	same as B42
B43**	1,800	same as B42
M 8	1,851	1/2 home range diameter (entire home range includes the marsh as well as the adjacent flatwood or hammock forest)

Table F-9. Continued.

Species Code*		Spatial Requirement (feet)
R38	2,756	home range diameter
M 8	3,702	home range diameter
A 5	4,000	maximum distance found from breeding pond
A 6**	4,000	same as A 5
A 7**	4,000	same as A 5
B72	4,221	home range diameter
B71	4,352	home range diameter
R19	4,654	home range diameter
R 8	5,280	maximum distance from closest water to nest
R 7**	5,280	same as R 8
M11	5,912	home range diameter
A13	6,336	distance between captures of same individual
A 1**	6,336	same as A13
A 2**	6,336	same as A13
A11**	6,336	same as A13
A12**	6,336	same as A13
M 9	6,600	home range diameter
B22	10,472	home range diameter
R 1	11,045	home range diameter
M 7	17,287	home range diameter

*See Appendix C for species names. A = Amphibian, R = Reptile, B = Bird, M = Mammal

**Because no spatial requirement data were found for these species, the numbers used here represent spatial requirements for species that are closely related, similar-sized, found in comparable habitats, and categorized in corresponding guilds.

APPENDIX G:

Habitat descriptions. (SCS, 1989)

SALT MARSHES

This habitat occurs along the Atlantic coast and inland along tidal rivers. It appears as an open expanse of grasses, sedges, and rushes. Vegetation often occurs in distinct zones within the salt marsh complex as a result of water levels from tidal action and salinity concentrations in water and soils. Some species have a wide tolerance range and may be found throughout the grass marsh. Plants in this group are black needlerush and seashore saltgrass. Smooth cordgrass is usually dominant in this system and more indicative of low, regularly flooded marsh, while the high marsh supports salt myrtle, marshhay cordgrass, marshelder, saltwort and sea oxeye. Plants that characterize this habitat are:

HERBACEOUS PLANTS AND VINES - Sea blite (Suaeda linearis), Sea pursland (Sesuvium portulacastrum).

GRASSES AND GRASSLIKE PLANTS - Big cordgrass (Spartina cynosuroides), Marshhay cordgrass (Spartina patens), Olney bulrush (Scripus americanus), Seashore dropseed (Scorobolus virginicus), Seashore paspalum (Pasalum vaginatum), Seashore saltgrass (Distichlis spicata), Shoregrass (Monanthochole littoralis), Smooth cordgrass (Spartina alterniflora).

FRESHWATER MARSHES

This habitat appears as an open expanse of grasses, sedges, and rushes, and other herbaceous plants in areas where the soil is usually saturated or covered with surface water for two or more months during the year. Plants that characterize this habitat are:

GRASSES AND GRASSLIKE PLANTS - Beak rushes (Rhynchospora spp.), Blue maidencane (Amphicarpum muhlenbergianum), Bottlebrush threawn (Aristida spiciformis), Bulrushes (Scirpus spp.) Caric sedges (Carex spp.), Clubhead cutgrass (Leersia hexandra), Common reed (Phragmites spp.), Flat sedge (Cyperus spp.), Maidencane (Panicum hemitomon), Rush (Juncus spp.), Sawgrass (Cladium jamaicense), Spike rushes (Eleocharis spp.), Umbrella grass (Fuirena spp.), Wild millet (Echinocloa spp.).

HERBACEOUS PLANTS - Arrowhead (Sagittaris spp.), Blue flag (Iris hexagona savannarum), Cattail (Typha spp.), Fire flag (Thalia geniculata), Pickerelweed (Pontederia cordata) and (Pontederia lanceolata), Smartweed, (Polygonum spp.), Pennywort (Hydrocotyle spp.).

SHRUBS - St. Johns wort (Hypericum spp.), Primrose willow (Ludwigia lanceolata), Smartweed (Polygonum spp.), Pennywort (Hydrocotyle spp.).

CYPRESS SWAMPS

This habitat occurs along rivers, lake margins, and interspersed throughout other communities such as flatwoods. Bald cypress, along lakes and stream margins, is dominant and often is the only plant found in large numbers. Pond cypress occurs in cypress heads or domes which are usually found in flatwoods. Plants that characterize this habitat are:

TREES - Bald cypress (Taxodium distichum), Blackgum (Nyssa sylvatica), Coastal plain willow (Salix caroliniana), Pond cypress (Taxodium distichum var. nutans), Red maple (Acer rubrum).

SHRUBS - Common buttonbush (Cephalanthus occidentalis), Southern waxmyrtle (Myrica cerifera).

HERBACEOUS PLANTS AND VINES - Cinnamon fern (Osmunda cinnamomea), Fall-flowering ixia (Nemastylis floridana), Laurel greenbriar (Smilax laurifolia), Pickerel weed (Pontederia cordata), Royal fern (Osmunda regalis).

GRASSES AND GRASSLIKE PLANTS - Maidencane (Panicum hemitomon), Narrowleaf sawgrass (Cladium mariscoides).

HARDWOOD SWAMPS

This habitat occurs along rivers and in basins which are either submerged or saturated part of the year. Bayhead swamps are included here. The vegetation is primarily deciduous hardwood trees. Many areas may have originally been dominated by cypress, but when the large cypress were cut out, the hardwoods became dominant. Plants that characterize this habitat are:

TREES - Blackgum (Nyssa sylvatica), Red maple (Acer rubrum), Sweetbay (Magnolia virginiana), Water ash (Fraxinus carolinensis).

SHRUBS - Buttonbush (Cephalanthus occidentalis), Dahoon holly (Ilex cassine).

HERBACEOUS PLANTS AND VINES - Cinnamon fern (Osmunda cinnamomea), Lizard's tail (Saururus cernuus), Royal fern (Osmunda regalis), Wild pine (Tillandsia fasciculata).

HAMMOCKS

This habitat complex includes xeric, mesic, and hydric hammocks. They occur in a variety of site conditions from strongly sloping, dry, sandy sites to level, poorly drained sites with high water tables. This habitat supports a luxurious growth of vegetation with a diversity of species. Plants that characterize this habitat are:

TREES - Black cherry (Prunus serotina), Flowering dogwood (Cornus florida), Pignut hickory (Carya palustris), Cabbage palm (Sabal palmetto), Hawthorns (Craetagus spp.), Laurel oak (Quercus laurifolia), Live oak (Quercus virginiana), Red bay (Persea borbonia), Red maple (Acer rubrum), Sweetbay (Magnolia virginiana), Sweetgum (Liquidambar styraciflua), Water oak (Quercus nigra), Magnolia (Magnolia grandiflora).

SHRUBS - American beautyberry (Callicarpa americana), Arrowwood (Viburnum dentatum), Sparkleberry (Vaccinium arboreum), Waxmyrtle (Myrica cerifera), Sawpalmetto (Serenoa repens).

HERBACEOUS PLANTS AND VINES - Cat greenbriar (Smilax glauca), Common greenbriar (Smilax rotundifolia), Crossvine (Bignonia capreolata), Partridge berry (Mitchella repens), Partridge pea (Cassia spp.), Virginia creeper (Parthenocissus quinquefolia), Wild grape (Vitis spp.), Blackberry (Rubus spp.).

GRASSES AND GRASSLIKE PLANTS - Low panicum (Panicum spp.), Switchgrass (Panicum virgatum), Eastern gamagrass (Tripsacum dactyloides), Maidencane (Panicum hemitomon).

FLATWOODS

This habitat occurs on nearly level land. Water movement is very gradual. During the rainy season, this water may be on or near the soil surface. At other times, the soil can be fairly dry. The natural vegetation of this habitat is typically scattered pine trees and occasionally cabbage palms with an understory of sawpalmetto and grasses. The plants that characterize this habitat are:

TREES - Live oak (Quercus virginiana), Slash pine (Pinus elliottii), Cabbage palm (Sabal palmetto).

SHRUBS - Sawpalmetto (Serenoa repens), waxmyrtle (Myrica cerifera), Ground blueberry (Vaccinium myrsinites), Gallberry (Ilex glabra), Shining sumac (Rhus copallina).

HERBACEOUS PLANTS AND VINES - Creeping beggarweed (Desmodium incanum), Deer tongue (Trilisa odoratissima), Gay feather (Liatris gracilis).

GRASSES AND GRASSLIKE PLANTS - Chalky bluestem (Andropogon capillipes), creeping bluestem (Schizachyrium stoloniferum), Lopsided indiagrass (Sorghastrum secundum), Low panicum (Panicum spp.).

SANDHILLS

This habitat includes the sand scrub and longleaf pine-turkey oak ecological communities. Sandhills occur on rolling land with strong slopes. Water movement is rapid through the sandy soil. Plants that characterize this habitat are:

TREES - Bluejack oak (Quercus incana), Chapman oak (Quercus chapmannii), sand live oak (Quercus virginiana var.), Sand pine (Pinus clausa), Longleaf pine (Pinus palustris), Turkey oak (Quercus laevis).

SHRUBS - Dwarf huckleberry (Gaylussacia dumosa), Gopher apple (Chrysobalanus oblongifolius) Prickly pear (Opuntia spp.).

HERBACEOUS PLANTS AND VINES - Grassleaf goldenaster (Heterotheca graminifolia), Deermoss (Cladonia spp.), Aster (Aster spp.), Blazing star (Liatris tenuifolia), Butterfly pea (Centrosema virginianum), Elephant's foot (Elephantopus spp.), Partridge pea (Cassia spp.), Pineland beggarweed (Desmodium strictum), Sandhill milkweed (Asclepias humistrata), Wild indigo (Baptista spp.).

GRASSES AND GRASSLIKE PLANTS - Yellow indiagrass (Sorghastrum nutans), Low panicum (Panicum spp.), Pinewoods dropseed (Sporobolus junceus).

Copies of this report may be purchased for \$10.00 from:

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Final Report

**AN EVALUATION OF THE APPLICABILITY OF
UPLAND BUFFERS FOR THE WETLANDS OF THE WEKIVA BASIN**

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with

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Preface

This document is the product of a contract between the St. Johns River Water Management District and the Center for Wetlands, University of Florida to evaluate the applicability of upland buffers to the wetlands of the Wekiva River Basin. The purpose of this report is to develop critical insight concerning the need for, potential applicability of, and criteria for delineating upland buffers in the Wekiva Basin. In this report, we have reviewed the literature related to buffers, wetlands, wildlife habitat, transition zones, water quality and quantity, and other models and criteria for determining buffer zones. We have reviewed this information as a means of evaluating the need for an upland buffer to protect the water resources of the Wekiva River System.

Whether an upland/wetland buffer zone is desirable and/or necessary for the Wekiva River System is not a question in the minds of the authors. Our review of the literature; our understanding of the unique character of the Wekiva River System; our knowledge of the limitations of the criteria for issuing of permits for construction, operation, and maintenance of stormwater systems; the limits of jurisdiction under current wetlands regulation; and the expressed policies of the Governing Board of the St. Johns River Water Management District suggest that an upland buffer is desirable and necessary if the wetlands, waters, and wildlife of the Wekiva River Basin are to be preserved.

Two issues have surfaced during our study which need clarification as a prelude to the report. Both are related to the language in Chapter 373,

Florida Statutes. In 373.413 and 373.416 a distinction is drawn between permits for construction and permits for operation and maintenance of water management systems. Both kinds of permits require that such systems cannot be harmful to the water resources of the District. Operation and maintenance permits are subject to an additional criterion: such activities cannot be inconsistent with the overall objectives of the District. Using one standard for construction and two for operation and maintenance is confusing. Operation and maintenance cannot be separated from construction, since once constructed, a system normally will be operated. Or to put it another way, if constructed, it seems backwards to then evaluate a permit for operation and find a system inconsistent with District objectives. Such a finding should be made prior to construction so that the project may be altered or redesigned to conform to District objectives. Thus, in our view, the review process for construction permit applications must also include operation and maintenance concerns. The District needs to review whether the constructed system will be harmful to the water resources and whether it will be consistent with the District's overall objectives during the construction permit review process.

The second issue is related to the definition of "water resources." We believe that one cannot separate the waters of the District from the overall aquatic system when determining harm to the resource. The water resource must include not only the abiotic substance (H_2O), but also the other abiotic substances and the biotic organisms that are carried and sustained by it. The water resource cannot be artificially dissected into parts which are regulated separately (although it is attempted quite often, much to the detriment of the resource); for as the water goes, so the organisms, and vice-versa.

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I. INTRODUCTION

I.A. The Concept of Buffer Zones

The landscape is a mosaic of uplands and wetlands, developed lands and natural lands, and forests and fields. Somehow, without complete knowledge about how these pieces fit together, society must make decisions concerning how best to assemble the puzzle. Some decisions are easier than others, especially when there are no conflicting elements. Unlike a puzzle, however, the ease of adding a new land use to the landscape is inversely related to the number of pieces already on the board. As more and more land uses are added to the landscape, the decisions concerning placement require more and more thought.

The more pieces there are on the board, the more conflicts there will be between pieces. Most often, it is at the borders between pieces where conflicts arise. Decisions are easier to make when adjoining uses are not significantly different, i.e., when the existing land uses abutting the boundaries of a decision piece are similar to the proposed use of the piece in question. However, when adjoining uses are significantly different, consideration must be given to the interrelationships that are being created and to how one piece might affect surrounding pieces.

When uses are significantly different, or where the potential for conflict is serious, it is common practice to create a buffer between them. Thus we have buffers around airports, nuclear power plants, and bombing ranges. Demilitarized zones (DMZ's) between warring nations are often used to maintain peace. Zoning in urban areas uses successively lower-density districts to make

transitions between high-density land uses and low-density residential districts. Buffer zones can be relatively narrow, like the grassed shoulders of highways which separate high-energy roads from forested landscapes, or quite wide, like the DMZ between North and South Korea. Generally, as the density of activity or the potential for conflict increases, the width of the buffer necessary to contain the negative effects increases proportionally. In addition, as the difference in activity level between bordering land uses increases, the width of the border must increase, since it is not the absolute magnitude of activity but rather the relative magnitudes of activity between neighboring uses that require buffering.

I.B. Buffers for Wetlands, Wildlife, and Water Quality

The differences between developed lands and wild lands are significant; the more intensely developed, the more the differences. Frequently, on developed lands the native vegetation is removed and replaced with exotics, drainage is improved, soil is compacted or covered with impervious materials, wildlife habitat is replaced with human habitat, and activity levels increase 10 to 100 times those found in the wild. The gradient in the intensity of noise, wastes, temperature, light, structure, and activity from undeveloped to developed lands is remarkable. It is this gradient that affects the edge between developed and wild lands, creating a new environment unlike the original and not at all similar to the developed land.

The edge between wild lands and developed lands is characterized by overflows of materials and energy that "flow" from high density to low. Water runs off developed land, carrying sediments and nutrients. Noise from developed land intrudes into the edge, disrupts natural activity, and interferes with the less intense communications of wildlife that are cues for

territorial protection and breeding. Increased temperatures caused by removing tree canopy and paving the ground surface have marked effects on the forest microclimate.

Edges are common in the landscape, with or without development. In the wild landscape, however, sharp edges are hard to find. The lake edge is not a clean line; as the water level rises and falls throughout the year, it creates a littoral zone that is neither open water nor dry land, but somewhere in between. The sea edge is buffered by estuaries and coastal wetlands, which are neither open ocean nor dry land. The forest edge is a transition from the mature canopy with moist soils and minimal understory through a zone of more open canopy, with drier soils and dense understory, to the prairie with its xeric soils and lack of woody vegetation.

As the landscape is developed, the wild lands that surround cities retreat. If the world was a homogeneous flat plain and development happened as a simple outward progression from the central city, the edge would constantly be moving and little need would be generated for buffer zones between developed lands and undeveloped lands. However, the world is not homogeneous, but heterogeneous, having many differences, many patches, and many obstructions to development. The development process becomes patchy, areas are skipped, wetlands left, and parks created. Areas are set aside as wildlife habitat, or protected for water quality purposes, or left undeveloped as remnants to remind us of what the landscape was once like. The patches that are created in this manner undergo constant change as they "evolve" or succeed toward ecological communities that are islands in the developed landscape.

In Florida, under continuing growth pressure, the wild landscape has been mostly developed, leaving behind large and small islands of managed national, state, and local parks, along with many wetlands. Wetlands were first left

behind because their development required a relatively greater commitment of funds and time than they were worth. Where the demand was high, in coastal areas for instance, wetlands were converted into dry lands and developed. Development skirted the swamps and marshes of inland areas not as a result of comprehensive planning, but because of piecemeal decisions made on a project-by-project basis. As land became more valuable and wetlands were threatened, state and local governments responded to increased pressure by enacting laws to protect the special values of wetlands recognized by society. Of primary concern was their function for maintaining clean, productive surface water and their value as very productive wildlife habitat.

In the minds of many, wetlands are now "protected." The Warren S. Henderson Wetlands Protection Act of 1983 established state permitting authority over activities in wetlands by virtue of the fact that they were defined as waters of the state. A methodology for determining state waters, developed as a rule (Ch. 17-4 FAC) by the Florida Department of Environmental Regulation, was required by the Henderson Act. The rule uses vegetation as a means of determining landward extent of state waters. Plant species normally found in wetlands are sorted into three broad categories: submerged species, transitional species, and "invisible" species. All plants not found on these plant lists are considered upland species. The rule then uses simple formulas that relate dominance of these species to determine the upland edge of "state waters." It is important to note that at no time does the rule or the original legislation (except in the name of the Act) delineate "wetlands". It only refers to a selective list of plant species. The intent of the rule and legislation is to protect state waters, which include areas that are dominated by certain plant species that indicate regular and periodic inundation. Wetlands can, and do, extend landward of this jurisdictional line.

The area immediately adjacent to and upland of the jurisdictional line is often a transition zone between wetlands and uplands. It is a zone that is wetland at times and upland at times, exhibiting characteristics of each and vegetated by species that are found in each. It is important to both the wetland and the upland as a seed reservoir, as habitat for aquatic and wetland-dependent wildlife species, as a refuge to wildlife species during high-water events, and as a buffer to the extreme environmental conditions of sharp vegetated edges.

To protect the values and functions of areas that are waterward of the jurisdictional line, attention must be given to the area immediately upland of the line. Wholesale alteration of this edge has immediate and potentially large-scale permanent impacts on the waterward area. Wetland-dependent wildlife species that are frequent users of this area are excluded, silt laden surface waters are no longer filtered, the microclimate is greatly affected and groundwaters may be diverted or drained. In the natural state the transition zone is a buffer zone both for the adjacent wetland and state waters and for the wildlife species that inhabit them. It should be recognized as such, and afforded some degree of development control.

I.C. Intent and Scope of the Report

This report is intended to provide a detailed review of the existing scientific understanding of upland buffer zones, their importance to the adjacent wetlands and waters, and the effects of alterations of these transitional areas on downstream water quality and quantity, and wetland wildlife habitat values. As we researched the topic, we found a dearth of information directly addressing buffer zones. However, there has been much recent interest in the literature concerning the impacts of edges on wildlife

habitat values, and some recent investigations of the extent and species composition of transitional zones between wetlands and uplands.

The habitat values of transitional areas are related to between and within habitat needs of wildlife, the water quality values of buffer zones are related to protection of surface and groundwater, and their value related to water quantity issues is in their ability to mitigate adverse drainage impacts.

The report is organized in five parts with an appendix that gives lists of aquatic and wetland-dependent wildlife species that are characteristic of the Wekiva Basin. After the Introduction, the second section reviews the literature and summarizes and relates it to the concept of a resource buffer zone. The third section gives a brief physical and ecological description of the Wekiva Basin. The fourth section reviews the Water Management District's statutory criteria (Chapter 373 FS) and permit criteria in 40C-4, 40C-41, and 40C-42 FAC and relates them to protection of the water resources of the Basin. The fifth section develops a methodology for determining buffer zone requirements.

II. REVIEW OF THE LITERATURE

II.A. Significance of Buffer Zones

II.A.1. Ecological Significance of Transition Zones

The zone that lies between what are unconditionally identified as uplands and wetlands is a zone of transition (sometimes called an ecotone). In this zone, environmental conditions resemble neither the true wetland nor upland, but fluctuate and may resemble each during different times of the year or from one year to the next. Plant species that characterize transition zones may be an assemblage of both wetland species and upland species and may contain species that are not found in either of the two adjacent zones. It has long been held that highest species diversity occurs in areas of habitat overlap (MacArthur and Pianka 1966, Allen 1962, Ranney 1977).

The Florida Department of Environmental Regulation (FDER), in its rules concerning the delineation and definition of landward extent of waters of the state, recognizes three main categories of plants: submerged, transitional, and "invisible" species (Ch. 17-4.022 FAC). In an area dominated by transitional species, a preponderance of evidence that indicates it is regularly inundated is necessary before the area is considered a state water. In other words, without regular inundation, an area dominated by transitional species is not considered state waters, and by inference, therefore not a wetland.

Under 17-4.022 FAC, Florida does not recognize purely transitional areas as state waters, and as a result does not recognize them as important or necessary for protection under the Warren S. Henderson Wetlands Protection Act

(Chapter 430 Florida Statutes). However, their ecological significance as wildlife habitat and seedbanks, as well as their role in maintaining the integrity of the adjacent wetland community, is unrelated to their classification under 17-4.022 FAC. The FDER has chosen a cut-off based on dominance of "submerged" species to delineate state waters. The line so determined in most cases classifies all vegetation to the landward side as uplands. Most transition zones are to the landward side of the FDER jurisdictional line.

The role of transition zones as wildlife habitat for wetland-dependent species will be reviewed in subsequent sections, as well as their role as seedbanks. Generally, their ecological value stems from (1) direct use by wildlife and (2) seed sources for plant species that are more upland in growth requirements, yet are found within wetlands and are an important component of the community. Transition zones occupy the key upland fringe and as a result are the main source for seed material that contributes to the spatial heterogeneity of wetlands.

Wetland communities are not homogeneous. They are heterogeneous communities whose spatial variation in species composition is probably controlled by topography and ultimately by periods of inundation. Higher areas sometimes referred to as hummocks range in size from a few meters to several hectares. Hummocks have fewer periods of inundation and water depths are shallower, resulting in conditions that favor more "mesic" species. Lower areas are favored by those species that are tolerant of flooding. This heterogeneity of the wetland landscape is one of the key factors that gives it its diversity and wildlife value. Wildlife values are greatly enhanced as a result of the increased diversity of vegetation and undulating topography.

Studies of the Florida landscape indicate that the plant species diversity in transition zones is higher than the diversity of either the adjacent wetland or upland. Clewell (1982) found five community types on the Alafia River in central Florida along a gradient from wet to dry of which the "Moist Mesic Forest" seems to occupy that area that is transitional. The number of plant species found in this community exceeded all others by 25%. In Gross's (1987) study of 12 small-stream floodplain ecosystems in north and central Florida, 12 vegetation types were distinguished, using cluster analysis of which the three most diverse appeared to occur most often in the transitional areas. Studying methods for determining transition zones, Hart (1984) documented species composition of the wetland to upland continuum of eight wetland community types of north central Florida. She found that the transition zones were more diverse than either the wetland or upland and were different physiognomically from adjacent wetlands, yet were "...aligned more closely with wetlands than with uplands and were composed of species that tended to alternate between wetland and transition zones." The width of transition zones varied from a minimum of 10 m to a maximum of 30 m depending on the method used to delineate the zone and the type of wetland.

Wildlife species richness shows direct spatial relationships to the increased diversity of transition zones. Studies of forest edges (see Edge Effects on Wildlife) have documented increases in species richness and density of individuals within ecotones between habitats. Vickers et al. (1985) found that species richness and abundance of herpetofauna were greater along the edges of six wetlands in north central Florida than in either the wetland or upland habitat. Harris and Vickers (1984) found that virtually all mammals, because of their cursorial mode of locomotion and frequently herbivorous food habits, reside in "peripheral" areas, i.e., the transition zones. When water

levels were increased, the movement of wildlife to the peripheral areas was also increased, suggesting the important role that transition zones play in providing refuge from wet-season increases in water levels in wetlands. The ecotone seems to play an even more important role when surrounded by clearcuts. Harris and McKlveen (1982) found a greater abundance and diversity of breeding birds in the ecotone between cypress wetlands and clearcut areas than in the ecotone between cypress and pinelands.

Classifying the bottomland hardwood ecosystem into five classes, Wharton et al. (1981) represented the transition to upland communities as the fifth class. They listed the importance of environmental factors to fauna in each zone. Of the five classes, the transitional zone ranked highest in importance overall and highest in 18 of 27 factors, among which are:

1. Retardation of "side flooding,"
2. Detritus source,
3. Diversity of oaks,
4. Availability of large variety of flora and fauna,
5. Diversity of forest strata,
6. Refuge from high water, and
7. Forage and cover for upland species.

The importance of the highest zones (transitional zones) of bottomland hardwoods to detrital food chains of downstream systems has been documented (Livingston et al. 1976, White et al. 1979). These studies showed that the infrequent pulses of organic matter and detritus form the higher zones in the floodplain after extreme flood and rainfall events correspond to peaks in fish production.

Topography plays an important role in controlling the width of transition zones. The transition zone between wetland and upland may be only a few meters in width or may extend for several hundred meters. In areas of very low relief, where the landscape has little or no slope, the transition zone may be extensive and ill-defined; yet, in landscapes where slopes are more prominent,

the transition from upland to wetland may be far more abrupt. In studies of the central Florida landscape (Brown et al. 1984, 1985, and 1986), transition zones as wide as 30 m were delineated using species composition as the controlling variable. Gross (1987) found community types using cluster analysis that were dominated by transition zone vegetation on central Florida streams as wide as 80 m, but 40-m zones were more common.

II.A.2. Physical and Ecological Significance of Wetland Forest Edges

When forest is cleared and some forested remnants are left, as when the landscape is developed for agriculture or urban uses or clearcut during silviculture operations, the remaining forested patches contain induced edge where there once was a forest continuum. These forested tracts develop characteristic edge habitats that differ from habitat of interior forests. Ranney (1977), in a review of the literature on forest island edges, suggested that edge habitat differed from interior forests in at least six ways:

1. Tree species composition,
2. Primary production,
3. Structure,
4. Development,
5. Animal activity, and
6. Propagule dispersal capabilities.

The importance of edge is in its effects on the forested habitat and eventually on the suitability of the habitat for indigenous fauna. The conditions created when the forest continuum is cleared have detrimental long term consequences on the remaining forest system. Using current jurisdictional lines (Ch. 17-4.022 FAC) to determine the landward extent of state waters and given current development practices, the forest edge created between wetland and developed upland will coincide with the jurisdictionally determined line of regularly inundated wetland. In most instances this does not include transitional zones to the landward side of the jurisdictional line. The

creation of an edge at this wetland/"upland" boundary opens the wetland to the many changes associated with edge conditions.

When a forested edge is created through clearing and/or partial removal of the forest canopy, steep gradients of solar radiation, temperature, wind speed, and moisture are incurred between the relative extremes of the open land and the forest interior (Wales 1967, 1972). Studies of characteristics of newly created edges (Gysel 1951, Swift and Knoeerr 1973, Trimble and Tryson 1966, Wales 1972, 1976) suggest that solar radiation is probably the most important physical parameter influencing conditions at the forest edge. The forest edge environment is characterized by increased solar radiation which in turn increases temperatures and decreases moisture content of soils and relative humidity when combines with effects of increased wind flows. Physical and structural manifestations of these changes include increase of shade-intolerant, xeric tree and shrub species and an increase of species associated with early stages of succession (Gysel 1951, Trimble and Tryson 1966, Wales 1972).

Of particular importance is the effect of increased wind speed on the newly created forest edge; especially when the edge is created at the wetland/upland interface. A major consequence of clearcutting is the loss of buffering of destructive wind speeds by the adjacent tree canopy. Tree windthrows are common along newly created edges since edge trees not exposed to wind velocities of the open landscape are not structurally prepared for them. Wetland trees do not have deep-rooted growth habits, but instead rely on a root mat very near the soil surface to provide structural support in the relatively low bearing-capacity soils of most swamps. Windthrows are relatively more common in the deep organic soils of wetland ecosystems than in forested upland

communities because of soil instability and difficulty of trees to anchor sufficiently.

The spatial effects of forest edge conditions are variable and are highly dependent on the way the edge is maintained. Ranney (1977) summarizes the spatial influences of newly created edges as between 5 and 20 m deep from the forest edge toward the interior. In a study of microclimate on Ft. George Island near Jacksonville, Florida, Hart (1985) determined that most of the microclimatic change between cleared areas and a forest interior in north and south directions occurred within 10 m of the edge, although on western facing edges, 25 m was often required for equivalent microclimatic change. Hart notes that the eventual closure of newly created edges by shrubs and vines will ameliorate negative microclimatic conditions and suggests the planting of fast-growing shrub species in some instances to speed up edge closure. Harris (1984) discusses the "three-tree-height" rule of thumb for the distance over which climatic effects of a surrounding clearcut will penetrate into an old-growth stand. Related to average tree heights of Florida wetland ecosystems, the three-tree-heights rule would suggest the penetration of influences as deep as 70 m.

Conceptually, to maintain the integrity of the wetland community and to insure faunal habitat for wetland-dependent species, buffers from 5 to 70 m in depth are necessary. Clearing at the wetland edge opens the wetland to significant changes. However, with a buffer that encompasses the transitional zone on the landward side of the wetland, negative impacts can be avoided.

Changes in abiotic parameters (due especially to increased solar radiation and wind) towards more xeric conditions along edges lead to corresponding changes in plant and animal communities (see Table 9 in Lovejoy et al. 1986) and in system properties such as nutrient cycling (Ranney 1977). Studies by

Levenson (1981) and Ranney et al. (1981) in Wisconsin have documented major edge effects on the vegetation of forest islands. They found that climatic structural edge influences extend at least 10 to 15 m into a forest on the east, north, and south sides and 30 m on the west side. Once established, characteristic edge associations composed of xeric-adapted and shade-intolerant species act as sources of propagules that invade the forest interior; forest islands below a certain size (about 5 ha in Wisconsin) may be entirely edge habitat in terms of their flora and vegetation structure (Ranney et al. 1981). Such changes may be essentially permanent. In Ohio, Whitney and Runkle (1981) found that small but persistent environmental differences associated with forest edges have greater long-term effects on tree species composition and structure than did severe but relatively brief disturbances associated with logging.

II.A.3. Water Quality Benefits of Buffer Zones

The water quality benefits of buffer zones are related to the ability of the zone to abate destructive water velocities and quantities of pollutants carried by surface runoff from uplands that may have a negative impact on downstream water quality, flora, and fauna. Soils of transitional areas are generally characterized by a low accumulation of organic matter (Gross 1987, Clewell 1982) but have accumulations of organic debris on the order of 1 to 5 tons per ha, depending on vegetative cover (Hewlett 1982). This organic debris can absorb about 98% of rainfall energy, minimizing erosion potential. Known as litter detention storage, it disperses the energy of water that would otherwise break bonds of soil materials and produces a slurry of mud and eroded soil. The kinetic energy of sediment transport increases rapidly as the second power of water velocity (Hewlett 1982) suggesting that as a slope increases or

loses obstructions (such as vegetation) to uninterrupted flow, erosion potential increases dramatically.

Occupying topographic lows in the landscape, wetlands are particularly susceptible to erosional deposition from higher grounds and to erosional scouring as a result of increased water velocities from mismanaged upland surface waters. Maintaining undisturbed vegetation in transition zones can help to minimize these destructive forces. The Florida Division of Forestry's Silviculture Best Management Practices (BMP) Manual (1979) recommends a Discretionary Zone (DZ) for land occurring within 300 ft of a watercourse. This 300-foot-wide strip of land is considered the zone most influential to surface water quality. Recommendations are given for varying site sensitivities regarding the intensity level of activities such as construction of roads, site preparation, and harvesting practices. Within the DZ, two Streamside Management Zones (SMZ) are further delineated: a fixed primary and a variable secondary zone, each of which has been assigned special management criteria. The primary zone is 10 m from the edge of the watercourse,¹ while the secondary zone is from 10 to about 50 m from the water's edge. The width of the secondary zone is determined by the soil and topographic characteristics of the site. Within each of the SMZ's, recommendations for site preparation and harvesting are given relative to slope and soil erodibility.

Since the main objective of Silviculture BMP's is to minimize negative impacts on water quality, and since silviculture, by definition, is the

¹Sometimes the border of the SMZ's are referred to as "...the edge of the watercourse or lake..." (Florida Division of Forestry 1979); other times the SMZ is "adjacent to perennially open waters" (Riekerk and Winter 1982); still others as a "...strip of forest land surrounding all perennial streams and lakes 10 acres or larger" or as "a vegetated strip adjacent to a watercourse..." or as occurring "...along all perennial and intermittent streams..." (Florida Division of Forestry 1979). A strict definition of the watercourse's edge as related to 17-4 FAC may be important to help determine from what point the SMZ should be applied.

management of forests for their wood fiber, the BMP's are designed to maximize the forest area that can be harvested. If the goal was to minimize negative impacts on state water resources,² the primary and secondary zones would begin at the wetland edge and extend upland. In this manner the zones would occupy the area that is commonly termed the transition zone between upland and wetland and would insure minimum impacts to state waters.

It is generally agreed that the more sensitive a site is to sediment production, the wider the undisturbed vegetative buffer should be. Since sediment production can result in the deposition of materials in locations where they may have negative impacts, and since sediments provide a major vehicle by which pollutants are transported, every effort should be made to encourage the use of vegetative buffers to minimize sediment deposition in wetlands and water courses. The width and efficiency are variable. Karr and Schlosser (1977), relying on the work of Trimble and Sartz (1957), suggest a minimum width of buffers for conditions encountered in "municipal conditions" as 15 to 20 m for lowest (0 to 3%) slopes and as high as 80 m for slopes of 60%.

There has been much research on the effects of logging in close proximity to streams, especially in the northwest United States. Erman et al. (1977), in studies of logged landscapes with and without streamside buffers, found that buffers were very important in minimizing negative impacts as a result of erosion from logged lands, and that streams with narrow (less than 30 m) buffers showed effects comparable to streams with no buffers. Generally, their

²Waters of the state are those lands that are regularly and periodically inundated as defined by 17-4.022 FAC which includes areas dominated by "submerged" wetland vegetation. Thus to protect state waters and achieve Best Management Practices as they relate to these waters, the discretionary zone, primary zone, and secondary zone should be measured as distance from the edge of the wetland instead of the edge of the watercourse.

research on 62 northern California streams showed a strong correlation between buffer width and stream community diversity index. Streams with highest diversity indices had buffers greater than 50 m in width.

Streamside buffers in the high-relief landscapes that characterize most of the continental United States are generally measured from the channel bank. Where landscape relief is high, channel slopes are high, and associated floodplain ecosystems are narrow; and as a consequence, streamside buffers measured in this way probably adequately protect the resource. However, where landscape relief is low, as in the Southern Coastal Plain, terrain is flatter, stream channel slopes are lower, and associated riparian ecosystems are wider. The measurement of streamside buffers in low relief landscapes needs to reflect these important differences and begin at the upland edge of the riparian ecosystem.

Effects of Construction Activities

Darnell et al. (1976) summarized the effects of construction activities on riparian ecosystems and grouped them into three time related categories:

1. Direct and immediate results which take place during the construction process;
2. Effects which occur during the period of stabilization following completion of the construction; and
3. Long-term effects of more or less permanent changes brought about by the construction itself or by subsequent human use and environmental management occasioned by the constructed facilities.

The water quality effects of construction activities within upland boundaries of riparian ecosystems can be grouped into the same time-related categories, although for the sake of simplicity, the first two may be combined. The overall impacts of any construction activity vary depending on environmental features (e.g., physical characteristics such as slope, soils,

and vegetative cover), timing, type of construction activity, and the care taken during the active construction phases. Long-term impacts associated with subsequent uses vary depending on environmental features, intensity of uses, and management practices.

During and immediately following construction the major impacts on water quality can be grouped into three broad classes:

1. Impacts associated with erosion of loose soils and their subsequent deposition in downslope wetlands;
2. Suspended sediment increases in surface waters, resulting in increased turbidity; and
3. Introduction of unusual levels of chemical compounds that may have negative effects on resident fish and wildlife populations.

The most obvious results of the deposition of eroded sediments in wetlands are the impacts associated with filling. When wetland soils are covered with additional depths of fill material, the most serious impact is loss of oxygen penetration to the root zone and resulting stress on vegetation. If the accumulation of sediment is deep enough, or if the sediment is fine enough to plug up soil pores so as to effectively starve roots of oxygen, death of vegetation results. Secondary impacts are experienced by wildlife as a result of the loss of habitat.

The authors have on numerous occasions witnessed the results of inadvertent filling along wetland edges throughout Florida. In most cases these results were caused by erosion of unstable soils during clearing and construction activities. The deposition of eroded material resembles a wedge of sediments where the bigger particles drop out of the sediment stream first and successively finer materials drop out farther into the wetland system. Depths of sediment are greatest along the periphery and taper off to shallower and shallower accumulations as the sediment stream penetrates into the wetland. In

most instances the effects are immediate and dramatic. Where sediment depths are greatest, both understory and canopy plants are killed, and as the sediment wedge tapers off, tree kills are less noticeable, but the many varieties of understory vegetation with their shallower root systems are killed. Finally, at the farthest extreme of the sediment wedge, only the herbaceous vegetation is affected.

The net result of the deposition of eroded sediments within the limits of wetland communities is to shift the conditions of the transitional edge farther into the wetland. Dead and dying vegetation is replaced over time by early successional upland vegetation. The impacts are less a loss of water storage capacity (since the volume of sediments may be small compared to the overall volume of water stored in the wetland) as they are a loss of valuable wetland function and wildlife habitat.

If the disturbed area is close enough to surface waters, or if the configuration of the wetland is such that stormwater runoff from the upland edge can collect and form an intermittent stream, sediments eroded during construction phases may directly affect aquatic environments. In their review of impacts of construction activities in wetlands, Darnell et al. (1976) grouped the biological impacts of suspended and sedimented solids under the topics of turbidity, suspended solids, and sedimentation. Within each group they review the biological effects that have been documented in the literature. Their review is summarized in Table II.A.1.

The final water quality effect during the construction phase is related to the release of chemicals, the levels of which may be harmful to downstream fish and wildlife or negatively affect ecosystem function. When areas are cleared, runoff increases, carrying with it increased volumes of soil and sediment. Large quantities of dissolved cations and other minerals are lost from the

Table II.A.1 Biological Effects of Sediments and Suspended Solids on Aquatic Environments (after Darnell et al. 1976)

Topic	Biological Effect
Turbidity	* Reduction of photosynthesis - eliminates phytoplankton, attached algae, and rooted vegetation, thus eliminating base of aquatic food chain * Decreased visibility - interferes with normal behavior patterns of higher aquatic organisms
Suspended Solids	* Temperature effects - water absorbs more radiant energy, inhibiting vertical mixing in calm waters or uniformly heating moving waters modifying oxygen content * Oxygen reduction - through inhibition of photosynthesis, heating, or increased COD and BOD * Reduction of primary production - inhibits light penetration, absorption of critical nutrients, removal of algae and zooplankton from suspension through adherence to particles * Effects on respiration - oxygen reduction can selectively eliminate aquatic animals that require oxygen for respiration, suffocation through clogging of gill filaments * Other effects - potential starvation of filter feeding animals, decreased visibility, interference with migration patterns of fish
Sedimentation	* Primary production - smothering and scouring, physical barrier to gas exchange * Bottom animals - scouring and blanketing with sediments * Fish populations - reduction of food supply, destruction of habitat, elimination of spawning areas, smothering of eggs and larvae

cleared areas and deposited in downstream areas. Borman et al. (1968) found cation losses from 3 to 20 times greater from clearcut watersheds than from undisturbed control watersheds. Riekerk et al. (1980) showed significant increases in sediment and higher nutrient cation loading of runoff from a clearcut, relatively low-gradient watershed after one year, but no significant differences after the second year. In watersheds composed of wet savanna forests of Florida's Lower Coastal Plain, Hollis et al. (1978) recorded significant loss rates of dissolved minerals including ammonium-nitrogen as well as phosphorus and suspended sediments.

Of less concern, unless a large-scale accident occurs, is the increase in petroleum products that may pass from construction sites into downstream wetlands and watercourses. Spills in maintenance yards and the general operation of equipment in and near wetlands increases the likelihood of increased contamination. In all, however, contamination from petroleum products during the construction phase should be of minor concern if proper care is taken.

Effects of Operation and Maintenance

Long-term water quality impacts associated with construction activities in areas adjacent to wetlands and watercourses is a function of subsequent human uses and management. Stormwaters running off developed lands carry both organic and inorganic materials, both suspended and in solution. Many of the organics are degraded through biological pathways or through chemical oxidation. As degradation occurs, oxygen is consumed causing decreases in available oxygen. Thus the breakdown of these compounds "demands" oxygen. Their presence and potential for negative water quality impacts is measured by tests for Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD).

The final land use of a developed area has a marked effect on the quality of stormwater runoff. The Florida Department of Environmental Regulation (FDER) (1978) summarized the work of Sartor and Boyd (1972) that compared the total solids loading from residential, commercial, and industrial land uses. Industrial areas were shown to have the highest loadings and commercial areas to have the lowest. Another stormwater study of three sub-basins (a forested, a suburban, and an urban basin) of Lake Jackson in northern Florida as reported in Wanielista (1975) and summarized by the FDER (1978) compared mean concentrations for various constituents in stream water under stormflow and baseflow conditions. The findings showed that the export from the urban watershed was greater for all constituents than from the forested or suburban watersheds, and that mean concentrations of suspended solid loadings from the urban basins and suburban basins were approximately 10 times and 5 times, respectively, those of the forested watershed.

In most time-related studies of the quality of urban runoff, a common finding is the difference in concentrations of constituents between the initial "first flush" and later runoff. Typically, the initial rainfall flushes the stormwater system, carrying with it large quantities of suspended solids and materials in solution. Later discharges have significant, but much lower, concentrations of pollutants.

Stormwater management rules generally recognize the potential for downstream water quality impacts from urban and suburban areas, and while there is some variation in regulation throughout the state, generally they address the problem through retention of a prescribed amount of the initial rainfall from a storm event. This treatment method assumes that through retention of the first flush, a majority of the constituents that would enter surface waters are retained. However, most stormwater systems, while retaining this first

flush, accumulate the remaining stormwater in the same retention basin, diluting initial concentrations with the added waters. Under these conditions, if the rainfall event is large enough, the diluted first flush is discharged along with remaining stormwaters to receiving water bodies. The net result is little if any retention of the pollutant carried by the storm runoff. Recently, more stringent regulations have been put into effect in the Wekiva River Basin that require off-line retention to avoid this problem.

The problems associated with degradation of water quality as a result of the operation and maintenance of a stormwater management system once a development is in place may be little affected by a buffer requirement. The potential impacts on water quality from the combined effects of increased runoff and increased concentrations of pollutants that result from urbanization are not so much functions of how close the developed areas are to wetlands and watercourses as they are of land use, size of the development, and stormwater system design. However, potential impacts from systems designed to allow portions of a development to discharge without treatment may be mitigated through a buffer requirement. In many instances, where slopes prohibit stormwaters to be collected into a system, portions of the lowest areas in the development (typically those closest to and abutting the wetland/watercourse edge) may discharge directly. A buffer requirement in these situations would allow for some treatment of stormwaters if they were allowed to sheetflow through the buffer area.

II.A.4. Water Quantity Benefits of Buffer Zones

The construction and subsequent operation of urban land uses within areas adjacent to wetlands and watercourses affect the quantity and timing of waters that flow over the lands and often surficial groundwaters beneath the developed

lands. The effects are the result of both construction-related activities and operation and management-related activities. During construction, the volume of runoff increases, since removed vegetation and surface accumulations of organic matter can no longer act to retard runoff, and transpiration is greatly reduced.

Studies of water yield from watersheds having varying degrees of clearing show strong relationships between the amount of disturbance and water yield. One study in north central Florida by Riekerk et al. (1980) found water yield increases of 165% from a clearcut, highly disturbed watershed and over 65% from a minimally disturbed watershed. In a later study Riekerk (1985) found 2.5-fold and 4.2-fold increases in runoff from minimally and maximally disturbed watersheds, respectively. In most studies, the effects of disturbance on runoff volumes decreases markedly from 2 to 3 years after treatment as vegetation again plays a role in the site's hydrologic balance. The net effects of clearing are reflected in higher soil moisture levels which may contribute to higher stream baseflow and greater direct runoff during storm events.

Once vegetation has been removed, it is quite common for groundwater table elevations to increase as a result of decreased transpiration. In areas of existing high water tables, soils can become saturated and extremely difficult to work without extensive "drainage improvements." Stormwaters are often routed through temporary swales and ditches into downstream areas to minimize flooding while drainage and stormwater systems are being constructed. Such practices can add significantly to construction-related water quality impacts and alter quantity and timing of surface water discharge.

Typically, areas immediately adjacent to floodplain and seepage wetlands are dominated by seasonally high water tables. This is a predominate aspect of

the lands adjacent to the floodplain wetlands throughout the Wekiva River Basin. Lowering of water tables to accommodate construction-related activities and as a permanent consequence of development can reduce groundwater elevations and intercept groundwater flows to adjacent wetlands. Of all the impacts of development, when the mitigating effects on surface water of properly designed retention/detention systems are taken into account, the loss and interception of groundwaters has the most profound consequences. Drainage in areas with high water tables is a widely accepted practice that allows development of lands that would otherwise be difficult to develop. Positive drainage "dewaters" the upper portions of the soil, which lowers the surrounding groundwater elevations. The effects spread radially from the drainage system with the actual amount of decline in water table elevation dependent on the elevation of the drainage system and soil properties and topography of the surrounding lands. Wang (1978) and Wang and Overman (1981) found the effects of a 10-foot lowering of the groundwater table to extend up to 1 mile from drainage ditches in south Florida. While this is probably not typical throughout Florida, it does indicate the magnitude of the problem.

The impact of lowered water tables on adjacent wetlands is a reduction in hydrologic function. Where adjacent wetlands are depressional wetlands that intercept the groundwater table, lower water table elevations reduce depths of surface waters and shorten hydroperiods. Under extreme conditions the wetland may remain dry throughout the year. In areas dominated by seepage wetlands, lowered water table elevations result in a reduction or even a cessation of groundwater seepage and subsequent drying of the wetland. The long-term, wide-scale effects of general drainage practices throughout the state have been discussed by Brown (1986) and are pervasive. While immediate ecological changes resulting from drainage are subtle--to the untrained eye, no change is

observable--the long-term consequences are loss of hydrological functions, gradual replacement of wetland vegetation with upland types, and consequent loss of habitat values for aquatic and wetland-dependent wildlife species.

The maintenance of setbacks or buffers in areas immediately adjacent to wetlands and watercourses can have significant impact in minimizing these effects. A properly sized buffer between construction activities and downstream wetlands can slow down and filter runoff and mitigate the drawdown effects of drainage ditches on adjacent wetlands. It cannot be stated strongly enough that the lowering of water tables to accommodate development is probably the single most important impact affecting adjacent wetlands, and that a properly sized buffer will go a long way toward minimizing these impacts.

II.A.5. Edge Effects on Wildlife

The question of how wide a buffer zone must be to maintain biological integrity cannot be answered without considering the problem of edge effects.

Edge is defined as the place where plant communities meet or where successional stages or vegetative conditions within plant communities come together (Thomas et al. 1979). Edge effects have been investigated intensively in wildlife management ever since 1933, when Aldo Leopold's classic text was published. Evidence of a positive edge effect (i.e., an increase in species richness or density of individuals near an edge in contrast to adjoining habitat types) has been reported for birds (Lay 1938, Beecher 1942, Galli et al. 1976, Laudenslayer and Balda 1976, McElveen 1977, Gates and Gysel 1978), mammals (Bider 1968, Forsyth and Smith 1973), and several other groups of organisms.

Most of the early studies of edge effects were concerned with documenting an increase in wildlife abundance near edges. They implied that managing land

to increase edge will also increase wildlife. Edge habitat has high cover density and food availability for many animals, and it is an index of carrying capacity for species that require two or more habitat types for survival (Johnson et al. 1979, Thomas et al. 1979). Hence, Leopold (1933) described game (wildlife) as "a phenomenon of the edge" because wildlife "occurs where the types of food and cover which it needs come together." Subsequently, edge became a fundamental principle of wildlife management (e.g., Allen 1962, Dasmann 1964), and some wildlife management texts went so far as to urge managers to "develop as much edge as possible" (Yoakum and Dasmann 1971). Ghiselin (1977) suggested that an edge index based on the amount of edge or ecotone present is useful as an indicator of relative animal productivity between similar habitats.

Unfortunately, these wildlife management recommendations were naive about the consequences of edge management on nongame animals, on plant communities, and on regional diversity patterns (reviewed in Noss 1983). In a management context, there are two types of edge: inherent edge and induced edge (Thomas et al. 1979). Inherent edge is a natural phenomenon that represents the juxtaposition of community types and a continuum of successional stages in the landscape mosaic. This natural heterogeneity is in large part a product of the natural disturbance regime of fire, flood, treefalls, windthrows, landslides, and other events (White 1979, Sousa 1984, Pickett and White 1985). Moreover, this natural heterogeneity may be the primary determinant of wildlife composition and diversity in a region (reviewed in Noss 1987).

Induced edge, on the other hand, is a product of manipulation of habitat by humans. It is closely tied to the process of habitat fragmentation that produces sharp contrasts between vegetation types. Simple geometry shows that small habitat islands have larger edge-to-interior ratios than do similar

shaped large habitat islands. As a natural landscape is fragmented into disjunct pieces of habitat in a sea of developed land, the proportion of edge habitat in the landscape increases. Thus, species that are restricted to habitat interiors gradually are replaced by species characteristic of edge habitats. The latter species are generally opportunistic or "weedy" and do not need reserves for survival (Diamond 1976, Whitcomb et al. 1976, 1981, Noss 1983). Conservation biologists therefore recognize that interior species dependent on large tracts of undisturbed habitat should receive priority attention in conservation plans.

The recognition of negative edge effects associated with induced edge was a major breakthrough in wildlife ecology. Until the mid-1970s, the attention of most wildlife scientists was focused on relatively small tracts of land (i.e., on local diversity) and on the small subset of animal species that could be hunted. Under these circumstances, induced edge habitat can be seen as favorable. Species such as white-tailed deer, bobwhite quail, cottontail rabbit, and ring-necked pheasant often increase under such circumstances, as does the species list of individual management units. But if one focuses on regional and global diversity, and on entire ecosystems (including nongame animals and endangered species of plants), the negative consequences of induced edge are all too clear. The end result is often a landscape that has lost its native character and is dominated by weeds that are either alien to the region or were previously restricted to recently-disturbed patches (Faaborg 1980, Samson 1980, Noss 1981, 1983, Samson and Knopf 1982, Harris 1984, Noss and Harris 1986).

The negative effects of induced edge are easier to understand when one considers that edge is more than a one-dimensional boundary between habitat types. Effects of an open, disturbed habitat penetrate some distance into an

adjoining wooded natural area; hence, edge has a width of influence. Much of this influence is ultimately climatic. Lovejoy et al. (1986), summarizing the status of their research on forest fragmentation and induced edge effects in Amazonia, recognize an abiotic class of edge-related changes that includes temperature, relative humidity, penetration of light, and exposure to wind.

The type of habitat on the outside of a forest edge will determine the nature of edge effects. A general principle is that the greater the contrast between habitat types, the greater the edge effect (Harris 1984). When a forest is fragmented, the matrix which surrounds it is usually some type of early successional habitat. (Housing subdivisions would generally fall in this category.) This secondary successional habitat is a constant source of weedy plant and animal propagules that invade the forest fragment and alter species composition and relative abundances (Janzen 1983). Opportunistic animals that achieve artificially high densities in the early successional habitat often invade pristine areas, exerting abnormally high levels of trampling, browsing, and seed predation; this can destroy a natural area as surely as can a chainsaw (Janzen 1983, 1986). Bratton and White (1980) reported that manipulation of habitat to support a huntable deer herd can result in heavy browsing in adjacent natural areas and further endanger a number of rare plant species.

The effects of habitat fragmentation and induced edge on animal communities (especially birds) has been particularly well studied over the last two decades. Application of island biogeography theory (MacArthur and Wilson 1967) to habitat islands have led to recommendations for the design of nature reserves. Nature reserves and forest fragments have been portrayed as islands because they are patches of natural habitat in a matrix or sea of culturally modified land (Terborgh 1974, Diamond 1975, Sullivan and Shaffer 1975, Wilson and Willis 1975, Diamond and May 1976, Forman et al. 1976, Galli et al. 1976,

and many others). Most early work on this problem was essentially a confirmation of the familiar species-area relationship (Arrhenius 1921, Gleason 1922, Preston 1960, 1962): larger pieces of habitat support more species. There are many potential explanations for the species-area relationship. Three general explanations are (1) larger areas support more kinds of habitats (and thus more habitat-specific species), (2) larger areas offer bigger "targets" for organisms dispersing across the landscape, (3) larger areas maintain larger populations that are less vulnerable to extinction due to random or deterministic population fluctuations, and (4) larger areas support animals of large territory and home range size that cannot be supported in small areas. Any one of these explanations is powerful enough to support the general recommendation that nature reserves should be as large as possible (e.g., Soule and Wilcox 1980, Frankel and Soule 1981, Schonewald-Cox et al. 1983, Harris 1984, Soule 1986).

The process of habitat fragmentation is accompanied by insularization of fragments, i.e., isolated pieces of habitat surrounded by dissimilar habitat begin to resemble islands in many of their ecological dynamics. Eventually, fewer native species will be found in a habitat islands than in sample areas of equal size within extensive blocks of habitat (Miller and Harris 1977). Alternately, species richness may not change much, or may even increase, with habitat insularization, but species composition will shift towards edge species at the expense of area-dependent interior species. These edge species are generally common in the developed landscape and do not need reserves of any kind for survival (reviewed in Noss 1983).

In New Jersey, Forman et al. (1976) found that forest islands contained more bird species than did sample plots of equal size within extensive forests, but the additional species were primarily birds of the forest edge. Forest

interior birds were limited to the larger forest islands. Since then, the changes in avifauna that occur with forest fragmentation have been thoroughly documented (for the most extensive treatment, see Whitcomb et al. 1981). In Florida hardwood hammocks, Harris and Wallace (1984) documented area-dependence in a number of bird species. In the Wekiva River bottomland hardwood forest, breeding bird species that have been shown elsewhere to be area-dependent and vulnerable to negative edge effects include the red-eyed vireo and the Acadian flycatcher, both near the limits of their ranges in this area (H. Kale, Florida Audubon Society, pers. comm.).

More generally, the species most vulnerable to extinction in fragmented landscapes are large animals with large home ranges (i.e., top carnivores), ecological specialists, and species with variable populations that depend on patchy or unpredictable resources (Terborgh and Winter 1980, Karr 1982, Wright and Hubbell 1983). The characteristically small populations of these species are vulnerable to problems related to environmental stochasticity, demographic stochasticity, social dysfunction, and genetic deterioration brought on by inbreeding or genetic drift (Frankel and Soule 1981, Shaffer 1981, Schonewald-Cox et al. 1983, Soule and Simberloff 1986).

Biotic aspects of edge effects have played a major role in the ecological deterioration that accompanies fragmentation. Some effects of edge on vegetation were discussed above. Because animal communities respond to vegetation structure (e.g., MacArthur and MacArthur 1961, Roth 1976), any edge-related changes in vegetation will cause corresponding changes in animal communities for a certain distance into a habitat interior. But there are more insidious processes at work. The opportunistic animals that are attracted to edge (or to the early successional habitat outside) often prey on, out compete

or parasitize interior species, sometimes with disastrous consequences to the latter's populations.

Most of the research on faunal deterioration near edges has been done on birds. Whitcomb et al. (1976) provided evidence that, in areas where forest has been reduced to isolated fragments, avian brood parasites (brown-headed cowbirds), nest predators (small mammals, grackles, jays, and crows), and non-native nest-hole competitors (e.g., starlings) are usually abundant in the urban-agricultural matrix and often invade small forest tracts and narrow riparian strips. Gates and Gysel (1978) found that a field-forest edge attracts a variety of open-nesting birds, but such an edge functions as an "ecological trap." Birds nesting near the edge had smaller clutches and were subject to higher rates of predation and cowbird parasitism than those nesting in either adjoining habitat interior. Brown-headed cowbirds, which were not found east of the Mississippi River before widespread forest fragmentation, are a particularly noxious species. Half or more of the songbird nests within 200 m of the edge may be parasitized, reducing reproductive success for some species below the level of population sustainability (Brittingham and Temple 1983). Brown-headed cowbirds have been increasing in number and are moving south in Florida, and they will undoubtedly become more problematic as forests continue to be fragmented; meanwhile, the ecologically similar shiny cowbird, which has caused severe problems in parts of the Caribbean (Post and Wiley 1976, Post and Wiley 1977), has been moving north and was reported in Florida in 1986.

Experimental studies of nest predation have documented significantly higher predation rates in small forests compared to large forests, in forests surrounded by suburbs compared to forests surrounded by agricultural land, and at decreasing distances to forest edge (Wilcove 1985, Wilcove et al. 1986).

This abnormally high predation rate is related to the artificially high densities of many opportunistic animals near forest edges and in disturbed habitats (including suburbs; Wilcove et al. 1986). A primary reason why these opportunistic animals (which in Florida include raccoons, opossums, gray squirrels, armadillos, house cats, and blue jays) achieve such high densities is that the large predators (e.g., panthers, wolves, and bears) that once regulated their populations have been extirpated or greatly reduced (Matthiae and Stearns 1981, Whitcomb et al. 1981, Wilcove et al. 1986). The deleterious effects of increased nest predation may extend 300 to 600 m inside a forest border (Wilcove et al. 1986). More generally, Janzen (1986) suggests that managers can expect serious edge effects (including problems related to heavy use by humans and domestic animals) anywhere within 5 km of a reserve boundary.

The studies discussed above suggest that any forest tract has a "core area" that is relatively immune to deleterious edge effects and is always far smaller than the total area of the forest (Temple 1986). Relatively round forest tracts with small edge-to-interior ratios would thus be more secure, whereas thin, elongated forests (such as those along riparian strips) may have very little or no core area and would be highly vulnerable to negative edge effects.

II.A.6. Regional Habitat Needs of Wildlife: Corridors

A great deal of recent literature in the fields of island biogeography and conservation biology has discussed the effects of inbreeding and genetic drift on wildlife due to genetic isolation and small population sizes (e.g., Miller 1979, Soule 1980, Senner 1980, Wilcox 1980, and Franklin 1980). Inbreeding has the effect of decreasing population heterozygosity (genetic variation) by increasing the probability that progeny will receive duplicate alleles from a

common ancestor. This loss of genetic variation can have both immediate and future implications for a species' survival. Inbreeding can lower species vigor and fecundity within a few generations (Soule 1980). The very reduced population of Florida panthers may be suffering from the effects of inbreeding. All five males examined have had greater than 93% abnormal sperm (Roelke 1986). Over the long term, inbreeding can also limit the ability of a population to evolve to meet changing environmental conditions (Soule 1980, Harris et al. 1984).

Other literature has questioned the effectiveness of fragmented parks and preserves in maintaining viable populations of animals which require large home ranges or activity areas (Pickett and Thompson 1978, Lovejoy and Oren 1981, Harris and Noss 1985, Harris 1984, Noss and Harris 1986, Noss [in press]). In Florida, bears may range over 15,000 ac and bobcats over 5,000 ac. An otter may require several miles of linear river and riparian habitat (Harris 1985). To maintain viable populations of these and other far-ranging animals, large blocks of land are needed.

One proposed management alternative for providing for these wildlife needs is the use of wildlife corridors (Diamond 1975, Butcher et al. 1981, Forman and Godron 1981, Harris 1983, Noss 1983, Harris 1984, Harris and Noss 1985, Noss and Harris 1986, Wilcove and May 1986, Noss [in press]). Wildlife corridors can be defined as strips or parcels of land which allow safe passage of wildlife between larger blocks of habitat. This contiguity effectively increases the size of protected lands and their ability to maintain viable wildlife populations. Genetic variation is maintained because genetic material is carried freely back and forth across the corridor and among large habitat blocks by dispersing wildlife. Dispersing animals can recolonize areas which have suffered from local extinctions (Fahrig and Merriam 1985). Large

carnivores such as panthers, bears, bobcats, and otters which require large home range sizes would be free to continue their natural movement between habitat blocks which would otherwise be rendered inaccessible to them by physical barriers. They gain the increased resource base needed to support top-level carnivores. In addition to serving as travel routes, corridors also serve as habitat for some species.

Evidence of wildlife use of travel corridors comes from a variety of sources at several scales. In the extreme, land bridges between continents have historically acted as wildlife corridors (Simpson 1940, Simpson 1965). The Bearing Sea land bridge allowed the migration of many animals, including man, into North America from Siberia. The Isthmus of Panama similarly allowed the migration of wildlife between North and South America. Other paleontological research has pointed to the development of a broad, flat corridor which formed along the Gulf coast of Florida during the glacial lowering of the sea level. Webb and Wilkins (1984) found that during these periods Florida's wildlife was highly influenced by fauna which had migrated into Florida from South America and southwestern North America. Riverine gallery forests in Brazil apparently act as mesic corridors which have allowed Amazonian forest species to invade and become components of the xeric cerrado fauna (Redford and da Fonseca, 1986).

On a smaller scale, habitat corridors have also been shown to be important for wildlife. Riverine forest corridors are known to be important habitats for many species. The maintenance of streamside strips of vegetation is an important management tool for maintaining gray squirrel populations within pine plantations (McElfresh et al. 1980). Turkeys have been successfully managed in a mosaic of poor habitat (short-rotation pine plantations) by maintaining hardwood and mature pine trees in travel corridors. These corridors allowed

the turkeys to move widely among foraging and roosting areas (Gehrken 1975). Several species of birds have been found to regularly use fencerows and hedgerows as safe travel routes (Bull et al. 1976). MacClintock et al. (1977) found that a small forest fragment connected by a corridor to an extensive forest block was characterized by birds typical of the forest interior, while similar but isolated forest fragments were not. Johnson and Adkisson (1985) noted that blue jays used vegetated fencerows as travel routes apparently because they afforded some escape cover from hawks. Wegner and Merriam (1977) found that small mammals and many birds travel more frequently along fence hedgerow corridors than across open fields. Wildlife populations in isolated blocks of forest have been shown to have lower growth rates than populations in forest blocks tied together by corridors (Fahrig and Merriam 1985).

The relevance of wildlife corridor management to the Wekiva River Basin lies in the presence of a large number of parks and preserves in the area. Many wildlife species in Rock Springs Run State Reserve, Wekiva Springs State Park, Lower Wekiva River State Reserve, and Kelly Park will be adversely affected if an adequate corridor is not preserved. While several types of corridors have been defined (Forman and Godron 1981), two are perhaps most important for a discussion of the Wekiva River Basin. "Line" corridors are narrow and are entirely edge habitat, while "strip" corridors are wide enough to maintain interior conditions. This distinction between edge and interior habitat is important (see previous discussion on edge effects) as some interior species cannot live or even migrate through extensive edge habitats (Forman and Godron 1981). Edge effects are a function of corridor width. Beyond the deleterious effects of edge, width also has other effects on corridor function. A wide corridor may provide actual habitat for an animal while a narrower one may simply provide a travel route. A study of cypress domes showed that

certain species of birds were excluded from smaller cypress domes (McElveen 1978). Stauffer (1978) found that bird species richness increased significantly with the width of wooded riparian habitat, where some species were restricted to wider strips. Tassone (1981) reported similar results from a study of hardwood leave strips. Interior forest species such as Acadian flycatchers were only infrequently found in corridors less than 50 m. Hairy and pileated woodpeckers required minimum strip widths of 50 to 60 m, while the parula warbler required at least 80 m. He suggested that leave strips must be a minimum of 100 m on larger streams to take advantage of their intrinsic wildlife value. Corridors which provide habitat should be much more effective in connecting larger habitat blocks than those which only provide paths for travel. Forman (1983) has stated that width is the most important variable affecting corridor function.

An upland buffer along the Wekiva River floodplain would maintain the width of the corridor, allowing it to function more efficiently as a wildlife corridor. This would be particularly true where the river floodplain is narrow. Narrow sections may act as barriers through which some animals are reluctant to pass. An upland buffer would allow continued movement and provide a refuge for some terrestrial wetland species during periods of high water. It would also encourage use of the corridor by upland species which do not make regular use of wetland habitats (Forman 1983).

In addition to providing dispersal pathways for animal wildlife, floodplain corridors are also important in plant dispersal. Flood waters collect and disperse large numbers of seeds from both wetland and upland plants (Wolfe 1987, Schneider and Sharitz [in press]). This dispersal of upland seeds may be very important in maintaining the diversity of upland plant species on topographic highs or islands within the floodplain (Schneider and Sharitz [in

press]). Wharton et al. (1982) noted that these upland areas within the floodplain are very important for wildlife habitat. Upland seeds carried onto the floodplain originate in the wetland-upland ecotone and from smaller tributaries feeding the river. Protection of this ecotone, which may extend 10 to 35 m in Florida (Hart 1981), and the adjacent upland would ensure continued input of seeds to the floodplain.

In summary, width is probably the most important variable affecting corridor function (Forman 1983). Several forest interior species are known to be excluded when corridor width falls below a critical level, which is a function of edge effects and home range requirements. Increasing the width of the Wekiva River corridor by maintaining an upland buffer can only increase its effectiveness in providing both a travel route for dispersing wildlife and high-quality habitat.

II.A.7. Between-habitat Needs of Wildlife

Between-habitat needs refer to wildlife utilization of more than one habitat type to fulfill their requirements. Several authors have substantiated the close association and interaction of wildlife in wetland and adjacent upland communities. Fredrickson (1978) reported that various species more commonly associated with either wetlands or uplands depend on seasonal or daily shifts into different habitat types to escape flooding, to forage, to disperse, or to hibernate. Examples that he cited are turkey, river otter, swamp rabbit, deer, bobcat, and gray fox. Other species such as raccoon, gray squirrel, tree frogs, and many woodland bird species occur with similar frequency in both wetlands and uplands.

Bottomland hardwoods are integrally coupled to the surrounding uplands (Wharton et al. 1982). Terrestrial lowland fauna may be coupled to the

uplands; for example, deer base their home range in floodplains and graze in uplands. Conversely, upland forms such as the black racer, slimy salamander, and pine vole may use the floodplain during drydowns. Although many species breed in both habitat types, their densities may differ considerably between adjacent areas. However, the lower-density populations may serve as important recruitment sources. The greenbelts of bottomland hardwoods also provide routes for migration and restocking.

Many semiaquatic Florida turtles, such as the mud turtle and snapping turtle, loaf and feed in marshes but need sandy upland sites to lay eggs (Weller 1978). The river cooter is an example of a turtle which is largely confined to water but must trek to adjacent uplands to deposit eggs (Patrick et al. 1981). Documented cases of Florida aquatic turtles laying eggs several hundred yards from a river are not uncommon (P. Moler, Florida Game and Fresh Water Fish Commission, pers. comm.). Weller (1978) also indicated a need for more information relating to the wetland-upland interface. He wrote, "Upland areas often serve as buffers, nesting areas, or food resources for wetlands wildlife but their relative importance is undocumented."

The eastern indigo snake is classified as a wetland species but frequently occurs in dry, sandy areas (Kockman 1978). Speake et al. (1978) found that indigo snakes concentrated on the higher ridges of sandhill habitat during winter and moved down into streambottom thickets in summer. Shelter provided by gopher tortoise burrows is critical to the survival of this snake while it is in upland areas.

Many wildlife species need both uplands and wetlands to satisfy their food requirements. Peak mast production occurs at different times of the year in uplands and lowlands (Harris et al. 1979). Winter and spring is the fruiting season for most bottomland species, while upland plants bear fruit in the

summer and fall. Correspondingly, both upland and wetland nesting birds often concentrate in wetland areas during the non-nesting season (Wharton et al. 1981). Landers et al. (1979) found that black bears also respond to seasonal differences in mast production. In North Carolina, they shift their food preferences from predominantly bottomland species in the winter and spring to predominantly upland fruits and nuts in summer and fall. Florida bears primarily inhabit swamps in the center of the state but are long distance travellers utilizing both wetlands and uplands (Williams 1978). They eat acorns, palmetto berries and the terminal bud ("swamp cabbage") of the cabbage palm.

Wild turkeys may be found in a variety of wet and dry habitats and normally depend on acorns as a staple food in Florida. But they also have been known to eat crawfish occasionally. (Wild turkeys were recently reintroduced into the Rock Springs Run State Reserve on the Wekiva River.) During the egg-laying season, female wood ducks eat a large percentage of invertebrates obtained from the wetland-upland transitional areas (Fredrickson 1979). Pileated woodpeckers nest and roost primarily in wet hardwoods and cypress habitats but forage in uplands (Hoyt 1957, Jackson 1978). Conner et al. (1975) did not find any pileated woodpecker nest trees farther than 150 m from water in southwestern Virginia.

Jennings (1951) observed that gray squirrels in the Gulf Hammock region of Levy County, Florida, were dispersed through all habitats while food was plentiful in the fall. When red maple and elm began to bud and produce seed in mid-January, the squirrels began to concentrate in the hydric hammocks and swamps to utilize this food source. As upland foods became available in the spring and the lowland areas flooded, the squirrels moved to higher elevations.

Kantola (1986) found higher fox squirrel densities in ecotone or transitional areas than in upland areas on the Ordway Reserve in Putnam County, Florida. But she also reported that home-range size and use within ecotones and uplands may vary with seasonal food abundance, reproductive activity, and climate.

Between-habitat needs may vary among sites because of differences in habitat quality. More than 33% of the 30 small vertebrates species caught by pit-fall traps in the floodplain of the Chattahoochee River in Georgia were classified as upland species (Wharton et al. 1981). In contrast, only 14% of 21 small vertebrates sampled by the same method along the Alcovy River in Georgia received the same classification. This dissimilarity was attributed to vegetation structural differences in the floodplain.

Numerous researchers have been interested in the response of small mammals to flooding. Most studies concluded that floodplains were marginal habitats for these species. However, Batzli (1977) found that Illinois floodplain populations of the white-footed mouse were remarkably similar in density, adult survival, and age structure to those in the adjacent upland areas. The exchange of individuals between these two communities consisted mainly of a few floodplain mice occasionally moving into the uplands. He suggested that mature trees with abundant holes and cavities may be necessary refuges for small mammal survival during flooding.

In a blackwater creek bottom in South Carolina's inner Coastal Plain, Gentry et al. (1968) found that the abundance of the cotton mouse, short-tailed shrew, and southeastern shrew were 2, 3, and 10 times greater, respectively, in the bottomland hardwood than in the adjacent uplands. Golden mouse specimens were collected only from the hardwoods.

Because wetlands are often the last lands to be developed, some species normally considered upland wildlife are sometimes forced to adapt to wetlands that can supply their habitat needs (Schitoskey and Linder 1978). When uplands required by animals are destroyed, animals may concentrate in the nearby wetlands. Ozoga and Verme (1968) reported that deer mice, which are usually abundant in uplands, were also found in wetlands. White-tailed deer, an edge species, is known to adapt well to the swamps and lowland areas (Verme 1961, Verme 1965, Sparrowe and Springer 1970). Weller and Spatcher (1965) found that upland bird species such as the meadowlark and mourning dove nested in unflooded portions of wetlands.

High densities of prey species also attract adaptable upland predators such as the skunk, raccoon, and red fox: Bailey (1971) found that striped skunk densities were greater in narrow wetlands than in adjacent uplands where cultivation and other development adversely affected upland feeding sites. This situation is suspected to cause an abnormally high predation rate on waterfowl eggs by skunks.

Bobcats in the Welaka Reserve showed a preference for bottomland hardwoods (Progulske 1982). More than 20% of the 269 recorded locations of two radio-collared bobcats from July 1980 to December 1981 were in this type of overstory habitat. Although the other locations were spread among seven different upland habitat types, their need for wetlands is obvious.

Melquist and Hornocker (1983) found that although Idaho otters generally followed stream beds, they often took shortcuts across peninsulas formed by stream meanders. Overland travel of up to about 3 km was recorded. Extensive cross-country movements considerably reduced the distance an animal would normally have had to travel to reach the same destination by water. However, these movements also subjected the animals to highway hazards. Three of nine

known mortalities were road-kills. In Great Britain, Chanin and Jefferies (1978) reported that in some areas dead otters were found repeatedly at the same location on roads over a number of years.

In a report that synthesized extant literature for southeastern bottomland hardwood swamp habitats, Wharton et al. (1982) stated that bottomland animals do not occur in the same distinct zonal pattern as plants ranging from aquatic to upland ecosystems. Wetland wildlife inhabitants move freely into irregularly flooded or dry zones over the year. They also noted that some overlap among zones occurs, especially in the transitional areas characterized by periodic annual flooding and a duration of flooding during a portion of the growing season. Their examples of overlapping species that might occur along the Wekiva River are mole salamander, slimy salamander, narrowmouth toad, spadefoot toad, cricket frogs, chorus frogs, box turtle, five-lined skink, southeastern five-lined skink, brown snake, garter snake, ribbon snakes, rat snakes, kingsnake, southern black racer, coachwhip snake, barred owl, downy and red-bellied woodpeckers, cardinal, turkey, common yellowthroat, wood thrush, eastern wood peewee, white-breasted nuthatch, Swainson's warbler, carolina wren, yellow-throated vireo, cotton mouse, golden mouse, short-tailed shrew, least shrew, southeastern shrew, woodrat, marsh rabbit, pine vole, and eastern mole.

The use of various bottomland hardwood ecological zones by wildlife differs by species, season and flooding regime (Larson 1981). Some are site specific during the breeding period while at other times they may use a broad range of ecological zones. Larson also referred to many of the species examples used by Wharton et al. (1981).

Many studies have documented utilization of adjacent uplands by wetland wildlife species. Removal or alteration of this important habitat type could

destroy critical requirements for many species and thus render the riverine system in that area no longer habitable for them.

II.A.8. Within-habitat Needs of Wildlife

Within-habitat needs refer to requirements of wildlife species within the habitat areas they occupy. Habitat alterations and land use changes can affect adjacent resident wildlife populations by fragmenting habitat to nonfunctional sizes and shapes and by introducing disturbance factors above the tolerance levels of some species. Because of the paucity of Florida-specific data, we authors have included information from research conducted in other states. Although not actual descriptions of local species/habitat relationships, there is no reason to believe that similar situations do not exist in Florida.

Temple (1986) found that 16 of 43 bird species encountered on 49 Wisconsin study areas occurred less frequently, if at all, in smaller-sized forest fragments. Fragment-sensitive birds did not occur regularly in fragments that were large in total area but lacked a secure core area more than 100 m from edges at which forest adjoined non-forested habitat. Large stretches of linear habitats without sufficient core areas were not utilized by sensitive species which included three (hairy woodpecker, pileated woodpecker, and acadian flycatcher) that have been recorded in a partial listing of Wekiva wildlife residents (Florida Dept. of Environmental Regulation, 1983). Of the 13 other sensitive species, it is highly likely that six (tufted titmouse, blue-gray gnatcatcher, wood thrush, yellow-throated vireo, American redstart, and hooded warbler) nest along the Wekiva and the remaining seven (least flycatcher, veery, chestnut-sided warbler, cerulean warbler, ovenbird, mourning warbler, and scarlet tanager) overwinter along the Wekiva. Stauffer and Best (1980)

predicted that the scarlet tanager would be absent from riparian strips in Iowa less than 200 m wide.

Galli et al. (1976) and Stauffer (1978) found the number of breeding bird species increased significantly with the width of wooded habitats in New Jersey and Iowa. Of the 46 species recorded in New Jersey, 18 were size-dependent species, limited to a particular range of forest sizes from the largest down to a specific minimum size. The minimum areas varied from 0.8 to 10.3 hectares and are considered characteristic of each species. As the habitat size increased, new species appeared when their minimum habitat size requirements were fulfilled. An example of a size-dependent species that requires a large wooded riparian habitat is the red-shouldered hawk. This species, which is a common year-round resident in Florida, was not found in any of the New Jersey sites less than 10.3 hectares (about 25 ac). Of the 32 species that occurred in Iowa wooded riparian habitats, 16 restricted breeding to relatively wide plots.

Bird species diversity is also strongly influenced by vegetation composition and structural heterogeneity or diversity within a habitat type (MacArthur et al. 1962, MacArthur 1964, Weller 1978). This type of heterogeneity is a function of foliage height and cover diversity. The vertical and horizontal stratification of plants within a forest habitat is positively correlated with the number of bird species that reside there. Therefore, land-use conversion of the most diverse portion of a wooded riparian habitat would have significantly greater negative impacts on the overall avian community than conversion of the least diverse portion. Transition or ecotone areas containing both wetland and upland plant species are typically the most diverse (Wharton et al. 1982).

Fragment-sensitive species or species that require large tracts of undisturbed, closed-canopy forest are also referred to as interior species. Tassone (1981) found that many forest interior bird species in Virginia were most common in riparian buffer widths above a mean value of 62 m, and certain species occurred very infrequently below different minima. Examples are the northern parula (80 m), yellow-throated vireo (70 m), Louisiana waterthrush (60 m), hairy and pileated woodpeckers (50 to 60 m), and acadian flycatcher (50 m). All of these species also breed in Florida's riparian areas. Tassone (1981) concluded that several other species, observed too infrequently to estimate width requirements, may also be sensitive to buffer width. He suggested:

Until more extensive research is done, strips should be left 60 or more meters in width if it is desired to provide breeding habitat for these species. They should also be situated as corridors between other hardwood and pine-hardwood stands whenever possible. Strips located on larger streams should be 100 or more meters in width to make full use of the intrinsic wildlife values associated with the riparian zone.

Small and Johnson (1985) recommended that riparian buffer strips be 75 m wide to protect woodland bird communities in Maine. Johnson's (1986) study of the tolerance levels of some woodland breeding species supported this suggestion.

Fragmentation also affects squirrel populations. In an eastern Texas study of clearcut effects conducted two to four years after tree harvest, gray and fox squirrels were abundant in mature woody riparian zones wider than 55 m but were rare in riparian zones narrower than 40 m (Hedrick 1973). The highest squirrel density index was calculated for the widest stringer study plot (185 m).

The home-range size requirement for an individual gray squirrel is about two acres (Burt and Grossenheider 1964). Larger Wekiva wildlife residents require larger areas. For example, home-range sizes for individual gray foxes

and bobcats in Welaka, Florida, is about 625 and 4,580 ha, respectively (Progulske 1982). Any actions that reduce suitable contiguous habitat below these home-range sizes will prevent individual animals from occupying those areas. Of course, viable self-sustaining wildlife populations require considerably larger home ranges than do of individuals.

Aside from the fragmentation factor, various human activities may alter behavior patterns or cause undue stress to some wildlife individuals in adjacent habitats. This is a relatively new aspect of wildlife biology, and very little research data are available regarding the effects of specific human activities on different wildlife species.

Noise associated with construction, operation, and maintenance of developments can cause harmful impacts on wildlife. Animals that rely on their hearing for courtship and mating behavior, prey location, predator detection, homing, etc., will be more threatened by increased noise than will species that utilize other sensory modalities. However, due to the complex interrelationships that exist among all the organisms in an ecosystem, direct interference with one species will indirectly affect many others. Unfortunately, few data are available that demonstrate the effects of noise on wildlife. Much of what is found in the literature lacks specific information concerning noise intensity, spectrum, and duration of exposure.

A few laboratory studies have documented decreased nesting and aversion reactions of small mammals in response to various sound frequencies (Sprock et al. 1967, Greaves and Rowe 1969). Other research has focused on the use of noise for damage or nuisance control. Diehl (1969), Crummett (1970), Hill (1970), and Messersmith (1970) reported on the success of using sound to repel rodents, bats, rabbits, deer, and birds.

The Environmental Protection Agency (1971), Ames (1978), and others have reported on the physiological responses of laboratory and farm animals to different noise stimuli. These data suggest that chronic sound may cause stress on wild animals which in turn may affect reproduction.

Most people can easily relate to auditory interference, annoyance, hearing damage, sleep interference, and stress-related effects of noise. And in response to public demands, many noise-control ordinances have been enacted to reduce these adverse impacts. However, it is doubtful that these laws sufficiently protect wildlife species.

van der Zande et al. (1980) found that breeding densities of three open grassland bird species were significantly reduced within 500 m of quiet rural roads and 1,600 m of busy highways in The Netherlands. They suggested that disturbance is also caused by farms, other buildings, and plantations.

Although Robertson and Flood (1980) found no significant differences in several vegetation variables between developed and undeveloped sites along Ontario shoreline areas, bird species diversity was negatively correlated with disturbance. A greater number of species was found in the natural areas than along shorelines where cottages were present and boat use was high. Several species which also nest in Florida (yellow-billed cuckoo, yellow-throated vireo, American redstart, and pileated woodpecker) were more abundant in, or restricted to, the less disturbed transects.

The Florida Game and Fresh Water Fish Commission is in the process of developing habitat protection guidelines for threatened and endangered species to provide land-use decisionmakers with recommendations and management practices that would integrate protection for these habitats in the context of large-scale developments. Many of these recommendations will address within-habitat needs such as those identified in The Recovery Plan for the Bald Eagle

in Florida (Murphy et al. 1984). This U.S. Fish and Wildlife Service document states that no human activity should occur within 750 ft (250 m) of active eagle nests and that the building of housing developments should be restricted within 750 to 1,500 ft (500 m) of active nests. Potential bald eagle nesting sites are currently abundant along the Wekiva.

Predation and harassment of wildlife by cats and dogs are other detrimental effects of development adjacent to wildlife habitat areas. Although relationships between domestic animals and wildlife are not fully understood, there is enough information in the literature to justify a legitimate concern. Several authors have documented the occurrence of wildlife prey in the diets of free-ranging cats and dogs and the effects of their predatory behavior on individual wildlife animals and populations (Errington 1936, McMurry and Sperry 1941, Bradt 1949, Hubbs 1951, Parmalee 1953, Eberhard 1954, Korschgen 1957, Smith 1966, Corbett et al. 1971, Gilbert 1971, Jackson 1971, Gavitt 1973, George 1974, Gill 1975, van Aarde 1980).

Cats can be especially devastating on local wildlife populations. Hunting is a feline instinct, and predation rates are not related to hunger (Davis 1957, Holling 1966, Holling and Buckingham 1976). Bradt (1949) reported that a single cat, who regularly consumed domestic food, killed over 1,600 mammals and 60 birds in Michigan during an 18-month period.

van Aarde (1980) found that free-ranging cats associated with households utilized open fields, edges, and timber areas. Home range sizes for females and males were 30 to 40 ha (about 100 ac) and four to eight square km (about four sections), respectively. In an Illinois study, the average home range for females and males was 112 and 228 ha, respectively (Warner 1985). These free-ranging rural cats spent about 40% of their time on farmsteads. Approximately

73% of the radiolocations of these cats occurred in edge areas such as roadsides, field interfaces, farmstead perimeters, and waterways.

Beck (1973) reported that the average home range for free-ranging dogs in Baltimore was about four acres. Schaefer (1978) reported that dogs in rural Iowa traveled up to two miles to kill pastured sheep.

Alteration of natural vegetation or other components of wildlife habitat may make modified areas unsuitable for some species. As these unsuitable areas encroach upon natural areas, core habitat fragments become smaller and the number of supported species is reduced. Various forms of disturbance can also adversely affect adjacent wildlife populations. An upland buffer would reduce or eliminate negative disturbance impacts associated with development.

II.B. Review of Buffer Zone Regulations

In this section methods and models for determining requirements and physical dimensions of buffer zones are presented. Buffer zones are normally considered to protect quality and wetland-dependent wildlife and to reduce the potential for negative impacts on a wetland resulting from adjacent upland development.

The determination of buffer requirements (i.e., widths in relation to land use, soils, topography, etc.) for the most part are not quantitative, but rely on what is felt to be qualitative evidence for the necessity of buffering development impacts. Never-the-less, there are numerous rules and regulations that have been promulgated throughout the country that require buffers around wetland areas.

The Pinelands Area

One of the most noteworthy buffer zones is that developed by the New Jersey Pinelands Commission. The Pinelands Area (also known as the Pine Barrens) is an area of about 445,000 ha of an interrelated complex of uplands, wetlands, and aquatic communities in southeast New Jersey. It is a largely undeveloped region within the Northeast Urban Corridor and was designated as the country's first National Preserve in 1978. In the next year the State of New Jersey passed the New Jersey Pinelands Protection Act that in essence called for the preservation, protection, and enhancement of the significant values of Pinelands land, water, and cultural resources.

In response to both federal and state legislative mandates, the Pinelands Commission developed a Comprehensive Management Plan to preserve and protect the unique and essential character of the Pinelands ecosystem. In the plan, wetlands protection is fostered through a regional land allocation program, a land acquisition program, and a wetland management program. The management program prohibits most development within wetlands and also requires an upland buffer around wetlands. The required "transition or buffer area" established between proposed development and adjacent wetlands measures 300 ft wide, and except for those regulated uses which have been described, no development may occur within the area.

Rationale for the width of the Pinelands buffer is derived from areal nutrient dilution models (Harlukowicz and Ahlert, 1978; Trela and Douglas, 1979 and Browne 1980) that were used to predict the travel distance necessary for groundwaters laden with nutrients (from septic tank leachate) to be diluted to background levels. Depending on the values used for input variables to the model, it predicted distances to attain background concentrations of 2 mg/l NO_3 -nitrogen of between 325 ft and 600 ft.

Since the implementation of the Pinelands Comprehensive Management Plan, 327 development applications that involved wetland issues have been reviewed by the Pinelands Commission. More than one third of these were considered inconsistent with the plan because they proposed development within wetlands or within 300 ft of wetlands (Zampella and Roman, 1983).

Figures compiled by Zampella and Roman (1983) show that more than over half of the development applications that involved wetland issues were consistent with the wetland management provisions of the plan. However, among the conditions imposed on these projects was the need to establish and maintain a buffer adjacent to wetlands. Approximately one third of these applications were required to maintain the maximum buffer of 300 ft, while the remainder were required to maintain variously sized buffers which averaged about 135 ft in width.

The Pinelands scheme of determining wetland buffers uses a Wetlands Buffer Delineation Model that evaluates relative wetland quality, and relative impacts of development. Prior to evaluating wetland quality a determination of the presence of threatened or endangered species is made, and if the wetland is known to support resident and/or breeding populations and if the wetland area is critical to their survival, the wetland is ranked having the maximum relative wetland value index and is, assigned a buffer of 300 ft. The following qualities, values, and functions are evaluated as part of the wetlands evaluation scheme and are evaluated after determination of presence of threatened and/or endangered species is made:

- Vegetation quality,
- Surface water quality,
- Potential for water quality maintenance,
- Wildlife habitat, and
- Socio-cultural value.

Each of the five general factors listed above has a score from 1 to 3, where 3 is high value. A wetland is scored for each factor, and scores are summed and divided by 5 to obtain a Relative Wetland Value Index.

Next, Potential for Impacts is evaluated by ranking the following factors:

Potential for site-specific wetland impacts,
Potential for cumulative impacts on a regional basis, and
Significance of watershed-wide impacts.

Once ranked, the scores for each of the potential impact factors are summed and divided by 3 to obtain an average score for the Relative Potential for Impacts Index.

To assign buffer areas, the final step is to average the Relative Wetland Value Index and the Relative Potential for Impacts Index to obtain a Buffer Delineation Index. This final index is used to determine the buffer distance in three different Land Capability Areas using a table of assigned values.

The strengths of the methodology are: (1) Wetland attributes and the potential for on- and off-site impacts are evaluated for each individual wetland and each development proposal on a case-by-case basis. Depending on the type of wetland, existing terrain, existing land use designations, and type of development, the buffer varies from a minimum of 50 ft to a maximum of 300 ft. (2) The method is quantitative and repeatable thus insuring some degree of consistency. (3) It does not require detailed scientific information about a wetland.

State of New Jersey

The House of the State of New Jersey has passed a bill whose short title is "Freshwater Wetlands Protection Act." As of this writing the State Senate has not acted upon the bill the ace would establish

...a transition area adjacent to all wetlands having the following purposes:

- (1) Ecological transition zone from uplands to wetlands which is an integral portion of the wetlands ecosystem providing temporary refuge for wetlands fauna during high water episodes, critical habitat for animals dependent upon but not resident in wetlands, and slight variations of wetland boundaries over time due to hydrologic or climatic effects:
- (2) Sediment and stormwater control zone to reduce the impacts of development upon wetlands and wetland species.

The bill would also establish the width of the transitional area as no greater than 150 ft and no less than 75 ft for freshwater wetlands of exceptional resource value, no greater than 50 ft and no less than 25 ft for freshwater wetlands of intermediate resource value, and no transitional area for wetlands of ordinary resource value. The act prohibits the following activities in transition areas:

- Removal, excavation or disturbance of the soil;
- Dumping or filling with any material;
- Erection of structures;
- Placement of pavements; and
- Destruction of plant life which would alter the existing pattern of vegetation.

New York State Wetlands Protection Act

The recent adoption of the Freshwater Wetlands Act (6 NYCCR) protects wetlands 12.4 ac or greater in size. The Act recognizes ten specific functions and benefits which freshwater wetlands provide for the public and for the environment. To achieve the goals of the Act to protect, preserve, and conserve New York's freshwater wetlands, the statute makes provisions for mapping, classification, regulation and local government protection. The act provides for the regulation, of a 100-foot buffer adjacent to wetland boundaries. Provisions exist in the law to extend the 100-foot adjacent area if necessary to protect the wetland.

California Coastal Act of 1976

The California Coastal Act (Public Resources Code, Division 20) established the California Coastal Commission which in turn promulgated the Statewide Interpretive Guidelines (SIG) to assist in the application of various Coastal Act policies to permit decisions. The SIG has set standards for siting development adjacent to environmentally sensitive habitat areas (ESHA). Wetlands are considered environmentally sensitive habitat areas, as are estuaries, streams, riparian habitats, lakes, and portions of open coastal waters. "Adjacent to" is defined as situated near or next to, adjoining, abutting, or juxtaposed to an ESHA. This usually means that any proposed development in an undeveloped area within of up to 500 ft of an ESHA will be considered to be adjacent and subject to critical review.

Criteria for establishing buffer areas around ESHA's are designed to provide essential open space between the development and the ESHA. Development allowed in a buffer area is limited to access paths, fences necessary to protect the habitat area, and similar uses which have either beneficial effects or at least no significant adverse effects. The buffer is not itself part of the ESHA, but it is a "screen" that protects the habitat area from adverse environmental impacts caused by development. Widths of buffer areas are variable depending upon site analysis. It is usually a minimum of 100 ft; however, it may reduce for small projects (defined as single family home or one commercial office building). Additionally, provisions are suggested that the 100 ft may be reduced if the applicant can demonstrate that it is not necessary to protect the resource. Standards for determining the appropriate width of the buffer area:

1. Biological significance of adjacent lands,
2. Sensitivity of species to disturbance,
3. Susceptibility of parcel to erosion,
4. Use of natural topographic features to locate development,

5. Use of existing cultural features to locate development,
6. Lot configuration and location of existing development, and
7. Type and scale of development proposed.

Humboldt County, California

Humboldt County's Southcoast Plan defines riparian corridors and limits development within them. It defines riparian corridors to include the uplands on both sides of streams as follows:

Riparian corridors on all perennial and intermittent streams shall be, at a minimum, the larger of the following: (i) 100 ft, measured as the horizontal distance from the stream transition line on both sides; (ii) 50 ft plus four times the average percent of slope, measured as a slope distance from the stream transition line on both sides; (iii) where necessary, the width of riparian corridors may be expanded to include significant areas of riparian vegetation adjacent to the corridor, slides, and areas with visible evidence of slope instability, not to exceed 200 ft. (Humboldt County Planning Department 1981, as cited by Ray et al. 1984)

Uses in the riparian corridor have been limited to minor facilities, minimal timber harvest, maintenance of existing facilities, residential wells, road and bridge replacement, and tree removal for disease control. There must be, at a minimum, replanting of vegetation for any approved disturbance, and any trees that have visible evidence of current use as nesting sites by hawks, owls, eagles, osprey, herons, or egrets must be retained.

Massachusetts Wetlands and Floodplain Protection Act

The Massachusetts Wetlands and Floodplain Protection Act recognizes three types of wetlands: 1) land areas bordering water bodies; 2) land under water bodies; and 3) land subject to tidal action, coastal storm flowage, or flooding. These wetlands must border on a listed water body with 50% or more wetland vegetation or within the 100-year floodplain. Permits are required for virtually any development activity in, near, or affecting jurisdictional areas. Work within a 100-foot buffer zone around wetlands may require a permit since

the Act defines "bordering" as a distance of 100 ft. The regulation provides that the extent of protection is to be 100 ft landward from wetland resources or 100 ft landward from the water elevation of the 100-year flood, whichever is greater.

Rhode Island Coastal Resources Management Program

The General Laws of the State of Rhode Island, Title 46, Chapter 23, establishes the Coastal Resources Management Council (CRMC). The CRMC has developed the Coastal Resources Management Program. The Program establishes setbacks ranging from 50 to 180 ft from the inland boundary of coastal features such as beaches, wetlands, cliffs, banks, rocky shores, and existing manmade shorelines and apply to the following activities:

- Filling, removal, grading;
- Residential buildings;
- Sewage disposal systems;
- Industrial, commercial, recreational structures; and
- Transportation facilities.

The setback minimum in areas not designated as Critical Erosion Areas is 50 ft, and within Critical Erosion Areas it is 30 times the calculated average annual erosion rate, which has been determined to vary between 75 and 180 ft.

In addition to setback requirements, the program establishes Buffer Zones defined as land areas on or contiguous to a shoreline feature that is retained in its natural and undisturbed condition by the applicant. Buffer zones must be tailored to on-site conditions and the specific alterations and activities that are taking place. Further, the determination of the boundaries of a buffer zone need to balance the property owners' rights to enjoy their property with the Council's responsibility to preserve and, where possible, to restore ecological systems. There are four benefits of buffer zones as follows:

1. Erosion control,
2. Prevention of water body pollution,

3. Preservation and enhancement of scenic qualities, and
4. Protection of flora and fauna.

The buffer zones are established according to values and sensitivities of the site as assessed by the Council's staff engineer and biologist, and the area may be wider than the setback distance. The buffer must be maintained by the applicant as an undisturbed area and in its natural condition.

Marion County, Florida

The Board of County Commissioners of Marion County, Florida adopted an emergency ordinance (Marion County Ordinance No. 73-4) in June of 1973

"...prohibiting dredging, filling, earth moving, and landclearing, and underbrushing except mowing, pruning, and care of existing lawns and planted trees and shrubs for a distance of 500 ft from the water's edge upon either side of Rainbow River or Blue Run in Marion County, Florida, between Rainbow Springs and the northern city limits of the city of Dunnellon...."

Cross Creek Buffer Requirement

In an amendment to its Comprehensive Plan, the Alachua County Commission adopted a 300-foot setback line from lakeshores for most development in a designated area in the southeast part of the county known as Cross Creek. The only construction allowed within the setback zone are structures such as docks built for access to the lake. The setback line is measured upland from the jurisdictional line set by the Department of Environmental Regulation or the St. Johns River Water Management District, or, where the lakeshore has been cleared, from the 100-year floodplain line. The setback width of 300 ft was determined qualitatively. The plan amendment is currently being rewritten. A new version expected to be completed by the second week of October 1987, may require a variable setback line based on such factors as soils, slope, habitat,

and groundwater, with a minimum setback of 75 ft. (John Hendricks, Alachua County Department of Environmental Services, pers. comm.)

Hillsborough County Wetland Buffer Requirement

A 30-foot buffer around "conservation areas" and a 50-foot buffer around "preservation areas" are required by Hillsborough County. The former category includes most freshwater wetlands and Class III waters; the latter includes saltwater wetlands, Class I waters, and critical habitats. These categories originated in the Conservation Element of the county's Comprehensive Plan adopted in the mid-1970s. That document set a policy to require "appropriate buffers" around those areas, but no width or formula to calculate width was set forth. However, in the definition of "natural shoreline"--another category of conservation area--a 30-foot width was mentioned as one way to delimit natural shorelines, and that number was applied by county zoning staff in rezoning applications involving freshwater wetlands. The larger buffer was required around preservation areas because they are considered to be more sensitive than conservation areas, but no formula was used to establish that width.

Both buffers were adopted by the Hillsborough County Commission in a 1985 ordinance (revised in 1987) and as part of its zoning code. A variety of uses are permitted within the buffer zone, such as detention ponds, stilted structures, and boardwalks, but impervious surfaces are prohibited. Removal of natural vegetation is discouraged but not prohibited. (Charner Benz, Hillsborough County Planning and Growth Management Group, pers. comm.)

II.C. Summary: Resource Buffer Zones

Effects of activities in the upland areas immediately adjacent to floodplain wetlands may be separated into three time-related categories:

1. Direct and immediate impacts which occur during the construction phase,
2. Impacts which occur immediately following the construction phases during the period of stabilization, and
3. Long-term impacts that are permanent as a result of the alterations themselves or subsequent use and/or management of the altered areas.

These development impacts affect three broad sets of parameters normally considered of particular importance from a regulatory perspective. They include:

1. Water quality,
2. Water quantity, and
3. Aquatic and wetland dependent wildlife.

Thus each of these attributes may be affected during construction, immediately following construction, or in the long term through human uses and management.

Water Quality. The need for a buffer to insure that water quality is not degraded as the result of upland development in areas immediately adjacent to floodplain wetlands of the Wekiva River Basin is related to two potential sources of degraded waters. The first is sediments carried by surface waters from developed lands into down-gradient wetlands and waters. The second is dissolved pollutants and suspended particulate matter that degrade water quality through what might be termed chemical pathways. These include nutrients, pesticides, and particulate organic matter which increase nutrient loading, may be harmful to aquatic plant and animal life, or increase BOD. Both sources of degraded water may come from the result of runoff during construction, during the period immediately following construction as the landscape stabilizes, or as a result of urban stormwater runoff long after the period of initial urbanization.

Loss of valuable wetland functions as a result of sedimentation may be the most serious impact during construction activities. Sedimentation causes loss

of soil properties and vegetation that are characteristic of wetlands and loss of wildlife habitat. In addition, sediments may carry significant amounts of pollutants and nutrients. Siltation and sedimentation of the wetland edge result from increased water velocities acting on soils susceptible to erosion, removal of ground cover in adjacent areas, or increased volumes of stormwaters entering the wetland that carry increased amounts of sediments.

Where the waterward lots of a development are not incorporated into the stormwater management system, the potential for long-term decreased water quality after the construction phase is related to surface runoff from driveways and lawns and groundwaters carrying increased levels of nutrients and pesticides/herbicides from lawn care practices. While the rule criteria of the District requires specific stormwater management practices to mitigate water quality impacts from stormwaters, the rules allow 10% of the developed area to be "unconnected," that is, to receive no treatment.

Water Quantity. The water flowing into the waters and wetlands of the Wekiva River Basin is derived from three general sources. The first is groundwater (or surficial groundwater) that becomes surface seepage where ground surface elevations intersect the zone of saturation. This usually occurs on inclines near the base of sandy slopes and is characterized by surface soils that are saturated, shallow ponding of seepage waters, and small seeps that coalesce into undefined flowing surface streams. The second source is surface runoff as sheet flow from adjacent higher ground during and immediately following rainfall events, and the third source from artesia flow of deep groundwaters.

Development in the zone immediately upland from the floodplain wetland edge may have dramatic impacts on the quantity of water from surface and surficial groundwater sources. Seepage is usually derived from rains that have

recharged groundwaters in higher sandy soils and are moving downslope over a broad front thus, seepage areas tend to extend over the toe of the slope in a perpendicular line across the slope where the ground surface intersects the groundwater elevation. The site of seepage is usually dominated by floodplain vegetation. Alteration of the ground surface elevation through excavation in areas immediately upslope from the site of seepage may intersect the groundwater plain, and if positive drainage is maintained, can lower groundwater levels and essentially cut off further downslope seepage. If no positive outfall is maintained, the effects of excavations immediately upslope from seepage sites may have only minor impacts, since waters may be intercepted and discharged on the upslope side of the excavation, but may become groundwaters through recharge on the downslope side.

In most areas where seepage is present, groundwater elevations immediately upslope are quite near the soil surface and are not conducive to many land uses. General engineering practices in areas with high water tables is to lower water table elevations by drainage or raise ground elevations by filling to make such areas more suitable for development. While filling may have little impact on subsurface water flows, drainage has the overall effect of short-circuiting groundwater flows, cutting off potential groundwater seepage downslope, and increasing surface discharge elsewhere.

The effects of development on surface water flows in areas immediately upslope of the wetland edge are more easily seen and more direct. Impervious surfaces and sod increase runoff coefficients significantly over coefficients characteristic of natural lands. If these waters are not intercepted by a stormwater management system, they enter the wetlands and eventually the waters of the river. The increased volumes and velocities may cause significant degradation of downslope communities. However, under most development

conditions, these waters are required to be routed through a stormwater management system, thus lessening the burden of the downslope communities. Yet these very requirements may in effect decrease sheetflow from rainfall events, since intercepted surface waters are routed elsewhere. The obvious implications of altered surface runoff and water quality have already been discussed.

The temporal differences of impacts on ground and surface water quantity before, during, and after construction may be significantly different. Construction practices may dictate that surface waters and groundwaters be routed differently than will be the case after construction, or that groundwaters be temporarily drained to facilitate construction activities. Once construction is completed and the stormwater system is under operating, the impacts on surface and groundwater quantity may vary little over time. Generally, stormwater discharge requirements within the Wekiva River Hydrologic Basin are designed to minimize negative impacts to surface waters through detention/retention, off-line treatment, and additional criteria. However, these requirements, and the fact that typically all lands within a project are engineered as part of the stormwater system, have the effect of isolating developed land. Contributions of overland flow runoff to downslope communities are minimized under such circumstances, since normal engineering practices are to discharge collected stormwaters at one or several point sources.

Aquatic and Wetland-Dependent Wildlife. Construction, operation, and maintenance of developed areas immediately adjacent to Wekiva River wetlands will result in both direct and indirect impacts on aquatic and wetland dependent wildlife. Noise during construction will interfere with vocalizations necessary for courtship, mating, prey location, and predator detection. Although this hindrance will be only temporary, there is no way to

predict long-term consequences. After individuals disperse to less noisy territories, they may or may not return. Chronic and acute noises of occupied residential communities will cause less severe impacts. However, auditory interference and stress-related effects will still occur in close proximity to these developed areas. A vegetated buffer will help to attenuate harmful sounds.

Domestic animal harassment and predation on wildlife will also increase when pets are brought into adjacent developments. Development covenants and local laws usually require owners to leash their pets. However, the probability of a few free-ranging dogs and many free-ranging cats is quite high. Because cats tend to spend most of their prey-searching time in edge areas, an upland buffer will help to alleviate cat predation on wetland wildlife species.

Indirect impacts on wildlife will be related to habitat alteration resulting from construction. The removal of natural uplands vegetation adjacent to the wetlands will cause the originally mesic community along the outer edge of the wetlands to become more xeric. Drier community species will invade and eventually dominate this area. The ultimate result will be a reduction in the wetlands and a corresponding decline in those species that are wetland-dependent. In some areas, the width of the wetlands may become too small, and the species composition will change because those with larger spatial requirements will no longer be present. Increased predation and parasitism associated with sharp induced edges will also encroach farther into the forest.

Wetland-dependent species that require uplands to fulfill at least some of their life functions will be extirpated from the Wekiva River Basin if there is no

access to these uplands. An upland buffer adjacent to the wetlands will be needed to protect this necessary habitat element.

III. LANDSCAPE ECOLOGY OF THE WEKIVA RIVER BASIN

III.A. Landscape Perspective

III.A.1. Physical Description

Topography. The landscape of the Wekiva River Basin is a complex mosaic of wetland and upland habitats distributed over approximately 130 sq mi in north central Orange County, southeastern Lake County, and western Seminole County. The basin contains the physiogeographic province known as the Wekiva River Plain. Its topography is flat to gently rolling. Elevation declines towards the northeast, where the Wekiva Plain merges into the valley of the St. Johns River.

On the western side of the upper Wekiva River, the land slopes gently upward to the sandhills, from whence it rises abruptly to elevations of 120 to 195 ft above sea level. Sandhills and sloping terraces separate large tracts of swampy lowlands and determine the circuitous route by which the waters of Rock Springs Run State Reserve flow southeastward. These waters turn north below the confluence of Wekiva Springs Run and the Little Wekiva River. North of this confluence, the floodplain narrows and turns to the northeast above State Road 46. The floodplain broadens out again where the Wekiva River joins Blackwater Creek and the St. Johns River in the Lower Wekiva River State Reserve (DNR, 1985, 1987).

Along the west bank of the Wekiva River upstream (south) of its confluence with the Little Wekiva, elevation rises gradually towards the northwest from 15 ft above sea level along the river to approximately 35 ft above sea level.

Beyond the 35-foot contour, the land surface rises abruptly into upland sandhill tracts in the north central section of Rock Springs Run State Reserve. Downstream (north) of the Wekiva/Little Wekiva confluence, the floodplain narrows abruptly, and the flow gradient increases rapidly to 1.6 ft/mi. The flow gradient in this stretch of the central Wekiva River is one of the steepest in east-central Florida, and the elevation along this section of the Wekiva rises much more steeply above the narrowed floodplain than it does in the flat swamps of the upper and lower sections. The width of the Wekiva/Little Wekiva floodplain narrows to about 1,000 ft along the central portion of the river, decreasing rapidly from its maximum dimensions of about 5 mi east/west by 3 mi north/south in the Wekiva Swamp. The floodplain broadens out once again in the Lower Wekiva River State Reserve (near the confluence with Blackwater Creek) to a width of 1 mi at the Wekiva's confluence with the St. Johns River (DNR, 1985, 1987).

Blackwater Creek is a major tributary of the Wekiva which drains the watershed lying just north of the Wekiva Basin. Its watershed covers approximately 125 sq mi, nearly all of which is in southern Lake County. Blackwater Creek's headwaters are in Lake Dorr, and its floodplain varies in width from 800 ft at State Road 44A to over a mile along its upper and lower reaches. Another major tributary, Seminole Creek, joins Blackwater Creek at the eastern edge of Seminole Swamp. Seminole Swamp extends north and west from the confluence of Blackwater and Seminole creeks, covering an area of about 3 mi east/west and 1.5 to 2 mi north/south. This swamp lies between State Road 46A and State Road 44 in southern Lake County. Blackwater Creek flows into the lower Wekiva near the confluence of the Wekiva and the St. Johns. The waters of the Wekiva River Basin merge with those of the St. Johns and flow northward to enter the Atlantic Ocean at Jacksonville, Florida (DNR, 1985, 1987).

The wetlands of the Wekiva Swamp's northern end connect with the lower reaches of Seminole Swamp through a narrow wetland corridor (not shown on all maps) which bisects the lands lying above the west bank of the Wekiva River and the northern borders of Wekiva Swamp. This wetland strip is an extremely important feature of the basin. It provides a wildlife corridor through which animals can move between these otherwise disjunct wetland communities (see Noss and Harris, 1986).

The basin's diverse topography engenders a wide range of habitats, ranging from submerged aquatic plant associations to upland sandhill communities. Local soil characteristics and elevational effects combined with past and present disturbances influence the development of the various plant communities found within the Wekiva Basin.

Geology and Hydrology. The Wekiva Plain was formed by Pleistocene terrace sands deposited during times of elevated sea level which occurred during interglacial periods of the Pleistocene. The most recent extended saltwater incursion probably occurred during the Sangamonian interglacial about 100,000 to 200,000 years ago, when sea levels were about 20 ft above those of the present time (Bloom, 1983). Dunes were built up during the dry and windy periods of earlier and later glacial periods (Watts and Hansen, in press). These sands overlie the older marine limestones, clays, and marls of the Hawthorne Formation, which rest upon the deeper, porous Paleocene limestones and dolomites containing the Floridan Aquifer (Heath and Conover, 1981). The non-sedimentary bedrock of the Florida peninsula upon which these marine deposits have accumulated lies at least 4,100 ft below the present ground surface and ties in with the crustal rock of the continental plate.

Soils in the Wekiva Basin can be grouped in five associations. The Freshwater Swamp Association occurs in the Wekiva River floodplain and the

bottomlands around the upper part of Rock Springs Run State Reserve. These soils are usually saturated with water and are flooded much of the time. They are adjoined by the Manatee-Delray Association, which grades uphill into the Pompano-Delray Association. The two latter groups include soils which are sandy, nearly level, poorly drained, and subject to periodic flooding. The Myakka-Placid Association soils of the north-central and northeastern portions of the Rock Springs Run State Reserve are sandy, nearly level, poorly drained, and not normally subject to flooding. The St. Lucie-Pomello Association soils of the uplands are sandy, moderately to excessively well-drained, and not subject to flooding. They are restricted to the upland sandhill areas of the Wekiva Basin (DNR, 1985; see also USDA, 1960, 1966).

Organic matter content of soils in the Wekiva Basin is high only in wetland soils. Silt deposition and decayed plant materials have formed the rich organic soils of river alluvium, swamp muds, and peat bogs in the basin.

The general absence of well-developed topsoil horizons in sandy upland soils of the region encourage the rapid infiltration of rainwater. However, the lack of organic matter, clays, and silts in the surface soils restricts nutrient availability and limits the water-holding capacity of upland soils. Although highly permeable for the most part, the upper horizons of upland sandy surface soils quickly reach saturation during heavy rains, and sheetflow movement of rainwater can result. Problems associated with surface runoff and erosion may develop in conjunction with the heavy rains accompanying major storm fronts, especially in areas where the protective vegetation cover has been disturbed or removed. Ecosystem disturbances of historical importance to the disruption of the vegetative cover of Wekiva Basin soils include logging, livestock grazing, high-intensity recreational use, construction and development, and wildfire. Wildfire is by far the least destructive of these

disturbances to the natural vegetation and wildlife. Indeed, fire is an essential ecological component of several endemic plant communities native to the region.

Lakes and sinkholes are scattered throughout the basin as the result of the formation and subsequent collapse of solution cavities within the upper layer of the underlying Hawthorne Formation limestone bedrock. Sudden surface collapses due to sinkhole formation have in recent years swallowed buildings, automobiles, and sections of roads in the suburbs of nearby Orlando. The prevalence of sinkhole formations in the regions bordering the southern edge of the Wekiva Basin dictate caution in siting industrial and residential development.

The same forces which create sinkholes also created the many artesian springs for which the Wekiva Basin is renowned. The water in these springs comes from the Florida aquifer in deep Paleocene limestones and dolomites via faults in the overlying Hawthorne Formation. Crevices and solution channels have penetrated the otherwise impervious clay and marl layers of the Hawthorne Formation and dissolved the underlying limestone. These provide the means for developing surface outlets for artesian springwaters.

The major springwater sources of the upper Wekiva River are Wekiva Springs (48 million gallons per day [MGD]), Rock Springs (42 MGD), Sanlando Springs (14 MGD), and Sheppard Springs (11 MGD). More than two-thirds of the Little Wekiva River's flow is provided by a combined discharge of 14 MGD from Seminole, Palm, and Starbuck Springs. Springflows from the Floridan Aquifer comprise most of the Wekiva River's water volume, which averages 186 MGD at State Road 46 (DNR, 1986, 1987). Reductions in flow of several major springs during the past two decades have been attributed to water withdrawals from numerous deep

groundwater wells in the region which supply water for residential, industrial, and agricultural uses (FWR, 1985; see also Heath and Conover, 1981).

Two man-made springwells at Wekiva Falls with a combined flow of 40 MGD enter the Wekiva just south of State Road 46. Withdrawals from these deepwater wells may be partly responsible for the recent decrease in springflow volume from various natural springs in the Wekiva Basin. However, cutting off upstream springflows from Wekiva Falls may not have particularly adverse effects on lower Wekiva River wetlands. The proximity of this source to the confluence of Blackwater Creek and the St. Johns River and the steep flow gradient in this section of the Wekiva River tend to reduce the importance of this water source to the ecology of the Lower Wekiva Aquatic Preserve region. The natural channelling of the river into a relatively restricted wetland zone caused by the increase in flow gradient tends to mitigate the negative impacts on wetlands of the lower Wekiva River from reduced flows caused by the Wekiva Falls wells.

Further drawdowns in the regional water table due to over-exploitation of water resources from the Floridan Aquifer will have major impacts on the wetland habitats of the Wekiva Basin. Since about 70% of the Wekiva River's water comes from springs, any reduction in springflow volumes will adversely affect the size, distribution, character, and quality of state-domain wetlands, waterways, and aquatic habitats in the Wekiva Basin (DNR, 1987).

Climate. The Wekiva Basin lies in the southernmost latitudes of the humid subtropical climate zone of the southeastern United States. About two-thirds of the precipitation in the basin falls between June and September. On average, 10 to 15% of the annual rainfall occurs from December to February. Annual rainfall averages 52 inches, with most rain deposited during brief, heavy showers and thunderstorms (Heath and Conover, 1981). Tropical storms,

including hurricanes, contribute on average about 15% of the precipitation from June to November. Rainfall events greater than 30 inches within a single 24-hour period have been recorded during hurricanes at some Florida locations, and such events are possible in the basin if a severe hurricane moves through central Florida (Yoho and Pirkle, 1985). Tornadoes are not uncommon in central Florida, and torrential rains and high winds typically accompany the storm fronts which spawn these dangerous and sometimes highly destructive storms.

The average temperature for the central Florida region is 72 degrees F.; ambient temperatures of 85 degrees F. or higher can occur during all months of the year. Arctic air masses sometimes penetrate into the region during winter months, bringing usually brief but occasionally intense episodes of sub-freezing temperatures (Yoho and Pirkle, 1985; Heath and Conover, 1981). Record freezes occurring during the past few years have devastated the citrus industry in Lake County and most of north central Florida. Tens of thousands of acres of orange groves were severely damaged or killed outright during sometimes week-long periods of sub-freezing temperatures. Whether these recent spates of unusually cold winter weather in central Florida represent a long-term trend toward harsher winter climates is unknown.

The effects of these hard freezes do not seem to be as severe on native wildlife and plants as they are on agricultural crops, with one major exception. Populations of manatees (Trichechus manatus) in northern and central peninsular Florida suffer high mortality rates from cold stress and related causes during extended periods of freezing weather (T.J. O'Shea, USFWS, pers. comm.; see O'Shea et al., 1985). Although the artesian springheads of the St. Johns River valley create warm water refuges (72 degrees F.) for manatees, the animals must leave areas of warmer water to feed. As food plants become increasingly scarce near warm-water refuges, manatees are forced to

travel farther and farther in search of food, increasing their exposure to colder water temperatures and the risk of collisions with boats (see Hartman, 1979). Radio-tagged manatees from Blue Spring on the St. Johns River have been sighted in the Wekiva River, and residents have reported seeing manatees in the Wekiva (Beeler and O'Shea, 1978).

Solar insolation is generally high in central Florida. Clear skies predominate throughout much of the year, but morning ground fogs and rain clouds often reduce direct sunlight penetration for brief periods. The relatively high insolation and temperature regimes characteristic of Florida combine to produce high evapotranspiration rates. In peninsular Florida, surface water and groundwater losses to evaporation and transpiration may approach or exceed the amount of water gained from precipitation (Heath and Conover, 1981). The potential for such a water deficit demonstrates the importance of springflows from the Floridan Aquifer to the maintenance of surface-water levels in the Wekiva Basin. The preservation of existing wetland ecosystems in the central and upper Wekiva River Basin is absolutely dependent on continued supply of springflow waters at present levels (DNR, 1987).

III.A.2. Biological Description

Ecological Communities. The Wekiva Basin is a unique natural ecosystem. It lies in the zone where tropical and temperate floras overlap. Tropical plant species at the northern limits of their range grow side by side with temperate-zone plants (DER, 1983). The distribution of plant species in various plant communities varies according to specific site characteristics, and species typical of one community may frequently occur in another (see Hart, 1984). Some species have fairly rigid microhabitat requirements, while others occur in wide ranges of soil, shade, and moisture conditions. The soil

characteristics and disturbance history of a given area may result in the anomalous presence or absence of species or species groups. A knowledge of prior disturbance history (fires, logging, farming, ranching, etc.) is important in determining the extent to which present vegetation conditions reflect native vegetation patterns or the presence of human-altered plant communities (Noss, 1985). For example, selective logging has greatly reduced the abundance of cypress trees in the mixed hardwood swamp community of Rock Springs Run State Reserve (DNR, 1985).

Rigid separations among plant communities do not typically occur within most natural biotas. The distinct edges (abrupt ecotones) associated with fire-maintained communities and human-altered landscapes are exceptions. For the most part, categories for community types are general constructs devised for analysis and identification of gross habitat characteristics. Despite the overlap between community types, these recognized associations reflect important biological differences among various communities and special interactions or interdependencies among the constituent species of each community.

The flows of numerous artesian springs from the Floridan Aquifer, together with groundwater drainage from the surrounding watershed, have created the vast network of stream channels and associated floodplains, lakes, and sinkholes which support extensive areas of hydric and mesic habitats in the Wekiva River Basin. The basin's landscape is dominated by wetland and lowland plant communities but is interdigitated by relatively limited and patchily distributed areas of transitional and upland habitats.

Deep-water and shallow-water herbaceous marsh communities inhabit the stream channels and flooded regions, grading into the hardwood swamp vegetation which also occurs on permanently flooded sites. Bottomland hardwood

communities (swamps and bayheads) grade into hydric hammocks where groundwater seeps riverward from upland communities and into mesic hammocks and flatwoods in areas of higher elevation. Drier upland communities in the region include pine sandhill, xeric hammock, and sand pine/oak scrub. Sinks and ponded areas support cypress domes and patches of wet prairie and mesic hammock (DNR, 1985, 1987; Brown and Starnes, 1983).

Wildlife. Many of the Wekiva Basin's wildlife species are locally ubiquitous mammals which are common throughout the region or not restricted to one specific plant community or habitat type. These include black bear (Ursus americanus), white-tailed deer (Odocoileus virginiana), feral hog (Sus scrofa), bobcat (Felis rufus), river otter (Lutra canadensis), striped skunk (Mephitis mephitis), opossum (Didelphis marsupialis), raccoon (Procyon lotor), two shrews, several bats, cotton mouse (Peromyscus gossypinus), wood rat (Neotoma floridiana), and two cottontail rabbits. Most of the ubiquitous species of the Wekiva Basin frequent swamps, and other species--including wood duck (Aix sponsa), pileated woodpecker (Dryocopus pileatus), and many songbirds--require forested wetlands for nesting and/or foraging habitats.

Many of these species require large expanses of diversified habitat mosaics. For example, black bears, sandhill cranes (Grus canadensis), and wild turkey (Meliagris gallipavo) need between-habitat diversity (presence of a patchwork of different habitats) within their home ranges to support the extensive daily or seasonal shifts in activity among various plant communities. Species such as bats, pileated woodpeckers, and water turtles, which typically forage and live within one habitat, may utilize quite different habitats for dispersal, reproduction, or hibernation. Other species, such as river otters, have large home ranges and travel widely among various habitat patches, even

though most of their activities are conducted in one habitat type (in this case, aquatic wetlands).

In describing the faunal communities of the Wekiva Basin, the focus will be upon typical species associations within given habitat types. As noted in reference to plant communities, these associations are, for the most part, flexible. Overlaps and omissions in the presence of species within community types may occur. However, the upland communities of the Wekiva Basin are exceptional in having several characteristic and interdependent (commensal) species which are entirely restricted to specific upland habitats. The wetland faunal communities include many species of restricted distribution (such as fishes or the endemic snail and crayfish species), as well as a large complement of more freely ranging forms which utilize several wetland habitat types.

Aquatic wildlife communities are comprised of species which are largely or entirely dependent upon aquatic ecosystems (rivers, lakes, springs, ponds: places where standing or flowing water is present to some degree at any given time) for at least part of their life cycle. These communities include animals such as toads and tree frogs which spend their adult lives in terrestrial habitats but which require aquatic habitats for breeding and the development of young (larvae or tadpoles). Aquatic communities in the Wekiva Basin region support a great diversity of wildlife, ranging from microscopic protozoans and invertebrates to the massive American alligator. Literally hundreds of species of snails, mussels, crayfish, insects, fishes, birds, amphibians, reptiles, and mammals share aquatic habitats with a broad spectrum of aquatic plant life. The aquatic plant community provides critical resources such as food, shelter, and oxygen for animals in aquatic environments and is the base of the aquatic food chain.

The aquatic plant communities in the rivers, springs, and floodplains of the Wekiva Basin support populations of numerous fishes, including various types of bass, sunfish, mullet, catfish, pickerel, shad, crappie, perch, shiner, topminnow, killifish, molly, and bowfin (see appendix for scientific names of species not detailed in this discussion).

The wetland herpetofauna of the region is exceptionally diverse and contains many aquatic forms. Amphibians which are largely or entirely dependent upon aquatic habitats include sirens, amphiumas, newts, bullfrogs, pigfrogs, and leopard frogs. The largely aquatic reptiles of wetland habitats in the region include American alligators, softshell turtles, cooters, mud turtles, alligator snapping turtles, stinkpots, water moccasins, and several non-poisonous water snakes. In contrast to amphibians--which typically lay their eggs in water--reptiles need terrestrial or semi-terrestrial sites in which to incubate their eggs. Some reptile species (especially turtles) must travel some distance from the water into adjacent upland habitats to find patches of sunlit, sandy soil necessary for successful nesting.

Some of the invertebrates of the Wekiva Basin (including three endemic snails of the genus Cincinnatia and the threatened Wekiva Springs Aphaestracon snail) are restricted to springhead habitats. The threatened Orlando Cave crayfish is an endemic form restricted to habitats in the Little Wekiva River system. Other important invertebrates of the basin are apple snails and burrowing crayfish. The apple snail is the primary food of the limpkin, a large snipe-like bird found in wetland habitats that support populations of this golf-ball-size snail. Burrowing crayfish spend part of the year in vertical burrows which are dug in muddy soils in non-flooded wetland and transitional zones. Excavated soil from the burrow is formed into a nearly cylindrical cone rising as much as 6 inches above ground level. Crayfish

emerge from these burrows periodically to forage and breed. Crayfish are an important food source for many larger vertebrates, including various fish, bird, and mammal species.

Many species of birds found within the Wekiva Basin are dependent upon aquatic and wetland habitats for foraging and/or nesting habitats. Osprey, anhinga, wood stork, egrets, herons, ibises, bitterns, ducks, snipe, gallinules, coot, limpkin, and grebes are characteristic of the open wetland and aquatic habitats of the region. Bald eagles (USFWS: Endangered; FGFWFC: Threatened) are expected to occur as transients in the aquatic communities of the area even if no resident individuals are known at the present time. The resident wood stork (Mycteria americana) has been classified as an endangered species by both state and federal agencies (FGFWFC, 1987). Sandhill cranes (threatened) utilize marsh, wetland, and upland sites in the Wekiva Basin. Other resident species such as the little blue heron (Florida caerulea), tricolored heron (Egretta tricolor), snowy egret (Egretta thula), and limpkin (Aramus guarauna) have been designated as Species of Special Concern (SSC) by the Florida Game and Fresh Water Fish Commission (FGFWFC, 1987). The wetlands bird community of the Wekiva region is exceptionally diverse. Encroachment upon wetland habitats will directly and indirectly affect these attractive and often highly visible components of the Wekiva Basin wildlife community.

Typical mammals of the aquatic marsh communities in this region include river otter, round-tailed muskrat (Neofiber alleni), raccoon, rice rat (Oryzomys palustris), and marsh rabbit (Silvilagus palustris). Otters and raccoons range widely among other habitats, while round-tailed muskrat, marsh rabbit, and rice rat are usually associated with marsh, swamp, or wet prairie communities.

The bottomland hardwood associations (hardwood swamp and bayhead communities) typically occur as closed-canopy woodlands which are distributed either as extensive wetland forests in flooded basins or as gallery forests along stream and lake margins. These communities represent a transitional gradient between strictly aquatic and terrestrial environments and retain characteristics of both. Consequently, the wildlife associated with swamp and bayhead communities includes species of both aquatic and terrestrial affinities. The Wekiva Basin swamps and bottomland hardwoods support not only numerous aquatic forms, but also many typically terrestrial animals, including black bear, white-tailed deer, turkey, opossum, gray squirrel (Sciurus carolinensis), cotton mouse, wood rat, gray fox (Urocyon cinereoargenteus), and striped skunk. The Wekiva Basin and the nearby southern portion of the Ocala National Forest constitute perhaps the best remaining areas of suitable bear habitat in central Florida (DER, 1983). The Florida black bear (Ursus americanus floridanus) is unique among North America's extant black bear populations in that its large size is commensurate with that of the ancestral black bears of Ice Age times (Kurten and Anderson, 1980). Management strategies keyed to protection of black bear populations and habitat requirements should benefit virtually all other wildlife in the Wekiva Basin.

The largely terrestrial habitats of the uplands include pine flatwoods, pine sandhills, and sand pine/oak scrubs. Flatwoods are used by bear, deer, spotted skunk (Spilogale putorius), cotton rat (Sigmodon hispidus), cotton mouse, diamondback rattlesnake (Crotalis adamanteus), and various other ubiquitous species. Flatwoods provide good cover and shelter for animals that forage in adjacent habitats, move between habitats, and seek refuge from high floodwaters during storms. The truly upland habitats of the region are the pine sandhill and sand pine/oak scrubs of the dry dune-ridges. Typical

wildlife species of these upland habitats include the gopher tortoise (Gopherus polyphemus, SSC) and its many associated commensal (interdependent) species, including the gopher frog (Rana sphenoccephala, SSC), the Florida mouse (Peromyscus floridanus, SSC), and the eastern diamondback rattlesnake. Pocket gophers (Geomys pinetis; also known as salamander or sandy-mounder) occur in more open habitats of deep, well-drained, sandy soils on high ridges in the Wekiva Basin. Longleaf pine sandhills are the preferred habitat of the Sherman's fox squirrel (Sciurus niger shermani, SSC). This species has been decimated over the past century by logging of mature pines in the sandhill communities. Reduced populations survive in remnant turkey oak forests, and the species may occur around cypress domes in flatwoods and in a few other upland ecotone situations (DER, 1983). The logging of mature longleaf pines and conversion of sandhill communities into citrus and slash pine plantations have severely affected the structure, composition, and distribution of sandhill ecosystems. The preponderance of listed species among the typical wildlife of the once widespread sandhill community is an indication of the extent to which this habitat has been disrupted by development.

The sand pine/oak scrub community contains several highly specialized endemic species such as scrub lizard (Sceloporus woodi), sand skink (Neoseps reynoldsi, threatened), and Florida scrub jay (Aphelecoma coerulescens, threatened). Many sandhill wildlife species also utilize scrub habitats and range freely between adjacent scrub and sandhill habitats. The acorns of various oak species common in these habitats are an important seasonal food for black bear, deer, turkey, and feral hog populations of the Wekiva Basin.

III.B. Wetland Communities

Wetlands habitats of the Wekiva Basin can be subdivided loosely into three major community types. These are the aquatic herbaceous marsh community of stream channels and springheads, the mixed hardwood swamp community of the river floodplains, and the hydric hammock community of groundwater and surface runoff seepage wetlands. Marshes and swamps are characterized by saturated or flooded soils which are subject to regular and extended periods of inundation by standing or flowing water. Hydric hammock soils are saturated but only occasionally inundated.

Marsh vegetation consists of submerged, emergent, and floating herbaceous plants. Swamp vegetation consists of water-tolerant trees and shrubs. Gradual shifts in plant species composition occur according to the regularity and depth of immersion for ground-level vegetation in floodplain habitats. The presence of surface water will greatly affect the types of wildlife species which are present at any given time.

III.B.1. Aquatic/Marsh Communities

The freshwater marshes of Florida are critically endangered. Freshwater marshes are vulnerable to changes in water levels, water quality, hydroperiod, and fire regimes. Drainage of marshes for development and agriculture has eliminated much of Florida's freshwater marsh habitat. Heavy recreational use, particularly when associated with off-road vehicle and boat traffic, can drastically alter the structure and composition of vegetation within marshes and inhibit the vital ecosystem functions of these communities.

The freshwater marsh is a critical resource for many species of birds, fishes, reptiles, mammals, and amphibians in the Wekiva Basin. Undisturbed areas of freshwater marsh provide excellent cover and travel routes for many

wildlife species. The vegetation of freshwater marshes filters surface runoff that feeds rivers and lakes. Soil particles are trapped within the vegetation matrix, and plant roots stabilize the soil surface both above and below the water level. Dense rafts and mats of marsh plants protect the stream banks from strong current flows and help prevent erosion during periods of high water and storm floods. Marsh plants fix and store nutrients and soil particles filtering in from the surrounding landscape, thus helping to prevent eutrophication.

The deepwater marsh communities (Water Hyacinth/Coontail/ Watergrass: Eichhornia/Ceratophyllum/Echinochloa) are dominated by rooted or free-floating aquatic herbaceous plants, and they typically occur on permanently flooded sites with water depths of 3 to 6 ft (Brown and Starnes, 1983). This community is found in the main channels and deeper sections of spring runs in the Wekiva Basin, with maximum development in sites not shaded by streamside tree canopy. These high-gradient, fast-moving streams tend to flush out the organic debris and compounds which stain the waters of blackwater swamp systems. High flow rates and steep gradients also create clearwater stream conditions within large tracts of hardwood swamps.

The large springflows of the upper Wekiva River system generate clearwater alkaline streams with high flow rates and clean, sandy bottoms. These calcareous springflows are rich in phosphorous and other nutrients and support luxuriant aquatic plant growth. Other representative plants of this habitat include water lily (Nymphaea odorata), hydrilla (Hydrilla verticillata), water-lettuce (Pistia stratioides), and duckweed (Lemna spp.). The common water hyacinth (Eichhornia crassipes) is a weedy exotic which has invaded aquatic habitats throughout Florida. This species has become the dominant aquatic plant in many localities within the region, severely encroaching upon

important native species such as eelgrass and coontail. Elimination of water hyacinth is a desirable but presently unachievable management goal.

Shallow-water marsh communities (Cutgrass/Maidencane/Cattail/ Arrowhead: Leersia/Panicum/Typha/Sagittaria) typically occur in sites which may be flooded only seasonally but which have water depths of 6 inches or more during the growing season (Brown and Starnes, 1983). Other representative species include sawgrass (Cladium jamaicense), sedges (Carex spp.), and rushes (Juncus spp., Elocharis spp., and Rynchospora spp.) These shallow-water herbaceous plant associations typically occur in the shallower sections of stream channels and along stream margins within the Wekiva Basin.

Wet prairie communities are similar to shallow marsh communities in terms of both their constituent species and flooding regimes. Water depths range from 0.5 to 2 ft in the growing season. Sometimes called grassy ponds, sloughs, or prairie lakes (DNR, 1985), the wet prairie is a grass/herb plant community associated with seasonally and permanently flooded areas of upland habitats (see below for a more detailed discussion of this community).

III.B.2. Mixed Hardwood Swamp Community

The shallower waters in floodplains and along the margins of lakes and streams in the Wekiva Basin support large tracts of swamp and bottomland hardwood vegetation. This community is comprised of cypress species and a variety of deciduous hardwood trees that grow on saturated and flooded soils. Nutrient availability is generally low, but wildlife habitat value is high. Swamps assimilate organic and inorganic wastes and pollutants, store water, and impede the movement of floodwaters. By slowing down the rate of water flow, swamps help to minimize erosion, promote infiltration, and facilitate the settling out of debris, silt, and nutrients carried by floodwaters. These

functions improve water quality, stabilize water flows in streams and rivers, and help to maintain high groundwater levels in the region. Swamps provide habitat for many wildlife species and are used as travel corridors by wildlife in developed areas.

The mixed hardwood swamp (cypress/tupelo/water ash: Taxodium/Nyssa/Fraxinus) and bayhead (red bay/loblolly bay/pond cypress: Persea/Gordonia/Taxodium) community occurs on poorly drained sites which are regularly or permanently flooded (Brown and Starnes, 1983). Tannins and humic acids from plant debris color and acidify the waters in swamps and in their drainage streams. These blackwater systems tend to occur in the low-gradient streams and basins of cypress and hardwood swamps where organic debris accumulates on stream bottoms and in backwaters. Blackwater Creek is a typical example of this distinctive stream type.

Pure stands of cypress stands and old cypress trees are no longer common in the swamps of the Wekiva Basin. Old-growth cypress has been selectively logged from swamps throughout Florida during the past century (see DNR, 1985; Monk, 1968). Fluctuations in water level are required for cypress regeneration: cypress seeds must be soaked before they will germinate, but they will not germinate if they are underwater. Other important species of the mixed hardwood swamp are red maple (Acer rubrum), American elm (Ulmus americana), water hickory (Carya aquatica), buttonbush (Cephalanthus occidentalis), and bluestem palmetto (Sabal minor) (Brown and Starnes, 1983). The American elm was formerly common and widespread throughout eastern and central North America, but in the past century the introduction of Dutch Elm disease, an exotic pathogen, has nearly exterminated this species throughout much of its range (see Davis, 1981). However, this species still survives as a common element in the floodplain forests of the Wekiva Basin.

III.B.3. Hydric Hammock Community

In some areas between the mixed bottomland hardwoods and the upland communities along the Wekiva River, seepage of groundwater from uplands is the dominant source of water. The topography of these areas is flat, and the soils are poorly drained and almost constantly saturated with seepage water. Although subject to occasional flooding, the hydroperiod in hydric hammocks is shorter than in the adjacent swamps.

Hydric hammock communities support more plant species than any other wetland type in the Wekiva Basin. Among the species are popash (Fraxinus caroliniana), live oak, laurel oak (Quercus laurifolia), red maple, southern magnolia (Magnolia virginiana), red cedar (Juniperus siliciola), cabbage palm, saw palmetto (Serenoa repens), tulip poplar (Liriodendron tulipifera), pond pine (Pinus serotina), slash pine (Pinus elliotii), sweet gum (Liquidambar styraciflua) wax myrtle (Myrica cerifera), and several vines and ferns (Brown and Starnes, 1983). The hydric hammock is excellent wildlife habitat and is used by ubiquitous mammals and birds as well as by numerous reptiles and amphibians.

This community is very sensitive and vulnerable to changes in groundwater hydrology in upland areas. Drawdowns caused by nearby wells and diversion of groundwater via retention ponds and ditches in uplands can interrupt the supply of seepage water to hydric hammocks, causing the soil to dry out and, eventually, species composition to shift toward more mesic and fewer wetland species. Lowering the water table also makes hydric hammock more vulnerable to fire, a disturbance to which these ecosystems are not adapted.

III.C. Transitional Communities: Mesic Hammock and Scrubby Flatwoods

In the Wekiva Basin, the transitional communities between the wetlands and the uplands are largely ecotonal in character, occurring as edges or borders around the larger areas of swamp. Distinct separations between the swamp, bayhead, and lowland hammock communities occupying floodplain habitats of the Wekiva Basin are typically absent. Transitional species of the wetland/upland ecotone include hydric and mesic hammock forms such as cabbage palm, saw palmetto, tulip poplar, pond pine, slash pine, and sweet gum (Brown and Starnes, 1983).

Scrubby flatwoods associations form ecotones between the mesic flatwoods and the xeric sandhill and scrub communities. Scrubby flatwoods occupy sites which are sufficiently well-drained so that there is no standing water present even under extremely wet conditions. Pines (slash, sand, and longleaf) are typically present but scattered within a matrix of shrubby oaks and palmettos. Scrub oak (Q. inopina), Chapman's oak (Q. chapmanii), and sand live oak intermix with saw palmetto and scrub palmetto (Sabal etonia) to form a generally thick shrub layer 1 to 2 m high. Herbaceous cover tends to be sparse. Lichens (Cladonia spp.) and spike moss (Selaginella arenicola) provide considerable ground cover except on recently burned sites. Fire is important in determining the structure and composition of scrubby flatwoods vegetation, which is intermediate in character between flatwoods and sandhill/scrub communities.

III.D. Upland Communities

The drier, sandy soils of the uplands support scrubby flatwoods on their lower edges and longleaf pine sandhill and sand pine scrub on better-drained and slightly higher sites. Longleaf pine-turkey oak sandhills and sand

pine-oak scrub are distinct in structure and composition from flatwoods communities. These communities occur as savanna or scrub formations on the well-drained upland soils of the Wekiva Basin and are subject to frequent burning. Differences in past burning regimes and local soil characteristics strongly affect the particular vegetation characteristics of these communities (see Kalisz and Stone, 1984). These habitats are home to a number of important endemic species and are particularly sensitive to changes in natural disturbance regimes (see Monk, 1968).

Upland habitats have been severely disturbed by past and present management practices, and major ecological components cannot become reestablished following certain types of human-caused disturbances (Means and Grow, 1985). In many respects, these specialized uplands communities are at the greatest risk from development at present (see Means and Grow, 1985). They occupy substrates and soils which are often preferred over those of wetland sites for agriculture, silviculture, industry, and residential development. As a consequence, few large tracts of native upland vegetation and wildlife survive at the present time. Those upland communities which remain have been subjected to major changes in vegetation regimes and wildlife species diversity as the direct result of human disturbance. Such human-caused changes in the ecology of upland terrestrial communities can greatly alter the movement of water, soil, and nutrients into adjacent wetlands and regional watersheds (see Odum, 1971, 1983).

III.D.1. Pine Flatwoods Communities

Flatwoods are fire-adapted communities which occur on moderately to poorly drained soils of terraced lands above the floodplain in areas subject to periodic burning. Wildfires tend to kill off most typical hardwood hammock

tree species while leaving the fire-tolerant forms, especially pines and palmetto, as local dominants. Exclusion of fire will result in succession to bottomland hardwoods or mesic hammock on most flatwoods sites (Monk, 1968).

The dominant species in the basin's mesic pine flatwoods community are pines, scattered oaks, and saw palmetto (Pinus spp./Quercus spp./Serenoa repens). A dense shrub layer carpets the understory level. Pines of flatwoods habitats include longleaf pine, slash pine, and pond pine. Live oak and dwarf live oak (Q. minima) are often present. Saw palmetto is usually the dominant shrub species, with dwarf live oak, fetterbush (Lyonia lucida), staggerbush (Lyonia fruticosa), dwarf huckleberry (Gaylussacia dumosa), and wax myrtle as secondary components. Saw palmetto, threeawn grass (Aristida patula), greenbriar (Smilax spp.), and gallberry (Ilex glabra) are typical understory species.

Flatwoods often contain patchily distributed areas of cypress dome, bayhead, mesic hammock, wet prairie, sandhill, and scrub vegetation due to variations in topography, soils, and soil moisture regimes. Standing water may be present in flatwoods during periods of high precipitation and elevated groundwater levels.

Longleaf pine was formerly dominant on drier sites, while slash pine and pond pine tend to be dominant on more mesic soils. Repeated selective harvesting of longleaf pines, changes in fire regimes, and conversion of flatwoods and sandhills to agriculture during the past century have greatly affected the distribution and abundance of native longleaf pine communities (Monk, 1965, 1968; Means and Grow, 1985). Slash pine is now the dominant tree on many former longleaf sites. Pond pine becomes dominant in acidic, poorly drained flatwoods where soil pH is less than 4.5, while slash pine occurs primarily on more neutral soils (Monk, 1968).

III.D.2. Wet Prairie Communities

Wet prairies typically occur in sinks and depressions within areas of low topographic relief which receive water through runoff from adjacent higher ground. Patches of wet prairie vegetation are commonly found scattered throughout the flatwoods and sandhills of the region. Shrubs and small trees, such as primrose willow (Ludwigia spp.) and elderberry (Sambucus simpsonii), are sometimes present in wet prairies. Characteristic herbaceous plants include panicum grasses (Panicum tenerum, P. dichotomum, etc.), sloughgrass (Scleria spp.), swamp lily (Crinum americanum), and sundew (Drosera spp.). The wet prairie is fire-adapted, and frequent burning will maintain wet prairies on sites which would otherwise succeed to hydric or mesic woodland. These grassy patches increase habitat diversity in flatwoods landscapes and provide accessory foraging habitats for important wetland wildlife species. Because wet prairies are dependent on surface water runoff to supply water (Brown and Starnes, 1983), drawdowns of water tables in flatwoods by ditching can eliminate wet prairies and reduce habitat diversity in upland regions.

III.D.3. Pine Sandhill Communities

The pine sandhill community is a savanna-type formation of scattered trees and open woodlands having a well-developed ground cover of grasses, forbs, and scattered shrubs. Characteristic species are longleaf pine, turkey oak, and wiregrass (Pinus palustris/Quercus laevis/Aristida stricta). Fire is an important ecological component of sandhill environments and maintains the characteristic open pine woodland and sparse understory vegetation. Burns occur naturally in sandhill communities at about 3- to 5-year intervals, usually started by lightning strikes (Means and Grow, 1985). These frequent

fires preserve the dominance of longleaf pine and inhibit succession to xeric hammock vegetation (Kalisz and Stone, 1984). Sand pine may also invade sandhill communities when fire is suppressed (Kalisz and Stone, 1984).

The upland dune formations of the Wekiva Basin are dominated by pine sandhill communities containing patchily distributed areas of sand pine/oak scrub (Pinus clausa/Quercus spp.) and xeric hammock. Pines and turkey oaks are typically the principal overstory components. The relative dominance of turkey oaks and pine species other than longleaf and the absence of old-growth longleaf in the region's sandhill communities are due to selective logging in these communities.

Sandhills have a more or less continuous herbaceous ground cover dominated by wiregrass. Shrubs and hardwoods other than oaks are typically present at low densities (Laessle, 1958). Other common plants of sandhill habitats are bluestem grasses (Andropogon stolonifera, A. tenarius), persimmon (Diospyros virginiana), prickly pear (Opuntia ammophila), blueberries (Vaccinium spp.), gopher apple (Chrysobalanus oblongifolius), and spike moss. Shrub rosemary (Ceratiola ericoides) is often common in sandhill communities but does not usually occur in dense stands. Individual rosemary bushes are usually ringed by narrow perimeters of bare soil. This phenomenon is caused by the release of an allelopathic chemical from the rosemary which inhibits the growth of other plants within its immediate vicinity.

The high primary productivity of sandhill habitats provides a rich food base for a wide variety of wildlife. Turkey oak acorns are important to mast-feeders such as deer, turkey, and feral hog. Sandhill communities support a characteristic fauna which includes Sherman's fox squirrel and gopher tortoise with its host of commensal wildlife species.

Sand pine scrub and oak scrub occur on various upland sites within the Wekiva Basin (DNR 1985, 1987). Sand pine and oak scrub are characterized by a mixed scrub oak understory dominated by scrub live oak, myrtle oak (Q. myrtifolia), and Chapman's oak (Q. chapmanii). Sand pine is variably present in the scrub habitats of the Wekiva Basin. Differences in burning and disturbance regimes probably account for the absence of sand pine in some scrub communities of the Rock Springs Run State Preserve (DNR, 1985). Shrubs such as staggerbush, rosemary, and wild olive (Osmanthus americana) may also be present. Scrub hickory (Carya floridana), a Florida endemic, is present in the scrub habitats of the Wekiva Basin. Common herbaceous plants of scrub habitats in the region include blueberries, gopher apple (Chrysobalanus oblongifolius), prickly pear (Opuntia compressa), spike moss, and wiregrass. Lichens (Cladonia spp., Usnea spp., and others) grow on patches of bare soil or as epiphytes on the bark of woody plants.

Patches of xeric hammock (live oak/sand live oak/red oak/American holly/deer moss: Quercus virginiana/Q. geminata/Q. falcata/Ilex opaca/Cladonia spp.) occur within the upland sandhill habitats. Pine sandhill and sand pine scrub communities will be succeeded by xeric hammock vegetation if the absence of fire is prolonged (Monk, 1968). Exclusion of fire allows regeneration of hardwoods and prevents the continued recruitment of pines. The leaf litter of xeric hammock plants is fire-resistant, so that patches of hammocks within large sandhill tracts typically remain unburned even though ground fires have spread throughout the surrounding pine-dominated landscape. The prevalence of natural and human-caused wildfires in the Wekiva Basin over the past centuries has limited the significance of this community type in the region.

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IV. STATUTORY & DISTRICT CRITERIA RELATED TO BUFFER ZONES

Questions have been raised concerning the authority of the District to enact requirements which restrict or preclude the construction and operation of systems within the Wekiva River Basin. The rulemaking related to the Wekiva Basin has been the subject of serious concern, and much debate has resulted. An earlier draft of the Wekiva Basin Rule had requirements that buffered the river from impacts, but was withdrawn following considerable controversy, and staff was directed to revisit the issue. Following several drafts of proposed language for buffer requirements, a Petition for Administrative Determination of Invalidity of Proposed Rule was filed that alleged the proposed rule constitutes an invalid exercise of delegated legislative authority or is otherwise invalid.

The statutory authority granted the Governing Board of the District related to the enactment of requirements that restrict or preclude the construction, operation, or maintenance of systems is clearly stated, but somewhat general. Broad rulemaking authority has been granted by the Legislature (Chapter 373, FS). The Board may adopt reasonable rules that are consistent with the law and reasonably necessary to effectuate its powers, duties, and functions. Rules adopted by the Board must be reasonably related to the purposes of Chapter 373. The Board cannot act in an arbitrary and capricious manner and should have before it competent and substantial evidence to support a proposed rule.

Two questions related to the statutory authority given in Chapter 373 (FS) have occurred to us. First, in Sections 373.413 and 373.416 the Legislature enacted two statutory provisions related to water management systems; the former addressing construction of systems and the later addressing operation and maintenance of systems. As a result, an arbitrary distinction is made between construction and operation and maintenance. Second, the statute does not provide a definition for the term "water resources."

IV.A. Statutory Criteria, Sections 373.413 & 373.416, FS

Sections 373.413 and 373.416 draw a distinction between permits required for construction or alteration of dams, impoundments, reservoirs, or works (373.413, FS) and permits required for maintenance and operation of same (373.416, FS). In the former, the District may require permits to assure that construction or alteration of any system will not be harmful to the water resources of the District. In the latter, the District may require permits to assure that the operation or maintenance of a system will not be harmful to the water resources of the District and will not be inconsistent with the overall objectives of the District. The distinction between the harm that may result from construction activities and harm that may arise from operation and maintenance is a confusing one in light of the review a permit application may receive. Can the District evaluate an application for construction based only on harm to water resources, or can the application also be evaluated relative to the overall objectives of the District?

Conceptually it may be relatively easy to separate impacts on water resources that result from development activities into those that occur during construction and those that may result from the operation and maintenance of that which has been constructed. From a resource management perspective,

however, it is not an easy distinction to make. Determining the harm to water resources during construction and following construction is not too difficult, but what is difficult is separating the consideration of these potential impacts when determining if a permit for construction should be issued. To issue a permit for construction of a system or work and evaluate only the potential impacts to water resources without evaluating its impact on the overall objectives of the District once the system is in place is like basing the decision to operate on a patient only upon his/her chances of living through the operation, with no regard as to whether the organ removed is essential for survival after the operation. The distinction is an artificial one at best.

If the overall objective is to manage the water resources of the District and insure that the construction, operation, and maintenance of works are not harmful to them, the District must evaluate potential harm resulting from operation and maintenance concurrently with potential harmful impacts resulting from construction. Foregoing sections of this report have established that while impacts caused by construction and those resulting from operation and maintenance can be separated for discussion purposes, they are intimately interconnected, and they must both be considered if the potential impacts are to be evaluated, understood, and resolved. To manage the water resources of the District effectively, all relevant information and potential consequences of any decision must be evaluated during application review. To do otherwise cannot possibly result in effective resource management.

In this light, when the District reviews a construction permit, not only should potential harm to water resources be evaluated (Chapter 373.413 FS), but District staff should also determine if it is consistent with the overall objectives of the District (Chapter 373.416 FS).

The second question is also important in permit evaluation. In evaluating a permit for construction and/or operation and maintenance, the District strives to assure that the system or work will not be harmful to the water resources of the District. In a narrow sense, water resources can be thought of as the water only. Then harm would constitute affecting the quality or quantity of water (the abiotic substance). In a broader sense, however, water resources must be thought of as not only the water (the H₂O) but as the combined biotic and abiotic components--the ecological system of plant and animal life and abiotic elements that are the whole resource. It is not easily dissected or decomposed into two distinct parts for the purposes of management, since the quality of the resource is a complex functional interrelationship of abiotic substances and living organisms. The management of one aspect without regard for the other may at times run counter to sound management of the whole.

A working definition of water resources should include the entire resource, and may be something like the following:

Water Resource - The combined abiotic substances and biotic organisms that constitute the aquatic systems of ground and surface waters.

IV.B. Rule Criteria, 40C-4, 40C-41 and 40C-42, FAC

Chapter 40C-4, FAC, implements the permitting program in a manner that is consistent with the objectives and policies of the St. Johns River Water Management District and the declared water policy of the State of Florida. In essence it declares that surface water management permits will be required prior to the construction, alteration, operation, maintenance, removal, or abandonment of any dam, impoundment, reservoir, appurtenant work, or works. To obtain a permit, each applicant must give reasonable assurance that such activity will not adversely affect navigability, recreational development, or

public lands; endanger life, health, or property; **adversely affect the availability of water**; be incapable of being effectively operated; adversely affect existing agricultural, commercial, industrial, or residential developments; **cause adverse impacts to the quality of receiving waters**; **adversely affect natural resources, fish, and wildlife**; increase the potential for damage to off-site property or the public; increase the potential for flood damage; or otherwise be inconsistent with the objectives of the District, among others (emphasis added). The chapter also establishes size thresholds for which permits are required.

In addition to the above, the District's Applicants Handbook states that State Water Policy (Chapter 17-40, FAC) is used as guidance to determine harm to water resource and that consideration should be given to the impacts of facilities on recreation; navigation; **water quality; fish and wildlife; wetlands, floodplains, and other environmentally sensitive areas**; saltwater or pollution intrusion; reasonable beneficial uses of water; **minimum flow levels**; and other factors related to the public health, safety, and welfare; among others (emphasis added).

Further, the Handbook states that the District recognizes that

...wetlands are important components of the water resource because they serve as spawning, nursery and feeding habitats for many species of fish and wildlife, and because they provide important flood storage and water quality benefits.

Review criteria are provided to determine whether a system will meet District objectives regarding hydrologically related environmental functions. Except when threatened or endangered species are involved, the District will only consider off-site impacts on aquatic and wetland-dependent species relative to the functions currently being provided by the wetland to these types of fish and wildlife. An applicant must provide assurance that a proposed system will not cause changes in the habitat of off-site aquatic and wetland-dependent

species; the abundance and diversity of off-site aquatic and wetland-dependent species; and the food sources of off-site aquatic and wetland-dependent species.

Chapter 40C-41, FAC establishes basin-specific surface water management permitting criteria for the Wekiva River Basin that are in addition to the District-wide criteria specified in Chapters 40C-4 and 40C-40, FAC. The Wekiva River Basin Rule was adopted in March 1987, establishing permitting standards as follows:

1. RECHARGE - Three inches of runoff from all directly connected impervious areas must be retained within the project area for projects or portions of projects in Most Effective Recharge Areas. As an alternative, applicants may demonstrate that the post development recharge capacity is equal to or greater than the pre-development recharge capacity.
2. STORAGE - A system may not cause a net reduction in flood storage within the 100 year floodplain of a stream or other watercourse which has a drainage area upstream of more than one square mile and which has a direct hydrologic connection to the Wekiva or Little Wekiva Rivers or Black Water Creek.

Definitions of Most Effective Recharge Areas and directly connected impervious areas are given in 40C-41, as follows:

...Most Effective Recharge Areas have been defined by the U.S. Geological Survey as areas which have 10-20 inches of recharge per year... Most Effective Recharge Areas can be more accurately defined by soil types. The Soil Conservation Service has categorized soils according to hydrologic characteristics. Those soils determined by SCS to be Type "A" Hydrologic Soil Group shall be considered to be Most Effective Recharge Areas...Directly connected impervious areas are those impervious areas which are connected to the surface water management system by a drainage improvement such as a ditch, stormwater, paved channel, or other man-made conveyance. Stormwater that is retained must be infiltrated into the soil or evaporated such that the storage volume is recovered within 14 days following a storm event.

In addition, when stormwater management systems discharge to Class I, Class II, or Outstanding Florida Waters, Chapter 40C-42, FAC provides for further treatment of stormwaters as follows:

(10) Stormwater discharge facilities which directly discharge to Class I, Class II, and outstanding Florida Waters shall include an additional level of treatment equal to fifty percent of the treatment criteria specified in Section 40C-42.035(1) (b) or Section 40C-42.041(5) and shall provide off-line retention or off-line detention with filtration of the first one-half inch of run-off of the total amount required to be treated.

In all, the criteria in 40C-41, and 40C-42 recognize the special values of the water resources of the Wekiva River Basin and were designed to afford additional protection. Rule criteria are generally designed to protect water resources (both quality and quantity of surface water and quantity of recharged groundwater) as a result of the construction, operation, and maintenance of a work or system. In most instances, however, specific construction techniques and specific engineering of a project's stormwater management system are not adequately addressed by criteria simply because these are outside the purview of the review criteria. Language may be inserted in conditions for permits that require particular attention be paid to minimizing impacts during construction from erosion and siltation, for example, but "accidents do happen." In other words, there are two significant potential gaps in the rule criteria related to water quality that an appropriately designed buffer rule will overcome. The potential gaps are as follows:

1. Water quality impacts resulting from construction activities in the areas immediately adjacent to wetland; and
2. Water quality impacts resulting from portions of projects constructed adjacent to wetlands, but not directly connected to the stormwater management system.

While the existing rule criteria recognize the importance of recharge in the Wekiva River Basin to maintain both the quality and quantity of groundwaters, the "discharge" of groundwaters that are of particular importance to maintenance of ecologically significant hydric hammocks and floodplain wetlands of the Basin is not addressed in the present rules. These wetland systems are particularly sensitive to the lowering of the groundwater table. The District's policy regarding the lowering of groundwater tables found in Section 10.6.3 of the Applicants handbook states:

It is presumed that an adverse impact will result if the system causes the groundwater table to be lowered; a) more than an average three feet lower over the project area than the average dry season low water table; or b) at any location, more than five feet lower than the average dry season low water table; or c) to a level that would drain adjacent surface water bodies below a minimum level established by the Governing Board pursuant to Section 373.042, FS.

In most instances, in areas adjacent to the floodplain wetlands of the Wekiva Basin a lowering of the water table from 3 to 5 ft would severely impact hydrologic functions, draining groundwater, disrupting seepage regimes, and diverting surface waters. The net result would be the disruption of ecological functions and loss of wildlife habitat. Thus a third potential gap in the protection of the water resources of the Wekiva River Basin and the importance of the groundwater table to seepage and floodplain wetlands that an appropriately designed buffer may overcome is as follows:

3. Water quantity impacts resulting from excavations and general lowering of the groundwater table in areas adjacent to seepage wetlands.

Finally, while it is the policy of the District to evaluate permit applications using review criteria that expressly states consideration should be given to impacts on fish and wildlife, wetlands, floodplains, and other environmentally sensitive areas, present rule criteria in 40C-41 or 40C-42 do

not address these factors. Recognizing the special significance of the wetland and wildlife resources of the Wekiva River Basin, a fourth potential gap in protection of the resources may be overcome with an appropriate buffer as follows:

4. Impacts to flora and fauna resulting from loss of habitat and disturbance as a consequence of construction, operation, and maintenance of systems in areas adjacent to wetlands.

Further discussion related to water quality and water quantity issues is given next to better explain the rationale for recommending a buffer to minimize negative impacts of development in areas immediately adjacent to the wetlands and watercourses of the basin.

Water Quality Issues. The potential for significant degradation of water quality during construction is directly related to the proximity to the resource and the type of construction activity. Given in Figure IV.1 is a plan view of an area along a section of river typical of the Wekiva River. The figure illustrates a typical wetland/upland interface and two typical residential development patterns. In the first type of development, lots and housing units are built up to the wetland line, and some clearing of canopy and understory is required. In the second type of development, because the wetland/upland edge is generally the lowest elevation of the project site, retention/detention basins are constructed along the edge, requiring complete removal of vegetation and excavation. Both development patterns could be constructed under current permit criteria.

Where lots and house construction occur adjacent to the wetland edge, typically, the downslope areas are wholly or partially excluded from the stormwater management system. This results from the fact that the edge of the floodplain generally is the lowest elevation, and either the back of lots must be filled to elevations so that surface waters flow toward the front of the

lot, or the back portions of lots are excluded from the management system. The size of lots on the floodplain edge dictate to a large degree how much land is excluded from the management system and allowed to sheetflow stormwaters downslope to the wetland edge. While this development pattern may minimize disturbances along the edge from clearing and digging, surface waters running downslope from these areas are not subject to treatment by the stormwater system and can cause significant water quality problems both in the short term during construction and in the long term during use and management.

If the area upslope from the wetland edge is to be excavated for detention or retention ponds, initial clearcutting, additional heavy equipment for digging, and placement of spoils contribute additional potential water quality problems. The clearcutting required exposes soils to even greater erosion potential since all vegetation must be removed and the ground surface is scraped clean in preparation for digging equipment. The heavy equipment associated with excavations and earthwork necessary to contour basin side slopes and surrounding lands contribute to significant potential construction-related "accidental infringement" into the downslope wetlands/water resources. Finally, spoil placement in adjacent areas and filling along the wetland line expose the downslope wetland/water resource to potential sedimentation from newly excavated non-stabilized soils.

Figure IV.2 is a cross section of a floodplain swamp, transition zone, and uplands typical of portions of the Wekiva River Basin. In the top drawing the undisturbed condition is shown. In the bottom drawing the effects of clearing and construction activities in areas immediately adjacent to the wetland line are summarized. Under these conditions, protective ground cover and litter are scraped off the soils, leaving them bare and easily washed downslope during construction. The resulting erosion and deposition will significantly affect

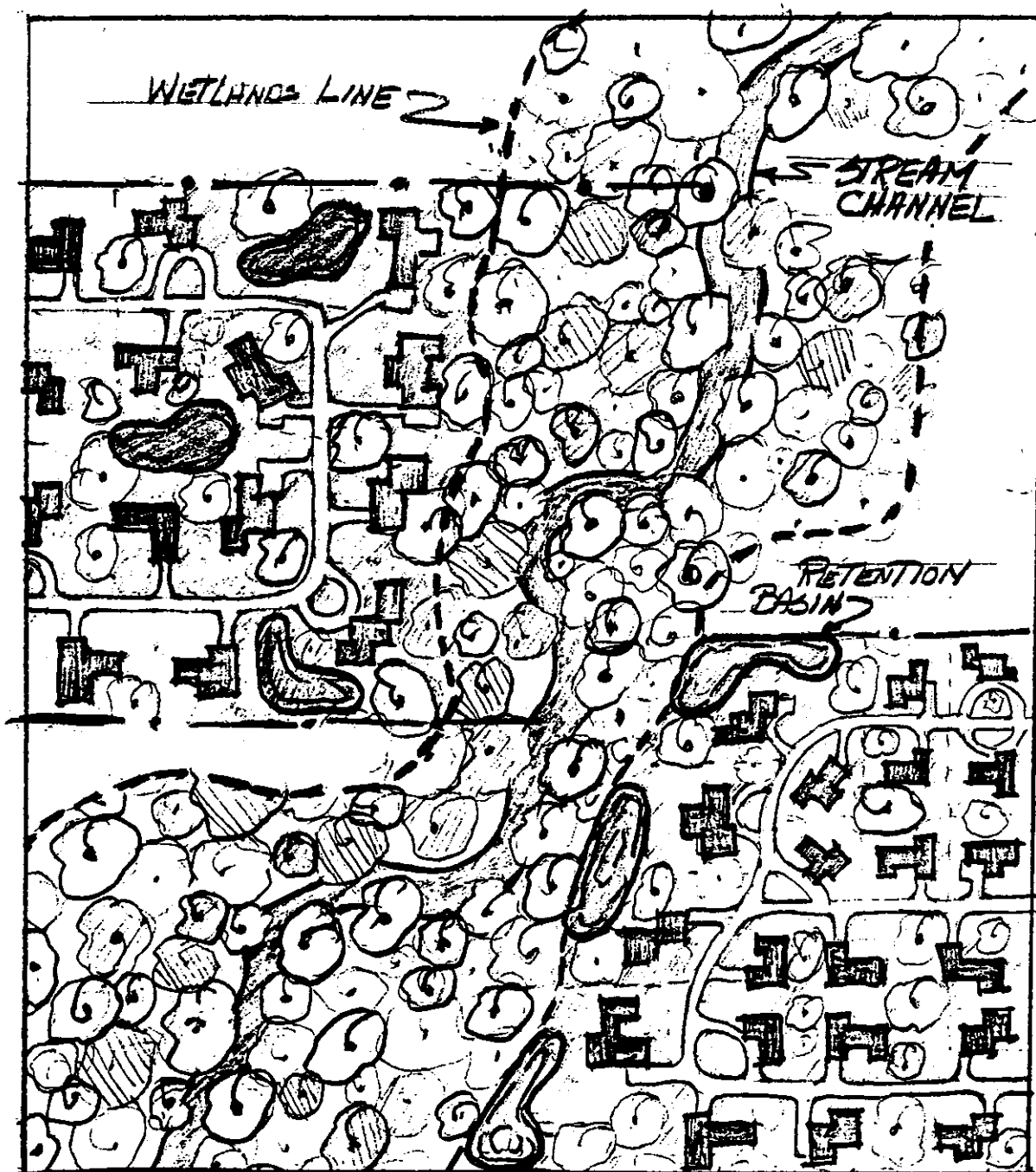


Figure IV.1. Drawing of two development patterns typical of the Wekiva River Basin. The development pattern in the upper portion of the drawing has housing down to the wetlands line and stormwater retention/detention ponds in the upland portions of the development. The development in the lower portion of the drawing has stormwater retention/detention basins constructed immediately adjacent to the wetlands line. The former development scheme minimizes water quantity impacts, but may cause water quality impacts. The latter scheme will impact water quantity, but storm water system may minimize water quality impacts.

those wetlands/water resources that are waterward of the construction line. While precautions might be taken, such as installation of barriers to impede and/or filter silt laden runoff, there is no assurance that the precautions will be effective or that they will remain in place long enough for the area to stabilize.

Degradation of water quality as a result of construction and long-term runoff from developed lands may be easily avoided by providing a construction setback or buffer that can act as a sediment trap, dissipate destructive velocities, and minimize water quality problems through filtration of surface runoff.

Water Quantity Issues. Criteria in 40C-4, 40C-41, and 40C-42 related to water quantity are generally concerned with recharge of groundwaters in areas of significant recharge potential and with surface runoff patterns. Not protected and of special significance in river systems like the Wekiva are seepage at the base of sandy slopes that maintain saturated soils and standing and flowing surface waters at seepage locations.

Shown in Figure IV.3 are the groundwater relationships of the sandy, well-drained ridges along the upland fringes of the Wekiva floodplain and the seepage areas at their bases. It is at these seeps that groundwaters become surface waters and contribute base flow to the Wekiva. In the natural condition waters exiting at the seepage edge are typically low in nutrient content, having recharged through the sparse scrub vegetation of the sandhills and filtered through several hundred (or thousand) feet of well-washed sand. Upon exit from the soil, the newly emerged surface waters support a unique assemblage of vegetation (often referred to as a hydric hammock) adapted to constant saturation and periodic inundation with oligotrophic waters. The wetland line typically coincides or is just landward of these areas.

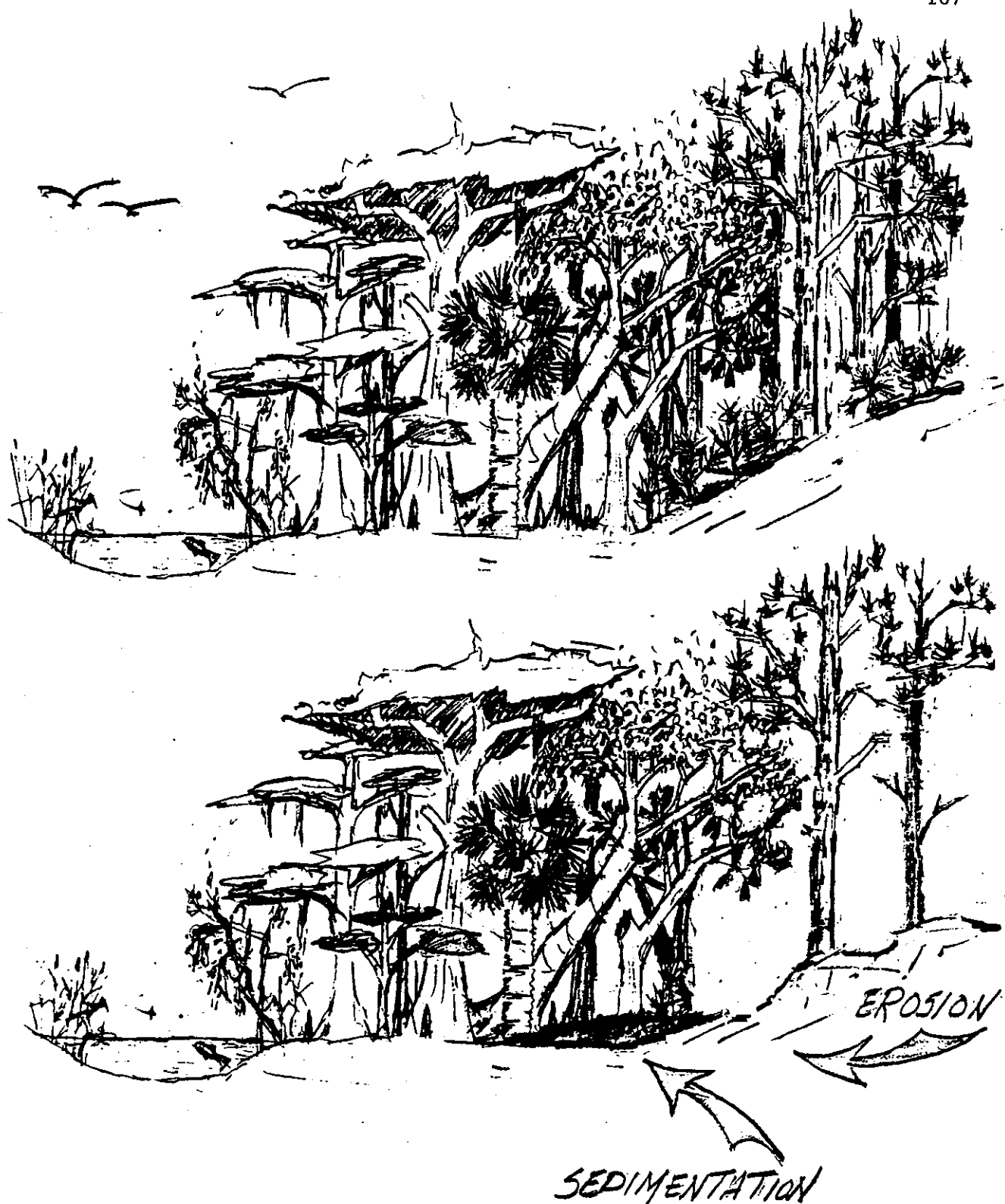


Figure IV.2. Cross section drawing of the floodplain and adjacent uplands showing the natural condition in the upper drawing, and the consequences of clearing and development in the bottom drawing.

The bottom drawing in Figure IV.3 summarizes the effects of excavations in the area immediately landward of the wetland line on the quantity of seepage water exiting in downslope locations. Where excavations are deep and interrupt groundwater flows, seepage areas are "robbed" of sustaining groundwaters, as they are routed through the stormwater management system and discharged at outfall points, or are exposed to surface evaporation in water retention/detention systems. The net effect on total quantity of water that may leave a project site when the effects of increased impervious surfaces and the stormwater management systems are factored in is not easily determined. However, it is quite apparent that the loss of seepage waters will significantly alter species composition in seepage wetlands and have potential consequences on dry season base flows of the Wekiva.

Potential negative consequences of lowered water tables and intercepted groundwater flow to downstream hydric hammocks and floodplain forests can be mitigated through implementation of a buffer zone requirement in the Wekiva Basin. While its function will be to insure high groundwater elevations in close proximity to seepage wetlands, it may also serve a role in insuring maintenance of high water quality.

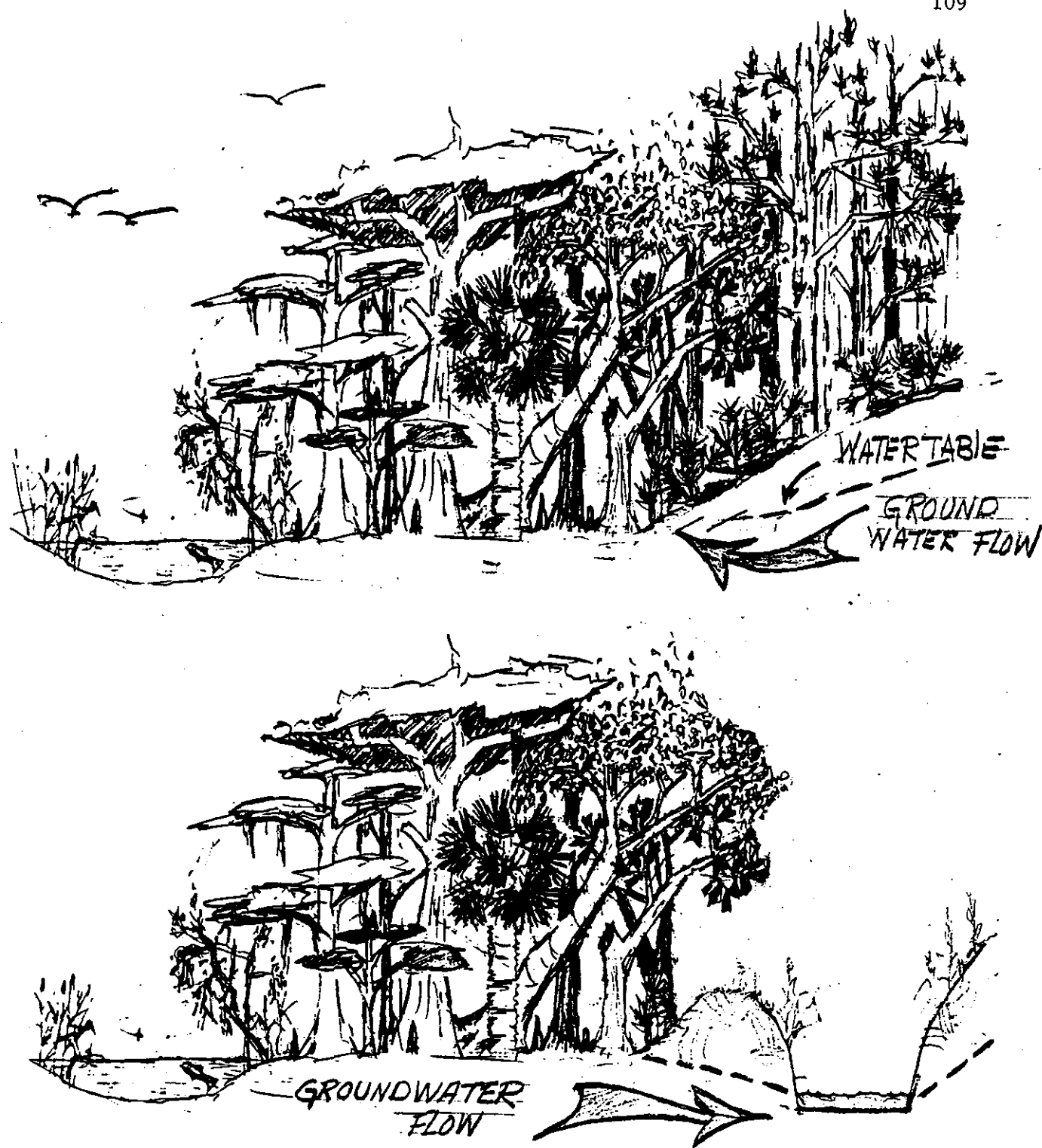


Figure IV.3. Cross section drawing of the floodplain and adjacent uplands showing the natural condition in the upper drawing, and the effects of construction of drainage ditches or retention/detention structures in close proximity to the wetlands edge on groundwater table.

V. DETERMINATION OF BUFFER ZONE REQUIREMENTS

Given in this section is a description and rationale for the methodology for determining buffer zone requirements. The need for a buffer zone to effectively protect the special values of the water resources of the Wekiva Basin is based on three potential impacts of the construction, maintenance, and operation of works. They are related to impacts on water quality that result from construction and long-term use, impacts that may result from alterations of groundwater tables, and impacts on aquatic and wetland-dependent wildlife habitat.

This section is organized into three parts. First an overview of the methodology is presented that discusses the parameters that control the determination of a buffer zone width. Second, methods for the determination of buffer zones are given, with formulae where appropriate. Finally, sample sections of the Wekiva River and Black Water Creek are used to describe each of the controlling parameters and to display the resulting buffer widths.

V.A. Overview of the Methodology for Determination of Buffer Zones

Four factors are used to determine the width of buffer zones to protect the water resources of the Wekiva River System. The four factors are (1) the Water Management District wetland line (40C-4 FAC), (2) the erodibility of soils in the zone immediately upland of the wetland line, (3) the depth of the groundwater table below the soil surface in the zone immediately upland of the wetland line, and (4) the habitat requirements of aquatic and wetland-dependent wildlife species.

Because of the detailed nature of the data required to determine the need for and extent of upland buffers, determinations must be made on a case-by-case basis. However, in the final part of this section we have included maps and figures of the relevant data for a typical sections of the river system to illustrate the methodology's application.

Controlling Parameters

The parameters that control the width of the required buffer are related to the need to protect water quality and quantity and aquatic and wetland-dependent wildlife, both during and following construction of any development project in areas immediately adjacent to the floodplains of the Wekiva River System. It is important that construction and operation are considered simultaneously, since a project cannot be operated unless it is built, nor is it realistic to assume that it will not be operated should it be built. The descriptions and rationale for the following parameters reflect this important integration. Some parameters result from the need for protective measures during construction, others from the need for measures after construction, and still others result from both.

(1) 40C-4 Wetland line. The wetland line is the landward extent of wetlands using the methodology outlined in 40C-4 (FAC) and Chapter 16 of the Applicant's Handbook. The determination is made by District staff using dominant vegetation, soils, and other indicators of wetland conditions. The line so determined in most cases is the same as the jurisdictional line set by the Florida Department of Environmental Regulation (17-4 FAC) for demarcation of the landward extent of state waters.

The wetland line defines the waterward boundary of the area for which buffer zone requirements are to be determined.

(2) Soil Erodibility. Soil erodibility is a function of slope and soil type. Used in combination, both factors determine the potential for soil erosion and subsequent sedimentation in downslope areas.

(a) Slope. Ground surface slope is expressed as percent slope and is determined by measuring the change in elevation over a distance of 300 ft landward of the wetland line. The slope is an indicator of the erosion potential of soils during and immediately following construction activities and/or site preparation. The steeper the slope, the greater the potential for soils to be eroded by surface runoff during rain events.

(b) Soil Type. The soil type may be determined by consulting the USDA SCS Soil Survey for the county in which the development project is located, or it may be determined in the field by a qualified soil scientist.

Highly erodible soils in combination with steep slopes dictate severe limitations on removal of vegetative cover; gentle slopes with highly erodible soils or steep slopes with minimally erodible soils dictate moderate limitations; and gentle slopes with minimally erodible soils dictate slight limitations. A formula is used to calculate the exact buffer requirement (see Section V.B).

(3) Depth to Water Table. The depth to the groundwater table in areas immediately upland of the wetland line is an important indicator of groundwater interaction with downslope wetlands. Where the water table is near the surface and slopes toward the wetland, the area is dominated by discharging groundwaters, and a buffer to avoid drainage of the wetlands is warranted. The depth to the groundwater table may be determined by field measurements (although it should be understood that one measurement at one point in time does not give a true picture of average year-to-year, season-to-season

conditions) or through field determination of soil type and interpretation of county soil survey data.

Excavations in areas where the water table is near the surface in the zone immediately upslope from seepage wetlands (i.e., where the hydraulic gradient is toward the wetland area) intercept groundwater flows and have the potential to drain wetlands on the downslope side of the excavations. Where these conditions are present, a setback is warranted to insure that proposed development activities do not diminish the quantity of water entering the downslope wetlands.

(4) Wildlife Habitat Requirements. The old adage that an ounce of prevention is worth a pound of cure is particularly appropriate to wildlife conservation. Loss of habitat is the greatest threat to many of Florida's wildlife species. One approach to alleviating this threat would be to monitor each species and to take protective action if it is determined that any given species is declining. This approach is risky in that such a determination may be made too late to reverse the decline. Another approach would be to prevent any change in the amount of habitat available to each species, but this is neither practical nor possible. It is better to formulate a general method to accommodate the wildlife of a given region as a whole. The practical solution, then, is to determine the amount of harm that is acceptable and to prevent it from increasing.

By far, the most common cause of wildlife population reduction is landscape alteration through agriculture, silviculture, or construction activities. Altering or changing natural conditions to which species are adapted often harms native wildlife communities by destroying key conditions that make a given site suitable habitat. An obvious example is the removal of snags (dead trees) that are essential nesting structures, food sources, and

perches for many birds, mammals, reptiles, and amphibians. A common misconception is that no harm is done because there are plenty of other undeveloped areas containing the same requirements. On the contrary, other areas that have the necessary elements for a particular species are probably already occupied at a saturation level, leaving no room for individuals that are ousted by development occurring elsewhere. Therefore, the most effective method of protecting wildlife resources in the Wekiva River Basin would be to preserve areas in their most natural conditions and in large enough parcels so that self-sustaining populations can be maintained.

Buffer requirements to protect aquatic and wetland-dependent wildlife species are related to four factors: habitat suitability; spatial requirements; access to upland and/or transitional habitat; and noise impacts on feeding, breeding, and other life functions. Wetland-dependent species are those which depend on wetland communities for at least some of their essential requirements.

(a) Habitat Suitability. Food, cover, and water are life-sustaining elements for all species. If every requirement for an animal is available in a particular area, the area is considered to be suitable habitat for that species; if one or more of a species' requirements is not available, the area is unsuitable. Some species are extremely specialized. For example, the Everglades or snail kite has an exclusive diet of only one snail species, Pomus depressus. Others, such as the raccoon, are generalists and can readily substitute many items to fulfill their needs.

Several methods have been developed recently to determine if sites are suitable for a given species. These methods are based on availability of food, cover and water requirements, and various parameter measurements have been

shown to be associated with these requirements. Examples of the parameters used for this report are tree canopy closure and tree height.

(b) Spatial Requirement. Every animal requires a certain amount of space to carry out life functions such as feeding, courtship, and nesting. Spatial needs are highly variable, even within species. Differences are associated with many factors, including sex and age of the animal, time of year, availability and distribution of food and cover, and social structures. In general, larger species tend to have greater spatial requirements. Obvious comparisons are the black bear versus the cotton mouse and the red-shouldered hawk versus the mockingbird. Also, species with more unpredictable and unevenly distributed food sources require more space to satisfy their nutritional needs. For example, marsh rabbits have small spatial requirements relative to their size because they eat grasses and forbs which are plentiful within small areas. Conversely, gray squirrels need relatively larger territories to find mast, which is unevenly distributed.

It should be realized that the Wekiva River acts as a border to many species living in the river basin. Even those that can swim or fly across the river are affected by the impacts of increased predation and disturbance factors associated with the edge ecotone created at the water/forest interface.

Because many forest-dwelling, wetland wildlife species utilize more than one habitat type, their spatial requirements can often be satisfied even if a portion of the forested area does not fit the definition of a wetland community but does fulfill other habitat suitability criteria. In most cases, areas immediately landward of the wetland line that are cleared for agriculture or silviculture or which are planted in monocultural pine plantations will not be suitable habitat for wetland-dependent species. Where these situations occur, buffer zone requirements are not as sensitive to wildlife considerations as

they might be if the area had a continuous, relatively natural, forest canopy. For this reason, it is essential that serious consideration be given to whether or not agriculture and silviculture should be exempt from buffer zone requirements where the protection of aquatic and wetland-dependent wildlife species is of particular importance.

Although it is difficult to rationalize the use of wildlife considerations when the canopy has been removed, mitigation of previous adverse impacts on wildlife could be addressed by replanting the would-be buffer zone (determined by the application of the other factors) with native tree species to reestablish wildlife values.

(c) Access to Upland or Transitional Habitat. Several wetland-dependent wildlife species must have access to upland or transitional habitat regardless of the landward extent of the wetlands. For example, many semiaquatic turtles need sandy and relatively warm upland sites to lay eggs. Elimination of such habitats could extirpate numerous wetland-dependent species from the Wekiva River Basin.

(d) Noise Impacts. Noise can interfere with signals and directly affect wildlife behavior. Many species rely on vocalizations for warnings, mate recognition, detection of separated young, and to establish territorial boundaries. Background noise can interfere with these vocalizations and cause direct reductions in populations or dispersal to less noisy areas. Sudden loud noises can disturb or harass some individuals and cause harmful stress which affects reproduction and other life functions.

To protect aquatic and wetland-dependent species from noise interference, buffer zones between the point of noise generation and the habitat are warranted. The distance of buffer necessary for protection from noise is related to both the level of noise and the space through which the noise

passes. Dense vegetation diminishes the level of noise more quickly than open ground; pavement tends to propagate noise better than vegetated grasslands. The required buffer depends upon the characteristics of the intervening area.

V.B. Determining Buffer Zone Requirements

The order in which each of the four parameters is calculated or measured is important. The 40C-4 wetland line must be determined first, since all determinations are based on the establishment of this line as the waterward boundary of the buffer zone. Once the wetland line is established, the order in which the remaining parameters are determined is of little consequence.

Since the requirements for a buffer zone depend on a dynamic landscape where the relationships between the controlling variables are not constant, each of the parameters must be calculated. The spatial frequency at which the calculations are made (i.e., how often the buffer zone lines need to be determined along the waterward edge of a proposed development) depends on the variation in the measured parameters. If there is no reason to believe the parameters and their relationships to each other are different along the entire length of the water-ward edge of the proposed development, each parameter needs to be determined only once. However, if the parameters appear to change significantly, more determinations are necessary. The exact number of determinations is a function of the relative changes in slope, soil type, water table elevation, and forest canopy and vegetative structure. In most cases, estimates of the relative changes in parameters can be made using topographic and soils maps and aerial photographs.

Final buffer zone widths are set by determining the controlling parameter, i.e., the parameter that results in the widest buffer zone. The following

paragraphs detail methods for determining buffer widths based on each of three parameters (water quality, water quantity, and wildlife habitat suitability).

(1) 40C-4 Wetland line. The wetland line is determined using the methodology outlined in Part III, Section 16 of the Applicants Handbook.

(2) Water Quality Maintenance. The requirement for a buffer zone for maintenance of water quality is related to the filtering capacity and roughness of natural undisturbed vegetation to minimize inputs of sediments and destructive velocity of waters. The potential for erosion and subsequent sedimentation is a function of the erodibility of soil and slope. The velocity of water varies as the square root of slope (Manning's formula), and the potential for a particle of soil to be moved is a function of erodibility and velocity of water over the surface. Thus a simple relationship of slope and erodibility may be used to determine buffer widths as follows:

$$B_w = \frac{S^{1/2}}{E} \quad (1)$$

where:

B_w = the width of the buffer in ft;
 S = average slope of the land in ft per 100 ft; and
 E = erodibility factor; use 4 for soils with SCS erosion factors (k) of 0.1, use 3 for soils with $k = 0.15$, use 2 for soils with $k = 0.17$, and 1 for soils with $k > 0.17$.

Using Equation 1, the required buffer for an average slope of 3% and soils with low erodibility factor ($E = 4$) would be 43 ft. The buffer required for soils with the same slope and erodibility factors of 3 and 2 are 57 ft and 87 ft, respectively.

Table V.1 lists pertinent soil properties for many soil types found in and adjacent to wetlands in the Wekiva River System. It highlights some of the important constraints likely to be encountered within the Basin. The second column lists k factors (erosion factors) that can be used in determining the erodibility factor.

Table V. 1. Soil properties and interpretation.

Soil type	K Erosion ¹	Depth to W. Table ²	Hydro ¹ . Group	Limitations ²		
				S.Tank	Bldg.	Excav.
Albany sand, 0-5% ¹	.10	15-40"	C	M	M	M
Anclote fine sand	.10	0-10"	D	S	S	S
Anclote & Myakka	.10	0-10"	D	S	S	S
Astatula sand, dark, 0-5%	.10	>120"	A	S1	S1	M
Blanton fine sand, high, 0-5% ³	.17-.28	18-30"	A	S1	S1	S
Blanton fine sand, low, 0-5% ³	.17-.28	18-30"	A	M	M	S
Cassia sand	.10	10-40"	C	S	S	S
Delray fine sand ³	.15	+12-0"	A/D	S	S	S
Delray fine sand, shallow ³	NA	0	NA	VP	-	IN
Delray fine sand, high ³	.15	0-12"	A/D	S	S	S
Emeralda fine sand	.10	0	D	S	S	S
Felda fine sand ³	.17-.28	0-12"	B/D	S	S	S
Immokalee fine sand ³	.17-.20	0-12"	A/D	S	S	S
Iberia & Manatee	.10-.28	0	D	S	S	S
Immokalee sand ³	.17-.20	0-12"	A/D	S	S	S
Leon fine sand ³	.17-.20	0-12"	A/D	S	S	S
Leon fine sand, 0-2% ³	.17-.20	0-12"	A/D	S	S	S
Myakka sand	.10	0-10"	D	S	S	S
Myakka & Placid sands, 2-8%	.10	0-10"	D	S	S	S
Ocilla sand	.10	40-60"	C	M	M	M
Paola sand, 0-5% ³	.10	>80"	A	S1	S1	S1
Plummer fine sand ³	.17-.28	0-12"	A/D	S	S	S
Pomello fine sand ³	.17-.20	12-30"	A	M	S1	S
Pomello fine sand, 0-5% ³	.17-.20	12-30"	A	M	S1	S
Pomello sand	.10	30-40"	C	M	M	M
Pompano fine sand ³	.15	0-12"	A/D	S	S	S
Pompano fine sand, shallow phase	.10	0	D	VP	-	IN
Placid sand	.10	0	D	S	S	S
Pompano fine sand ³	.15	0-12"	A/D	S	S	S
Sandy alluvial land ³	-	-	-	S	S	S
Swamp	.10	+24"-0	D	+S	+S	+S
Tavares sand	.10	40-60"	C	S1	S1	M
Tavares sand, white subsurf.	.10	40-60"	C	S1	M	M
Wabasso sand	.10	0-10"	D	S	S	S
Wauchula sand	.10	0-10"	D	S	S	S

Table V. 1. Continued. (footnotes)

¹ K Erosion is a measure of the rate at which a soil will erode. Values are expressed as tons of soil loss per acre per unit of R (rainfall factor) from continuous fallow on a 9% slope 73 feet long.

Hydrologic Group is a relative index of runoff rate. A = low runoff potential, B = moderately low runoff potential, C = moderately high runoff potential, and D = high runoff potential. When two letters are given, the first applies to the drained condition while the second applies to the natural condition.

Source for K factors and hydrologic groups, unless otherwise noted: U.S. Soil Conservation Service Soil Interpretation Sheets (provided by SCS office in Gainesville, Florida, September 1987) for Lake, Orange, and Seminole counties.

² Depth to water table = depth to seasonally high water table. The range reflects year-to-year variation. Standing water above the soil surface is indicated by a "+".

Limitations apply to septic tank drainage fields, dwellings without basements or foundations for low buildings, and shallow excavations (ponds or below-ground basements).

Sources for depth to water table and limitations are the Soil Survey of Orange County, Florida (1960), Soil Survey of Seminole County, Florida (1966), or Soil Survey of Lake County Area, Florida (1975) except where otherwise noted. Sl = slight, M = moderate, S = severe, and +S = very severe. The Orange County Soil Survey does not include a rating for building suitability. Ratings for septic tank drainage fields range from very poor (VP) to poor (P) to fair (F) to good (G). It does not rate soils for excavated ponds, but only describes the elevation [high (H) or medium (ME)], shallow water table (SH), or inundated (IN).

³ Source: Soil Survey Supplement, Seminole County, Florida (1975).

The above formula is included as a means of providing a framework from which hydrologists, soil scientists, and engineers working in conjunction might develop nomographs or equations better suited for the conditions encountered in the Wekiva River Basin. A derivation of the Universal Soil Loss Equation, while requiring very specific information, may be a better means of determining buffer zone widths for protection of water quality if an allowable field soil loss can be established, although any soil erosion has the potential to cause disruption of downstream waters and wetlands. Without the detailed analysis required by the more sophisticated methodologies, the above equation is given as an example for determining the buffer requirements for protection of water quality.

(3) Water Quantity Maintenance. The buffer width required for protecting water quantity is related to the drainage impacts of lowered water tables on adjacent wetlands. The lowering of groundwater tables is accomplished through drainage structures that cause transient groundwater flows toward the structure in the upper portions of the shallow aquifer (water table aquifer). The effect of water table drawdown diminishes with distance from the structure. Current regulations of the District allow an average drawdown of 3 ft throughout a development project, with no one area having a drawdown greater than 5 ft. The width of the buffer depends on the drawdown anticipated as a result of the drainage structures and the hydraulic conductivity of the soil. Using a design drawdown (depth to which groundwaters are to be lowered) in the vicinity of a structure, the buffer required to minimize drawdown effects on adjacent wetlands can be calculated using a derivation of the Theis equation as follows:

$$h_0 - h = (2.3 Q/4 \pi K D)(\log [2.25 T t/r^2 n]) \quad (2)$$

and substituting:

$$Q = K s D L \quad (3)$$

and

$$t = 4 D n / \pi K s^2 \quad (4)$$

where:

$h_0 - h$ = acceptable drawdown at wetlands edge taken as 0.25 ft.
 Q = discharge
 D = depth of ditch or basin
 L = length of ditch or basin
 K = hydraulic conductivity, taken as 10 ft/day
 s = slope of water table surface
 T = $K \times$ depth of ditch
 t = time in days
 S = coefficient of storage, taken as 0.2
 r = distance radially from ditch or basin
 n = porosity.

Equation 2 may be simplified and rearranged to solve for the distance, r , where the drawdown will be equal to 0.25 ft in terms of the length, L , of ditch or basin. Substituting the buffer width, B_w , for the distance, r , the equation is then stated as follows:

$$B_w = (1.69D/s)(10^{-[1.3/sL]}) \quad (5)$$

The solution of Equation 5 is trivial for very small ditch lengths.

The assumption is made that a drawdown of 0.25 ft at the wetland edge is acceptable. The buffer distances for drawdowns of 1, 2, 3, and 5 ft with a ditch length of 300 ft are 78, 156, 235, and 392 ft, respectively.

Determining drawdowns in unconfined water table aquifers where conditions vary from one site to the next is a very complex task, and the methodology presented here is likely to be controversial. Be that as it may, the above formula may be used to determine a buffer width based on gross assumptions concerning such factors as hydraulic conductivity and coefficient of storage, among others. It is a much simplified version of much more complex relationships. Without a detailed analysis of the conditions and soils characteristic of the Wekiva Basin--which are beyond the scope of this report--the simplified relationships expressed in Equation 2 may be used as guides to

determine effective setbacks to minimize drawdown effects. The authors suggest that groundwater hydrologists, engineers and ecologists be consulted to better define parameters more precisely and to formulate an acceptable methodology for determining drawdown effects.

(4) Maintaining Habitat Suitability

Specific quantitative data are not currently available for all of the wildlife species in the Wekiva River Basin. However, we were able to obtain information on several of the more sensitive forest-dwelling wetland-dependent species which would be adversely affected by landscape alterations (Table V.2). Areas that are suitable for these species would, of course, also be suitable for less sensitive species. The following are minimum standards that are required for an area to be considered suitable for a full spectrum of wildlife along the Wekiva River.

1. Tree canopy height greater than 50 ft;
2. Tree canopy closure greater than 70%;
3. Average tree crown diameter greater than 15 ft;
4. More than 3 trees of at least 20 inches dbh/ac;
5. More than 0.1 snags greater than 20 inches dbh/ac;
6. Average shrub height greater than 2 ft but less than 15 ft; and
7. Shrub canopy closure greater than 70%.

(a) Calculating Spatial Requirements. The amount of suitable contiguous habitat required to support at least one individual of most species living in the Wekiva River Basin is a circular area of 5.17 ac (diameter = 536 ft). This was derived by combining information from several references (see Table V.2). First of all, many forest interior songbirds do not live in plots smaller than 1 ac (diameter = 236 ft). Other data suggest that individuals found in some of the smallest plots were probably living in stressful and unhealthy environments. Negative edge effects have been shown to affect species within 300 ft of forest boundaries. Ideally then, the minimum diameter

Table V.2. Minimum habitat suitability and spatial requirements of some of the most sensitive wetland dependent wildlife species in the Wekiva River Basin.

Species	Habitat Types	Minimum Habitat Suitability	Minimum Spatial Requirements in Suitable Habitat Areas	
			Distance Upland from River Edge of Timber	Total Width Including River
Florida cooter and other aquatic turtles ¹	aquatic, all wetlands, sandy uplands	uplands for nesting, water for food	(50 ft of uplands)	
wood stork ²	cypress swamps, shallow fresh water	large cypress trees for nesting, water for food		300 ft from large cypress trees
Pileated woodpecker ^{3,4}	all forested wetlands	- tree canopy closure > 25% - > 3 trees of at least 20 in. dbh/acre - > 0.1 snags (>20 in. dbh)/acre	197 ft	4,221 ft
Red-shouldered hawk ^{5,6,7}	all forested wetlands	- tree canopy height > 17.7 m - tree canopy closure > 70% - avg. tree crown diam. > 8 m	795 ft	2,606 ft
Song birds ^{4,5,8,9}		- shrub canopy closure > 20% - avg. shrub ht. > 0.5 m but < 5.0 m	236 ft	
Indigo snake ¹⁰		wetlands for most of the year but gopher tortoise burrows in winter	(300 ft of uplands)	

Table V.2 (page 2 of 2)

- ¹Weller, M.W. 1978. Management of Freshwater Marshes for Wildlife. Pages 276-84 in R.E. Good, D.F. Whigham, and R.L. Simpson (eds.), *Freshwater Wetlands: Ecological Processes and Management Potential*. New York, NY: Academy Press.
- ²Palmer, R.S. 1962. *Handbook of North American Birds: Volume 1, Loons through Flamingos*. Yale University Press, New Haven. 567 pp.
- ³Schroeder, R.L. 1983. Habitat suitability index models: Pileated woodpecker. U.S. Dept. Int., Fish. Wildl. Serv. FWS/OBS-82/10.39. 15 pp.
- ⁴Tassone, J.F. 1981. Utility of Hardwood Leave Strips for Breeding Birds in Virginia's Central Piedmont. MS Thesis. Blacksburg, VA: Virginia Polytechnic Institute and State College, 83 pp.
- ⁵Galli, A.E., C.F. Leck, and R.T.T. Forman. 1976. Avian distribution patterns in forest islands of different sizes in central New Jersey. *Auk* 93:356-64.
- ⁶Bryant, A.A. 1986. Influence of selective logging on red-shouldered hawks, *Buteo lineatus*, in Waterloo Region, Ontario, 1953-1978. *Canadian Field-Naturalist* 100(4):520-25.
- ⁷Bednarz, J.C. and J.J. Dinsmore. 1982. Nest-sites and habitat of red-shouldered and red-tailed hawks in Iowa. *Wilson Bull.* 94(1):31-45.
- ⁸Sousa, P.J. 1982. Habitat suitability index models: Veery. U.S. Dept. Int., Fish. Wildl. Serv. FWS/OBS-82/10.22. 12 pp.
- ⁹Temple, S.A. 1986. Predicting impacts of habitat fragmentation on forest birds: A comparison of two models. Pages 301-04 in J. Verner, M.L. Morrison and C.J. Ralph (eds.), *Wildlife 2000: Modeling Habitat Relationships of Terrestrial Vertebrates*. Madison, WI: The University of Wisconsin Press.
- ¹⁰Speake, D.W., J.A. McGlinchy, and T.R. Colvin. 1978. Ecology and management of the eastern indigo snake in Georgia: A progress report. Pages 64-73 in R.R. Odum and L. Landers (eds.), *Proceedings of the Rare and Endangered Wildlife Symposium*, Aug. 3-4, 1978. Georgia Dept. Nat. Res. Tech. Bull. WL 4.

of a stress-free suitable habitat area should be 836 ft (300 ft + 236 ft + 300 ft). However, it is assumed that edge effects along the river are not as severe as those along the uplands, and the average of 236 and 836 (536 ft) is recommended as the minimum width necessary to prevent harmful effects of development on individual wetland-dependent animals. Self-sustaining populations require suitable areas many times larger. Their spatial needs can be easily satisfied by protecting a minimum width of 536 ft of suitable habitat landward from the edge of the forest along both sides of the river. In some situations, the wetland area will be sufficient and no upland buffer is needed to fulfill this requirement. Where wetlands are relatively narrow but forest canopy continues into the uplands, an upland buffer will be needed.

Although some large species such as the red-shouldered hawk need correspondingly wider areas, it is our opinion that the requirements of these low-density nesting birds are satisfied by the large wetland areas within the existing designated wetlands along the Wekiva River. The 536-foot width is believed to be sufficient contiguous habitat to satisfy corridor requirements of large mammals such as black bear, river otter, and bobcat.

(b) Calculating Necessary Access to Uplands or Transitional Habitat.

Enough upland or transitional habitat must be preserved adjacent to the wetlands so that semiaquatic turtles can find suitable safe areas to lay their eggs. Although a narrow upland strip of sandy soil would provide the necessary substrate, nests constructed in this type of environment would be subjected to high predation rates associated with edges. A minimum 50-foot upland buffer along the entire length of the river is recommended for turtles.

Areas where gopher tortoises are present within 300 ft of the adjacent wetlands should be protected so indigo snakes in the wetlands can continue

their seasonal movements into upland gopher tortoise burrows. In these situations, the buffer should include the entire gopher tortoise area.

(c) Calculating Buffers for Noise Impacts. The effects of noise on wildlife breeding, feeding, and territorial protection is not completely understood, although data suggest that noise more than human presence that drives wildlife from areas surrounding developed land. A simple method proposed by Brown (1981) for determining buffer sizes necessary to attenuate highway noise to acceptable levels was to utilize forested areas to reduce noise levels to background levels. Using the following equation,³ noise level at the source can be related to vegetation of the buffer zone to determine buffer width necessary to reduce noise levels to background (40 dBA).

$$B_w = \ln (40/N_i) / -A_c \quad (6)$$

where:

B_w = buffer width in ft

A_c = attenuation coefficient. Use .002 for paved buffer, .0037 for nonforested buffer, and .0053 for heavily forested buffer

N_i = noise level of source. Use 50 dBA for residential areas, 60 dBA for nonarterial general traffic, 70 dBA arterial traffic, and 70 dBA for commercial areas

The required buffers to reduce average residential noise levels (50 dBA) to background (40 dBA) is 60 ft when the buffer is cleared or 42 ft when the buffer is forested.

V.C. Illustration of Buffer Zone Determinations

Given in this section are several maps of portions of the Wekiva River Basin and Black Water Creek Basin depicting relevant information and highlighting examples of buffer width determinations for controlling

³The equation is derived from data presented in several studies (Eyring 1946, Weiner and Keast 1959, Embleton 1963, and a summary by Robinette 1972).

parameters. The information shown on each of the maps has been derived from aerial photographs, USDA SCS soil surveys, and USGS topographic maps. The scale of the original information determines the resolution at which buffer widths can be graphically depicted. As a result, the resolution of these maps is not sufficient to locate buffer requirements accurately at a scale that is suitable for actual determinations. Instead, maps and data should be compiled at a scale of about 1" = 100 ft, or possibly 1" = 200 ft, to render the zone in which buffer determinations are to be made in sufficient detail.

The areas chosen for these illustrations were selected because of the variety of conditions that are illustrated within relatively small geographic locales. Whether these areas can ultimately be developed was not taken into consideration, so to the astute observer, it may be obvious that portions of the areas are in state ownership. No attempt has been made to single out these areas for any purpose other than for their illustrative value.

Tables V.3, V.4, and V.5 list ranges of buffer widths generated using the above equations and a given set of parameter values. It is important to note that there is an infinite range of buffer widths and that the values shown are only representative possibilities. The variables in the equations are to be determined in the field on a site-by-site basis.

(1) 40C-4 Wetland Line. Given in Maps V.1 and V.6 are simplified vegetation maps to show the forest canopy and wetland line. The wetland line was drawn from interpretation of aerial photographs and is an estimate of the line that would be determined using field verification of the dominance of wetland vegetation.

(2) Wildlife Habitat Suitability. Also shown on Maps V.1 and V.6 are the three habitat buffer zones. When forest canopy is absent, the buffer zone resulting from spatial requirements of wildlife is not determined and is only

shown when the wetland line is waterward of the necessary 536 ft. The transitional habitat buffer is shown as a 50-foot zone landward of the wetland line, and the noise attenuation buffer is drawn based on the vegetative characteristics of the intervening area between the habitat line and the area reserved for development. The most landward line is then drawn as the wildlife buffer.

(3) Water Quality Buffer. Shown on Maps V.2, V.3, V.7, and V.8 are slope and generalized soil characteristics derived from SCS soil surveys that are used in calculating buffer zone requirements to minimize erosion and sedimentation. The indicated buffer zone requirement is a function of the erodibility of the soil and slope of the ground surface in the area immediately landward of the wetland line. Where two or more soil types occur along the 300-foot survey swath, either the dominant type was used or an average value was taken if the soils were evenly distributed.

(4) Water Quantity Buffer. Shown on Maps V.4 and V.9 are generalized water table characteristics that are used to determine the buffer zone required to minimize adverse impacts from water table drawdown. A design drawdown of 3 ft was used to calculate buffer zone requirements. The assumption was made that if water table elevations were between 0" and 12", then a full drawdown of 3 ft was necessary. In like manner, if the water table elevation was between 12" and 24" or between 24" and 36", the drawdown was taken as 2 ft and 1 foot, respectively.

(5) Composite Buffer. Given in Maps V.5 and V.10 are the composites derived by taking the most landward buffer boundary determined by each of the four controlling parameters.

Table V.3. Sample buffer widths (ft) determined by water quality criteria
(refer to Equation 1, Section V.B.2)

Slope % **	Erodibility*			
	1	2	3	4
3.9	198	99	66	49
6.9	263	131	88	67
7.9	281	140	94	70
10.0	316	158	105	79

* Erodibility factors are interpreted as follows:

- 1) Most erodible soils ($K > 0.17$) or no. 2 soils with no vegetative cover.
- 2) Soils with ($K = 0.17$) conditions or medium soils (3) with no vegetation.
- 3) Medium erodibility ($K = 0.15$) or good soils (4) with no vegetative cover.
- 4) Good soils ($K = 0.10$) with vegetative cover.

** Numbers shown represent upper limits of slope categories.

Table V.4. Sample buffer widths (ft) determined by water quantity criteria
(refer to Equation 5, Section V.B.3)

Slope % *	Drawdown (ft)			
	1	2	3	5
3.9	56	112	168	280
6.9	28	57	85	142
7.9	24	49	73	121
10.0	19	37	56	93

* Numbers shown represent upper limits of slope categories. The slope of the groundwater table was assumed to equal that of the ground surface in the area immediately adjacent to the wetland line.

Table V.5. Sample buffer widths (ft) determined by noise attenuation criteria (refer to Equation 6, Section V.B.4)

Buffer Type	Noise Level (dBA)		
	50	60	70
Canopy	42	76	105
No Canopy	60	110	151
Paved	112	203	280

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APPENDIX A

WILDLIFE ASSOCIATED WITH WEKIVA RIVER BASIN

TABLE A-1. Fish species of the Wekiva River Basin area.

Scientific Name	Common Name
<u>Amia calva</u>	Bowfin
<u>Anguilla rostrata</u>	American eel
<u>Aphredoderus sayanus</u>	Pirate perch
<u>Dorosoma cepedianum</u>	Gizzard shad
<u>Dorosoma petenense</u>	Threadfin shad
<u>Elassoma evergladei</u>	Everglades pygmy sunfish
<u>Elassoma okefenokee</u>	Okefenokee pygmy sunfish
<u>Enneacanthus gloriosus</u>	Bluespotted sunfish
<u>Enneacanthus obesus</u>	Banded sunfish
<u>Erimyzon sucetta</u>	Lake chubsucker
<u>Esox americanus</u>	Redfin pickerel
<u>Esox niger</u>	Chain pickerel
<u>Etheostoma fusiforme</u>	Swamp darter
<u>Fundulus chrysotus</u>	Golden topminnow
<u>Fundulus lineolatus</u>	Lined topminnow
<u>Fundulus seminolis</u>	Seminole killifish
<u>Gambusia affinis</u>	Mosquitofish
<u>Heterandria formosa</u>	Least killifish
<u>Ictalurus brunneus</u>	Snail bullhead
<u>Ictalurus catus</u>	White catfish
<u>Ictalurus nebulosus</u>	Brown bullhead
<u>Ictalurus punctatus</u>	Channel catfish
<u>Jordanella floridae</u>	Flagfish
<u>Labidesthes sicculus</u>	Brook silverside
<u>Lepisosteus osseus</u>	Longnose gar
<u>Lepisosteus platyrhincus</u>	Florida spotted gar
<u>Lepomis auritus</u>	Redbreast sunfish
<u>Lepomis gulosus</u>	Warmouth
<u>Lepomis macrochirus</u>	Bluegill
<u>Lepomis marginatus</u>	Dollar sunfish
<u>Lepomis microlophus</u>	Redear sunfish
<u>Lepomis punctatus</u>	Spotted sunfish
<u>Lucania goodei</u>	Bluefin killifish
<u>Micropterus salmoides</u>	Largemouth bass
<u>Morone saxatilis</u>	Striped bass
<u>Mugil cephalus</u>	Striped mullet
<u>Notemigonus crysoleuca</u>	Golden shiner
<u>Notropis chalybaeus</u>	Ironcolor shiner
<u>Notropis emiliae</u>	Pugnose minnow
<u>Notropis hypselopterus</u>	Sailfin shiner

TABLE A-1. Fish species of the Wekiva River area (continued).

Scientific Name	Common Name
<u>Notropis maculatus</u>	Tail light shiner
<u>Notropis petersoni</u>	Coastal shiner
<u>Notropis welaka</u>	Bluenose shiner
<u>Noturus gyrinus</u>	Tadpole madtom
<u>Noturus leptoacanthus</u>	Speckle madtom
<u>Percina nigrofasciata</u>	Blackbanded darter
<u>Poecilia latipinna</u>	Sailfin molly
<u>Pomoxis nigromaculatus</u>	Black crappie

TABLE A-2. Relative abundance of amphibian species in Wekiva River Basin habitats.*

Scientific Name	Common Name	Habitat Types			
		HH	HS	CS	ST
<u>Acris gryllus</u>	Cricket frog	-	-	-	-
<u>Amphiuma means</u>	Amphiuma	-	-	-	-
<u>Bufo quericus</u>	Oak toad	-	-	-	-
<u>Bufo terrestris</u>	Southern toad	-	c	u	-
<u>Desmognathus auriculatus</u>	Dusky salamander	c	u	-	-
<u>Eleutherodactylus planirostris</u>	Greenhouse frog	c	c	u	-
<u>Eurycea quadridigitata</u>	Dwarf salamander	c	u	u	u
<u>Gastrophryne carolinensis</u>	Narrowmouth toad	c	c	u	c
<u>Hyla cinerea</u>	Green frog	c	u	c	c
<u>Hyla crucifer</u>	Spring peeper	c	-	-	-
<u>Hyla femoralis</u>	Pinewoods treefrog	-	u	u	-
<u>Hyla gratiosa</u>	Barking treefrog	-	u	u	-
<u>Hyla squirella</u>	Squirrel treefrog	c	c	c	u
<u>Limnaoedus ocularis</u>	Little grass frog	-	u	u	u
<u>Notophthalmus perstriatus</u>	Striped newt	-	u	u	-
<u>Notophthalmus viridescens</u>	Penninsula newt	-	-	-	-
<u>Pseudacris nigrita</u>	Southern chorus frog	-	u	c	-
<u>Pseudacris ornata</u>	Ornate chorus frog	-	-	-	-
<u>Pseudobranchius striatus</u>	Dwarf siren	u	u	u	u
<u>Rana areolata</u>	Gopher frog	c	-	-	-
<u>Rana catesbeiana</u>	Bullfrog	u	u	u	u
<u>Rana grylio</u>	Pig frog	-	u	u	u
<u>Rana heckscheri</u>	River swamp frog	u	-	-	-
<u>Rana utricularia</u>	Leopard frog	u	c	c	u
<u>Scaphiopus holbrooki</u>	Spadefoot toad	c	u	u	-
<u>Siren intermedia</u>	Lesser siren	u	c	c	c
<u>Siren lacertina</u>	Greater siren	u	u	u	c

HH = Hydric hammock habitat
 HS = Hydric swamp habitat
 CS = Cypress swamp habitat
 ST = Swamp thicket habitat

* = All species wetland dependent
 c = Common
 u = Uncommon
 - = Possible but no data available

TABLE A-3. Relative abundance of reptile species in Wekiva River Basin habitats.

Scientific Name	Common Name	Habitat Types			
		HH	HS	CS	ST
<u>Agkistrodon piscivorus*</u>	Eastern cottonmouth	c	u	c	u
<u>Alligator mississippiensis*</u>	American alligator	u	-	-	-
<u>Anolis carolinensis</u>	Green anole	c	c	c	c
<u>Cemophora coccinea</u>	Scarlet snake	-	-	-	-
<u>Chelydra serpentina*</u>	Snapping turtle	u	-	u	-
<u>Cnemidophorus sexlineatus</u>	Six-lined racerunner	-	-	-	-
<u>Coluber constrictor</u>	Black racer	c	c	u	-
<u>Crotalus adamanteus</u>	E. diamondback rattlesnake	c	-	-	-
<u>Deirochelys reticularia*</u>	Chicken turtle	-	u	u	-
<u>Diadophis punctatus</u>	Southern ringneck snake	c	-	-	-
<u>Drymarchon corais</u>	Indigo snake	c	u	u	-
<u>Elaphe guttata</u>	Red rat snake	c	-	-	-
<u>Elaphe obsoleta</u>	Yellow rat snake	c	u	u	u
<u>Eumeces egregius</u>	Mole skink	-	-	-	-
<u>Eumeces inexpectatus</u>	Five-lined skink	c	-	-	-
<u>Farancia abacura*</u>	Mud snake	-	u	u	c
<u>Farancia erytrogramma*</u>	Rainbow snake	-	-	-	-
<u>Gopherus polyphemus</u>	Gopher tortoise	-	-	-	-
<u>Heterodon platyrhinos</u>	Eastern hognose snake	-	-	-	-
<u>Heterodon simus</u>	Southern hognose snake	-	-	-	-
<u>Kinosternon bauri*</u>	Striped mud turtle	-	u	u	u
<u>Kinosternon subrubrum*</u>	Florida mud turtle	-	-	-	-
<u>Lampropeltis getulus</u>	Florida kingsnake	c	u	u	c
<u>Lampropeltis triangulum</u>	Scarlet kingsnake	c	u	u	c
<u>Masticophis flagellum</u>	Eastern coachwhip	u	-	-	-
<u>Micrurus fulvius</u>	Coral snake	c	u	u	-
<u>Neoseps reynoldsi</u>	Sand skink	-	-	-	-
<u>Nerodia cyclopion*</u>	Green water snake	-	u	u	-
<u>Nerodia fasciata*</u>	Banded water snake	c	u	u	u
<u>Nerodia taxispilota*</u>	Brown water snake	u	u	u	-
<u>Opheodrys aestivus</u>	Rough green snake	c	u	u	u
<u>Ophisaurus attentuatus</u>	Slender glass lizard	-	-	-	-
<u>Ophisaurus ventralis</u>	Eastern glass lizard	-	-	-	-
<u>Pituophis melanoleucus</u>	Pine snake	-	-	-	-
<u>Pseudemys floridana*</u>	Florida cooter	u	u	u	-

TABLE A-3. Relative abundance of reptile species in Wekiva River Basin habitats (continued).

Scientific Name	Common Name	Habitat Types			
		HH	HS	CS	ST
<u>Pseudemys nelsoni*</u>	Florida red-bellied turtle	-	-	u	-
<u>Regina alleni*</u>	Striped swamp snake	-	u	u	u
<u>Rhadinaea flavilata</u>	Pine woods snake	-	-	-	-
<u>Rhineura floridana</u>	Florida worm lizard	-	-	-	-
<u>Sceloporus undulatus</u>	Southern fence lizard	-	-	-	-
<u>Sceloporus woodi</u>	Florida scrub lizard	-	-	-	-
<u>Scincella laterale</u>	Ground skink	-	c	u	u
<u>Seminatrix pygaea*</u>	Black swamp snake	-	u	u	-
<u>Sistrurus miliarius</u>	Dusky pygmy rattlesnake	c	u	u	u
<u>Sternotherus odoratus*</u>	Stinkpot turtle	-	u	u	-
<u>Storeria dekayi</u>	Brown snake	c	u	u	-
<u>Storeria occipitomaculata</u>	Red-bellied snake	-	-	-	-
<u>Tantilla coronata</u>	Southeastern crowned snake	-	-	-	-
<u>Terrapene carolina</u>	Box turtle	-	u	u	-
<u>Thamnophis sauritus</u>	Ribbon snake	-	u	u	c
<u>Thamnophis sirtalis</u>	Eastern garter snake	-	u	u	u
<u>Trionyx ferox*</u>	Florida softshell turtle	-	u	u	-

HH = Hydric hammock habitat
 HS = Hydric swamp habitat
 CS = Cypress swamp habitat
 ST = Swamp thicket habitat

* = Wetland dependent species
 c = Common
 u = Uncommon
 - = Possible but no data available

TABLE A-4. Relative abundance of bird species in Wekiva River Basin habitats.

Scientific Name	Common Name	Habitat Types			
		HH	HS	CS	ST
<u>Accipiter cooperii</u>	Cooper's hawk	c	u	u	u
<u>Accipiter striatus</u>	Sharp-shinned hawk	c	c	u	u
<u>Actitus macularia*</u>	Spotted sandpiper	-	-	-	-
<u>Agelaius phoeniceus*</u>	Red-winged blackbird	u	c	c	c
<u>Aimophila aestivalis</u>	Bachman's sparrow	-	-	-	-
<u>Aix sponsa*</u>	Wood duck	-	c	c	-
<u>Ammodramus henslowii#</u>	Henslow's sparrow	-	-	-	-
<u>Ammodramus leconteii*#</u>	LeConte's sparrow	-	-	-	-
<u>Ammodramus savannarum</u>	Grasshopper sparrow	-	-	-	-
<u>Anas americana*#</u>	American widgeon	-	-	-	-
<u>Anas clypeata*#</u>	Northern shoveler	-	-	-	-
<u>Anas crecca*#</u>	Green-winged teal	-	-	-	-
<u>Anas discors*</u>	Blue-winged teal	-	-	-	-
<u>Anas fulvigula*</u>	Mottled duck	-	-	-	-
<u>Anhinga anhinga*</u>	Anhinga	-	u	u	-
<u>Anthus spinoletta*#</u>	Water pipit	-	-	-	-
<u>Aphelocoma coerulescens</u>	Scrub jay	-	-	-	-
<u>Aramus guarauna*</u>	Limpkin	-	c	c	-
<u>Archilochus colubris</u>	Ruby-throated hummingbird	c	c	u	-
<u>Ardea herodias*</u>	Great blue heron	-	-	-	-
<u>Athene cunicularia</u>	Burrowing owl	-	-	-	-
<u>Aythya collaris*</u>	Ring-necked duck	-	-	-	-
<u>Bombycilla cedrorum#</u>	Cedar waxwing	c	c	c	u
<u>Botaurus lentiginosus*</u>	American bittern	-	-	-	-
<u>Bubo virginianus</u>	Great horned owl	u	u	u	u
<u>Bubulcus ibis</u>	Cattle egret	-	c	c	-
<u>Buteo brachyurus*</u>	Short-tailed hawk	u	u	u	-
<u>Buteo jamaicensis</u>	Red-tailed hawk	u	u	u	u
<u>Buteo lineatus*</u>	Red-shouldered hawk	c	c	c	c
<u>Butorides virescens*</u>	Green heron	-	c	u	u
<u>Cairina moschata*</u>	Muscovy duck	-	-	-	-
<u>Calidris alba*#</u>	Sanderling	-	-	-	-
<u>Calidris alpina*#</u>	Dunlin	-	-	-	-
<u>Calidris mauri*#</u>	Western sandpiper	-	-	-	-
<u>Calidris minutilla*#</u>	Least sandpiper	-	-	-	-

TABLE A-4. Relative abundance of bird species in Wekiva River Basin habitats (continued).

Scientific Name	Common Name	Habitat Types			
		HH	HS	CS	ST
<u>Campephilus principalis*</u>	Ivory-billed woodpecker	-	-	-	-
<u>Caprimulgus carolinensis</u>	Chuck will's widow	c	c	u	-
<u>Caprimulgus vociferus#</u>	Whip-poor-will	c	u	u	u
<u>Cardinalis cardinalis</u>	Northern Cardinal	c	c	c	c
<u>Carduelis tristis#</u>	American goldfinch	c	c	c	c
<u>Carpodacus purpureus#</u>	Purple finch	-	-	-	-
<u>Casmerodius albus*</u>	Great egret	-	c	c	u
<u>Cathartes aura</u>	Turkey vulture	u	u	u	u
<u>Catharus fuscescens*#</u>	Veery	-	-	-	-
<u>Catharus guttatus#</u>	Hermit thrush	c	c	u	-
<u>Catharus ustulatus#</u>	Swainson's thrush	-	-	-	-
<u>Ceryle alcyon*</u>	Belted kingfisher	-	-	-	-
<u>Chaetura pelagica</u>	Chimney swift	-	-	-	-
<u>Charadrius vociferus*</u>	Killdeer	-	-	-	-
<u>Chordeiles minor</u>	Common nighthawk	-	-	-	-
<u>Circus cyaneus*</u>	Northern harrier hawk	-	-	-	u
<u>Cistothorus platensis*#</u>	Sedge wren	-	-	-	u
<u>Coccyzus americanus</u>	Yellow-billed cuckoo	c	c	u	u
<u>Colaptes auratus</u>	Common flicker	c	u	u	-
<u>Colinus virginianus</u>	Bobwhite	u	u	-	u
<u>Columbina passerina</u>	Ground dove	-	-	-	u
<u>Conotopus virens</u>	Eastern wood peewee	-	-	-	-
<u>Coragyps atratus</u>	Black vulture	u	u	u	u
<u>Corvus brachyrhynchos</u>	Common crow	-	u	c	-
<u>Corvus ossifragus*</u>	Fish crow	c	c	c	c
<u>Cyanocitta cristata</u>	Blue jay	c	c	c	-
<u>Dendroica caerulescens#</u>	Black-throated blue warbler	-	-	-	-
<u>Dendroica coronata#</u>	Yellow-rumped warbler	c	c	c	c
<u>Dendroica discolor</u>	Prairie warbler	c	c	u	c
<u>Dendroica dominica*</u>	Yellow-throated warbler	c	c	c	-
<u>Dendroica magnolia#</u>	Magnolia warbler	-	-	-	-
<u>Dendroica palmarum#</u>	Palm warbler	c	c	c	c
<u>Dendroica petechia</u>	Yellow warbler	-	-	-	-
<u>Dendroica pinus</u>	Pine warbler	-	-	-	-
<u>Dendroica striata#</u>	Blackpoll warbler	-	-	-	-

TABLE A-4. Relative abundance of bird species in Wekiva River Basin habitats (continued).

Scientific Name	Common Name	Habitat Types			
		HH	HS	CS	ST
<u>Dendroica tigrina</u> #	Cape May warbler	-	-	-	-
<u>Dryocopus pileatus</u> *	Pileated woodpecker	c	c	u	u
<u>Dumetella carolinensis</u>	Gray catbird	c	c	c	c
<u>Elanoides forficatus</u> *	Swallow-tailed kite	u	c	u	-
<u>Empidonax virescens</u> *	Acadian flycatcher	c	-	-	-
<u>Eudocimus albus</u> *	White ibis	-	u	c	-
<u>Euphagus carolinus</u> *#	Rusty blackbird	-	-	-	-
<u>Falco sparverius</u>	American kestrel	-	-	-	-
<u>Florida caerulea</u> *	Little blue heron	-	u	c	-
<u>Fulica americana</u> *#	American coot	-	-	-	u
<u>Gallinago gallinago</u> *#	Common snipe	-	-	-	c
<u>Gallinula chloropus</u> *	Common gallinule	-	-	-	-
<u>Gelochelidon nilotica</u> *	Gull-billed tern	-	-	-	-
<u>Geothlypis trichas</u> *	Common yellowthroat	c	c	c	c
<u>Grus canadensis</u> *	Sandhill crane	-	-	-	-
<u>Haliaeetus leucocephalus</u> *	Bald eagle	u	u	u	u
<u>Himantopus mexicanus</u> *	Black-necked stilt	-	-	-	-
<u>Hirundo rustica</u>	Barn swallow	-	-	-	-
<u>Hydranassa tricolor</u> *	Tricolored heron	-	u	c	-
<u>Hylocichila mustelina</u> *	Wood thrush	-	-	-	-
<u>Ixobrychus exilis</u> *	Least bittern	-	-	-	-
<u>Lanius ludovicianus</u>	Loggerhead shrike	u	-	-	u
<u>Larus delawarensis</u> *#	Ring-billed gull	-	-	-	-
<u>Laterallus jamaicensis</u> *	Black rail	-	-	-	-
<u>Leucophoyx thula</u> *	Snowy egret	-	c	c	u
<u>Limnodromus griseus</u> *#	Short-billed dowitcher	-	-	-	-
<u>Limnodromus scolopaceus</u> *#	Long-billed dowitcher	-	-	-	-
<u>Limnithlypis swainsonii</u> *	Swainson's warbler	u	u	u	-
<u>Lophodytes cucullatus</u> *	Hooded merganser	-	c	c	-
<u>Melanerpes erythrocephalus</u>	Red-bellied woodpecker	c	c	c	u
<u>Meleagris gallopavo</u> *	Turkey	c	c	u	u
<u>Melospiza georgiana</u> *#	Swamp sparrow	-	u	-	c
<u>Melospiza melodia</u> #	Song sparrow	-	-	-	c
<u>Mimus polyglottus</u>	Mockingbird	u	u	u	c
<u>Mniotilta varia</u> #	Black and white warbler	c	c	c	u

TABLE A-4. Relative abundance of bird species in Wekiva River Basin habitats (continued).

Scientific Name	Common Name	Habitat Types			
		HH	HS	CS	ST
<u>Molothrus ater</u>	Brown-headed cowbird	-	-	-	-
<u>Mycteria americana</u> *	Wood stork	-	-	c	-
<u>Myiarchus crinitus</u> *	Great-crested flycatcher	c	c	c	-
<u>Numida meleagris</u>	Guinea fowl	-	-	-	-
<u>Nycticorax nycticorax</u> *	Black-crowned night heron	-	u	u	u
<u>Nycticorax violacea</u> *	Yellow-crowned night heron	-	u	c	c
<u>Otus asio</u>	Screech owl	c	c	c	u
<u>Pandion haliaetus</u> *	Osprey	-	-	-	-
<u>Parula americana</u> *	Northern parula	c	c	c	-
<u>Parus bicolor</u>	Tufted titmouse	c	c	c	-
<u>Parus carolinensis</u>	Carolina chickadee	c	c	c	-
<u>Passer domesticus</u>	House sparrow	-	-	-	-
<u>Passerculus sandwichensis</u> *#	Savannah sparrow	-	-	-	c
<u>Passerina cyanea</u>	Indigo bunting	-	-	-	-
<u>Phalacrocorax auritus</u> *	Double crested cormorant	-	-	-	-
<u>Pheucticus ludovicianus</u> #	Rose-breasted grosbeak	-	-	-	-
<u>Picoides borealis</u>	Red cockaded woodpecker	-	-	-	-
<u>Picoides pubescens</u>	Downy woodpecker	c	c	c	-
<u>Picoides villosus</u>	Hairy woodpecker	c	-	u	-
<u>Pipilo erithrophthalmus</u>	Rufous-sided towhee	c	c	-	c
<u>Piranga rubra</u>	Summer tanager	c	c	c	-
<u>Plegadis falcinellus</u> *	Glossy ibis	-	-	-	-
<u>Pluvialis squatarola</u> *#	Black-bellied plover	-	-	-	-
<u>Podilymbus podiceps</u> *	Pied-billed grebe	-	-	-	-
<u>Poliophtila caerulea</u>	Blue-gray gnatcatcher	c	c	c	c
<u>Poocetes gramineus</u> #	Vesper sparrow	-	-	-	-
<u>Porphyrala martinica</u> *	Purple gallinule	-	-	-	-
<u>Porzana carolina</u> *#	Sora	-	-	-	u
<u>Progne subis</u> *	Purple martin	-	-	c	c
<u>Protonotaria citrea</u> *	Prothonotary warbler	-	-	-	-
<u>Quiscalus major</u>	Boat-tailed grackle	-	u	u	c
<u>Quiscalus quiscula</u>	Common grackle	c	c	c	-
<u>Rallus elegans</u> *	King rail	-	-	-	c
<u>Rallus limicola</u> *	Virginia rail	-	-	-	u
<u>Regulus calendula</u> #	Ruby-crowned kinglet	c	c	c	c

TABLE A-4. Relative abundance of bird species in Wekiva River Basin habitats (continued).

Scientific Name	Common Name	Habitat Types			
		HH	HS	CS	ST
<u>Rostrhamus sociabilis</u> *	Everglades kite	-	-	-	-
<u>Rynchops niger</u> *	Black skimmer	-	-	-	-
<u>Sayornis phoebe</u> #	Eastern phoebe	c	c	c	c
<u>Scolopax minor</u> *	American woodcock	u	u	-	c
<u>Seiurus aurocapillus</u> #	Ovenbird	-	-	-	-
<u>Seiurus motacilla</u> *	Louisiana waterthrush	-	-	-	-
<u>Seiurus noveboracensis</u> *#	Northern waterthrush	-	-	-	-
<u>Setophaga ruticilla</u>	American redstart	-	-	-	-
<u>Sialia sialis</u>	Eastern bluebird	-	-	-	-
<u>Sphyrapicus varius</u> #	Yellow-bellied sapsucker	c	c	c	-
<u>Spizella passerina</u> #	Chipping sparrow	-	-	-	-
<u>Sterna antillarum</u> *	Least tern	-	-	-	-
<u>Sterna forsteri</u> *	Foster's tern	-	-	-	-
<u>Strix varia</u> *	Barred owl	c	c	c	u
<u>Sturnella magna</u>	Eastern meadowlark	-	-	-	-
<u>Sturnus vulgaris</u>	European starling	-	-	-	-
<u>Tachycineta bicolor</u> *#	Tree swallow	-	u	u	c
<u>Thryothorus ludovicianus</u>	Carolina wren	c	c	c	c
<u>Toxostoma rufum</u>	Brown thrasher	c	u	u	u
<u>Tringa flavipes</u> *#	Lesser yellowlegs	-	-	-	-
<u>Tringa melanoleuca</u> *#	Greater yellowlegs	-	-	-	-
<u>Troglodytes aedon</u> #	House wren	u	c	u	c
<u>Turdus migratorius</u>	American robin	u	c	c	c
<u>Tyrannus tyrannus</u>	Eastern kingbird	-	-	-	-
<u>Tyto alba</u>	Barn owl	u	u	-	u
<u>Vermivora celata</u> #	Orange-crowned warbler	c	c	u	u
<u>Vermivora ruficapilla</u> #	Nashville warbler	-	-	-	-
<u>Vireo flavifrons</u>	Yellow-throated vireo	-	-	-	-
<u>Vireo griseus</u>	White-eyed vireo	c	c	u	c
<u>Vireo olivaceus</u>	Red-eyed vireo	c	c	u	-
<u>Vireo solitarius</u> #	Solitary vireo	c	c	c	-
<u>Wilsonia citrina</u> *	Hooded warbler	-	-	-	-
<u>Zenaida macroura</u>	Mourning dove	c	u	u	u
<u>Zonotrichia albicollis</u> #	White-throated sparrow	-	-	-	c

HH = Hydric hammock habitat
 HS = Hydric swamp habitat
 CS = Cypress swamp habitat
 ST = Swamp thicket habitat

= Migrant species
 * = Wetland dependent species
 c = Common
 u = Uncommon
 - = Possible but no data available

TABLE A-5. Relative abundance of mammal species in Wekiva River Basin habitats.

Scientific Name	Common Name	Habitat Types			
		HH	HS	CS	ST
<u>Blarina carolinensis</u>	Short-tailed shrew	u	-	-	-
<u>Cryptotis parva</u>	Least shrew	-	u	u	-
<u>Dasypus novemcinctus</u>	Armadillo	-	c	u	u
<u>Didelphis virginiana</u>	Opossum	c	c	c	c
<u>Eptesicus fuscus</u>	Big brown bat	-	-	-	-
<u>Geomys pinetis</u>	Pocket gopher	-	-	-	-
<u>Glaucomys volans</u>	Flying squirrel	-	c	-	-
<u>Lasiurus intermedius</u>	Yellow bat	-	-	c	-
<u>Lasiurus seminolus</u>	Seminole bat	-	-	-	-
<u>Lutra canadensis*</u>	River otter	u	u	u	-
<u>Lynx rufus</u>	Bobcat	c	c	u	-
<u>Mephitis mephitis</u>	Striped skunk	c	u	-	-
<u>Mustela frenata</u>	Long-tailed weasel	-	-	-	-
<u>Myotis austroriparius</u>	Southeastern myotis bat	-	-	-	-
<u>Neofiber alleni*</u>	Florida muskrat	u	-	-	-
<u>Neotoma floridana</u>	Wood rat	c	u	-	-
<u>Nycticeius humeralis</u>	Evening bat	-	c	c	-
<u>Ochrotomys nuttalli</u>	Golden mouse	c	-	-	-
<u>Odocoileus virginianus</u>	White-tailed deer	c	u	u	u
<u>Oryzomys palustris*</u>	Rice rat	c	u	-	c
<u>Peromyscus floridanus</u>	Florida mouse	-	-	-	-
<u>Peromyscus gossypinus</u>	Cotton mouse	c	c	c	c
<u>Peromyscus polionotus</u>	Oldfield mouse	-	-	-	-
<u>Pipistrellus subflavus*</u>	Southern pipistrelle bat	-	-	-	-
<u>Plecotus rafinesquii</u>	Eastern big-eared bat	-	-	-	-
<u>Procyon lotor*</u>	Raccoon	c	c	c	c
<u>Reithrodontomys humulis</u>	Eastern harvest mouse	-	-	-	-
<u>Scalopus aquaticus</u>	Eastern mole	-	-	-	-
<u>Sciurus carolinensis</u>	Gray squirrel	c	c	u	-
<u>Sciurus niger</u>	Fox squirrel	-	-	-	-
<u>Sigmodon hispidus</u>	Cotton rat	c	u	u	c
<u>Spilogale putorius</u>	Spotted skunk	-	-	-	-
<u>Sorex longirostris</u>	Southeastern shrew	c	-	-	-
<u>Sus scrofa</u>	Feral pig	u	c	c	c
<u>Sylvilagus floridanus</u>	Cottontail rabbit	-	u	u	-

TABLE A-5. Relative abundance of mammal species in Wekiva River Basin habitats (continued).

Scientific Name	Common Name	<u>Habitat Types</u>			
		HH	HS	CS	ST
<u>Sylvilagus palustris*</u>	Marsh rabbit	-	u	u	c
<u>Tadarida brasiliensis</u>	Free-tailed bat	-	-	-	-
<u>Trichechus manatus*</u>	West Indian manatee	-	-	-	-
<u>Urocyon cinereoargenteus</u>	Gray fox	c	-	-	-
<u>Ursus americanus*</u>	Black bear	c	-	-	-
<u>Vulpes vulpes</u>	Red fox	-	c	-	-

HH = Hydric hammock habitat
 HS = Hydric swamp habitat
 CS = Cypress swamp habitat
 ST = Swamp thicket habitat

* = Wetland dependent species
 c = Common
 u = Uncommon
 - = Possible but no data available

TABLE A-6. Designated plant and animal species of the Wekiva River Basin.

Scientific Name	Common Name	Designation		
		A	B	C
Plants				
<u>Bonamia grandiflora</u>	Florida bonamia	E	UR1	
<u>Dennstaedtia bipinnata</u>	Cuplet fern	E		
<u>Dryopteris ludoviciana</u>	Florida shield fern	T		
<u>Encyclia tampensis</u>	Butterfly orchid	T		II
<u>Habenaria repens</u>	Water spider orchid	T		II
<u>Nemastylis floridana</u>	Fall-flowering ixia	E	UR2	
<u>Ophioglossum palmatum</u>	Hand adder's tongue fern	E	UR5	
<u>Phlebodium aureum</u>	Golden polypody	T		
<u>Rhapidophyllum hystrix</u>	Needle palm		UR5	
<u>Sabal minor</u>	Bluestem palmetto	T		
<u>Spiranthes</u> sp.	Ladies tresses	T		II
<u>Thelypteris hispidula</u>	Hairy tri-vein fern	T		
<u>Thelypteris interrupta</u>	Spready tri-even fern	T		
<u>Thelypteris ovata</u>	Ovate maiden fern	T		
<u>Tillandsia fasciculata</u>	Stiff-leaved wildpine	C		
<u>Tillandsia setacea</u>	Needle-leaved wildpine	T		
<u>Tillandsia utriculata</u>	Giant wildpine	C		
<u>Zamia floridana</u>	Florida coontie	C		II
Invertebrates				
<u>Aphaostracon asthenes</u>	Blue spring aphaostracon		UR2	
<u>Aphaostracon monas</u>	Wekiwa spring aphaostracon		UR2	
<u>Cincinnatia parva</u>	Blue spring snail		UR2	
<u>Cincinnatia ponderosa</u>	Ponderous spring snail		UR2	
<u>Cincinnatia wekiwae</u>	Wekiwa spring snail		UR2	
<u>Procambarus acherontis</u>	Orlando cave crayfish		UR	
Amphibians				
<u>Rana areolata</u>	Gopher frog	SSC	UR2	
Reptiles				
<u>Alligator mississippiensis</u>	American alligator	SSC	T	II
<u>Drymarchon corais couperi</u>	Eastern indigo snake	T	T	
<u>Gopherus polyphemus</u>	Gopher tortoise	SSC	UR2	
<u>Neoseps reynoldsi</u>	Sand skink	T	UR2	
<u>Pituophis melanoleucus mugitus</u>	Pine snake	SSC	UR2	
<u>Sceloporus woodi</u>	Florida scrub lizard		UR2	

TABLE A-6. Designated plant and animal species of the Wekiva River Basin (continued).

Scientific Name	Common Name	Designation		
		A	B	C
Birds				
<u>Aimophila aestivalis</u>	Bachman's sparrow		UR2	
<u>Apelocoma coerulescens</u> <u>coerulescens</u>	Florida scrub jay	T	T	
<u>Aramus guarauna</u>	Limpkin	SSC		
<u>Athene cunicularia</u>	Burrowing owl	SSC		II
<u>Campephilus principalis</u>	Ivory-billed woodpecker	E	E	
<u>Circus cyaneus</u>	Marsh hawk			II
<u>Falco sparverius paulus</u>	American kestrel	T	UR2	II
<u>Falco sparverius sparverius</u>	Eastern kestrel			II
<u>Florida caerulea</u>	Little blue heron	SSC		
<u>Grus canadensis pratensis</u>	Florida sandhill crane	T		II
<u>Haliaeetus leucocephalus</u>	Bald eagle	T	E	I
<u>Hydranassa tricolor</u>	Tricolored heron	SSC		
<u>Leucophoyx thula</u>	Snowy egret	SSC		
<u>Mycteria americana</u>	Wood stork	E	E	
<u>Pandion haliaetus</u>	Osprey		T	II
<u>Picoides borealis</u>	Red cockaded woodpecker	T	E	
<u>Rostrhamus sociabilis</u>	Snail kite	E	E	
<u>Sterna antillarum</u>	Least tern	T		
Mammals				
<u>Lutra canadensis</u>	River otter			II
<u>Lynx rufus</u>	Bobcat			II
<u>Mustela frenata penninsulae</u>	Florida weasel		UR2	
<u>Myotis austroriparius</u>	Southeastern myotis bat		UR2	
<u>Neofiber alleni</u>	Florida muskrat		UR2	
<u>Peromyscus floridanus</u>	Florida mouse	SSC	UR2	
<u>Peromyscus polionotus</u> <u>decoloratus</u>	Pallid beach mouse	E	UR3	
<u>Plecotus rafinesquii</u>	Eastern big-eared bat		UR2	
<u>Sciurus niger shermani</u>	Sherman's fox squirrel	SSC	UR2	
<u>Trichechus manatus latirostris</u>	West Indian manatee	E	E	I
<u>Ursus americanus floridanus</u>	Florida black bear	T	UR2	

DESIGNATION:

- A = Florida Game and Fresh Water Fish Commission (animals) or
Florida Department of Agriculture and Consumer Services (plants)
B = United States Fish and Wildlife Service
C = Convention on International Trade in Endangered Species (CITES)

CODES:

- E = Endangered
- T = Threatened
- SSC = Species of special concern
- C = Commercially exploited

- I = Appendix I species
- II = Appendix II species

- UR1 = Under review for federal listing, with substantial evidence in existence indicating at least some degree of biological vulnerability.

- UR2 = Under review for listing, but substantial evidence of biological vulnerability and/or threat is lacking.

- UR3 = Still formally under review for listing, but no longer being considered for listing due to existing pervasive evidence of extinction.

- UR5 = Still formally under review for listing, but no longer considered for listing because recent information indicates species is more widespread or abundant than previously believed.

**CALCULATING BUFFER ZONE WIDTHS
FOR PROTECTION OF WETLANDS
AND OTHER
ENVIRONMENTALLY SENSITIVE LANDS
IN ST. JOHNS COUNTY**

JEA PROJECT NO.: 19270-485-01

Submitted to:

ST. JOHNS COUNTY PLANNING DEPARTMENT
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1.0 INTRODUCTION

St. Johns County's adopted 1990 Comprehensive Plan Policy E.1.3.7 requires vegetative buffers of at least 25 feet to be maintained between natural drainage courses and developed areas to protect the water quality of the drainage course. This buffer requirement has been expanded through Article IV of the Land Development Code to require a 50-foot minimum natural upland buffer between development lands and the St. Johns River, Matanzas River, Guana River, Tolomata River, and their associated wetlands and water bodies, regardless of any other regulatory agency requirement of a lesser distance. However, in recent years the county has determined a minimum of 25 or 50 feet around wetlands in the county may not be sufficient to protect water quality given the variety of wetlands and other environmentally sensitive lands. Further, the Comprehensive Plan requires that the county protect environmentally sensitive lands (wetlands adjacent to Outstanding Florida Waters [OFWs], Class II waters, Class III waters, Aquatic Preserves, estuaries, wetlands adjacent to shellfish harvesting areas, all major rivers, and headwaters to major creeks and estuaries) through the establishment of buffers.

Jones, Edmunds & Associates, Inc. (JEA), is working in collaboration with Dr. Mark T. Brown (University of Florida Center for Wetlands and Water Resources) and Dr. Richard Hamann and Jeff Wade (University of Florida Center for Governmental Responsibility) to develop a buffer zone ordinance that will further protect environmentally sensitive land from development activities. This report presents the methodology necessary for calculating buffer zone widths as determined through scientific studies for protecting wetland habitat. Additionally, it presents reduced buffer distances as suggested by county staff as alternative buffer widths and will subsequently be used to develop a buffer ordinance for St. Johns County.

1.1 PROJECT GOALS

Upland vegetative buffers are widely regarded as necessary to protect wetlands, streams, and other aquatic resources. However, buffer size requirements have typically been established by political acceptability, not scientific merit. This often leads to insufficiently buffered aquatic resources and the false perception that the resources are being properly buffered from potential impacts. Numerous scientific studies have shown that relatively wide buffers (150 to more than 300 feet) are necessary to protect wetland (JEA et al. 1999). The dilemma exists that undersized buffers may place aquatic resources at risk; however, buffers that are too large may unnecessarily deny landowners the use of a portion of their land. Therefore, it is important to determine the minimum buffer width necessary for protection of sensitive environmental resources.

Three goals have been identified that are used to determine buffer sizes: protection of wildlife habitat; minimization of sediment transport into wetlands; and minimization of groundwater drawdown in wetlands. This buffer report provides the methodology for calculating buffer sizes necessary to achieve these three goals in St. Johns County. A single buffer width is then recommended that is appropriate for protecting all three wetland resources. Alternatives to one large buffer distance, as suggested by county staff, is also presented. A previous report summarizes the information that was reviewed and assessed for developing buffer zone widths for the county, including identification and classification of ecological habitats, review of other county ordinances, review of other wetland regulations, review of related reports and studies, and review of legal implications (JEA et al. 1999).

1.2 ECOLOGICAL VALUE OF BUFFER ZONES

The differences between developed lands and natural ecological areas are significant, and the more intensely developed, the greater the differences. Frequently on developed lands, native vegetation is removed and replaced with exotic ornamentals, soil drainage is altered, soils become compacted and covered with impervious materials, and wildlife species are displaced by human activities. The gradient in intensity of noise, waste, temperature, light, structure, and activity from undeveloped to developed lands is intense. In this edge between development and natural areas, water runoff carries sediments, nutrients, and pollutants. Noise and activities from development intrudes into the edge and interferes with wildlife activities. Wildlife populations also suffer greatly from predation from domesticated cats and dogs that are allowed to roam unconstrained and from predation from animals such as the brown-headed cowbird that flourishes in disturbed habitats and preys on smaller and more vulnerable birds such as the painted bunting, a prized resident of St. Johns County and a species of great concern by the Audubon Society and wildlife biologists.

The area immediately adjacent to wetlands is often a transition zone between wetlands and uplands and exhibits vegetation, soils, and hydrologic characteristics that are similar and intermediate between wetlands and uplands. To protect the values and functions of wetlands, protection must be afforded to the transition zone and adjacent upland. Disturbance and alteration of the transition zone and adjacent upland can result in elimination of wildlife species that utilize both uplands and wetlands, a loss in plant species diversity, an increase of sedimentation and erosion into the wetland, and alteration in hydrologic patterns within both the upland and wetland.

It has long been regarded that the highest plant species diversity occurs in transition zones between wetlands and uplands. Studies of Florida landscapes indicate that plant species diversity is higher in transition zones than either the adjacent wetland or upland (Clewett et al. 1982; Gross 1987; Hart 1984). Likewise, wildlife species richness also shows direct spatial relationships to the increased diversity of the transition zone. Vickers et al. (1985) found that species richness and abundance of herptofauna were greater along the edge of six wetlands in north central Florida than in either the wetland or upland habitat. Harris and Vickers (1984) found that virtually all mammals reside in transition zones because of their cursorial mode of locomotion and frequent herbivorous food habits. When water levels rise in wetlands, wildlife movement to peripheral areas also increases, suggesting the importance of transition zones in providing refuge for wildlife.

The water quality benefits of buffer zones are related to the ability of the zone to abate erosive water velocities and quantities of pollutants carried by surface runoff from uplands. Pollutants such as metals adhere to sediments and are thereby transported by the sediments. Also, degradation of pollutants from biological and other mechanisms can increase as surface runoff flows from an upland to a wetland. Thus, every effort should be made to maintain a vegetative buffer between wetlands and developments, where vegetation can trap sediments and attached pollutants before they are deposited into wetlands and water courses.

2.0 PROTECTING WETLAND-DEPENDENT WILDLIFE HABITAT

The wildlife component of this study focused on developing a methodology for determining an appropriate buffer zone width that will protect habitat for wildlife species that depend on both wetlands and adjacent uplands for portions of their life cycle. By far the most common cause of wildlife population decline is alteration of the natural landscape through construction, agricultural, and silvicultural activities. However, countless studies have documented the benefits to wildlife from preserving natural habitat in the form of buffer zones and greenway corridors. A tabulation of buffer zone widths recommended for protecting specific wildlife species is provided in Table 2.1. A more detailed literature review is presented in the Background Report submitted to St. Johns County in support of developing a buffer zone ordinance (JEA et al. 1999). As shown in Table 2.1, forest widths exceed 164 feet in all cases for protection of wildlife species. It is protection of wildlife species that will in most all cases dictate the overall buffer zone width.

2.1 SPATIAL REQUIREMENTS

A detailed species list was developed that presents wildlife species that are reliant on both wetland and adjacent upland habitats in St. Johns County (Appendix A). Spatial requirements as listed in Appendix A were then determined for each species based on published results of variables related to buffers, such as minimum distance from humans tolerated, maximum distance an animal was seen from a wetland, maximum distance that a nest occurred from a wetland, home range diameter, minimum forest width that an animal occupies, and distance between captures of the same individual. Brown et al. (1990a and 1990b) compiled a list of species spatial requirements for determining similar buffer widths in east central Florida and the Econlockhatchee River basin, respectively. Spatial requirements from these two studies were used as the first step in compiling specific spatial requirements. More recent publications were then reviewed to identify additional spatial requirement data that were not available for the Brown et al. (1990a and 1990b) studies. Published spatial data were not available for all species on the species list, so in those cases, spatial data were used for species that are closely related, similar-sized, found in comparable habitats, and/or maintain similar foraging and nesting habits. Spatial requirements by species are listed in ascending order of spatial width for each habitat in Appendix B.

The wildlife species table also presents wetland and upland habitats where each species is likely to occur (Appendix A). Habitat graphs were developed for each wetland and upland habitat type to illustrate the spatial requirements by percent of animals occurring in each habitat (Figures 2.1 - 2.7). The top graph on each page includes all species found in that habitat and their associated spatial requirement. Several species in each habitat encompass a very large spatial requirement, such as several species of snakes, turtles, and frogs that venture a substantial distance from wetlands. These data skewed the graphs in such a manner that it was difficult to interpret spatial data within the 0 to 500 foot range where adopted buffer widths are likely to occur. Therefore, on the bottom graph of each page, data for all species that contain a spatial requirement greater than 1,000 feet were omitted. These data were retained for data analysis but were not illustrated on the bottom graph. The data omitted from the bottom graph are listed as text on the right-hand side of the bottom graph for each habitat.

These graphs illustrate the buffer width recommended for protecting a certain percentage of wildlife species that occur in a specific habitat. For instance, a buffer width of 343 feet is recommended to

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Table 2.1 Summary of Published Data Describing Recommended Buffer Zones for Protection of Wildlife Species		
Description of Study	Recommended Buffer Width(feet)	Reference
Forest width necessary to support forest interior species such as Acadian Flycatcher, American Redstart, Hooded Warbler, Louisiana Waterthrush	164	Tassone 1981
Forest width necessary to support Hairy and Pileated Woodpeckers	164 to 197	Tassone 1981
Forest width necessary to support Parula Warbler	262	Tassone 1981
Suggested width of buffer strips to protect intrinsic wildlife value	328	Tassone 1981
Forest width found with more abundant neotropical migrant birds	>328	Triquet et al. 1990
Forest width found with more abundant resident and short-lived migrant birds	<328	Triquet et al. 1990
Width necessary to include 90 percent of the bird species	492	Spackman and Hughes 1995
Width necessary to include 95 percent of the bird species	574	Spackman and Hughes 1995
Width necessary to maintain a complete avian community in bottomland hardwood swamps	1641	Kilgo et al. 1998
Width necessary to protect wetland-dependent wildlife species in East Central Florida	322 to 732	Brown et al. 1990a
Width necessary to protect wetland-dependent wildlife species in freshwater riverine systems in Tomoka River and Spruce Creek (Volusia County, Florida)	322 to 550	Brown and Orell 1995
Width necessary to protect wetland-dependent wildlife species in salt marsh systems in Tomoka River and Spruce Creek (Volusia County, Florida)	322	Brown and Orell 1995
Width necessary to protect wetland-dependent wildlife species in the Wekiva River Basin (Central Florida)	536	Brown and Shaffer 1987
Provided recommended set-back distances for 14 species of breeding colonial waterbirds between human disturbance from both walking and motor boat approach directly to the nest	207 to 584	Rodgers and Smith 1995
Provided recommended buffer widths for 16 species of waterbirds based on flushing distance	220 to 413	Rodgers and Smith 1997

Figure 2.1. Spatial Requirement (ft) of wildlife species that utilize cypress wetlands for some portion of their life cycle. Graph A includes all species. Graph B excludes all species with a spatial requirement greater than 1,000 feet. Spatial Requirement includes flight or retreat distance, home range diameter, nest location along edge of wetland, maximum distance from nearest water source and between captures.

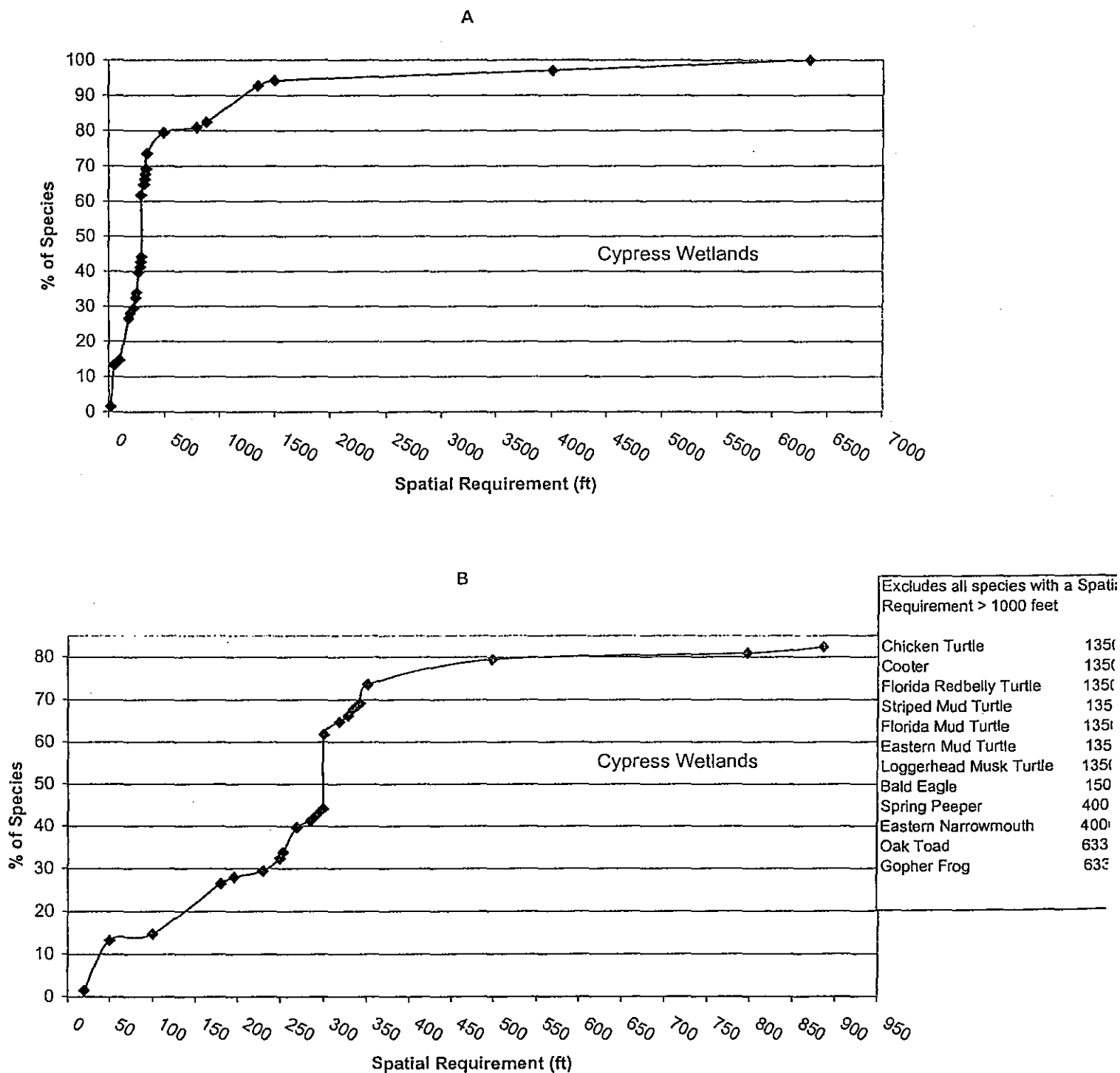


Figure 2.2. Spatial Requirement (ft) of wildlife species that utilize hardwood swamps for some portion of their life cycle. Graph A includes all species. Graph B excludes all species with a spatial requirement greater than 1,000 feet. Spatial Requirement includes flight or retreat distance, home range diameter, nest location along edge of wetland, maximum distance from nearest water source and between captures.

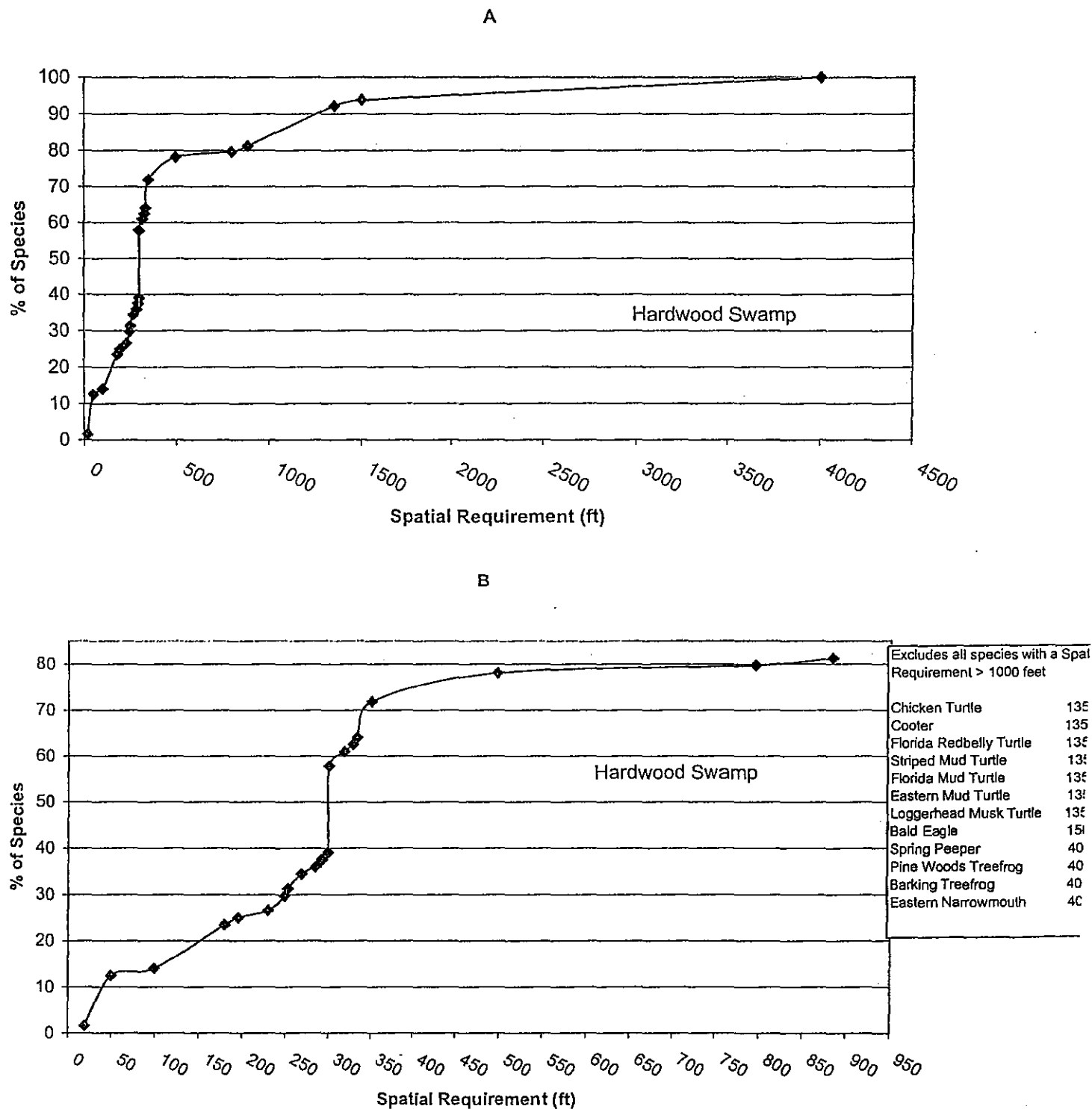


Figure 2.3. Spatial Requirement (ft) of wildlife species that utilize freshwater marshes for some portion of their life cycle. Graph A includes all species. Graph B excludes all species with a spatial requirement greater than 1,000 feet. Spatial Requirement includes flight or retreat distance, home range diameter, next location along edge of wetland, maximum distance from nearest water source and distance between captures.

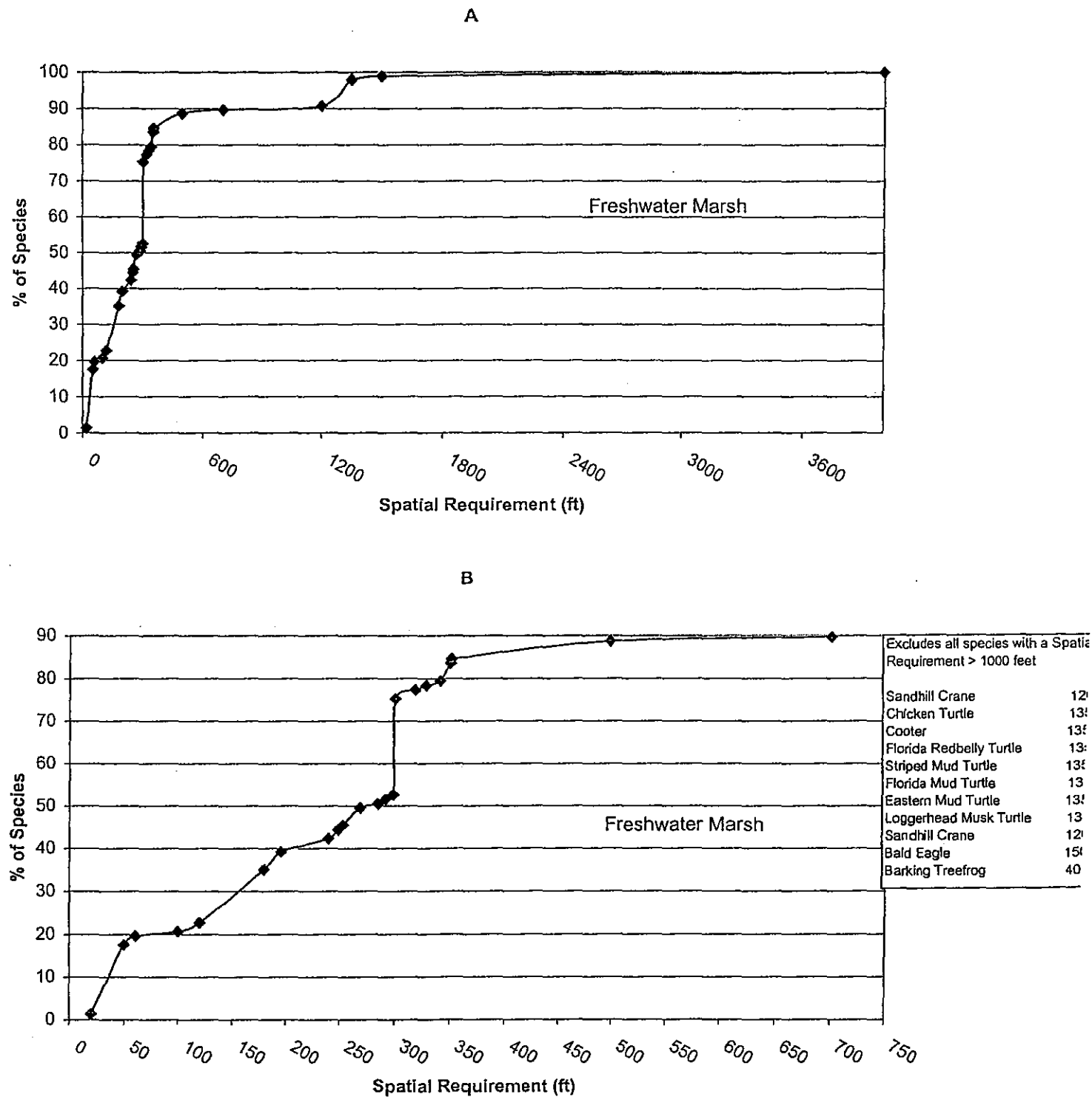


Figure 2.4. Spatial Requirement (ft) of wildlife species that utilize saltwater marshes for some portion of their life cycle. Graph A includes all species. Graph B excludes all species with a spatial requirement greater than 1,000 feet. Spatial Requirement includes flight or retreat distance, home range diameter, next location along edge of wetland, maximum distance from nearest water source and distance between captures.

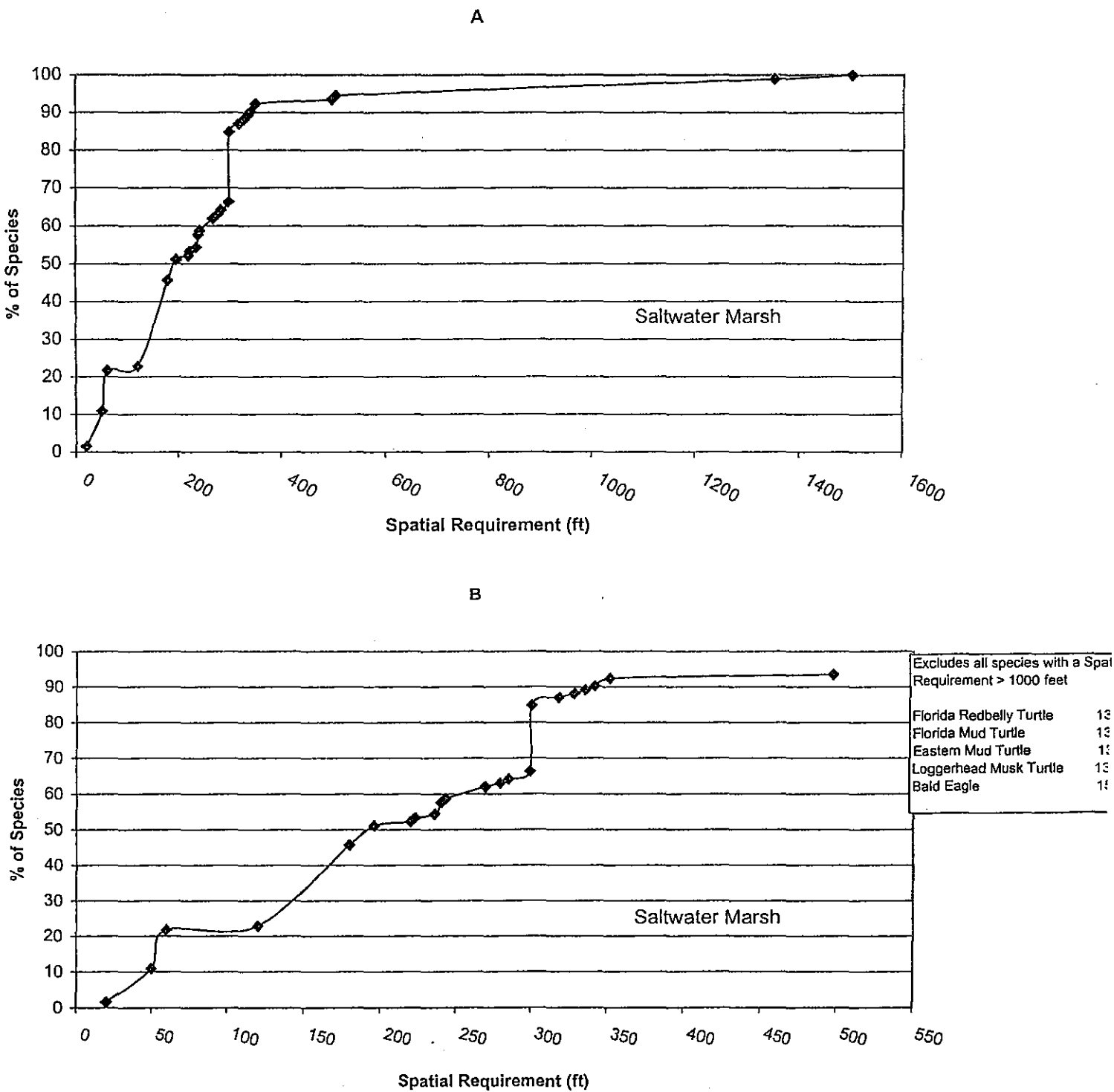


Figure 2.5. Spatial Requirement (ft) of wildlife species that utilize flatwoods for some portion of their life cycle. Graph A includes all species. Graph B excludes all species with a spatial requirement greater than 1,000 feet. Spatial Requirement includes flight or retreat distance, home range diameter, nest location along edge of wetland, maximum distance from nearest water source and between captures.

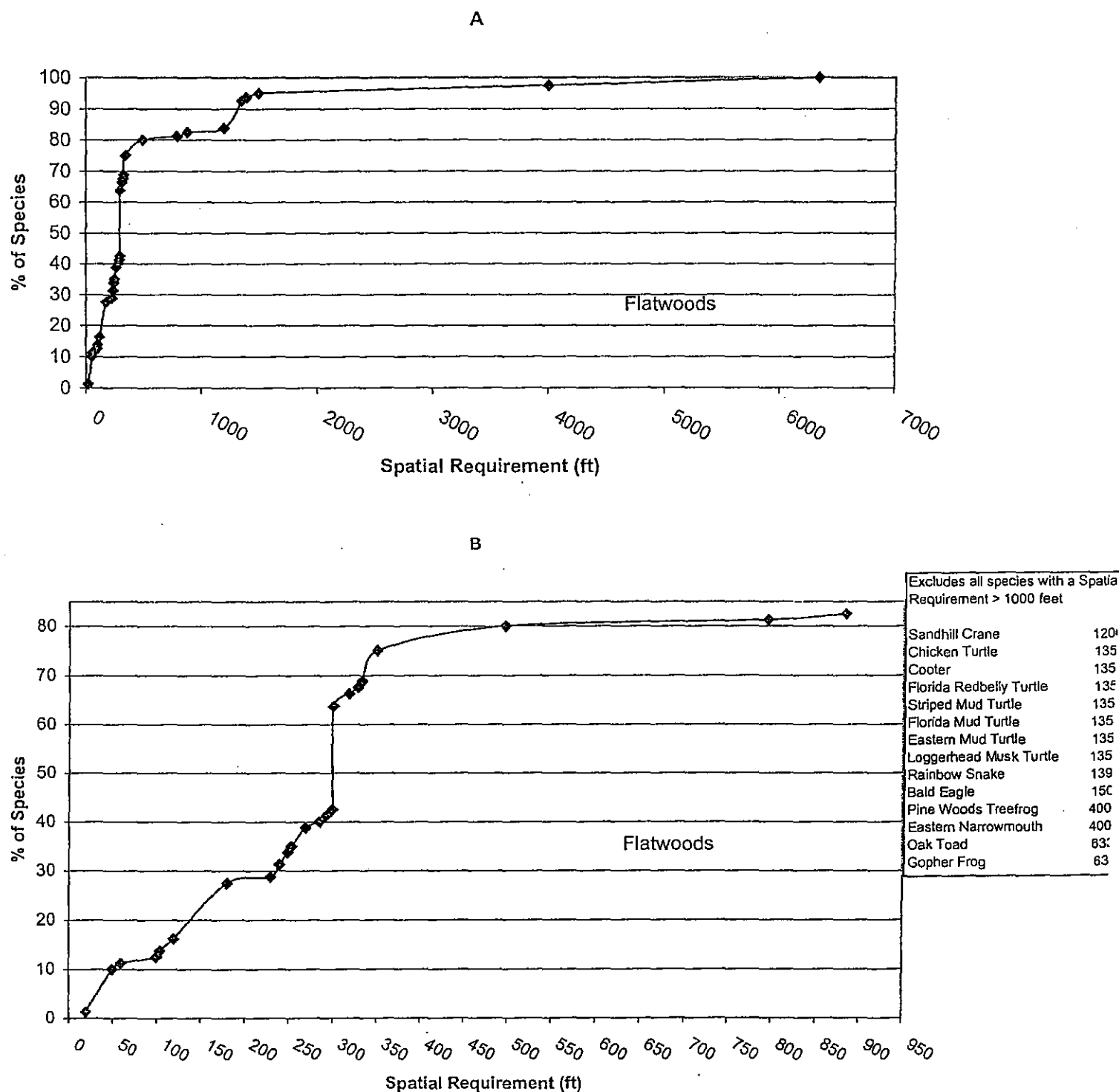


Figure 2.6. Spatial Requirement (ft) of wildlife species that utilize hammocks for some portion of their life cycle. Graph A includes all species. Graph B excludes all species with a spatial requirement greater than 1,000 feet. Spatial Requirement includes flight or retreat distance, home range diameter, nest location along edge of wetland, maximum distance from nearest water source and between captures.

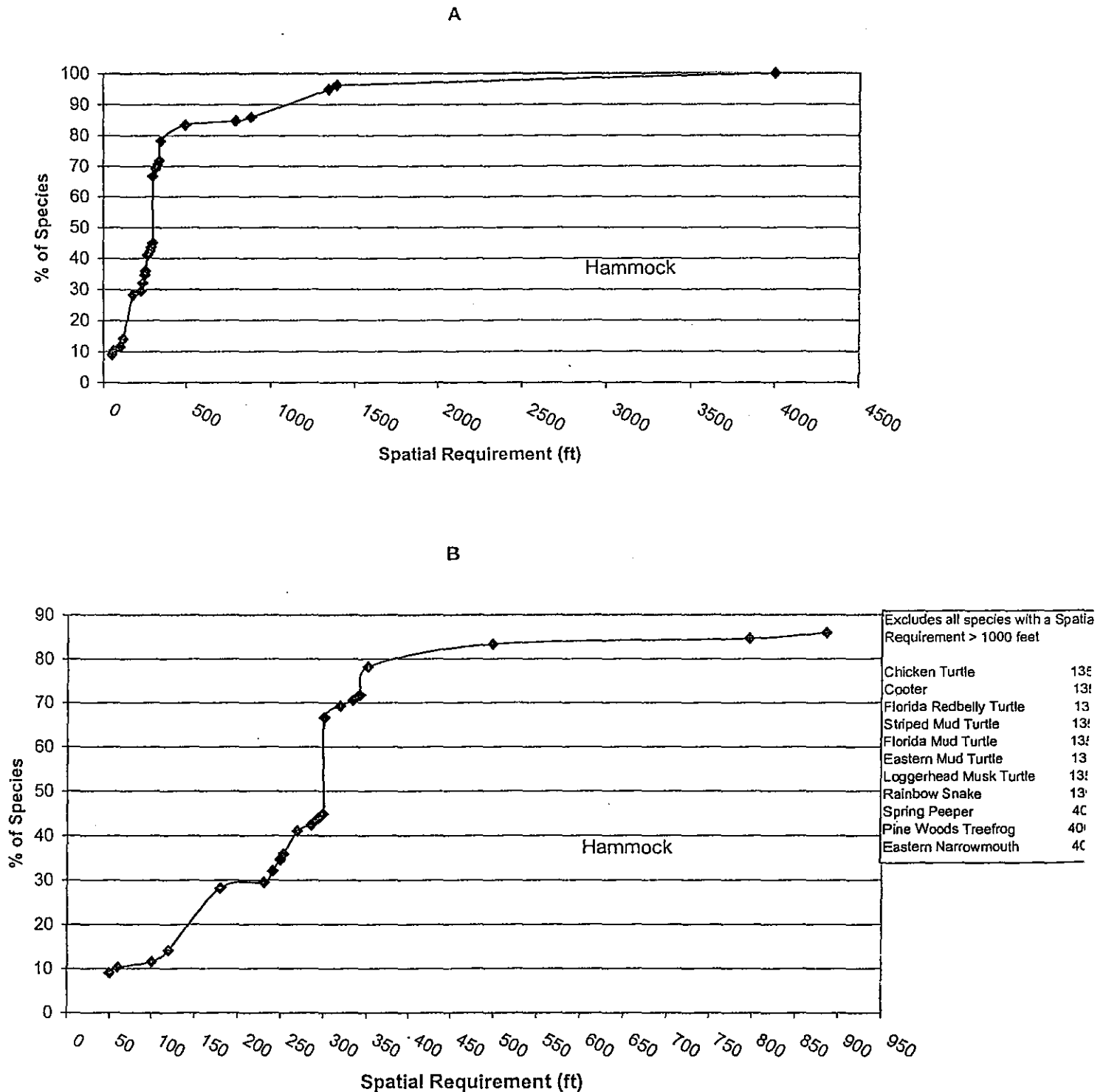


Figure 2.7. Spatial Requirement (ft) of wildlife species that utilize sandhills for some portion of their life cycle. Graph A includes all species. Graph B excludes all species with a spatial requirement greater than 1,000 feet. Spatial Requirement includes flight or retreat distance, home range diameter, next location along edge of wetland, maximum distance from nearest water source and distance between captures.

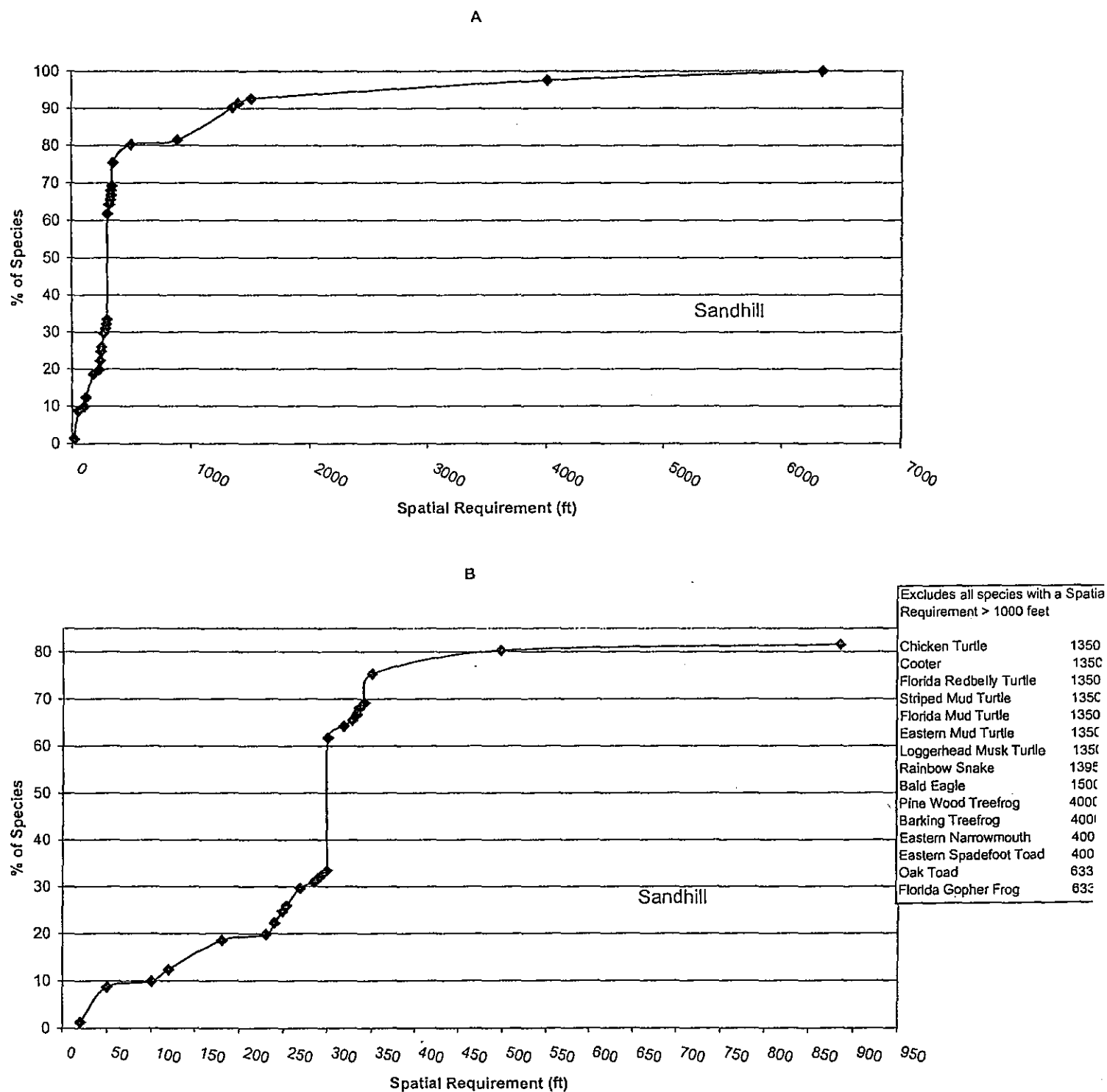


Table 2.2 Spatial Requirement (ft) to Protect Various Percentages of Species for Each Habitat Type (Data from Figures 2.1 - 2.7)

% of Species	Cypress	Hardwood Swamp	Freshwater Marsh	Saltwater Marsh	Flatwoods	Hammock	Sandhill
100	6,336.0	4,000.0	4,000.0	1,500.0	6,336.0	4,000.0	6,336.0
90	1,230.1	1,257.1	850.5	339.8	1,307.1	1,097.3	1,343.5
80	616.6	813.3	342.4	299.7	497.0	401.4	489.6
70	342.8	345.9	299.8	299.2	336.4	327.0	342.3
60	299.9	312.6	299.3	253.4	299.8	299.7	299.9
50	299.3	299.6	277.0	192.8	299.4	299.2	299.6
40	272.2	299.1	207.7	165.1	285.0	265.8	299.2
30	233.8	249.8	155.5	138.9	235.0	231.9	273.8
20	135.9	150.7	75.9	58.4	140.0	145.1	231.0
10	41.8	43.1	36.1	47.2	50.0	57.9	100.9

3.0 PROTECTING WETLANDS FROM TURBIDITY AND SEDIMENTATION

Sediments can erode from upland areas and be deposited in lowlands, wetlands, and/or aquatic systems (i.e., lakes and streams). These systems can eventually fill in and loss of wetland or aquatic habitat can occur. Water quality also declines from turbidity in wetlands and particularly aquatic systems. Turbidity can considerably decrease photosynthesis of submerged vegetation and phytoplankton in the water column. Siltation can leave a coating of clay/silt on vegetation and soil surfaces. In sufficient quantities it can change the infiltration properties of natural soils and may affect the benthic ecology of wetland and aquatic systems.

Controlling erosion is critical during the construction phase of a development. A vegetated buffer zone can effectively catch and retain sediment carried by overland flow and can reduce or eliminate the amount of turbidity reaching surface waters. Vegetative buffers are far more effective than other typical erosion control techniques such as sediment screens and hay bales, which are more susceptible to accidental breaching by heavy equipment or blowouts by high intensity rainstorm events.

The design width of a vegetated buffer for erosion control depends on a number of factors, including soil grain size, soil erosion potential, and topography or overland slope. Erosion is also influenced by hydrologic factors. These factors can effectively be rolled into one: water flow velocity over the soil surface. This in turn is a function of factors such as rainfall intensity, amount of impervious area versus vegetated area in the drainage basin, and overland slope.

Grain size of soils can be generally classified into four categories (from smallest to largest):

- Clay particles (<0.002 mm)
- Silt particles (0.002 - 0.05 mm)
- Fine sand (0.05 - 0.25 mm)
- Coarse sand (0.25 - 2.00 mm)

In most of peninsular Florida, sediments will consist primarily of sands that, due to their larger size, settle more quickly and require less buffer width than finer grained silt and clay materials. When sediments contain silt, the required buffer will be considerably wider. When sediments contain clay, vegetated buffers alone cannot sufficiently trap these finer sediments, and additional means may be needed to protect against turbidity. These may include settling/holding ponds, filter fabric barriers, or sand filtration systems. When sediments contain both sands and clays, it may be best to configure a system where overland flow will first flow over a vegetated buffer to remove most of the coarse-grained sediments, then through a second treatment system for the fine-grained sediments. In this way the additional treatment system will more effectively capture the fine-grained sediments without being deluged with the coarse-grained sediments. Sieve analyses can be conducted on soils to establish which particle-size classification they will fall under. In lieu of conducting sieve analyses, grain-size distributions for the various soil classifications can be found in the soil survey of St Johns County (SCS 1983). Select soil parameters for each soil series in the county is provided in Appendix C.

Overland slope can be expressed as the ratio of the vertical drop per horizontal distance (i.e., feet per feet, meter per meter). Steeper slopes will increase the velocity of overland flow, which in turn

increases sediment transport. Thus, the greater the slope, the wider the required buffer width. A buffer with too great a slope may be infeasible to serve as sediment control. Overland slope may be determined through site surveying or consulting topographical maps such as the U.S. Geological Survey Quadrangle series. The SCS soil survey also gives approximate ranges of slopes for identified soil units.

3.1 SEDIMENTATION AND TURBIDITY LOOK-UP TABLE

Two different methods can be used to calculate a buffer width for protecting wetlands from sedimentation and turbidity. The first is a look-up table designed for quick reference, and the second is a calculation method that is a more technical approach.

3.1.1 Look-up Table

The look-up table was adopted from the east central Florida buffer zone study (Brown et al. 1990a) and is presented as Table 3.1. This is a simple methodology that is used to determine buffer widths based on soil conditions, rainfall, and antecedent conditions that are typical of St. Johns County. This table assumes newly-graded soils of hydrologic group D and a rainfall event with a 5-year frequency and 24-hour duration event giving 6.5 inches of total rainfall. Hydrologic group D soils are considered to be very poorly drained (SCS 1986) and give a worst-case scenario as opposed to using hydrologic groups A, B, or C. Using a 5-year frequency storm is somewhat of an average choice; it will predict a greater buffer width than a 1-year frequency storm but will predict a smaller buffer width than a 10-year or 25-year frequency storm. Table 3.1 gives four buffer width values, one for each of the soil types described earlier. They are somewhat conservative and generalized values that do not consider site-specific conditions other than soil texture. Based on the look-up table, the most typical soils in St. Johns County, fine sands and coarse sands will need a 200-foot and 75-foot buffer, respectively, to protect wetlands from sedimentation and turbidity (Table 3.1).

Table 3.1 is applicable only for sites with a slope less than 7 percent and cannot be applied to sites such as the ravines in the northwest part of the county. For a site with steep slopes (greater than seven percent), the buffer distance as indicated on Table 3.1 should be measured from the top of the slope rather than the wetland/upland boundary.

3.1.2 Calculation Procedure

In lieu of using the simple look-up table, more complicated calculations can be performed for determining a buffer zone that takes into account site-specific conditions. The calculation is based on the settling velocities for the four soil types discussed above and application of the Manning Equation to overland flow. This method assumes the buffer consists of a plane of consistent slope and roughness conditions along its entire length. While this is seldom the case, it is usually appropriate to specify average values for slope and roughness. The roughness conditions primarily depends on the thickness and type of vegetation and is specified as Mannings "n" values (Table 3.2). The calculation demonstrates that these two parameters are critical for the effectiveness of the buffer in settling out eroded sediments. It demonstrates that buffers perform best when they have a very flat slope and high roughness (thick vegetation). For buffers with steep slopes and low roughnesses,

Table 3.1 Recommended Wetland Buffers to Minimize Sedimentation in Wetlands and to Control Turbidity in Adjacent Open Waters (Adopted from Brown, et. al. 1990a)	
USDA Soil Type	Buffer Requirements
Clay	Sedimentation and turbidity control cannot be met with buffer requirements alone
Silt	450 feet from wetland/upland boundary
Fine Sand	200 feet from wetland/upland boundary
Coarse Sand	75 feet from the wetland/upland boundary

The values are based on soil condition, rainfall, and antecedent conditions that are typical of St. Johns County and to the conditions that would be expected during construction. That is, the soil hydrologic group is D, the soils are newly graded, and the rainfall event is a 5-year storm of 6.5 inches in a 24-hour period. Thus, the recommended buffer widths are based on average expected conditions, except for soil hydrologic group.

Table 3.2 Mannings Roughness Coefficients (n)	
Upland Groundcover	
Bare Sand	0.010
Bare Clay-loam (eroded)	0.012
Graveled Surface	0.012
Sparse Vegetation	0.050
Range (clipped)	0.080
Range (natural)	0.130
Short Grass prairie	0.150
Dense Grass	0.240
Bermuda Grass	0.410
Woods	0.450
Wetland Groundcover	
Pasture	0.025 - 0.035
Light Brush	0.040 - 0.070
Dense Brush	0.075 - 0.160
Trees only (dense growth)	0.080
Trees with Underbrush	0.160

Source: Roberts 1991.

this procedure may indicate that finer sediments may not settle out regardless of buffer size but rather will stay in continuous suspension. When this is the case, then additional sedimentation facilities (e.g., settling basins) may be needed. This method does not account for trapping of water (and thus transported sediment) in depressions that may exist in some natural buffers. If a buffer has a significant amount of depressional storage, then it will have a higher capacity for trapping sediments than this method will predict, and calculated buffer lengths may be over-estimated.

This method also allows for comparison of different predicted buffer lengths based on different design storms. This includes differing return frequencies (e.g., 5-year, 25-year, 100-year) and storm duration (e.g., 1-hour, 8-hour, 24-hour).

The calculation procedure is as follows:

1. Determine the soil type of the upland area immediately adjacent to the wetland. Once the soil type is known, the corresponding hydrologic group and USDA soil classification can be determined from the St. Johns County soil survey or from Appendix C.
2. Calculate peak discharge identified as "Q" for one acre of the proposed developed site. The peak discharge flow rate will be used to determine overland flow velocity. The higher the peak flow the higher the sediment transport. Methodologies for determining peak discharge from a site are numerous. Two methods, the SCS method and the Rational method, are discussed in Appendix D. The SCS method should primarily be used for agricultural and rural applications, and the Rational Method should be used for urban sites or small sites with a high percentage of impervious area. The TR-55 computer model or other stormwater computer models may also be applied to determine peak discharge from a one-acre portion of the site.
3. The width of this acre plot should be determined by dividing the area (1 acre = 43,560 ft²) by the length along the longest continuous slope of the drainage basin, as this will be the worst-case scenario. If the length exceeds 300 feet, overland sheet flow will begin concentrating into channels and channelized flow will form. Channelized flow has higher erosion potential than sheet flow, and additional conservation measures in the calculative procedures should be made. This is based on procedures described in SCS TR-55 "Urban Hydrology for Small Watersheds" (SCS 1986).
4. The peak discharge, Q, predicted in Step 2 will be in dimensions of volume per time (Length³/Time or L³/T). This value must be divided by the width of the one-acre plot to give a volumetric flow per unit width (L³/T/L), or q. The units may either be English or metric, per user preference, but the unit system must be consistent throughout the procedure. For the English system, length is in feet; for metric, length is meters. Time should always be in seconds.

$$q = Q / w \quad (1)$$

This will be the flow entering the buffer per unit width.

5. By applying the continuity equation: $q = v \cdot d$ (2)

and Mannings equation: $v = M \cdot d^{2/3} \cdot S_b^{1/2}$ (3)

the overland flow velocity, v , can be calculated as:

$$v = [M \cdot q^{2/3} \cdot S_b^{1/2}]^{3/5} \quad (4)$$

where: $M = 1 / n$ (metric), $1.486 / n$ (English)

S_b = overland slope of the buffer

q = flow per unit width from Step 4

n = Mannings roughness coefficient

Mannings roughness coefficient values are given for various terrains in Table 3.2.

6. Calculate overland flow depth: $d = q / v$ (5)

7. Determine the appropriate particle settling velocity, V_s , for the soil type. Values are given below for the four basic soil textures (assume silts to be the same as loamy soils). Settling velocities can also be calculated for a specific soil based on a sieve analysis using Stoke's equation, but the details are not included here. Stoke's Equation is explained in Metcalf and Eddy, 1991.

Soil Type	V_s (ft/sec)	V_s (m/sec)
Clays	0.000010	0.00000305
Loamy soils and Mucks	0.000263	0.0000802
Fine sands	0.001093	0.0003331
Sands	0.002500	0.0007620

8. Determine particle settling slope: $S_s = V_s / v$ (6)

Note that the settling slope, S_s , must be greater than the overland slope, S_b , in order for sediments to settle out. Otherwise, this method predicts that sediments will remain in suspension.

9. Calculate the required settling length: $L_s = d / (S_s - S_b)$ (7)

An appropriate safety factor, F_s , should be applied.

10. An initial transition zone is needed at the interface of the developed site with the buffer. This allows the overland flow to adjust to the hydrologic conditions of the buffer (i.e., slope and roughness). This distance, L_{tr} is recommended to be 10 feet.

11. Finally, the required width of the buffer is calculated as follows:

$$B_w = L_s F_s + L_{tr}$$

These calculations may or may not result in a lower buffer width than indicated in the look-up table (Table 3.1). In most cases, it would be more conservative to go with the larger of the two predicted values. In any case, the buffer width should never be less than 75 feet as indicated in Table 3.1, as this is the smallest width that prevents erosion and sedimentation based on soil texture.

4.0 PROTECTING WETLANDS FROM GROUNDWATER DRAWDOWN

During development activities, it is often necessary to improve site drainage to reduce the level or frequency of flooding and/or high groundwater levels. Drainage modifications typically involve construction of swales, ditches, canals, or underdrains. These structures are usually designed so that the water table is lowered by an amount sufficient to meet the drainage needs of the development. Calculating a buffer distance to protect wetlands from drawdown will not be necessary if no drainage structures are planned for a site. In those instances, this section of the methodology would not apply. Lowering the water table in wetlands can be the single most destructive action imposed on wetlands. A lowered hydroperiod can result in loss of wildlife habitat, loss of flood storage capacity, lack of hydrophytic vegetation, and loss of water quality improvements. Various methods have been used in previous buffer zone studies to predict the buffer width necessary to protect wetland hydrology from surficial aquifer drawdown. While these methods were appropriate or appeared appropriate a decade ago, they have been superseded by more sophisticated groundwater models.

The latest guidelines used by the Southwest Florida Water Management District (SWFWMD) to review water table drawdown due to ditching and subsurface drains were established by Higganbotham (1996). That report suggests that groundwater drawdown radius of influence calculations be made and site-specific permeability tests be performed. It recommends that the applicant use computer software to perform radius of influence calculations but provides no information on what is considered an acceptable level of drawdown. The radius of influence calculations are used by the SWFWMD to determine if adverse impacts are likely, but no general policy such as "0.1 foot after 30 days with no recharge" is used. Each application is reviewed individually, and decisions are made on a case-by-case basis.

The St. Johns River Water Management District (SJRWMD) also reviews wetland impacts on a case-by-case basis. Radius of impact calculations are used along with information regarding the particular wetland areas. Predicted impacts of less than 0.1 foot after 90 days with no recharge are generally considered sufficient to not cause adverse impacts to wetlands, but in other cases a greater amount of drawdown may be considered acceptable. The SFWMD uses a guideline of 1 foot of surficial aquifer drawdown at the edge of the wetland. These policies provide flexibility and discretion to the districts in their evaluation of permit applications and reflect the difficulties inherent in generalizing and simplifying the complex interrelationship between wetlands and hydrology.

4.1 MODELING REQUIREMENTS AND LIMITATIONS

Computer programs allow for rapid simulation of a wide range of groundwater flow scenarios. As discussed above, the SJRWMD, which is the applicable water management district for St. Johns County, has essentially adopted the use of computer models as their standard method to determine drawdowns. A relatively simple model can be developed and run under a variety of conditions to determine appropriate buffer distances. However, these simulations are accurate only if the data used as input are accurate. It is typically necessary to make simplifying assumptions when developing a model, and other assumptions are inherently a part of the model. Site-specific information improves the reliability of the results. It must be recognized that geologic variations in parameters such as aquifer thickness and hydraulic conductivity may result in large differences between simulated and actual drawdowns.

Because of the complexity of groundwater flow equations, several major assumptions must be made to simplify the model. One is that the surficial aquifer is uniform across the entire model area. Hydraulic conductivity and specific yield are assumed to be constant throughout the model area. Another key assumption is that a completely impermeable horizontal layer is present beneath the surficial aquifer. These assumptions are rarely met in real world situations. The near-surface sediments in St. Johns County vary widely over relatively short distances. Widely varying conditions are commonly found over lateral distances of 100 feet or less. These assumptions, however, are necessary to allow calculation of drawdown, unless a significant amount of detailed, site-specific information is available.

Variables such as size and type of wetland and local hydrologic and rainfall conditions make determination of buffer distances complex. Some wetlands within the county may be perched on top of near-surface low permeability hardpans that impede infiltration of rainfall. Other wetlands may result from the surficial aquifer being filled to capacity. The effect of aquifer drawdown on these two types of wetlands would be different. This is one reason the water management districts judge each permit application individually and make decisions on aquifer drawdown on a case-by-case basis. The problem of predicting the impact on wetlands from surficial aquifer drawdown of several inches or even 1 foot is compounded by the fact that water levels are not static and vary from year to year and within each year.

4.2 DRAWDOWN IMPACT CALCULATIONS FOR ST. JOHNS COUNTY

A simple groundwater flow model was developed using the MODFLOW computer program and can be used with site-specific data to predict the buffer width for protecting wetland hydrology. Other groundwater models are available to predict drawdown in wetlands in addition to MODFLOW. MODFLOW was selected for this project as it is an industry standard and widely accepted, it is public domain and widely available, it is applicable to St. Johns County, and it is sufficiently sensitive to a wide range of conditions. In the model, pre- and post-processing were aided through use of the Groundwater Modeling System (GMS) software package. The model was utilized to simulate surficial aquifer drawdowns resulting from drainage structures.

Several assumptions for the simplified MODFLOW model developed for St. Johns County are as follows:

- The aquifer is isotropic and homogeneous.
- The drainage structure and the wetland edge are parallel and of infinite length.
- The wetland is directly connected to the surficial aquifer, and the hydraulic properties of the wetland are the same as the surficial aquifer.
- The water table is initially flat.
- The drainage structure is installed instantaneously.
- The entire surficial aquifer is underlain by an impermeable confining layer.
- No recharge occurs during the model run.
- No water exists as surface water within the model.

The length and width of the model grid are 2,000 feet. It is a one-layer model consisting of 50 rows and 98 columns. The width of the cells ranges from 5 feet near the western edge to 45 feet at the eastern edge. The cell height is constant at 40 feet. The cells of the westernmost column are set up

as drains, representing the proposed drainage structure. The eastern boundary is modeled as a constant head boundary. The north and south edges consist of active model cells.

The initial head is set at 0 feet in all cells. The elevation of the drain is set to the amount of water table drawdown proposed for the drainage structure. For example, if a design calls for 2 feet of water table drawdown, the elevation of the drain will be set at -2 feet.

The major variables that must be input into the model are hydraulic conductivity, thickness of the surficial aquifer, specific yield, and proposed drawdown. Ideally, site-specific information should be collected at each development site. For this project, ranges of possible values were simulated and then tabulated. The results show the impact that construction of a drainage structure will have on water levels. If the simulated drawdown at some location is 1 foot, this suggests that the water level at that location will be 1 foot lower than it would be without the ditch.

To apply the model, the horizontal hydraulic conductivity can be calculated using permeability information from the St. Johns County soil survey (SCS 1983) (Appendix C). Horizontal hydraulic conductivity is estimated from the soil survey data using a method used by the SWFWMD (Higginbotham 1996) as follows:

Horizontal permeability in each soil horizon is assumed to be 1.5 times the vertical permeability for that horizon. The horizontal permeability of each soil layer is multiplied by thickness of that soil layer and the results for each soil horizon are totaled. This total is divided by the total thickness of the soil to give a weighted average hydraulic conductivity which can be used in the model.

4.3 WETLAND DRAWDOWN LOOK-UP TABLES

In lieu of developing and running MODFLOW or other suitable hydrologic model, look-up tables can be used to determine an appropriate buffer width necessary for protecting wetlands from groundwater drawdown. The two look-up tables allow either 0.5 foot of drawdown (Table 4.1) or 1.0 foot of drawdown (Table 4.2). These tables were generated from data run in the MODFLOW model. The user determines the appropriate hydraulic conductivity, aquifer thickness, and amount of drawdown allowed to occur in the drainage structure. If soil boring information is not available, aquifer thickness and depth to the impermeable layer must be assumed to be some constant value such as 10 feet. Based on these variables, a buffer distance can be determined from either Table 4.1 or 4.2. If site conditions deviate substantially from the hydraulic conductivity and aquifer thickness provided in Tables 4.1 and 4.2, or the assumptions made for this model do not apply to the site, then it will be necessary to run a model using site-specific conditions, rather than using one of the look-up tables.

Buffer distances based on hydraulic conductivity and depth to the impermeable layer are illustrated in Figures 4.1 through 4.3. The curve representing the amount of drawdown at the proposed drainage structure is selected, and the appropriate buffer distance is read. A series of runs were made for surficial aquifers with initial saturated thicknesses of 6 feet and 10 feet. Hydraulic conductivities ranging from 6.5 to 19.5 inches/hour were simulated. The specific yield of the aquifer was set to 0.20, which is typical for soils composed primarily of fine sand. The model runs simulated the drawdown that would result after 90 days with zero recharge to the system.

Table 4.1 Buffer Distances When Surficial Aquifer Drawdown of 0.5 Feet is Acceptable						
Hydraulic Conductivity	Aquifer Thickness (feet)	1 Foot Drop in Ditch	2 Foot Drop in Ditch	3 Foot Drop in Ditch	4 Foot Drop in Ditch	5 Foot Drop in Ditch
6.5 Inches/Hour	6	160	270	315	335	340
13 Inches/Hour	6	225	380	440	475	490
19.5 Inches/Hour	6	280	455	540	580	600
6.5 Inches/Hour	10	210	355	430	475	490
13 Inches/Hour	10	305	510	600	660	705
19.5 Inches/Hour	10	370	620	730	815	850

Table 4.2 Buffer Distances When Surficial Aquifer Drawdown of 1.0 Feet is Acceptable

Hydraulic Conductivity	Aquifer Thickness (feet)	1-Foot Drop in Ditch	2-Foot Drop in Ditch	3-Foot Drop in Ditch	4-Foot Drop in Ditch	5-Foot Drop in Ditch
6.5 Inches/Hour	6	--	150	200	225	245
13 Inches/Hour	6	--	200	280	320	345
19.5 Inches/Hour	6	--	250	340	395	415
6.5 Inches/Hour	10	--	200	285	335	370
13 Inches/Hour	10	--	280	400	485	510
19.5 Inches/Hour	10	--	355	490	575	620

Figure 4.1 Simulated drawdowns of the surficial aquifer. Assumptions for Graph A & B are:
 Hydraulic Conductivity = 6.5 in/hr, Specific Yield = 0.20, Time = 90 Days
 Graph A Assumes Thickness = 6ft.
 Graph B Assumes Thickness = 10ft.

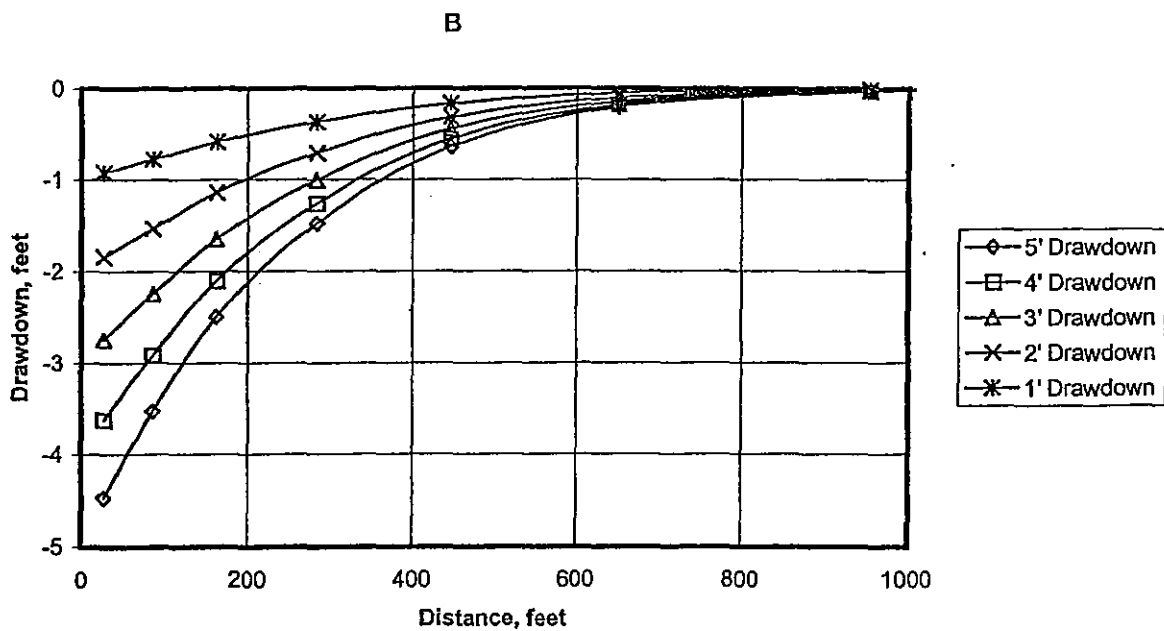
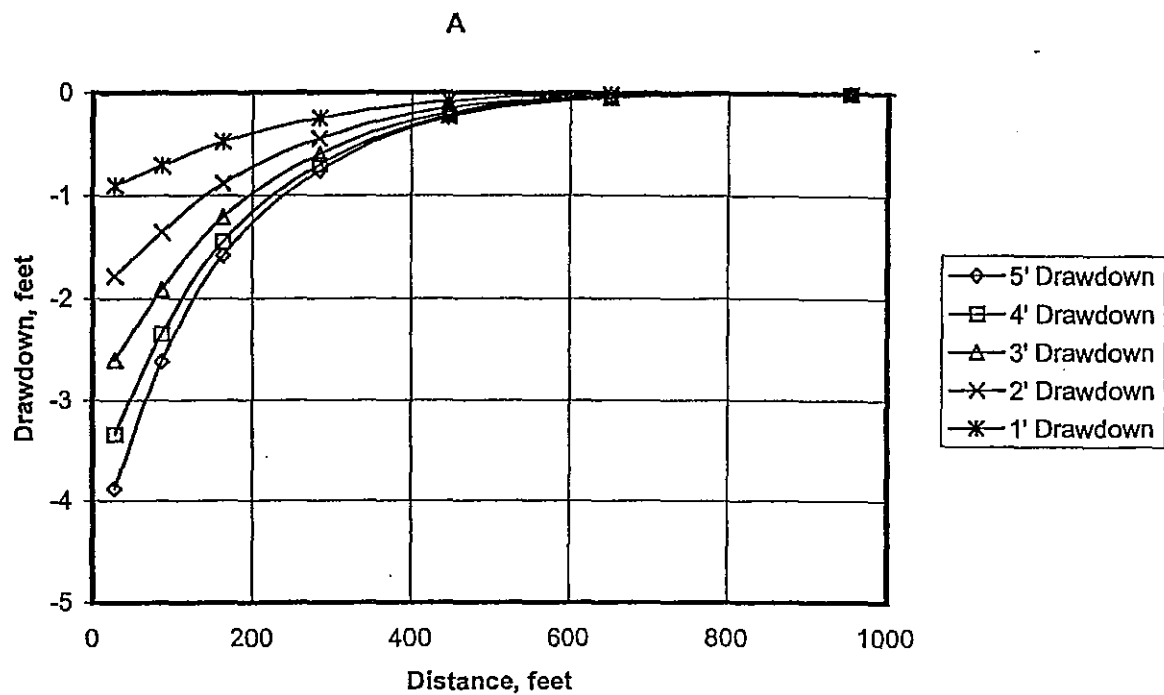


Figure 4.2 Simulated drawdowns of the surficial aquifer. Assumptions for Graph A & B are:
 Hydraulic Conductivity = 13 in/hr, Specific Yield = 0.20, Time = 90 Days
 Graph A Assumes Thickness = 6ft.
 Graph B Assumes Thickness = 10ft.

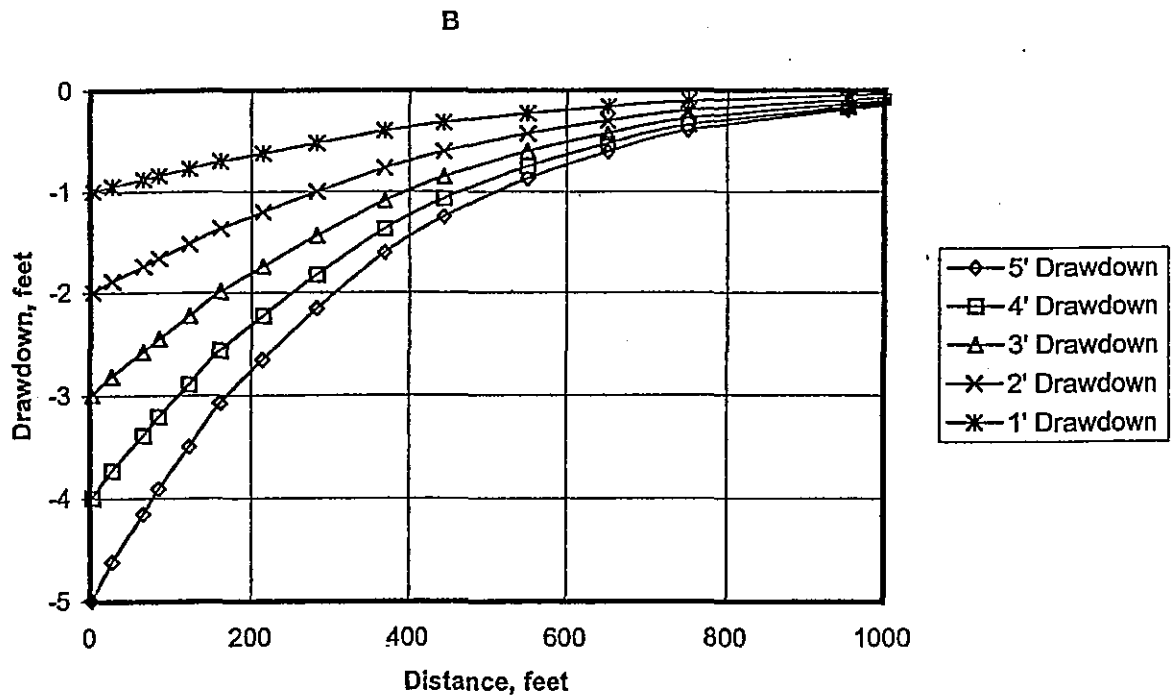
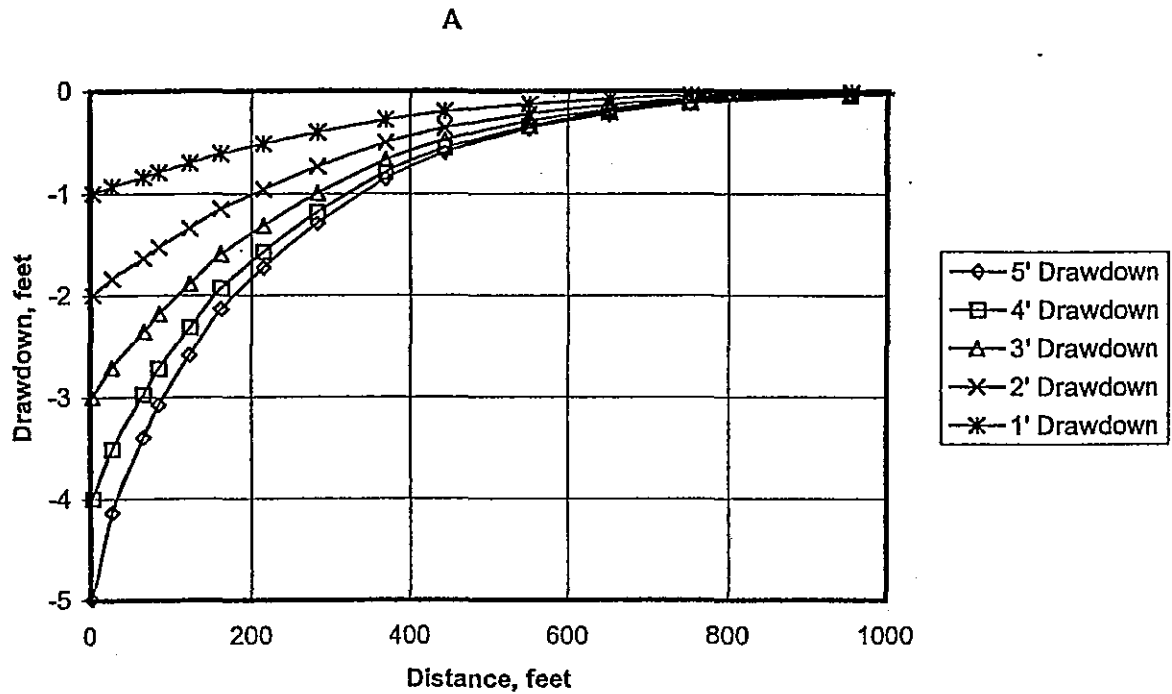
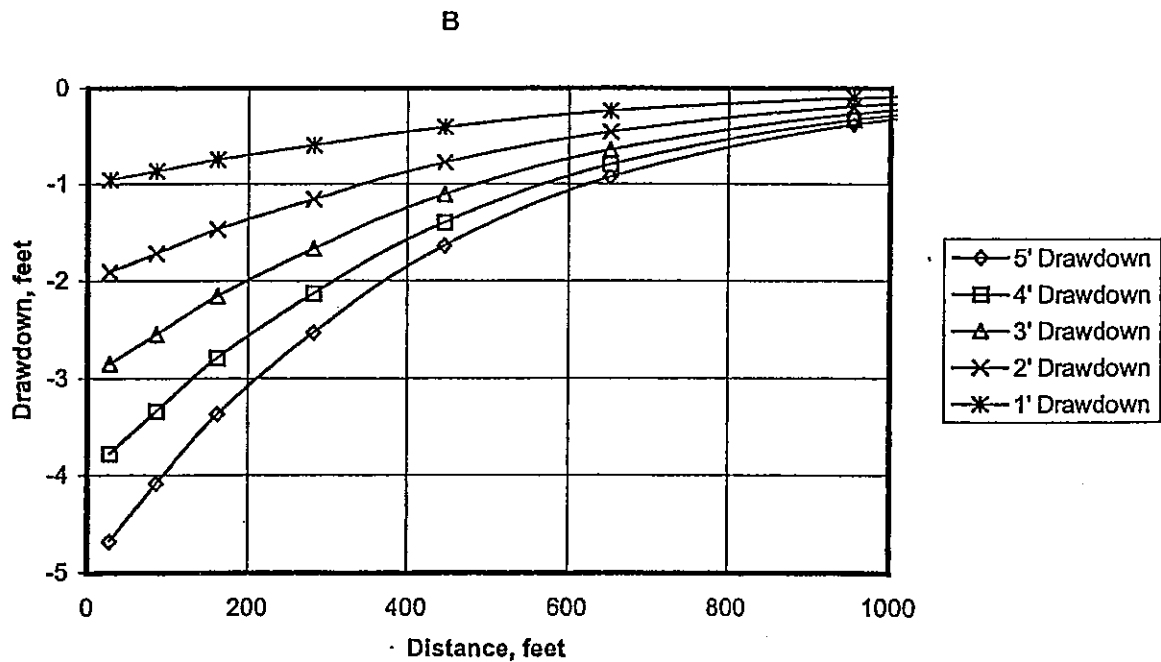
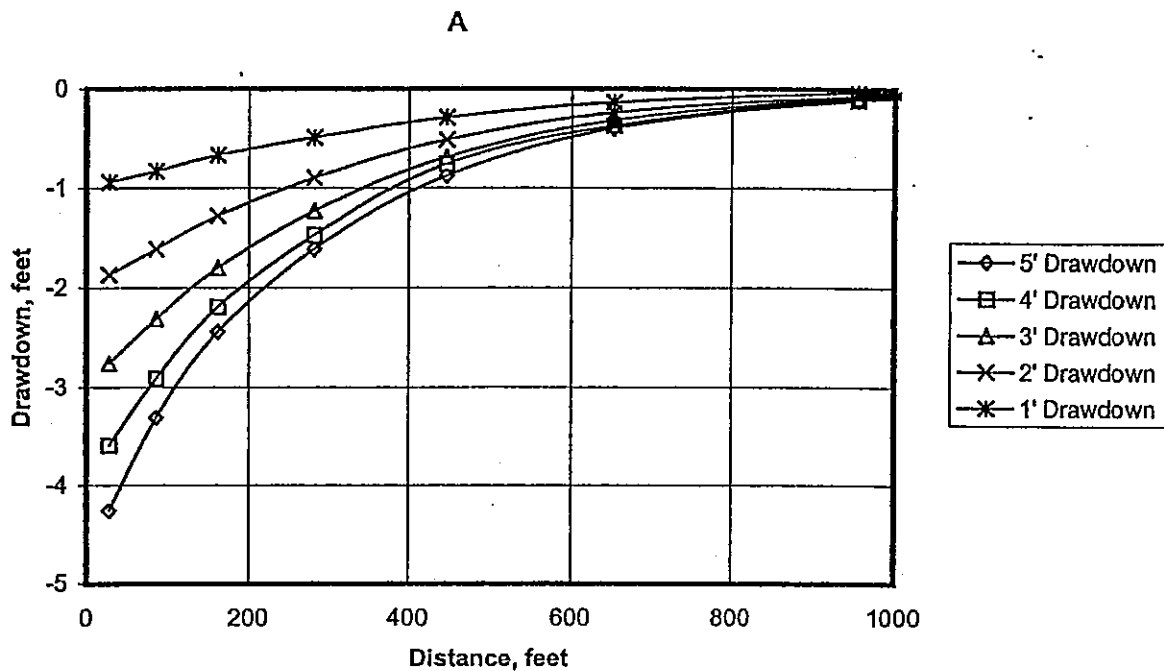


Figure 4.3 Simulated drawdowns of the surficial aquifer. Assumptions for Graph A & B are:
 Hydraulic Conductivity = 19.5 in/hr, Specific Yield = 0.20, Time = 90 Days
 Graph A Assumes Thickness = 6ft.
 Graph B Assumes Thickness = 10ft.



The length of time simulated in the model run has a significant effect on the amount of drawdown. For example, using a hydraulic conductivity of 13 inches/hour and a 3-foot lowering of the water table at the drainage structure, the distance at which the water table will be lowered 1 foot is approximately 215 feet at 30 days and 400 feet at 90 days. This effect is illustrated in Figure 4.4A. Thickness of the aquifer also results in a significant difference. For 90-day runs with hydraulic conductivity of 13 inches/hour and a drainage depth of 3 feet, the 1-foot drawdown occurs at a distance of approximately 280 feet for a 6 foot aquifer thickness and at roughly 400 feet for a 10 foot thick aquifer. The simulated drawdown is even greater for thicker aquifers, as shown in Figure 4.4B.

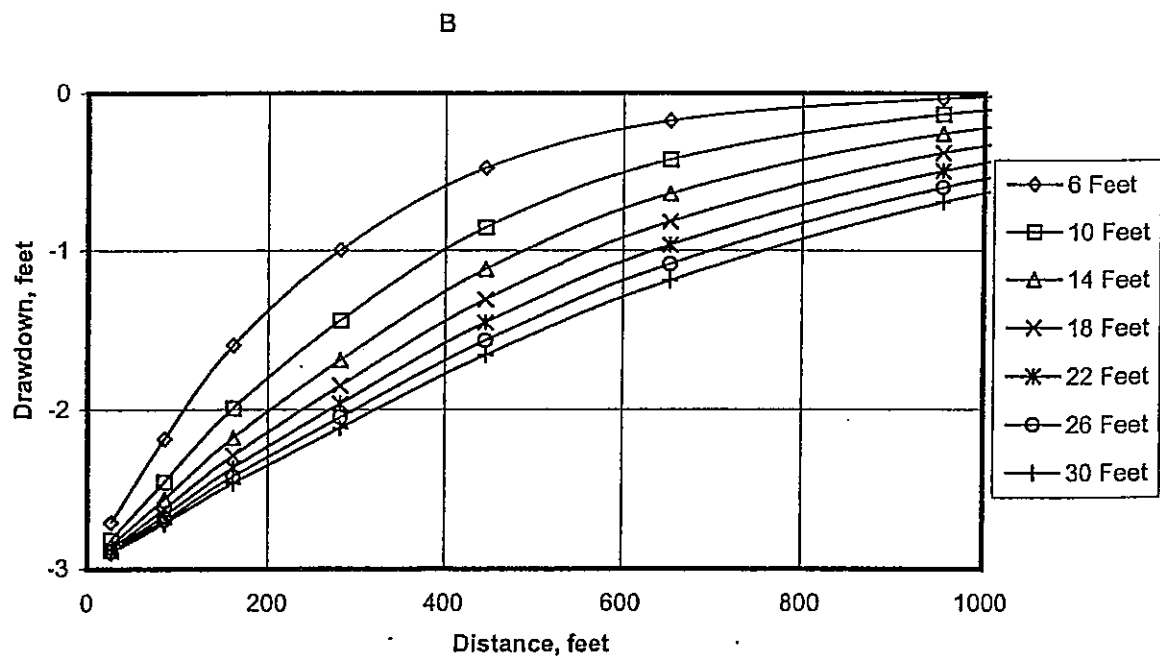
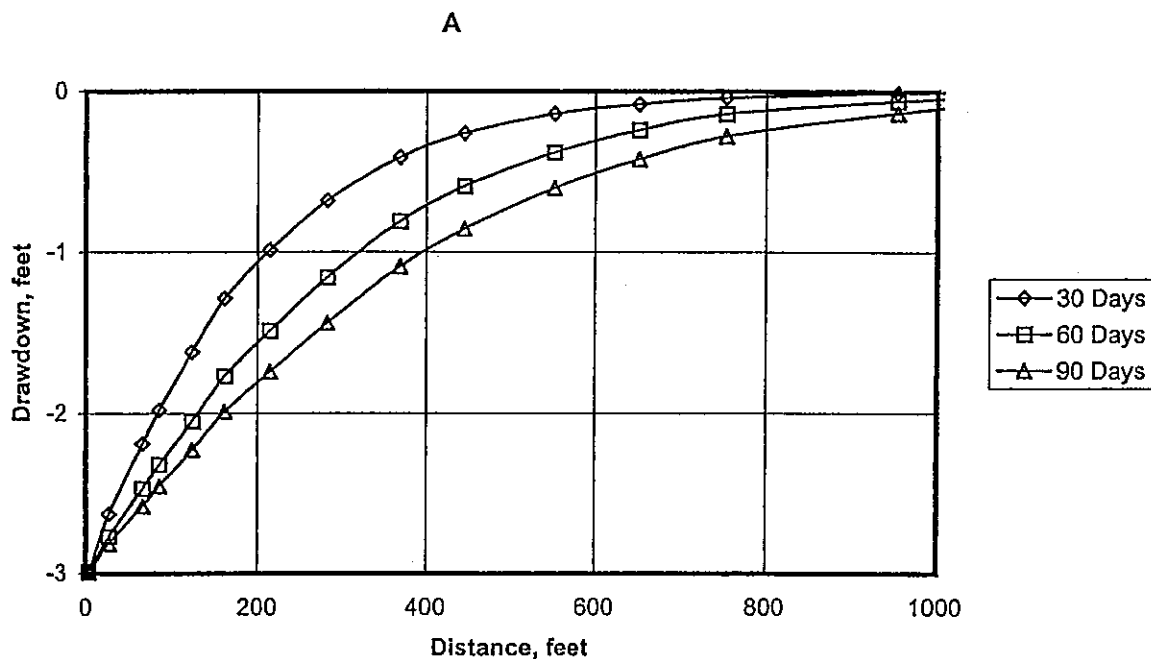
A modeled drawdown of 0.5 feet reflects drawdown within the aquifer, where much of the volume is made up of soil. The model uses a value of 2.0 for specific yield, which is the amount of water that will drain from the soil under the force of gravity. This means that the 0.5 feet of drawdown in the aquifer can be replenished by only 0.1 feet of recharge. When the effect of surface water storage in the wetland is taken into account, a drawdown of 0.5 feet in the aquifer after 90 days with zero recharge is considered unlikely to result in adverse impacts to wetlands.

Figure 4.4 Effect of Time on Simulated Drawdowns of the Surficial Aquifer.

Graph A Assumes Hydraulic Conductivity = 13 in/hr., Specific Yield = 0.20, Thickness = 10ft, Drawdown at Ditch = 3 ft.

Graph B Effect of Aquifer Thickness on Simulated Drawdowns

Assumes Hydraulic Conductivity = 13 in/hr., Specific Yield = 0.20, Time = 90 Days



5.0 DETERMINATION OF A BUFFER WIDTH

A review of the scientific literature was conducted to determine the buffer distance necessary for protecting wetland habitat. This review is detailed in an earlier report submitted to St. Johns County (JEA et al. 1999). Based on the scientific literature, buffer distances were then evaluated specifically for St. Johns County and are described in this report in Sections 2.0, 3.0, and 4.0 for wildlife, water quality, and water quantity, respectively. From the scientific literature and county-specific calculations, a buffer width of 300 feet was determined to be the distance necessary to protect a viably functioning wetland ecosystem. A 300-foot buffer would also protect approximately 50 percent of the wetland-dependent wildlife species in freshwater wetlands and protect water quality from erosion of coarse and fine sands. In some site-specific cases, such as with silt or clay soils, or from large draw-down structures, a buffer distance greater than 300 feet would be necessary to protect the wetland.

5.1 ALTERNATIVE BUFFER WIDTHS

As indicated above, a buffer distance of 300 feet is necessary to protect wetland functions and ecological resources within a wetland. Any reduction in the buffer width below 300 feet can impose adverse impacts to the wetland, particularly to wetland-dependent wildlife species that require a wide surrounding upland area in which to feed, forage, and use as protection from human disturbances. Alternatives to a 300-foot buffer would still provide protection to wetlands; however, any decline in the buffer can result in a reduction in the wildlife population, as well as degrade water quality from erosion of fine sediments. A reduction of a buffer below 300 feet will be based on policy decisions made by county staff. Four conditions were recommended by county planning staff as alternatives to a 300-foot buffer. These alternatives are described in Table 5.1.

5.2 BUFFER ESTABLISHMENT

The buffer distance shall be measured from the SJRWMD or Florida Department of Environmental Protection (DEP) wetland jurisdictional line. In some cases, unavoidable impacts will occur to jurisdictional wetlands and will result in a reduced buffer near the area of wetland impacts. In other cases, unavoidable impacts will occur to the buffer such that the buffer is less than the distance specified in Table 5.1. In no instance shall the upland buffer be less than 25 feet, even at points where unavoidable wetland impacts have been approved and permitted by the SJRWMD or DEP. The buffer area shall be clearly depicted on all site plans, development plans, and other documents submitted to the county to review for development. In cases where the buffer is reduced near permitted wetland impacts, it is the discretion of the county planning staff to require a larger buffer than that specified in Table 5.1 in other areas of the development in order to compensate for the smaller buffer.

5.3 BUFFER HABITAT

Native, undisturbed habitat should occur within the designated buffer area in order to maximize the habitat of wetland-dependent wildlife species. Buffer areas that are devoid of natural associations of native vegetation should be planted with, or supplemented by, appropriate native vegetation. Vegetation planting of trees and shrubs should be performed on an equivalency of 10-foot spacings to achieve 400 trees or shrubs per acre. Plantings should occur in staggered and clumped patterns to reflect more natural plant occurrences. A suggested list of plant species to be planted in disturbed buffer zones in St. Johns County is provided in Table 5.2.

Table 5.1 Buffer Widths for St. Johns County as Proposed by County Planning Staff

Buffer Determination Criteria	Buffer Distance (feet)	Scientific Basis
Development of single-family or two-family dwellings on platted or legal and documented lots of record existing prior to September 15, 1999, as provided in Section 4.01.02 E of the Land Development Code	25	N/A
Any development adjacent to water bodies and jurisdictional wetlands that do not meet any of the conditions listed below.	75	Based on protecting water quality from siltation and erosion of coarse sands. Protects habitat for 15 percent of wetland-dependent wildlife in freshwater wetland areas.
Any development adjacent to Aquatic Preserves ^a	200 ^b	Based on protecting water quality from siltation and erosion of fine sands. Protects habitat for approximately 50 percent of wetland-dependent wildlife species in saltwater marshes.
Any development adjacent to areas which support threatened or endangered plant or animal species in the wetland or within 300 feet of the wetland, (Appendix E) as documented during a field survey by a trained biologist.	300 ^c	Based on protection of 50 percent of the wetland-dependent wildlife species in freshwater wetlands. At the Federal level, 300 feet is considered sufficient to adequately protect wetland resources in the Wetland Rapid Assessment Procedure (Miller and Gunsalus 1997).

^a Aquatic Preserves include Guana River Marsh and Pellicer Creek (Figure 5.1).

^b This distance may be reduced to 75 feet if the applicant follows the guidelines specified in Chapter 40C-42 of the SJRWMD Applicant's Handbook for advanced stormwater treatment (Appendix F).

^c In the event that listed plant or animal species are found within the wetland or within 300 feet of the wetland, then the Florida Fish and Wildlife Commission, U.S. Fish and Wildlife Service, SJRWMD, DEP, or Florida Natural Areas Inventory should be consulted for input in developing a listed species management plan. If one of these agencies determine that a 75-foot buffer will adequately protect the listed species, then the buffer can be reduced to 75 feet.

Table 5.2 Appropriate Plantings for Buffer Zones in St. Johns County (Page 1 of 2)

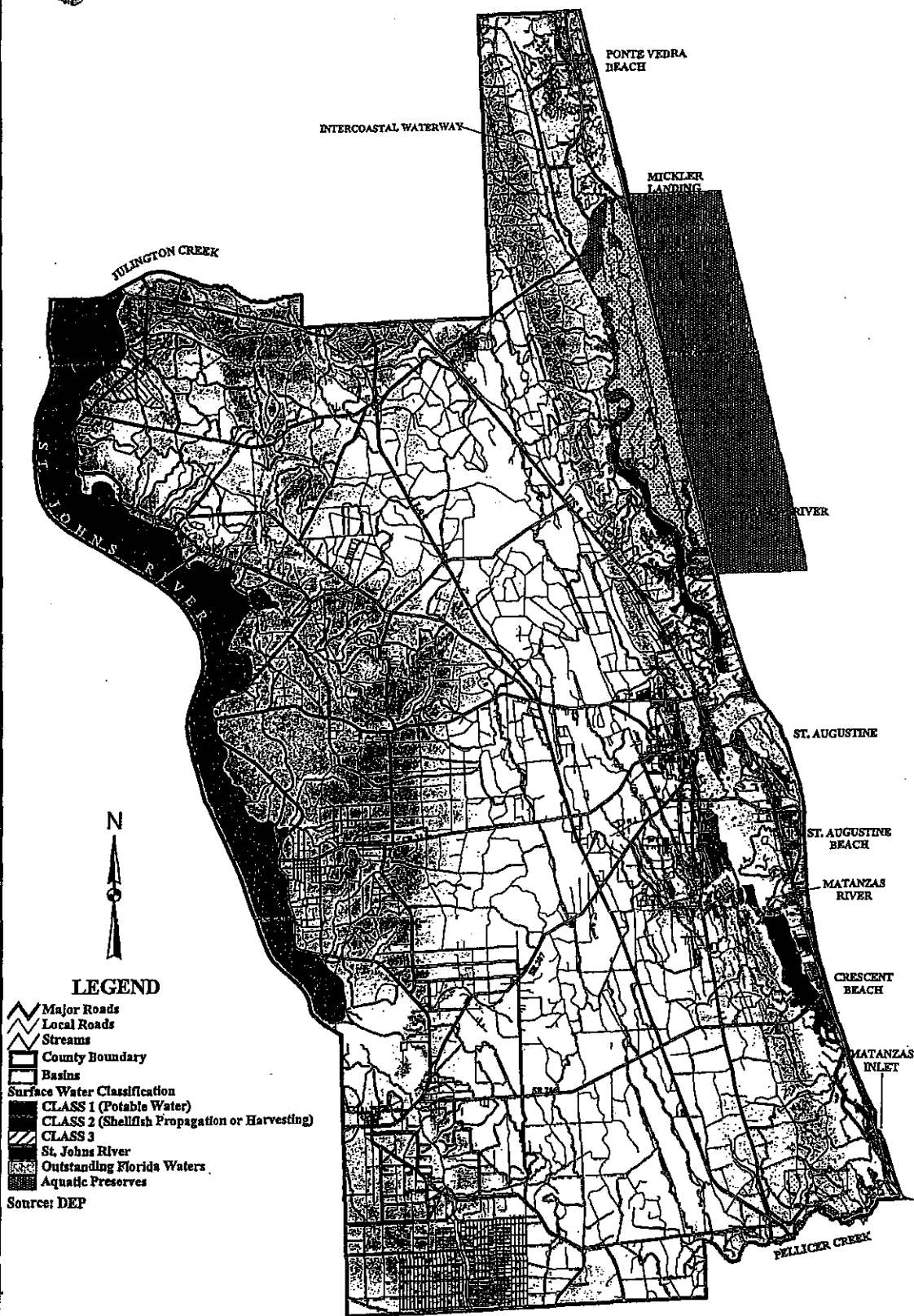
Scientific Name	Common Name	Tree (T) or Shrub (S)
<i>Acer negundo</i>	boxelder	T
<i>Aronia arbutifolia</i>	red chokeberry	S
<i>Callicarpa americana</i>	beautyberry	S
<i>Calycanthus floridus</i>	sweet shrub	S
<i>Carya glabra</i>	pignut hickory	T
<i>Celtis laevigata</i>	sugarberry	T
<i>Cercis canadensis</i>	redbud	T
<i>Clethra alnifolia</i>	sweet pepperbush	S
<i>Cornus florida</i>	dogwood	T
<i>Crataegus aestivalis</i>	may haw	T
<i>Euonymus americana</i>	strawberry bush	S
<i>Fagus grandifolia</i>	American beech	T
<i>Fraxinus americana</i>	white ash	T
<i>Hamamelis virginiana</i>	witchhazel	S
<i>Ilex glabra</i>	gallberry	S
<i>Ilex cassine</i>	dahoon holly	T
<i>Ilex coriacea</i>	sweet gallberry	S
<i>Ilex opaca</i>	American holly	T
<i>Ilex vomitoria</i>	yaupon	T
<i>Ilex myrtifolia</i>	myrtle holly	T
<i>Juniperus silicicola</i>	southern red cedar	T
<i>Lindera benzoin</i>	common spicebush	S
<i>Liquidambar styraciflua</i>	sweetgum	T
<i>Liriodendron tulipifera</i>	tulip poplar	T
<i>Lyonia ferruginea</i>	rusty lyonia	S
<i>Lyonia fruticosa</i>	staggebush	S
<i>Lyonia lucida</i>	fetterbush	S
<i>Magnolia grandiflora</i>	Southern magnolia	T

Table 5.2 Appropriate Plantings for Buffer Zones in St. Johns County (Page 2 of 2)

Scientific Name	Common Name	Tree (T) or Shrub (S)
<i>Morus rubra</i>	red mulberry	T
<i>Myrcianthes fragrans</i>	Simpson stopper *	T
<i>Myrica cerifera</i>	wax myrtle	S
<i>Nyssa sylvatica var. biflora</i>	swamp tupelo	T
<i>Osmanthus americanus</i>	wild olive	T
<i>Ostrya virginiana</i>	Eastern hop hornbeam	T
<i>Persea borbonia</i>	redbay	T
<i>Pinus ellioti</i>	slash pine	T
<i>Pinus glabra</i>	spruce pine	T
<i>Pinus palustris</i>	longleaf pine	T
<i>Pinus taeda</i>	loblolly pine	T
<i>Prunus angustifolia</i>	chickasaw plum	T
<i>Prunus caroliniana</i>	Carolina laurelcherry	T
<i>Quercus alba</i>	white oak	T
<i>Quercus haemipherica</i>	laurel oak	T
<i>Quercus michauxii</i>	swamp chestnut oak	T
<i>Quercus laurifolia</i>	diamond-leaf oak	T
<i>Quercus nigra</i>	water oak	T
<i>Rhaphidophyllum hystrix</i>	needle palm	S
<i>Sabal palmetto</i>	cabbage palm	T
<i>Sabal minor</i>	bluestem palmetto	S
<i>Sassafras albidum</i>	sassafras	T
<i>Serenoa repens</i>	saw palmetto	S
<i>Symplocos tinctoria</i>	common sweetleaf	S
<i>Tilia caroliniana</i>	Carolina basswood	T
<i>Vaccinium arboreum</i>	sparkleberry	S
<i>Vaccinium corymbosum</i>	highbush blueberry	S
<i>Zanthoxylum clava-herculis</i>	Hercules club	T



Figure 5.1
Environmentally Significant Lands



LEGEND

- Major Roads
- Local Roads
- Streams
- County Boundary
- Basins
- Surface Water Classification
 - CLASS 1 (Potable Water)
 - CLASS 2 (Shellfish Propagation or Harvesting)
 - CLASS 3
- St. Johns River
- Outstanding Florida Waters
- Aquatic Preserves

Source: DEP

SCALE

2 0 2 4 6 Miles

1:200000

For Informational Purposes Only

5/16/99 MCTW riparian_vector.mxd

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APPENDIX A

**SPECIES LIST OF WETLAND-DEPENDENT NATIVE
WILDLIFE SPECIES OF ST. JOHNS COUNTY**

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
AMPHIBIANS					
Oak Toad ^{B,G}	A1	<i>Bufo quercicus</i>	FL, SH, CY	Similar to gopher frog	6,336
Southern Toad ^G	A2	<i>Bufo terrestris</i>	FL, FM, HK, SH, HS	Similar to green treefrog	180
Florida Cricket Frog ^B	A3	<i>Acris gryllus dorsalis</i>	CY, FL, HS, FM, HK,	Similar to green treefrog	180
Green Treefrog ^{B,G}	A4	<i>Hyla cinerea</i>	FL, FM, HK, SH, CY	Maximum distance found from closest water	180
Pinewoods Treefrog ^{B,G}	A6	<i>Hyla femoralis</i>	FL, HK, HS, SH	Similar to spring peeper	4,000
Barking Treefrog ^{B,G}	A7	<i>Hyla gratiosa</i>	FM, SH, HS	Similar to spring peeper	4,000
Squirrel Treefrog ^{B,G}	A8	<i>Hyla squirella</i>	HS, CY, FL, HK, SH	Similar to green treefrog	180
Little Grass Frog ^{B,G}	A9	<i>Pseudacris ocularis</i>	CY, FL, HK	Similar to green treefrog	180
Southern Spring Peeper ^{B,G}	A5	<i>Pseudacris crucifer bartramiana</i>	CY, HK, HS	Maximum distance from breeding pond	4,000
Ornate Chorus Frog ^B	A10	<i>Pseudacris ornata</i>	CY, FL, HK, HS	Similar to green treefrog	180
Southern Chorus Frog ^C		<i>Pseudacris nigrita</i>	CY, HK	Similar to green treefrog	180
Eastern Narrowmouth Toad ^G	A11	<i>Gastrophryne carolinensis</i>	HS, FL, HK, SH, CY	Similar to spring peeper	4,000
Eastern Spadefoot Toad ^G	A12	<i>Saphiopus holbrookii holbrookii</i>	SH	Similar to spring peeper	4,000
Florida Gopher Frog ^{B,G} (SSC)	A13	<i>Rana capito aesopus</i>	FL, SH, CY	Distance between captures of same individuals	6,336
Bullfrog ^{B,G}	A14	<i>Rana catesbeiana</i>	CY, FL, HK, HS, SH	Maximum distance found from permanent water	350

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
Pig Frog ^{B,G}	A15	<i>Rana grylio</i>	FL, FM, HK HS, SH	Similar to bullfrog	350
River Frog ^B	A16	<i>Rana heckscheri</i>	CY, FL, FM, HK HS, SH	Similar to bullfrog	350
Bronze Frog ^C		<i>Rana clamitans clamitans</i>	FL, FM, HK HS, SH	Similar to bullfrog	350
Southern Leopard Frog ^G	A17	<i>Rana utricularia</i>	CY, FL, FM, HK HS, SH	Similar to bullfrog	350
Dwarf Salamander ^B	A19	<i>Eurycea quadridigitata</i>	HS, CY, FL, FM, HK	Similar to green treefrog	180
Mole Salamander ^C		<i>Ambystoma talpoideum</i>	FM, CY, FL, HK, HS	Similar to green treefrog	180
Striped Newt ^B	A20	<i>Notophthalmus perstriatus</i>	CY, FL HK, SH	Similar to green treefrog	180
Central Newt ^C		<i>Notophthalmus viridescens louisianensis</i>	SH, CY, FL	Similar to green treefrog	180
Greater Siren ^G		<i>Siren lacertina</i>	HS, HK, FL, CY	Very aquatic habits, needs enough adjacent land to provide good water quality	50

REPTILES

American Alligator ^G (SSC) (T S/A)	R1	<i>Alligator mississippiensis</i>	HS, CY, FL, HK, SM, SH, FM	Needs land for sunning and nesting	50
Florida Snapping Turtle ^B	R2	<i>Chelydra serpentina osceola</i>	CY, FL, HK, HS, SH, FM	Home range diameter	497
Chicken Turtle ^{B,G}	R3	<i>Deirochelys reticularia</i>	CY, FL, FM, HK, HS, SH	Similar to striped mud turtle	1,350

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
Carolina Diamondback Terrapin ^B	R4	<i>Malaclemys terrapin centrata</i>	CY, FL, FM, HK, HS, SH, SM,	Similar to Florida snapping turtle	497
Peninsula Cooter ^{B,G}	R5	<i>Pseudemys floridana peninsularis</i>	CY, FL, FM, HK, HS, SH	Similar to striped mud turtle	1,350
Florida Redbelly Turtle ^{B,G}	R6	<i>Pseudemys nelsoni</i>	FM, CY, FL, HK, HS, SH, SM	Similar to striped mud turtle	1,350
Striped Mud Turtle ^{B,G}	R9	<i>Kinosternon baurii</i>	CY, FL, FM, HK, HS, SH	Maximum distance from closest water to winter hibernation site	1,350
Florida Mud Turtle ^{B,G}	R10	<i>Kinosternon subrubrum steindachneri</i>	CY, FL, HK, HS, SH, SM, FM	Similar to striped mud turtle	1,350
Eastern Mud Turtle ^C		<i>Kinosternon subrubrum subrubrum</i>	CY, FL, HK, HS, SH, SM, FM	Similar to striped mud turtle	1,350
Loggerhead Musk Turtle ^G		<i>Sternotherus minor minor</i>	CY, FL, HK, HS, SH, SM, FM	Similar to striped mud turtle	1,350
Common Musk Turtle ^C		<i>Sternotherus odoratus</i>	CY, FL, HK, HS, SH, SM, FM	Similar to striped mud turtle	1,350
Florida Softshell Turtle ^B	R12	<i>Apalone ferox</i>	CY, FL, FM, HK, HS, SH	Similar to Florida snapping turtle	497
Spotted Turtle ^C		<i>Clemmys guttata</i>	CY, FL, FM, HK, HS, SH	Similar to Florida snapping turtle	497
Eastern Mud Snake ^G		<i>Farancia abacura abacura</i>	CY, FL, FM, HK, HS, SH	Needs land for sunning and laying eggs	50

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
Rainbow Snake ^B	R21	<i>Farancia erythrogramma</i>	FL, HK, SH	Similar to Eastern garter snake	1,395
Florida Water Snake ^G		<i>Nerodia fasciata pictiventris</i>	CY, FL, FM, HK, HS, SH	Needs land for sunning and giving birth	50
Striped Crayfish Snake ^G		<i>Regina alleni</i>	CY, FL, FM, HK, HS, SH	Needs land for sunning and laying eggs	50
Glossy Crayfish Snake ^B	R31	<i>Regina rigida</i>	CY, FL, HK, HS, SH	Similar to green water snake	884
North Florida Swamp Snake ^G		<i>Seminatrix pygaea pygaea</i>	HS, CY, FL, FM, HK, SH	Needs land for sunning and laying eggs	50
Peninsula Ribbon Snake ^{G,B}	R35	<i>Thamnophis sauritus sackenii</i>	CY, FL, HK, SH, HS	Home range diameter	333
Florida Cottonmouth ^G		<i>Agkistrodon piscivorus</i>	CY, FL, FM, HK, HS, SH	Needs land for sunning and giving birth	50
BIRDS					
Horned Grebe ^C		<i>Podiceps auritus</i>	FM, SM	Similar to pied-billed grebe	240
Common Loon ^C		<i>Gavia immer</i>	FM, SM, HK, SH, FL	Similar to pied-billed grebe	240
Pied-Billed Grebe ^B	B1	<i>Podilymbus podiceps</i>	FM, HK, FL, SH	Minimum distance from humans tolerated	240
Brown Pelican ^F (SSC)		<i>Pelecanus occidentalis</i>	SM	Recommended buffer based on flush distance	351
American White Pelican ^C		<i>Pelecanus erythrorhynchos</i>	SM, FM	Similar to brown pelican	351
Double-Crested Cormorant ^F		<i>Phalacrocorax auritus</i>	SM, SH	Recommended buffer based on flush distance	335
Anhinga ^H		<i>Anhinga anhinga</i>	FM, CY, HS, HK, FL, SH	Minimum distance from humans tolerated while nesting	292

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
American Bittern ^B	B24	<i>Botaurus lentiginosus</i>	FM, HK	Minimum distance from humans tolerated	180
Least Bittern ^B	B31	<i>Ixobrychus exilis</i>	FM	Minimum distance tolerated from humans	180
Great Blue Heron ^F	B23	<i>Ardea herodias</i>	SM, FM, CY, HS, FL, SH	Recommended buffer based on flush distance	328
Great Egret ^F	B27	<i>Ardea alba</i>	SM, FM, CY, HS, HK, FL, SH	Recommended buffer based on flush distance	299
Snowy Egret ^F (SSC)		<i>Egretta thula</i>	SM, FM, CY, HS, HK, FL, SH	Recommended buffer based on flush distance	285
Little Blue Heron ^F (SSC)		<i>Egretta caerulea</i>	SM, FM, CY, HK, FL, SH	Recommended buffer based on flush distance	341
Tricolored Heron ^F (SSC)		<i>Egretta tricolor</i>	SM, FM, CY, HK, FL, SH	Recommended buffer based on flush distance	269
Reddish Egret ^C (SSC) (W)		<i>Egretta rufescens</i>	SM, FM, CY, HK, FL, SH	Similar to tricolored heron	269
Cattle Egret ^H		<i>Bubulcus ibis</i>	CY, HS, HK, FL, SH	Recommended set back distance	230
Green Heron ^F		<i>Butorides virescans</i>	SM, FM, CY, HS, HK, FL, SH	Similar to tricolored heron	269
Limpkin ^F (SSC)		<i>Aamus guarauna</i>	FM, CY, HS, HK	Similar to tricolored heron	269
Sandhill Crane ^G		<i>Girus canadensis</i>	FM, FL	Tends to nest away from roads and other development activities	1,200

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
Black-crowned Night-Heron ^H		<i>Nycticorax nycticorax</i>	SM, FM, CY, HS, HK, FL, SH	Recommended set back distance	318
Yellow-crowned Night-Heron ^F		<i>Nyctanassa violacea</i>	SM, FM, CY, HS, HK, FL, SH	Similar to black-crowned night-heron	318
White Ibis ^H (SSC)		<i>Eudocimus albus</i>	FM, CY, HS, HK, FL, SH	Minimum distance from humans tolerated while feeding	249
Glossy Ibis ^C		<i>Plegadis falcinellus</i>	FM, CY, SH, HS, HK, FL	Similar to white ibis	249
Roseate Spoonbill ^C (SSC)(W)		<i>Ajaia ajaja</i>	SM	Similar to great egret	299
Wood Stork ^F (E) (E)		<i>Mycteria americana</i>	FM, CY, HS, HK, FL, SH	Recommended set back distance	253
Fulvous Whistling-Duck ^G		<i>Dendrocygna bicolor</i>		Similar to wood duck	300
Black-bellied Whistling-Duck ^C		<i>Dendrocygna autumnalis</i>	FM, CY, HS, HK, FL, SH, SM	Similar to wood duck	300
Snow Goose ^C		<i>Chen caerulescens</i>	FM, CY, HS, HK, FL, SH	Similar to wood duck	300
Canada Goose ^C		<i>Branta Canadensis</i>	FM, CY, HS, HK, FL, SH	Similar to wood duck	300
Wood Duck ^G		<i>Aix sponsa</i>	FM, CY, HS, HK, FL, SH	Minimum distance from humans tolerated while feeding	300
American Black Duck ^C (W)		<i>Anas rubripes</i>	FM, CY, HS, HK, FL, SH	Similar to wood duck	300

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
Mottled Duck ^{B,G} (W)	B10	<i>Anas fulvigula</i>	SM, FM, HK, FL, SH	Minimum distance from humans tolerated while feeding	120
Mallard ^B	B11	<i>Anas platyrhynchos</i>	FM, HK, FL, SH	Similar to mottled duck	120
Northern Pintail ^C		<i>Anas acuta</i>	FM, HK, FL, SH, SM	Similar to wood duck	300
Bufflehead ^C		<i>Bucephala albeola</i>	FM, HK, FL, SH, SM	Similar to wood duck	300
Greater Scaup ^C		<i>Aythya marila</i>	FM, HK, FL, SH, SM	Similar to wood duck	300
Black Scoter ^C		<i>Melanitta nigra</i>	FM, HK, FL, SH, SM	Similar to wood duck	300
Surf Scoter ^C		<i>Melanitta perspicillata</i>	FM, HK, FL, SH, SM	Similar to wood duck	300
White-winged Scoter ^C		<i>Melanitta fusca</i>	FM, HK, FL, SH, SM	Similar to wood duck	300
Green-Winged Teal ^B	B8	<i>Anas carolinensis</i>	SM, CY, HS, SH	Similar to American wigeon	300
Blue-Winged Teal ^C		<i>Anas discors</i>	SM, EM, HK, FL, SH	Similar to American wigeon	300
Northern Shoveler ^B	B7	<i>Anas clypeata</i>	CY, HS, SH	Minimum distance from humans tolerated	300
Gadwall ^C		<i>Anas strepera</i>	SM, FM, CY, HS, SH	Similar to American wigeon	300
American Wigeon ^{BC}	B6	<i>Anas americana</i>	SM, FM, CY, HS, SH	Minimum distance from humans tolerated	300

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
Canvasback ^C		<i>Aythya valisineria</i>	SM, FM, CY, HS, SH	Similar to wood duck	300
Redhead ^C		<i>Aythya americana</i>	SM, FM, CY, HS, SH	Similar to wood duck	300
Ring-Necked Duck ^{B,G}	B12	<i>Anthya collaris</i>	FM, HK, FL, SH, SM	Similar to American wigeon and wood duck	300
Lesser Scaup ^C		<i>Aythya affinis</i>	FM, HK, FL, SH, SM	Similar to wood duck	300
Hooded Merganser ^B	B13	<i>Lophodytes cucullatus</i>	FM	Similar to American wigeon	300
Red-Breasted Merganser ^C		<i>Mergus serrator</i>	FM, HK, FL, SH, SM	Similar to American wigeon	300
Ruddy Duck ^C		<i>Oxyura jamaicensis</i>	FM, HK, FL, SH, SM	Similar to wood duck	300
Osprey ^B	B20	<i>Pandion haliaetus</i>	SM, FM, CY, HS, FL, SH	Very tolerant of humans near nest site	20
Swallow-Tailed Kite ^{B (W)}	B17	<i>Elandides forficatus</i>	CY, HS, HK, FL	Similar to red-shouldered hawk	795
Bald Eagle ^{B,G (T)}	B18	<i>Haliaeetus leucocephalus</i>	SM, FM, CY, HS, FL, SH	Secondary restrictive activity zone around nests	1,500
Clapper Rail ^C		<i>Rallus longirostris</i>	SM, FM	Similar to king rail	50
King Rail ^G		<i>Rallus elegans</i>	SM, FM	Needs enough adjacent land to provide good water quality	50
Virginia Rail ^C		<i>Rallus limicola</i>	SM, FM	Similar to king rail	50
Sora ^C		<i>Porzana carolina</i>	SM, FM	Similar to king rail	50
Purple Gallinule ^G		<i>Porphyryla martinica</i>	FM	Needs enough adjacent land to provide good water quality	50
Common Moorhen ^G		<i>Gallinula chloropus</i>	FM	Needs enough adjacent land to provide good water quality	50

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
American Coot ^G		<i>Fulica americana</i>	SM, FM	Needs enough adjacent land to provide good water quality	50
Black-bellied Plover ^C		<i>Pluvialis squatarola</i>	SM	Similar to Wilson's plover	60
Piping Plover ^C (T)(T)		<i>Charadrius melodus</i>	SM	Similar to Wilson's plover	60
Wilson's Plover ^B	B47	<i>Charadrius wilsonia</i>	SM, FM	Fairly tolerant of humans	60
Semipalmated Plover ^F		<i>Charadrius semipalmatus</i>		Recommended buffer based on flushing distance	249
American Oystercatcher ^B (SSC)	B44	<i>Haematopus palliatus</i>	SM	Minimum distance from humans tolerated	180
Black-Necked Stilt ^G		<i>Himantopus mexicanus</i>	SM, FM	Needs enough adjacent land to provide good water quality	50
American Avocet ^C		<i>Recurvirostra americana</i>	SM, FM	Similar to American oystercatcher	180
Greater Yellowlegs ^B	B57	<i>Tringa melanoleuca</i>	SM	Minimum distance from humans tolerated	180
Lesser Yellowlegs ^B	B56	<i>Tringa flavipes</i>	SM	Minimum distance from humans tolerated	180
Solitary Sandpiper ^C		<i>Tringa solitaria</i>	SM	Similar to greater yellowlegs	180
Willet ^F (W)		<i>Catoptrophorus semipalmatus</i>	SM	Recommended buffer based on flush distance	243
Spotted Sandpiper ^B	B48	<i>Actitis macularia</i>	SM	Fairly tolerant of humans	60
Whimbrel ^C		<i>Numenius phaeopus</i>	SM, FM	Similar to greater yellowlegs	180
Long-billed Curlew ^C (W)		<i>Numenius americanus</i>	SM, FM	Similar to greater yellowlegs	180
Marbled Godwit ^C		<i>Limosa fedoa</i>	SM, FM	Similar to greater yellowlegs	180
Red Knot ^C (W)		<i>Calidris canutus</i>	SM, FM	Similar to greater yellowlegs	180
Sanderling ^F		<i>Calidris alba</i>	SM	Recommended buffer based on flush distance	220
Semipalmated Sandpiper ^C		<i>Calidris pusilla</i>	SM	Similar to greater yellowlegs	180
Western Sandpiper ^F		<i>Calidris mauri</i>	SM	Recommended buffer based on flush distance	223
Least Sandpiper ^B	B51	<i>Calidris minutilla</i>	SM	Minimum distance from humans tolerated	240

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
Dunlin	B53	<i>Calidris alpina</i>	SM	Minimum distance from humans tolerated	300
Stilt Sandpiper ^{C(W)}		<i>Calidris himantopus</i>	SM	Similar to greater yellowlegs	180
Ruddy Turnstone ^F		<i>Arenaria interpres</i>	SM	Recommended buffer based on flush distance	236
Short-Billed Dowitcher ^{B(W)}	B54	<i>Limnodromus griseus</i>	SM	Minimum distance from humans tolerated	180
Long-Billed Dowitcher ^B	B55	<i>Limnodromus scolopaceus</i>	SM	Minimum distance from humans tolerated	180
Common Snipe ^B	B58	<i>Gallinago gallinago</i>	SM, FM	Minimum distance from humans tolerated	180
American Woodcock ^B	B59	<i>Scolopax minor</i>	HK, FL	Minimum distance from humans tolerated	180
Laughing Gull ^B	B60	<i>Larus atricilla</i>	SM	Fairly tolerant of humans	60
Bonaparte's Gull ^C		<i>Larus philadelphia</i>	SM	Similar to laughing gull	60
Lesser Black-back Gull ^C		<i>Larus fuscus</i>	SM	Similar to laughing gull	60
Greater Black-back Gull ^C		<i>Larus marinus</i>	SM	Similar to laughing gull	60
Ring-Billed Gull ^B	B61	<i>Larus delawarensis</i>	SM	Fairly tolerant of humans	60
Herring Gull ^C		<i>Larus argentatus</i>	SM	Similar to laughing gull	60
Gull-Billed Tern ^B	B64	<i>Sterna nilotica</i>	SM	Minimum distance from humans tolerated	180
Sandwich Tern ^C		<i>Sterna sandvicensis</i>	SM	Similar to gull-billed tern	180
Common Tern ^C		<i>Sterna hirundo</i>	SM	Similar to gull-billed tern	180
Forster's Tern ^B	B63	<i>Sterna forsteri</i>	SM	Minimum distance from humans tolerated	180
Least Tern ^{H(T)}	B62	<i>Sterna antillarum</i>	SM	Recommended set back distance	505
Royal Tern ^B	B65	<i>Sterna maxima</i>	SM	Minimum distance from humans tolerated	180
Black Tern ^C		<i>Chilidonias niger</i>	SM	Similar to royal tern	180
Caspian Tern ^C		<i>Sterna caspia</i>	SM	Similar to royal tern	180
Black Skimmer ^{F(SSC)}		<i>Rynchops niger</i>	SM	Flush distance	279

WETLAND-DEPENDENT NATIVE WILDLIFE SPECIES OF ST. JOHNS COUNTY

Species ^A	Species Code ^D	Scientific Name	Habitat ^E	Spatial Requirements Notes	Spatial Req (ft)
Belted Kingfisher ^{B,G}	B70	<i>Ceryle alcyon</i>	FM, HK, FL, SH	Fairly tolerant of humans	60
Sedge Wren ^B	B79	<i>Cistothorus platensis</i>	SM, FM	Similar to marsh wren	196
Marsh Wren ^B	B78	<i>Cistothorus palustris</i>	SM, FM	Home range diameter	196
Saltmarsh Sharp-tailed Sparrow ^{C (W)}		<i>Ammodramus caudacutus</i>	SM, FM	Similar to seaside sparrow	196
Nelson's Sharp-tailed Sparrow ^C		<i>Ammodramus nelsoni</i>	SM, FM	Similar to seaside sparrow	196
Seaside Sparrow ^{B (W)}	B94	<i>Ammodramus maritima</i>	SM	Home range diameter	196
Swamp Sparrow ^B	B95	<i>Melospiza georgiana</i>	CY, HS	Home range diameter	196
Red-Winged Blackbird ^G	B91	<i>Agelaius phoeniceus</i>	SM, FM	Needs enough adjacent land to maintain good water quality	50
MAMMALS					
Marsh Rabbit ^{B,G}	M3	<i>Sylvilagus palustris</i>	FM	Maximum distance found from shore	700
Round-Tailed Muskrat ^G		<i>Neofiber alleni</i>	FM	Needs enough adjacent land to maintain good water quality	50
Marsh Rice Rat ^G		<i>Oryzomys palustris</i>	SM, CY	Needs enough adjacent land to maintain good water quality	50
River Otter ^G		<i>Lutra canadensis</i>	SH, FM, CY, HS, HK, FL	Needs land for denning	100
Mink ^B	M10	<i>Mustela vison</i>	FM, CY, HS, HK, FL, SH	Maximum distance of den from closest water	300

Notes:

- ^A E = Endangered
 T = Threatened
 T (S/A) = Threatened/Similarity of Appearance
 SSC = Species of Special Concern
 W = Species listed on the National Audubon Society Watch List.

Where two abbreviations are listed, the first one is a state listed species listed by the Florida Game and Freshwater Fish Commission (FGFWFC), and the second is a federal listed species listed by the U.S. Fish and Wildlife Service (USFWS).

- ^B Because no spatial requirement data were found for these species, the numbers used here are reported by Brown et al. 1990a (for B footnote) and Brown et al. 1990b (for G footnote) to represent spatial requirements for species that are closely related, similar-sized, or found in comparable habitats.

- ^C Because no spatial requirement data were found for these species, the numbers used here are reported by the JEA Project Team to represent spatial requirements for species that are closely related, similar-sized, or found in comparable habitats (from JEA Project Team).
- ^D Species code corresponds to code used in Brown et al. 1990a.
- ^E Habitats:
- | | | |
|----|---|------------------|
| CY | = | Cypress |
| FL | = | Flatwoods |
| FM | = | Freshwater Marsh |
| HK | = | Hammock |
| HS | = | Hardwood Swamp |
| SH | = | Sandhill |
| SM | = | Saltwater Marsh |
- ^F Spatial requirements based on Rodgers and Smith 1997.
- ^G Because no spatial requirement data were found for these species, the numbers used here are reported by Brown et al. 1990a (for B footnote) and Brown et al. 1990b (for G footnote) to represent spatial requirements for species that are closely related, similar-sized, or found in comparable habitats.
- ^H Spatial requirements based on Rodgers and Smith 1995.

APPENDIX B

SPATIAL REQUIREMENTS BY SPECIES LISTED IN ASCENDING ORDER BY HABITAT

Cypress

Species	Spatial Requirement (feet)	% of Species Protected
Osprey	20	
Marsh Rice Rat	50	
Florida Water Snake	50	
Striped Crayfish Snake	50	
Eastern Mud Snake	50	
American Alligator	50	
Greater Siren	50	
Cottonmouth	50	
North Florida Swamp Snake	50	
River Otter	100	20% of species = 135.9
Cricket Frog	180	
Green Treefrog	180	
Squirrel Treefrog	180	
Little Grass Frog	180	
Ornate Chorus Frog	180	
Southern Chorus Frog	180	
Dwarf Salamander	180	
Striped Newt	180	
Swamp Sparrow	196	
Cattle Egret	230	30% of species = 233.8
White Ibis	249	
Glossy Ibis	249	
Wood Stork	253	
Tricolored Heron	269	
Reddish Egret	269	
Green Heron	269	
Limpkin	269	
Snowy Egret	285	40% of species = 272.2
Anhinga	292	
Great Egret	299	50% of species = 299.3
Wood Duck	300	60% of species = 299.9
Green-Winged Teal	300	
Northern Shoveler	300	
American Wigeon	300	
Mink	300	
Black-bellied Whistling Duck	300	
Snow Goose	300	
Canada Goose	300	
American Black Duck	300	
Gadwall	300	
Canvasback	300	
Redhead	300	
Black-crowned Night Heron	318	
Yellow-crowned Night Heron	318	
Great Blue Heron	328	
Peninsula Ribbon Snake	333	
Little Blue Heron	341	70% of species = 342.8
Bullfrog	350	

River Frog	350
Southern Leopard Frog	350
Snapping Turtle	497
Diamondback Terrapin	497
Florida Softshell	497
Spotted Turtle	497
Swallow-Tailed Kite	795
Glossy Crayfish Snake	884
Chicken Turtle	1350
Cooter	1350
Florida Redbelly Turtle	1350
Striped Mud Turtle	1350
Florida Mud Turtle	1350
Eastern Mud Turtle	1350
Loggerhead Musk Turtle	1350
Bald Eagle	1500
Spring Peeper	4000
Eastern Narrowmouth	4000
Oak Toad	6336
Gopher Frog	6336

Flatwoods

Species	Spatial Requirement (feet)	% of Species Protected
Osprey	20 ✓	
Florida Water Snake	50	
Striped Crayfish Snake	50	
North Florida Swamp Snake	50	
Eastern Mud Snake	50	
American Alligator	50	
Greater Siren	50	
Cottonmouth	50	
Belted Kingfisher	60	
River Otter	100	
Reddish Egret	104	
Mottled Duck	120	
Mallard	120	20% of species = 140.0
Cricket Frog	180	
Green Treefrog	180	
Squirrel Treefrog	180	
Little Grass Frog	180	
Ornate Chorus Frog	180	
Dwarf Salamander	180	
Striped Newt	180	
American Woodcock	180	
Southern Toad	180	
Cattle Egret	230	30% of species = 235.0
Pied-Billed Grebe	240	
Common Loon	240	
White Ibis	249	
Glossy Ibis	249	
Wood Stork	253	
Tricolored Heron	269	
Little Blue Heron	269	
Green Heron	269	
Snowy Egret	285	40% of species = 285.0
Anhinga	292	50% of species = 299.4
Great Egret	299	60% of species = 299.8
Wood Duck	300	
Blue-winged Teal	300	
Ring-Necked Duck	300	
Mink	300	
Black-bellied Whistling Duck	300	
Snow Goose	300	
Canada Goose	300	
American Black Duck	300	
Northern Pintail	300	
Bufflehead	300	
Greater Scaup	300	
Black Scoter	300	
Surf Scoter	300	
White-winged Scoter	300	

Lesser Scaup	300
Red-breasted Merganser	300
Ruddy Duck	300
Black-crowned Night Heron	318
Yellow-crowned Night Heron	318
Great Blue Heron	328
Peninsula Ribbon Snake	333
Bullfrog	350
Pig Frog	350
River Frog	350
Southern Leopard Frog	350
Bronze Frog	350
Snapping Turtle	497
Diamondback Terrapin	497
Florida Softshell Turtle	497
Spotted Turtle	497
Swallow-Tailed Kite	795
Glossy Crayfish Snake	884
Sandhill Crane	1200
Chicken Turtle	1350
Cooter	1350
Florida Redbelly Turtle	1350
Striped Mud Turtle	1350
Florida Mud Turtle	1350
Eastern Mud Turtle	1350
Loggerhead Musk Turtle	1350
Rainbow Snake	1395
Bald Eagle	1500
Pine Woods Treefrog	4000
Eastern Narrowmouth	4000
Oak Toad	6336
Gopher Frog	6336

70% of species = 366.4

Hammock

Species	Spatial Requirement (feet)	% of Species Protected
Cottonmouth	50	
Florida Water Snake	50	
Striped Crayfish Snake	50	
North Florida Swamp Snake	50	
Eastern Mud Snake	50	
American Alligator	50	
Greater Siren	50	
Belted Kingfisher	60	
River Otter	100	
Mottled Duck	120	
Mallard	120	20% of species = 145.1
Cricket Frog	180	
Green Treefrog	180	
Squirrel Treefrog	180	
Little Grass Frog	180	
Ornate Chorus Frog	180	
Southern Chorus Frog	180	
Dwarf Salamander	180	
Striped Newt	180	
American Woodcock	180	
American Bittern	180	
Southern Toad	180	
Cattle Egret	230	30% of species = 231.9
Pied-Billed Grebe	240	
Common Loon	240	
White Ibis	249	
Glossy Ibis	249	
Wood Stork	253	40% of species = 265.8
Tricolored Heron	269	
Reddish Egret	269	
Green Heron	269	
Limpkin	269	
Snowy Egret	285	
Anhinga	292	
Great Egret	299	50% of species = 299.2
Wood Duck	300	60% of species = 299.7
Blue-winged Teal	300	
Ring-necked Duck	300	
Mink	300	
Black-bellied Whistling Duck	300	
Snow Goose	300	
Canada Goose	300	
American Black Duck	300	
Northern Pintail	300	
Bufflehead	300	
Greater Scaup	300	
Black Scoter	300	
Surf Scoter	300	

White-winged Scoter	300	
Lesser Scaup	300	
Red-breasted Merganser	300	
Ruddy Duck	300	
Black-crowned Night-Heron	318	
Yellow-crowned Night-Heron	318	70% of species = 327.0
Peninsula Ribbon Snake	333	
Little Blue Heron	341	
Bullfrog	350	
Pig Frog	350	
River Frog	350	
Southern Leopard Frog	350	
Bronze Frog	350	
Snapping Turtle	497	
Diamondback Terrapin	497	
Florida Softshell	497	
Spotted Turtle	497	
Swallow-tailed Kite	795	
Glossy Crayfish Snake	884	
Chicken Turtle	1350	
Cooter	1350	
Florida Redbelly Turtle	1350	
Striped Mud Turtle	1350	
Florida Mud Turtle	1350	
Eastern Mud Turtle	1350	
Loggerhead Musk Turtle	1350	
Rainbow Snake	1395	
Pine Woods Treefrog	4000	
Spring Peeper	4000	
Eastern Narrowmouth Toad	4000	

Snowy Egret	285
Anhinga	292
Great Egret	299
Wood Duck	300
Blue-winged Teal	300
American Wigeon	300
Ring-Necked Duck	300
Hooded Merganser	300
Mink	300
Black-bellied Whistling Duck	300
Snow Goose	300
Canada Goose	300
American Black Duck	300
Northern Pintail	300
Bufflehead	300
Greater Scaup	300
Black Scoter	300
Surf Scoter	300
White-winged Scoter	300
Gadwall	300
Canvasback	300
Redhead	300
Lesser Scaup	300
Red-breasted Merganser	300
Ruddy Duck	300
Black-crowned Night-Heron	318
Yellow-crowned Night-Heron	318
Great Blue Heron	328
Little Blue Heron	341
Pig Frog	350
River Frog	350
Southern Leopard Frog	350
Bronze Frog	350
American White Pelican	351
Snapping Turtle	497
Diamondback Terrapin	497
Florida Softshell	497
Spotted Turtle	497
Marsh Rabbit	700
Sandhill Crane	1200
Chicken Turtle	1350
Cooter	1350
Florida Redbelly Turtle	1350
Striped Mud Turtle	1350
Florida Mud Turtle	1350
Eastern Mud Turtle	1350
Loggerhead Musk Turtle	1350
Bald Eagle	1500
Barking Treefrog	4000

60% of species = 299.3

70% of species = 299.8

Freshwater Marsh

Species	Spatial Requirement (feet)	% of Species Protected
Osprey	20	
Round-Tailed Muskrat	50	
Cottonmouth	50	
Florida Water Snake	50	
Striped Crayfish Snake	50	
North Florida Swamp Snake	50	
Eastern Mud Snake	50	
American Alligator	50	
American Coot	50	
Red-Winged Blackbird	50	
Black-Necked Stilt	50	
King Rail	50	
Purple Gallinule	50	
Common Moorhen	50	
Virginia Rail	50	
Sora	50	
Clapper Rail	50	
Wilson's Plover	60	
Belted Kingfisher	60	20% of species = 75.9
River Otter	100	
Mottled Duck	120	
Mallard	120	30% of species = 155.5
Cricket Frog	180	
Green Treefrog	180	
Dwarf Salamander	180	
Common Snipe	180	
American Bittern	180	
Least Bittern	180	
Southern Toad	180	
American Avocet	180	
Whimbrel	180	
Long-billed Curler	180	
Marbled Godwit	180	
Red Knot	180	
Sedge Wren	196	
Marsh Wren	196	
Saltmarsh Sharp-tailed Sparrow	196	
Nelsons Sharp-tailed Sparrow	196	40% of species = 207.7
Pied-Billed Grebe	240	
Horned Grebe	240	
Common Loon	240	
White Ibis	249	
Glossy Ibis	249	
Wood Stork	253	
Tricolored Heron	269	
Reddish Egret	269	
Green Heron	269	
Limpkin	269	50% of species = 277.0

Western Sandpiper	223	
Ruddy Turnstone	236	
Least Sandpiper	240	
Horned Grebe	240	
Common Loon	240	
Willet	243	60% of species = 253.4
Tricolored Heron	269	
Reddish Egret	269	
Green Heron	269	
Black Skimmer	279	
Snowy Egret	285	
Great Egret	299	70% of species = 299.2
Roseate Spoonbill	299	
Green-Winged Teal	300	
Blue-Winged Teal	300	
American Wigeon	300	
Black-bellied Whistling Duck	300	
Northern Pintail	300	
Bufflehead	300	
Greater Scaup	300	
Black Scoter	300	
Surf Scoter	300	
White-winged Scoter	300	
Gadwall	300	
Canvasback	300	
Redhead	300	
Lesser Scaup	300	
Red-breasted Merganser	300	
Ruddy Duck	300	
Ring-necked Duck	300	
Black-crowned Night-Heron	318	
Yellow-crowned Night-Heron	318	
Great Blue Heron	328	
Double-Crested Cormorant	335	
Little Blue Heron	341	
Brown Pelican	351	
American White Pelican	351	
Diamondback Terrapin	497	
Least Tern	505	
Florida Redbelly Turtle	1350	
Florida Mud Turtle	1350	
Eastern Mud Turtle	1350	
Loggerhead Musk Turtle	1350	
Bald Eagle	1500	

Saltwater Marsh

Species	Spatial Requirement (feet)	% of Species Protected
Osprey	20	
Marsh Rice Rat	50	
American Alligator	50	
American Coot	50	
Black-Necked Stilt	50	
King Rail	50	
Virginia Rail	50	
Sora	50	
Rusty Blackbird	50	
Clapper Rail	50	20% of species = 58.4
Wilson's Plover	60	
Spotted Sandpiper	60	
Laughing Gull	60	
Bonaparte's Gull	60	
Lesser Black-back Gull	60	
Greater Black-back Gull	60	
Herring Gull	60	
Black-bellied Plover	60	
Piping Plover	60	
Ring-Billed Gull	60	
Mottled Duck	120	30% of species = 138.9
American Oystercatcher	180	40% of species = 165.1
Greater Yellowlegs	180	
Lesser Yellowlegs	180	
Short-Billed Dowitcher	180	
Long-Billed Dowitcher	180	
Common Snipe	180	
Gull-Billed Tern	180	
Sandwich Tern	180	
Common Tern	180	
Forster's Tern	180	
Royal Tern	180	
Black Tern	180	
Caspian Tern	180	
American Avocet	180	
Whimbrel	180	
Long-billed Curler	180	
Marbled Godwit	180	
Red Knot	180	
Solitary Sandpiper	180	
Semipalmated Sandpiper	180	
Stilt Sandpiper	180	50% of species = 192.8
Sedge Wren	196	
Marsh Wren	196	
Saltmarsh Sharp-tailed Sparrow	196	
Nelson's Sharp-tailed Sparrow	196	
Seaside Sparrow	196	
Sanderling	220	

Red-breasted Merganser	300	
Ruddy Duck	300	
Black-crowned Night-Heron	318	
Yellow-crowned Night-Heron	318	
Great Blue Heron	328	
Peninsula Ribbon Snake	333	
Double-Crested Cormorant	335	
Little Blue Heron	341	70% of species = 342.3
Bullfrog	350	
Pig Frog	350	
River Frog	350	
Southern Leopard Frog	350	
Bronze Frog	350	
Snapping Turtle	497	
Diamondback Terrapin	497	
Florida Softshell Turtle	497	
Spotted Turtle	497	
Glossy Crayfish Snake	884	
Chicken Turtle	1350	
Cooter	1350	
Florida Redbelly Turtle	1350	
Striped Mud Turtle	1350	
Florida Mud Turtle	1350	
Eastern Mud Turtle	1350	
Loggerhead Musk Turtle	1350	
Rainbow Snake	1395	
Bald Eagle	1500	
Pine Wood Treefrog	4000	
Barking Treefrog	4000	
Eastern Narrowmouth Toad	4000	
Eastern Spadefoot Toad	4000	
Oak Toad	6336	
Florida Gopher Frog	6336	

Sandhill

Species	Spatial Requirement (feet)	% of Species Protected
Osprey	20	
Florida Water Snake	50	
Eastern Mud Snake	50	
American Alligator	50	
Cottonmouth	50	
Striped Crayfish Snake	50	
North Florida Swamp Snake	50	
River Otter	100	
Mottled Duck	120	
Mallard	120	
Green Treefrog	180	
Squirrel Treefrog	180	
Striped Newt	180	
Belted Kingfisher	180	
Southern Toad	180	
Cattle Egret	230	20% of species = 231.0
Pied-Billed Grebe	240	
Common Loon	240	
White Ibis	249	
Glossy Ibis	249	
Wood Stork	253	
Tricolored Heron	269	
Reddish Egret	269	
Green Heron	269	30% of species = 273.8
Snowy Egret	285	
Anhinga	292	
Great Egret	299	40% of species = 299.2
Wood Duck	300	50% of species = 299.6
Green-Winged Teal	300	60% of species = 299.9
Blue-Winged Teal	300	
Northern Shoveler	300	
American Wigeon	300	
Ring-Necked Duck	300	
Mink	300	
Black-bellied Whistling Duck	300	
Snow Goose	300	
Canada Goose	300	
American Black Duck	300	
Northern Pintail	300	
Bufflehead	300	
Greater Scaup	300	
Black Scoter	300	
Surf Scoter	300	
White-winged Scoter	300	
Gadwall	300	
Canvasback	300	
Redhead	300	
Lesser Scaup	300	

Florida Softshell Turtle	497
Spotted Turtle	497
Swallow-Tailed Kite	795
Glossy Crayfish Snake	884
Chicken Turtle	1350
Cooter	1350
Florida Redbelly Turtle	1350
Striped Mud Turtle	1350
Florida Mud Turtle	1350
Eastern Mud Turtle	1350
Loggerhead Musk Turtle	1350
Bald Eagle	1500
Spring Peeper	4000
Pine Woods Treefrog	4000
Barking Treefrog	4000
Eastern Narrowmouth Toad	4000

Hardwood Swamp

Species	Spatial Requirement (feet)	% of Species Protected
Osprey	20	
Eastern Mud Snake	50	
American Alligator	50	
Greater Siren	50	
Striped Crayfish Snake	50	
Florida Water Snake	50	
North Florida Swamp Snake	50	
Cottonmouth	50	
River Otter	100	20% of species = 150.7
Cricket Frog	180	
Squirrel Treefrog	180	
Ornate Chorus Frog	180	
Dwarf Salamander	180	
Hooded Warbler	180	
Southern Toad	180	
Swamp Sparrow	196	
Cattle Egret	230	
White Ibis	249	
Glossy Ibis	249	30% of species = 249.8
Wood Stork	253	
Green Heron	269	
Limpkin	269	
Snowy Egret	285	
Anhinga	292	
Great Egret	299	40% of species = 299.1
Wood Duck	300	50% of species = 299.6
Green-Winged Teal	300	
Northern Shoveler	300	
American Wigeon	300	
Mink	300	
Black-bellied Whistling Duck	300	
Snow Goose	300	
Canada Goose	300	
American Black Duck	300	
Gadwall	300	
Canvasback	300	
Redhead	300	60% of species = 312.6
Black-crowned Night-Heron	318	
Yellow-crowned Night-Heron	318	
Great Blue Heron	328	
Peninsula Ribbon Snake	333	70% of species = 345.9
Bullfrog	350	
Pig Frog	350	
River Frog	350	
Southern Leopard Frog	350	
Bronze Frog	350	
Snapping Turtle	497	
Diamondback Terrapin	497	

APPENDIX C

SOILS INFORMATION IN ST. JOHNS COUNTY

SOURCE: ST. JOHNS COUNTY SOIL SURVEY

Table A-1 Soils Series in St. Johns County, Florida
Source: Soil Survey of St. Johns County, Florida

Soil Series				Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
Soil Series USDA Soil Type and Depth from Surface (in)	Hydrologic Group	Permeability (in/hr)			
1 Adamsville Fine Sand					
0-8	C	6.0-20	0.10	2.0-3.5 Jun-Nov	
8-80	C	6.0-20	0.10		
2 Astatula Fine Sand					
0-80	A	>20	0.10	>6.0	
3 Myakka Fine Sand					
0-23	B/D	6.0-20	0.10	0-1.0 Jun-Nov	
23-53	B/D	0.6-6.0	0.15		
53-80	B/D	6.0-20	0.10		
4 Myakka Fine Sand					
0-17	D	6.0-20	0.10	+2-1.0 Jun-Feb	
17-31	D	0.6-6.0	0.15		
31-80	D	6.0-20	0.10		
5 St. Johns Fine Sand					
0-13	D	6.0-20	0.10	+2-1.0 Jun-Apr	
13-25	D	6.0-20	0.10		
25-50	D	0.2-2.0	0.15		
50-80	D	6.0-20	0.10		
6 Tavares Fine Sand					
0-7	A	6.0-20	0.10	3.5-6.0 Jun-Dec	
7-80	A	6.0-20	0.10		
7 Immokalee Fine Sand					
0-8	B/D	6.0-20	0.10	0-1.0 Jun-Nov	
8-40	B/D	6.0-20	0.10		
40-64	B/D	0.6-2.0	0.15		
64-80	B/D	6.0-20	0.10		
8 Zolfo Fine Sand					
0-5	C	6.0-20	0.10	2.0-3.5 Jun-Nov	
5-66	C	6.0-20	0.10		
66-80	C	0.6-2.0	0.15		
9 Pomona Fine Sand					
0-6	B/D	6.0-20	0.10	0-1.0 Jul-Sep	
6-21	B/D	6.0-20	0.10		
21-31	B/D	0.6-2.0	0.15		
31-47	B/D	6.0-20	0.10		
47-63	B/D	0.2-0.6	0.20		
63-80	B/D	6.0-20	0.10		
11 Smyrna Fine Sand					
0-14	A/D	6.0-20	0.10	0-1.0 Jul-Oct	
14-21	A/D	0.6-6.0	0.15		
21-32	A/D	6.0-20	0.10		
32-45	A/D	0.6-6.0	0.15		
45-80	A/D	6.0-20	0.10		

Soil Series				
Soil Series USDA Soil Type and Depth from Surface (in)	Hydrologic Group	Permeability (in/hr)	Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
12 Ona Fine Sand				
0-8	B/D	6.0-20	0.10	0-1.0 Jun-Nov
8-25	B/D	0.6-2.0	0.15	
25-80	B/D	6.0-20	0.10	
13 St. Johns Fine Sand				
0-10	B/D	6.0-20	0.10	0-1.0 Jun-Apr
10-15	B/D	6.0-20	0.10	
15-28	B/D	0.2-2.0	0.15	
28-42	B/D	6.0-20	0.10	
42-66	B/D	0.2-2.0	0.15	
66-80	B/D	6.0-20	0.10	
14 Cassia Fine Sand				
0-18	C	6.0-20	0.10	1.5-3.5 Jul-Jan
18-32	C	0.6-6.0	0.15	
32-75	C	6.0-20	0.10	
75-80	C	0.6-6.0	0.15	
15 Pomello Fine Sand				
0-45	C	>20	0.10	2.0-3.5 Jul-Nov
45-57	C	2.0-6.0	0.15	
57-80	C	6.0-20	0.10	
16 Orsino Fine Sand				
0-18	A	>20	0.10	3.5-5.0 Jun-Dec
18-80	A	>20	0.10	
18 Floridana Fine Sand				
0-18	D	6.0-20	0.10	0-1.0 Jun-Feb
18-28	D	6.0-20	0.10	
28-80	D	<0.2	0.24	
19 Pompano Fine Sand				
0-80	B/D	>20	0.10	0-1.0 Jun-Nov
21 Wabasso Fine Sand				
0-25	B/D	6.0-20	0.10	0-1.0 Jun-Oct
25-32	B/D	0.6-2.0	0.15	
32-45	B/D	<0.2	0.24	
45-80	B/D	6.0-20	0.10	
22 Manatee Fine Sandy Loam				
0-13	D	0.6-2.0	0.10	0-1.0 Jun-Feb
13-34	D	0.6-2.0	0.24	
34-52	D	0.6-2.0	0.24	
52-80	D	0.6-2.0	0.24	
23 Paola Fine Sand				
0-17	A	>20	0.10	>6.0
17-80	A	>20	0.10	
24 Pellicer Silty Clay Loam				
0-10	D	0.06-0.2	0.32	0-0.5 Jan-Dec
10-70	D	<0.06	0.24	
70-80	D	6.0-20	0.24	

Soil Series				
Soil Series USDA Soil Type and Depth from Surface (in)	Hydrologic Group	Permeability (in/hr)	Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
25 Parkwood Fine Sandy Loam				
0-10	B/D	6.0-20.0	0.10	0-1.0 Jun-Oct
10-55	B/D	0.06-0.6	0.15	
55-80	B/D	6.0-20	0.10	
26 Samsula Muck				
0-31	B/D	6.0-20	----	+2-1.0 Jan-Dec
31-80	B/D	6.0-20	0.17	
27 St. Augustine Fine Sand				
0-10	C	6.0-20	0.10	1.5-3.0 Jul-Oct
10-80	C	2.0-20	0.15	
28 Beaches				
No Data Provided				
29 Satellite Fine Sand				
0-6	A	>20	0.10	1.0-3.5 Jun-Nov
6-80	A	>20	0.10	
30 Wesconnett Fine Sand				
0-8	D	6.0-20	0.10	0-1.0 Jun-Feb
8-34	D	0.6-6.0	0.15	
34-45	D	6.0-20	0.10	
45-80	D	0.6-6.0	0.15	
31 Fripp Fine Sand				
No Data Provided				
32 Palm Beach Fine Sand				
0-80	A	>20	0.10	>6.0
33 Jonathan Fine Sand				
0-4	B	6.0-20	0.10	3.0-5.0 Jun-Oct
4-71	B	6.0-20	0.24	
71-80	B	<0.2	0.28	
34 Toco Fine Sand				
0-13	B/D	6.0-20	0.10	0-1.0 Aug-Feb
13-23	B/D	2.0-20	0.15	
23-45	B/D	6.0-20	0.10	
45-76	B/D	2.0-6.0	0.15	
76-80	B/D	0.6-20	0.15	
35 Hontoon Muck				
0-55	B/D	6.0-20	----	2-1.0 Jan-Dec
55-80	B/D	6.0-20	0.15	
36 Riviera Fine Sand				
0-23	C/D	6.0-20	0.10	0-1.0 Jun-Dec
23-28	C/D	<0.2	0.24	
28-71	C/D	<0.2	0.24	
71-80	C/D	0.6-6.0	0.15	
38 Pitts				
No Data Provided				

Soil Series				
Soil Series USDA Soil Type and Depth from Surface (in)	Hydrologic Group	Permeability (in/hr)	Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
40 Pottsburg Fine Sand				
0-60	B/D	6.0-20	0.10	0-1.0 Jul-Mar
60-80	B/D	0.6-2.0	0.15	
41 Tomoka Muck				
0-21	B/D	6.0-20	----	+1-0 Jun-Apr
21-80	B/D	0.6-6.0	0.28	
42 Bluff Sandy Clay Loam				
0-3	D	6.0-20	----	0-1.0 Jul-Dec
3-9	D	0.2-0.6	0.28	
9-25	D	0.06-0.2	0.28	
25-53	D	0.06-0.2	0.28	
53-80	D	0.06-0.2	0.28	
44 Sparr Fine Sand				
0-3	C	6.0-20	0.10	1.5-3.5 Jul-Oct
3-68	C	6.0-20	0.20	
68-80	C	0.6-2.0	0.24	
45 St. Augustine Fine Sand				
0-21	C	6.0-20	0.10	1.5-3.0 Jul-Oct
21-48	C	2.0-20	0.15	
48-53	C	0.2-0.6	0.20	
53-80	C	<0.06	0.32	
46 Holopaw Fine Sand				
0-53	B/D	6.0-20	0.10	0-1.0 Jun-Nov
53-72	B/D	0.2-2.0	0.20	
72-80	B/D	6.0-20	0.15	
47 Holopaw Fine Sand				
0-50	D	6.0-20	0.10	0-1.0 Jun-Feb
50-68	D	0.6-2.0	0.24	
68-80	D	6.0-20	0.15	
48 Winder Fine Sand				
0-11	B/D	6.0-20	0.10	0-1.0 Jun-Dec
11-16	B/D	0.2-0.6	0.20	
16-42	B/D	<0.2	0.24	
42-80	B/D	<0.2	0.24	
49 Moultrie Fine Sand				
0-22	D	>20.0	0.10	0-1.0 Jan-Dec
22-29	D	2.0-20	0.10	
29-80	D	>20.0	0.10	
50 Narcoossee Fine Sand, Shelly Substratum				
0-3	C	>20	0.10	2.0-3.5 Jun-Nov
3-11	C	>20	0.10	
11-14	C	>20	0.10	
14-80	C	6.0->20	0.10	
51 St. Augustine Fine Sand				
0-10	C	6.0-20	0.10	1.5-3.0 Jul-Oct

Soil Series				
Soil Series USDA Soil Type and Depth from Surface (in)	Hydrologic Group	Permeability (in/hr)	Erosion Factor (tons/acre/ unit rainfall)	High Water Table depth (ft) months
10-80	C	2.0-20	0.15	
52 Durbin Muck				
0-59	D	6.0-20	----	0-0.5 Jan-Dec
59-80	D	6.0-20	0.10	
53 Immokalee Fine Sand				
0-6	B/D	6.0-20	0.10	0-1.0 Jun-Nov
6-42	B/D	6.0-20	0.10	
42-66	B/D	0.6-2.0	0.15	
66-80	B/D	6.0-20	0.10	
54 Astatula Fine Sand				
0-80	A	>20	0.10	>6.0
55 Arents				
No Data Provided				
57 Adamsville Variant Fine Sand				
0-10	C	>20	0.10	2.0-3.5 Jun-Nov
10-80	C	6.0-20	0.10	
58 EauGallie Fine Sand				
0-17	B/D	6.0-20	0.10	0-1.0 Jun-Oct
17-23	B/D	0.6-6.0	0.15	
23-53	B/D	6.0-20	0.10	
53-58	B/D	0.06-2.0	0.20	
58-80	B/D	0.6-6.0	0.15	
61 Riviera Fine Sand				
0-25	D	6.0-20	0.10	+2-1.0 Jun-Dec
25-35	D	<0.2	0.24	
35-55	D	<0.2	0.24	
55-80	D	0.6-6.0	0.15	
62 Floridana Fine Sand				
0-11	D	6.0-20	0.10	0-1.0 Jun-Feb
11-30	D	6.0-20	0.10	
30-80	D	<0.2	0.24	
63 Placid Fine Sand				
0-12	B/D	6.0-20	0.10	0-1.0 Jun-Mar
12-80	B/D	6.0-20	0.10	
64 Ellzey Fine Sand				
0-12	B/D	2.0-6.0	0.10	0-1.0 Jun-Oct
12-37	B/D	2.0-6.0	0.10	
37-58	B/D	0.6-2.0	0.17	
58-80	B/D	2.0-6.0	0.10	
65 Riviera Fine Sand				
0-28	C/D	6.0-20	0.10	0-1.0 Jun-Dec
28-40	C/D	<0.2	0.24	
40-65	C/D	<0.2	0.24	
65-80	C/D	0.6-6.0	0.15	

Soil Series			Erosion Factor	
Soil Series USDA Soil Type and Depth from Surface (in)	Hydrologic Group	Permeability (in/hr)	(tons/acre/ unit rainfall)	High Water Table depth (ft) months
66 Terra Ceia Muck				
0-80	B/D	6.0-20	----	0-1.0 Jan-Dec
67 Tisonia Mucky Peat				
0-18	D	6.0-20	----	0-0.5 Jan-Dec
18-65	D	<0.06	0.20	
68 Winder Fine Sand				
0-10	B/D	6.0-20	0.10	0-1.0 Jun-Dec
10-14	B/D	0.2-0.6	0.20	
14-56	B/D	<0.2	0.32	
56-80	B/D	<0.2	0.32	
69 Bakersville Muck				
0-5	D	6.0-20	----	+2-1.0 Jul-Mar
5-41	D	2.0-6.0	0.10	
41-59	D	0.6-2.0	0.15	
59-86	D	2.0-6.0	0.10	

APPENDIX D

HYDROLOGIC METHODOLOGIES FOR PREDICTING PEAK STORMWATER DISCHARGE

HYDROLOGIC METHODOLOGIES FOR PREDICTING PEAK STORMWATER DISCHARGE

METHODOLOGY ONE: THE RATIONAL FORMULA

The Rational Formula is a simple physically-based model that applies well to urban settings, and particularly small development sites with a high percentage of impervious areas (parking lots, buildings, etc.). The first step is to decide on a design storm including the return frequency time period and the storm duration time as this will establish the input parameters of the equation. The equation calculates the discharge rate using the form:

$$Q = ciA \quad (C-1)$$

where: Q is the volumetric discharge (L^3/T)
 c is the runoff coefficient (dimensionless)
 i is the rainfall intensity (L/T)
 A is the area of the drainage basin or site (L^2)

The runoff coefficient, c , is defined as that fraction of the rainfall that will be realized as runoff during a storm event as opposed to being abstracted by infiltration, depressional storage, canopy interception, and/or evaporation. This varies with the land use type, soil type, and topography. The rainfall intensity, i , will be determined by the choice of design storm; it increases as the return frequency time period increases, and decreases as the storm duration time increases. For the application at hand the drainage area is defined as one acre, so A becomes a constant.

When working in the English System, the length unit (L) should be in feet and the time unit (T) should be in seconds. Technically speaking, i should be in feet/second and A should be in square feet such that Q is calculated in cubic feet per second (cfs). This means A should be expressed as 43560 ft^2 . However, if i is expressed as inches per hour and A is expressed as 1 acre, then Q will still be calculated in cfs within 1 percent accuracy. This latter system generally makes the calculative process easier.

For applying the metric system, the length unit (L) is in meters and the time unit (T) is in seconds. This means that for the discharge to be calculated as cubic meters per second, the rainfall intensity must be expressed in meters per second and the area must be expressed in square meters. Thus A should be set equal to 4047 m^2 , the equivalent of 1 acre.

Materials from the FDOT drainage manual have been reproduced here for reference, and the calculative process can be performed by following these steps:

1. Choose a design storm; this requires the specification of the return frequency time period and the storm duration time. Typically, the latter is set equal to the time of concentration for the drainage area for design purposes.
2. The rainfall intensity can be determined for the design storm by using FDOT Figure 5-6. This figure is the Rainfall Intensity-Duration-Frequency Curve for Zone 5 of Florida, which includes St. Johns County as shown in Figure 5-1. The value of i should be expressed in inches/hour, ft/sec, or m/sec, depending on the user's choice of unit system.

3. The runoff coefficient can be determined through the use of Tables 5-5 and 5-6. Table 5-5 establishes a value for given slopes, land use, and general soil type for return periods of less than 10 years. Table 5-6 gives a multiplication factor to use for higher return periods.
4. The value of A should be expressed as 1 acre, 43560 ft², or 4047 m², depending on the user's choice of unit system.
5. Equation C-1 can then be applied to calculate the peak runoff volumetric discharge. The value of Q will be expressed in cfs (approx.), cfs (exact), or m³/sec, depending on the user's choice of unit system. This is the final value that will then be applied in the erosion buffer width determination (Method #2).

METHODOLOGY TWO: THE SCS CURVE NUMBER METHOD

The SCS methodology was originally developed for agricultural and rural settings, but has also been adapted for more urban settings as well. It is based on a curve number (CN) system which indicates the runoff potential for a given land use and hydrologic condition of a site. The higher the CN value, the higher the runoff for a given storm event. The process of determining the appropriate CN value and the peak runoff flow rate is described in the following series of steps. Tables from the FDOT drainage manual and other sources are utilized.

1. Classify the soil according to runoff potential. Soils are categorized as A through D which goes from low runoff to high runoff potential. FDOT Table 5-7 gives a description of the 4 types.
2. Determine the antecedent moisture condition (AMC) of the soil. This condition is described as AMC I, AMC II, or AMC III, and are described as follows:

AMC I: Dry soils, no recent rains.
 AMC II: Typical conditions that may exist prior to seasonal flooding
 AMC III: Saturated soils due to significant rainfall occurring during the 5 days prior to storm.

3. Classify the hydrologic condition of the soil as either *good*, *fair*, or *poor*. This could also be considered a vegetative cover condition, and is generally determined as follows:

good: 75% plant cover (lightly grazed)
 fair: 50% - 75% plant cover (not heavily grazed)
 poor: <50% plant cover (heavily grazed)

FDOT Table 5-10 gives additional guidelines for determining the hydrologic condition.

4. From the parameters determined from the previous three steps, a CN value can now be determined using either FDOT Table 5-8 or Table 5-9. Please note that these tables apply for AMC II pre-existing condition. The CN value can be determined as a composite

value for varying land uses or hydrologic conditions within the drainage basin using a weighted-area method.

5. This step is only necessary if the user desires to represent either the AMC I or AMC III condition. Table 6.8 (Lindeburg, 1989) can be used to convert the CN value for AMC II to either of these other conditions.
6. This step is only necessary if there are significant impervious areas within the basin that are not otherwise accounted for. These areas should be assigned a CN value of 100, and a new area weighted composite CN value should be determined for the basin.
7. Choose a design storm. Generally, a 24-hour duration storm is used when applying the SCS method. Determine the total rainfall for this design storm.
8. The net rainfall, or runoff can be determined through the following series of calculative steps:
 - a. Calculate S, the storage capacity of the soil as:
$$S = 1000/CN - 10$$
 - b. Calculate the initial abstraction as: $I_a = 0.2S$
 - c. The gross rain, P_g , must be greater than I_a or there will be no runoff.
 - d. Determine the runoff (net rain) as follows:
$$P_N = (P_g - I_a)^2 / (P_g + 0.8S)$$
All the parameters, except CN are expressed in inches.
9. An approximation of the peak discharge can then be determined by determining the maximum incremental value of the SCS Florida-modified rainfall distribution. Table C-1, which was derived from the FDOT Table 5-19, shows that the maximum incremental rainfall occurs during the one-half hour between 11.5 and 12.0 hours for the 24-hour storm and is equal to 0.299 of the total rainfall. This fraction can be multiplied by the net rain, P_N , and divided by 0.5 hours to give a runoff intensity in inches per hour. This is then multiplied by the 1 acre area (converting to appropriate units if necessary) to give a peak discharge:

$$Q = 0.299/0.5 * P_N * 1 \text{ acre} \quad (C-2)$$

Equation C-2 will give the discharge rate in cfs if P_N is expressed in inches. This step assumes that the runoff rate is similarly distributed to the rainfall rate, which is a good assumption for a small basin (such as 1 acre) and is a conservative assumption for larger basins. This is the final value that will then be applied in the erosion buffer width determination (Method #2).

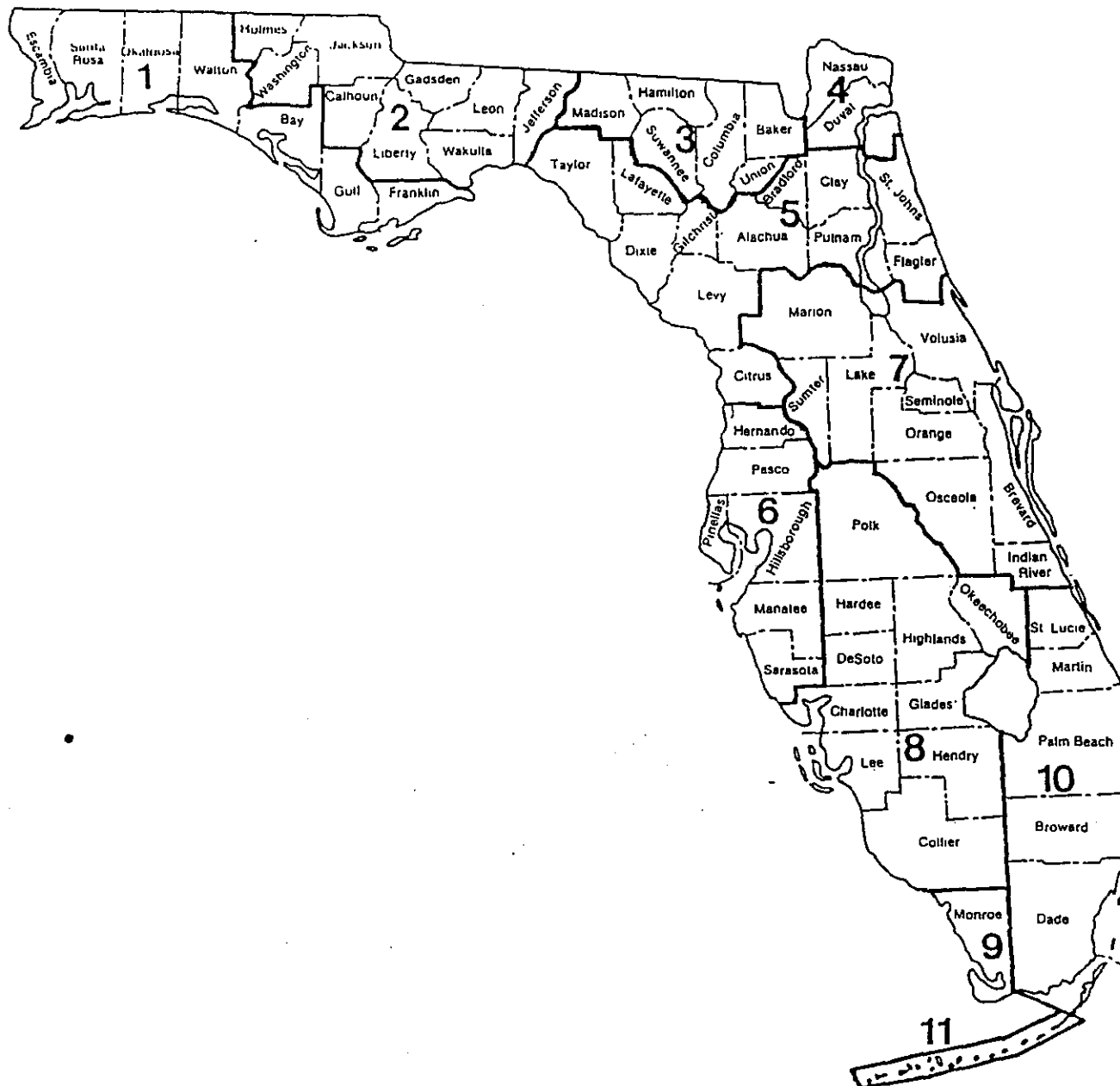


FIGURE 5-1
Zones for Precipitation Intensity-Duration-Frequency (IDF) Curves Developed by the Department

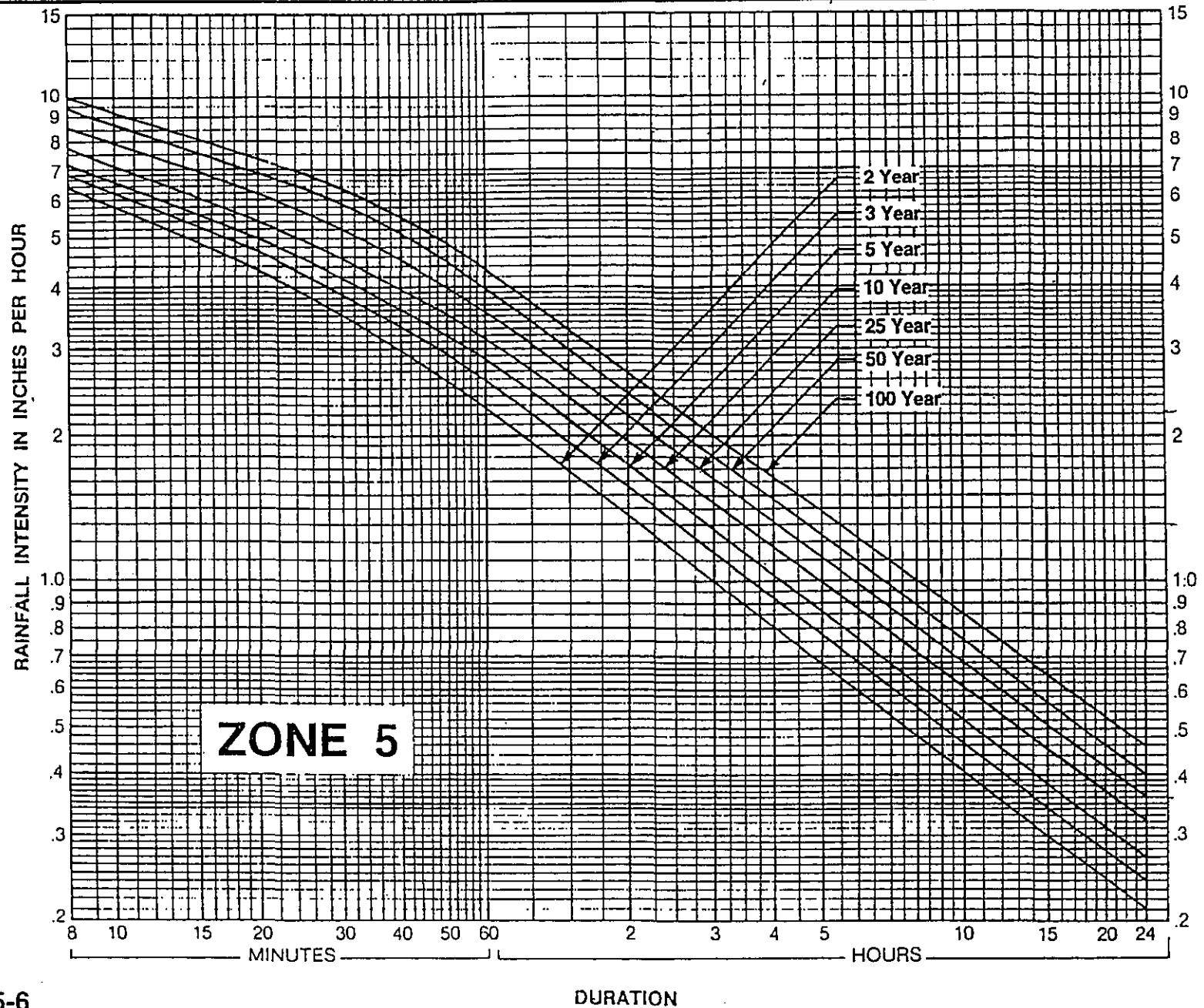


FIGURE 5-6
Rainfall Intensity-Duration-Frequency Curves for Zone 5

Table 5-5
 RUNOFF COEFFICIENTS^a FOR A DESIGN STORM RETURN
 PERIOD OF 10 YEARS OR LESS

Slope	Land Use	Sandy Soils		Clay Soils	
		Min.	Max.	Min.	Max.
Flat (0-2%)	Woodlands	0.10	0.15	0.15	0.20
	Pasture, grass, and farmland ^b	0.15	0.20	0.20	0.25
	Rooftops and pavement	0.95	0.95	0.95	0.95
	Pervious pavements ^c	0.75	0.95	0.90	0.95
	SFR: ½-acre lots and larger	0.30	0.35	0.35	0.45
	Smaller lots	0.35	0.45	0.40	0.50
	Duplexes	0.35	0.45	0.40	0.50
	MFR: Apartments, townhouses, and condominiums	0.45	0.60	0.50	0.70
	Commercial and Industrial	0.50	0.95	0.50	0.95
Rolling (2-7%)	Woodlands	0.15	0.20	0.20	0.25
	Pasture, grass, and farmland ^b	0.20	0.25	0.25	0.30
	Rooftops and pavement	0.95	0.95	0.95	0.95
	Pervious pavements ^c	0.80	0.95	0.90	0.95
	SFR: ½-acre lots and larger	0.35	0.50	0.40	0.55
	Smaller lots	0.40	0.55	0.45	0.60
	Duplexes	0.40	0.55	0.45	0.60
	MFR: Apartments, townhouses, and condominiums	0.50	0.70	0.60	0.80
	Commercial and Industrial	0.50	0.95	0.60	0.95
Steep (7%+)	Woodlands	0.20	0.25	0.25	0.30
	Pasture, grass, and farmland ^b	0.25	0.35	0.30	0.40
	Rooftops and pavement	0.95	0.95	0.95	0.95
	Pervious pavements ^c	0.85	0.95	0.90	0.95
	SFR: ½-acre lots and larger	0.40	0.55	0.50	0.65
	Smaller lots	0.45	0.60	0.55	0.70
	Duplexes	0.45	0.60	0.55	0.70
	MFR: Apartments, townhouses, and condominiums	0.60	0.75	0.65	0.85
	Commercial and Industrial	0.60	0.95	0.65	0.95

^aWeighted coefficient based on percentage of impervious surfaces and green areas must be selected for each site.

^bCoefficients assume good ground cover and conservation treatment.

^cDepends on depth and degree of permeability of underlying strata.

Note: SFR = Single Family Residential
 MFR = Multi-Family Residential

Table 5-6
DESIGN STORM FREQUENCY FACTORS
FOR PERVIOUS AREA RUNOFF COEFFICIENTS *

Return Period (years)	Design Storm Frequency Factor, X_T
-----	-----
2 to 10	1.0
25	1.1
50	1.2
100	1.25

Reference: Wright-McLaughlin Engineers (1969).

* DUE TO THE INCREASE IN THE DURATION TIME THAT THE PEAK OR NEAR PEAK DISCHARGE RATE IS RELEASED FROM STORMWATER MANAGEMENT SYSTEMS, THE USE OF THESE SHORT DURATION PEAK RATE DISCHARGE ADJUSTMENT FACTORS ARE NOT APPROPRIATE FOR FLOOD ROUTING COMPUTATIONS.

Table 5-7
DEFINITIONS OF FOUR SCS HYDROLOGIC SOIL GROUPS

<u>Hydrologic Soil Group</u>	<u>Definition</u>
A	<u>Low Runoff Potential</u> Soils having high infiltration rates even when thoroughly wetted, consisting chiefly of deep, well-to-excessively-drained sands or gravels. These soils have a high rate of water transmission.
B	<u>Moderately Low Runoff Potential</u> Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.
C	<u>Moderately High Runoff Potential</u> Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, soils with moderate fine to fine texture, or soils with moderate water tables. These soils have a slow rate of water transmission.
D	<u>High Runoff Potential</u> Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with high swelling potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

Reference: USDA, SCS, NEH-4 (1972).

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B	<u>Moderately Low Runoff Potential</u> Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.
C	<u>Moderately High Runoff Potential</u> Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, soils with moderate fine to fine texture, or soils with moderate water tables. These soils have a slow rate of water transmission.
D	<u>High Runoff Potential</u> Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with high swelling potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

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Table 5-8
SCS RUNOFF CURVE NUMBERS FOR SELECTED AGRICULTURAL, SUBURBAN, AND URBAN LAND USE

Land Use Description	Hydrologic Soil Group			
	A	B	C	D
Cultivated Land ^a :				
Without conservation treatment	72	81	88	91
With conservation treatment	62	71	78	81
Pasture or range land:				
Poor condition	68	79	86	89
Good condition	39	61	74	80
Meadow: good condition	30	58	71	78
Wood or Forest Land:				
Thin stand, poor cover, no mulch	45	66	77	83
Good cover	25	55	70	77
Open Spaces, Lawns, Parks, Golf Courses, Cemeteries:				
Good condition: grass cover on 75% or more of the area	39	61	74	80
Fair condition: grass cover on 50% to 75% of the area	49	69	79	84
Poor condition: grass cover on 50% or less of the area	68	79	86	89
Commercial and Business Areas (85% impervious)	89	92	94	95
Industrial Districts (72% impervious)	81	88	91	93
Residential ^c :				
Average lot size Average % Impervious ^d				
1/8 acre or less 65	77	85	90	92
1/4 acre 38	61	75	83	87
1/3 acre 30	57	72	81	86
1/2 acre 25	54	70	80	85
1 acre 20	51	68	79	84
Paved Parking Lots, Roofs, Driveways ^e :	98	98	98	98
Streets and Roads:				
Paved with curbs and storm sewers ^e	98	98	98	98
Gravel	76	85	89	91
Dirt	72	82	87	89
Paved with open ditches	83	89	92	93
Newly graded area (no vegetation established) ^f	77	86	91	94

^aFor a more detailed description of agricultural land use curve numbers, refer to Table 5-9.

^bGood cover is protected from grazing and litter and brush cover soil.

^cCurve numbers are computed assuming the runoff from the house and driveway is directed toward the street with a minimum of roof water directed to lawns where additional infiltration could occur.

^dThe remaining pervious areas (lawn) are considered to be in good pasture condition for these curve numbers.

^eIn some warmer climates of the country, a curve number of 96 may be used.

^fUse for temporary conditions during grading and construction.

Note: These values are for Antecedent Moisture Condition II, and $I_a = 0.25$.

Reference: USDA, SCS, TR-55 (1984).

Table 5-9
SCS RUNOFF CURVE NUMBERS FOR AGRICULTURAL LAND USES

Land Use	Cover		Hydrologic Soil Group			
	Treatment or Practice	Hydrologic Condition	A	B	C	D
Fallow	Straight row	----	77	86	91	94
Row crops	Straight row	Poor	72	81	88	91
	Straight row	Good	67	78	85	89
	Contoured	Poor	70	79	84	88
	Contoured	Good	65	75	82	86
	and terraced	Poor	66	74	80	82
	and terraced	Good	62	71	78	81
Small grain	Straight row	Poor	65	76	84	88
	Straight row	Good	63	75	83	87
	Contoured	Poor	63	74	82	85
	Contoured	Good	61	73	81	84
	Contoured	Good	55	69	78	83
	and terraced	Poor	61	72	79	82
Close seeded legumes ^a or rotation meadow	and terraced	Good	59	70	78	81
	Straight row	Poor	66	77	85	89
	Straight row	Good	58	72	81	85
	Contoured	Poor	64	75	83	85
	and terraced	Good	55	69	78	83
	Contoured	Poor	63	73	80	83
Pasture or range	and terraced	Good	51	67	76	80
		Poor	68	79	86	89
		Fair	49	69	79	84
		Good	39	61	74	80
	Contoured	Poor	47	67	81	88
	Contoured	Fair	25	59	75	83
Meadow	Contoured	Good	6	35	70	79
		Good	30	58	71	78
		Poor	45	66	77	83
Woods		Fair	36	60	73	79
		Good	25	55	70	77
Farmsteads		----	59	74	82	86
Roads (dirt) ^b		----	72	82	87	89
(hard surface) ^b		----	74	84	90	92

^aClose-drilled or broadcast.

^bIncluding right-of-way.

Note: These values are for Antecedent Moisture Condition II, and $I_a = 0.2S$.

Reference: USDA, SCS, NEH-4 (1972).

Table 5-10
SCS CLASSIFICATION OF VEGETATIVE COVERS BY THEIR
HYDROLOGIC PROPERTIES

<u>Vegetative Cover</u>	<u>Hydrologic Condition</u>
Crop rotation	Poor: Contains a high proportion of row crops, small grains, and fallow. Good: Contains a high proportion of alfalfa and grasses.
Native pasture or range	Poor: Heavily grazed or having plant cover on less than 50% of the area. Fair: Moderately grazed; 50-75% plant cover. Good: Lightly grazed; more than 75% plant cover. Permanent Meadow: 100% grass cover.
Woodlands	Poor: Heavily grazed or regularly burned so that litter, small trees, and brush are destroyed. Fair: Grazed but not burned; there may be some litter. Good: Protected from grazing so that litter and shrubs cover the soil.

Reference: USDA, SCS, NEH-4 (1972).

Table 6.8
Curve Numbers for AMC I and AMC III

<i>CN</i> for AMC II	Corresponding <i>CN</i> 's	
	AMC I	AMC III
100	100	100
95	87	98
90	78	96
85	70	94
80	63	91
75	57	88
70	51	85
65	45	82
60	40	78
55	35	74
50	31	70
45	26	65
40	22	60
35	18	55
30	15	50
25	12	43
20	9	37
15	6	30
10	4	22
5	2	13

Source: Lindeburg 1992

Table C-1: SCS Type II Florida-modified Rainfall Distributions

<u>Time (hrs)</u>	<u>Cumulative</u>	<u>Incremental</u>
0.0	0.000	---
0.5	0.006	0.006
1.0	0.012	0.006
1.5	0.018	0.006
2.0	0.025	0.007
2.5	0.032	0.007
3.0	0.039	0.007
3.5	0.046	0.007
4.0	0.054	0.008
4.5	0.062	0.008
5.0	0.071	0.009
5.5	0.080	0.009
6.0	0.089	0.009
6.5	0.099	0.010
7.0	0.110	0.011
7.5	0.122	0.012
8.0	0.135	0.013
8.5	0.149	0.014
9.0	0.164	0.015
9.5	0.181	0.017
10.0	0.201	0.020
10.5	0.226	0.025
11.0	0.258	0.032
11.5	0.307	0.049
12.0	0.606	0.299
12.5	0.718	0.112
13.0	0.757	0.039
13.5	0.785	0.028
14.0	0.807	0.022
14.5	0.826	0.019
15.0	0.842	0.016
15.5	0.857	0.015
16.0	0.870	0.013
16.5	0.882	0.012
17.0	0.893	0.011
17.5	0.903	0.010
18.0	0.913	0.010
18.5	0.922	0.009
19.0	0.931	0.009
19.5	0.939	0.008
20.0	0.947	0.008
20.5	0.955	0.008
21.0	0.962	0.007
21.5	0.969	0.007
22.0	0.976	0.007
22.5	0.983	0.007
23.0	0.989	0.006
23.5	0.995	0.006
24.0	1.000	0.005
		1.000 (Total check)

APPENDIX E

LIST OF THREATENED AND ENDANGERED SPECIES IN ST. JOHNS COUNTY

Florida Natural Areas Inventory

Species and Natural Community Summary for St Johns County

Fish Amphibians Reptiles Birds Mammals Invertebrates Plants Natural Communities
Other

Explanations and Definitions: Global/State Rank, Federal/State Status Occurrence Status

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Occurrence Status
<u>FISH</u>						
<i>Acipenser brevirostrum</i>	shortnose sturgeon	G3	S1	LE	LE	C
<i>Acipenser oxyrinchus oxyrinchus</i>		G3T?	S1	N	N	C
<i>Agonostomus monticola</i>	mountain mullet	G5	S3	N	N	C
<i>Ameiurus brunneus</i>	snail bullhead	G4	S3	N	N	P
<i>Awaous tajasica</i>	river goby	G5	S1S2	N	N	P
<i>Microphis brachyurus</i>	opossum pipefish	G5	S2	N	N	C
<i>Notropis cummingsae</i>	dusky shiner	G5	S4	N	N	P
<i>Petromyzon marinus</i>	sea lamprey	G5	SA	N	N	C
<u>AMPHIBIANS</u>						
<i>Notophthalmus perstriatus</i>	striped newt	G2G3	S2S3	N	N	P
<i>Rana capito</i>	gopher frog	G4	S3	N	LS	P
<u>REPTILES</u>						
<i>Alligator mississippiensis</i>	American alligator	G5	S4	T(S/A)	LS	C
<i>Caretta caretta</i>	loggerhead	G3	S3	LT	LT	C

<i>Chelonia mydas</i>	green turtle	G3	S2	LE	LE	C
<i>Clemmys guttata</i>	spotted turtle	G5	S3?	N	N	C
<i>Crotalus adamanteus</i>	eastern diamondback rattlesnake	G5	S3	N	N	C
<i>Dermochelys coriacea</i>	leatherback	G3	S2	LE	LE	C
<i>Drymarchon corais couperi</i>	eastern indigo snake	G4T3	S3	LT	LT	C
<i>Gopherus polyphemus</i>	gopher tortoise	G3	S3	N	LS	C
<i>Lepidochelys kempii</i>	Kemp's ridley	G1	S1	LE	LE	P
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	G5T3?	S3	N	LS	C

BIRDS

<i>Accipiter cooperii</i>	Cooper's hawk	G4	S3?	N	N	P
<i>Aimophila aestivalis</i>	Bachman's sparrow	G3	S3	N	N	P
<i>Ajaia ajaja</i>	roseate spoonbill	G5	S2S3	N	LS	P
<i>Aramus guarauna</i>	limpkin	G5	S3	N	LS	P
<i>Ardea alba</i>	great egret	G5	S4	N	N	C
<i>Charadrius melodus</i>	pipin plover	G3	S2	LT	LT	C
<i>Egretta caerulea</i>	little blue heron	G5	S4	N	LS	C
<i>Egretta thula</i>	snowy egret	G5	S4	N	LS	P
<i>Egretta tricolor</i>	tricolored heron	G5	S4	N	LS	C
<i>Elanoides forficatus</i>	swallow-tailed kite	G4	S2S3	N	N	C
<i>Eudocimus albus</i>	white ibis	G5	S4	N	LS	C
<i>Falco columbarius</i>	merlin	G5	SU	N	N	P
<i>Falco peregrinus</i>	peregrine falcon	G4	S2	LE	LE	P
<i>Falco sparverius paulus</i>	southeastern American kestrel	G5T3T4	S3?	N	LT	P
<i>Haematopus palliatus</i>	American oystercatcher	G5	S3	N	LS	P

<i>Haliaeetus leucocephalus</i>	bald eagle	G4	S3	LT	LT	C
<i>Ixobrychus exilis</i>	least bittern	G5	S4	N	N	P
<i>Laterallus jamaicensis</i>	black rail	G4	S3?	N	N	P
<i>Mycteria americana</i>	wood stork	G4	S2	LE	LE	C
<i>Nyctanassa violacea</i>	yellow-crowned night-heron	G5	S3?	N	N	P
<i>Nycticorax nycticorax</i>	black-crowned night-heron	G5	S3?	N	N	P
<i>Pandion haliaetus</i>	osprey	G5	S3S4	N	LS**	P
<i>Pelecanus occidentalis</i>	brown pelican	G4	S3	N	LS	P
<i>Picoides borealis</i>	red-cockaded woodpecker	G3	S2	LE	LT	P
<i>Picoides villosus</i>	hairy woodpecker	G5	S3?	N	N	P
<i>Plegadis falcinellus</i>	glossy ibis	G5	S2	N	N	P
<i>Rynchops niger</i>	black skimmer	G5	S3	N	LS	P
<i>Sterna antillarum</i>	least tern	G4	S3	N	LT	C
<i>Sterna caspia</i>	Caspian tern	G5	S2?	N	N	P
<i>Sterna maxima</i>	royal tern	G5	S3	N	N	C
<i>Sterna sandvicensis</i>	sandwich tern	G5	S2	N	N	P
<u>MAMMALS</u>						
<i>Corynorhinus rafinesquii</i>	Rafinesque's big-eared bat	G3	S3?	N	N	P
<i>Eubalaena glacialis</i>	black right whale	G1	S1	LE	LE	C
<i>Mustela frenata olivacea</i>	southeastern weasel	G5T4	S3?	N	N	P
<i>Mustela vison lutensis</i>	Atlantic salt marsh mink	G5T3	S2	N	N	C
<i>Neofiber alleni</i>	round-tailed muskrat	G3	S3	N	N	P

<i>Peromyscus polionotus phasma</i>	Anastasia beach mouse	G5T1	S1	LE	LE	C
<i>Podomys floridanus</i>	Florida mouse	G3	S3	N	LS	P
<i>Sciurus niger shermani</i>	Sherman's fox squirrel	G5T2	S2	N	LS	P
<i>Sorex longirostris longirostris</i>	southeastern shrew	G5T5	S4	N	N	P
<i>Trichechus manatus</i>	manatee	G2?	S2?	LE	LE	C
<i>Ursus americanus floridanus</i>	Florida black bear	G5T2	S2	C	LT**	C

VASCULAR PLANTS

<i>Adiantum tenerum</i>	brittle maidenhair fern	G5	S3	N	LE	R
<i>Asclepias viridula</i>	southern milkweed	G2	S2	N	LT	C
<i>Baptisia calycosa</i> var <i>calycosa</i>	Canby's wild indigo	G2T1	S1	N	N	C
<i>Calamovilfa curtissii</i>	Curtiss' sandgrass	G3	S3	N	LT	R
<i>Calydorea coelestina</i>	Bartram's ixia	G2	S2	N	LE	C
<i>Chamaesyce cumulicola</i>	sand-dune spurge	G2	S2	N	LE	C
<i>Cheiroglossa palmata</i>	hand fern	G4	S2	N	LE	R
<i>Ctenium floridanum</i>	Florida toothache grass	G2	S2	N	N	C
<i>Glandularia maritima</i>	coastal vervain	G3	S3	N	LE	C
<i>Hedyotis nigricans</i> var <i>pulvinata</i>	narrow-leaved bluets	G5T1Q	S1	N	N	C
<i>Helianthus carnosus</i>	lake-side sunflower	G1G2	S1S2	N	LE	C
<i>Litsea aestivalis</i>	pondspice	G3	S2	N	LE	C
<i>Monotropsis reynoldsiae</i>	pigmy pipes	G1Q	S1	N	LE	C
<i>Nemastylis floridana</i>	fall-flowering ixia	G2	S2	N	LE	C
<i>Nolina atopocarpa</i>	Florida beargrass	G3	S3	N	LT	C

<i>Pteroglossaspis ecristata</i>	wild coco	G2G3	S2	N	LT	C
<i>Pycnanthemum floridanum</i>	Florida mountain-mint	G3	S3	N	N	C
<i>Rhynchospora punctata</i>	pineland beakrush	G1?	S1?	N	N	C
<i>Rudbeckia nitida</i>	St. John's Susan	G1G2	S1S2	N	LE	C
<i>Ruellia noctiflora</i>	white-flowered wild petunia	G2G3	S2	N	LE	C
<i>Spiranthes polyantha</i>	green ladies'-tresses	G3G5	S1S2	N	LE	R
<i>Verbesina heterophylla</i>	variable-leaf crownbeard	G2	S2	N	N	C

NATURAL COMMUNITIES

Basin Swamp		G4?	S3	N	N	C
Baygall		G4?	S4?	N	N	C
Beach Dune		G4?	S2	N	N	C
Coastal Grassland		G3	S2	N	N	C
Coastal Interdunal Swale		G3	S2	N	N	C
Coastal Strand		G3?	S2	N	N	C
Depression Marsh		G4?	S3	N	N	C
Dome Swamp		G4?	S3?	N	N	C
Estuarine Tidal Marsh		G4	S4	N	N	C
Floodplain Swamp		G?	S4?	N	N	C
Hydric Hammock		G?	S4?	N	N	C
Maritime Hammock		G4	S2	N	N	C
Mesic Flatwoods		G?	S4	N	N	C
Sandhill		G2G3	S2	N	N	C
Scrubby Flatwoods		G3	S3	N	N	C
Scrub		G2	S2	N	N	C

Xeric Hammock		G?	S3	N	N	C
OTHER						
Bird rookery				N	N	C

** See Rank and Status Explanations and Definitions, Special Animal Listings - Federal and State Status

County Occurrence Status

Vertebrates and Invertebrates:

C = (Confirmed) Occurrence status derived from a documented record in the FNAI data base.

P = (Potential) Occurrence status derived from a reported occurrence for the county or the occurrence lies within the published range of the taxon.

N = (Nesting) For sea turtles only; occurrence status derived from documented nesting occurrences.

Plants, Natural Communities, and Other:

C = (Confirmed) Occurrence status derived from a documented record in the FNAI data base or from a herbarium specimen.

R = (Reported) Occurrence status derived from published reports.

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*Florida Natural Areas Inventory
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Data Current to December 1997

1.0 INTRODUCTION

St. Johns County contracted the team of Jones, Edmunds & Associates, Inc. (JEA), Mark Brown, Ph.D. (University of Florida Center for Wetlands and Water Resources), Richard Hamann, Esq., and Jeff Wade, Esq. (University of Florida College of Law) to develop a buffer zone ordinance which will further protect environmentally sensitive land from development activities. St. Johns County is committed to balancing strong development pressures with protection and preservation of unique, imperiled, and vulnerable habitats.

The county's adopted 1990 Comprehensive Plan Policy F.1.3.7 requires vegetative buffers of at least 25 feet to be maintained between natural drainage courses and developed areas to protect the water quality of the drainage course. This buffer requirement has been expanded through Article IV of the Land Development Code to require a 50-foot minimum natural vegetative upland buffer between development lands and the St. Johns River, Matanzas River, Guana River, Tolomato River, and their associated wetlands and water bodies regardless of any other regulatory agency requirement of a lesser distance. However, in recent years the county has determined that a minimum 25 or 50 foot buffer around wetlands may not be sufficient to protect water quality given the variety of wetlands and other environmentally sensitive lands. Further, the Comprehensive Plan requires that the county protect environmentally sensitive lands (wetlands adjacent to Outstanding Florida Waters (OFWs), Class II waters, Class III waters, Aquatic Preserves, estuaries, wetlands adjacent to shellfish harvesting areas, all major rivers, headwaters to major creeks and estuaries) through the establishment of buffers. Natural hydroperiod of wetlands and similar areas must be maintained according to the type and nature of the wetland or water body being impacted.

1.1 PROJECT GOALS

Upland vegetated buffers are widely regarded as being necessary to protect wetlands, streams, and other aquatic resources. Buffer size requirements, however, have typically been established by political acceptability rather than scientific merit. This often leads to insufficiently buffered aquatic resources and the false perception that resources are being properly buffered from potential impacts. Numerous scientific studies have shown that relatively wide buffers (150 to over 300 feet) are necessary to protect wetland resources. In general, wider buffers are needed to protect wetland-dependent wildlife, whereas more narrow buffers will adequately protect water quality and water quantity. An exception is for steep slopes where a wider buffer is necessary to counteract potentially high erosive forces.

The goal of this project is to determine the appropriate buffer width(s) that will protect environmentally sensitive lands in St. Johns County, based on results published in the scientific literature. Three goals have been identified that will be used to determine buffer sizes for wetlands: protection of water quantity from groundwater drawdown, protection of water quality from erosion and sedimentation, and protection of wildlife habitat through preservation of native vegetation. Buffers that are undersized may place aquatic resources at risk; however, buffers that are larger than needed may unnecessarily deny landowners the use of a portion of their land. Therefore, it is important to be able to determine the minimum buffer width necessary for aquatic resource protection.

This background report has assembled information and data on habitat types within the county, existing buffer ordinances from other municipalities, existing buffer ordinances from federal and state regulations, buffer requirements from scientific literature, and a legal review of buffer zones. The information compiled in this background report has been used to develop a buffer zone ordinance for the county.

1.2 ECOLOGICAL VALUE OF BUFFER ZONES

The differences between developed lands and natural ecological areas are significant, and the more intensely developed, the greater the differences. Frequently on developed lands, native vegetation is removed and replaced with exotic ornamentals, soil drainage is altered, soils become compacted and covered with impervious materials, and wildlife species are displaced due to human activities. The gradient in intensity of noise, waste, temperature, light, structure, and activity from undeveloped to developed lands is intense. In this edge between development and natural areas, water runs off developed areas carrying sediments, nutrients, and pollutants. Noise and activities from development intrudes into the edge and interferes with wildlife activities. Wildlife populations also suffer greatly from predation by domesticated cats and dogs that are allowed to roam unrestrained. Wildlife populations also suffer from predation from animals such as the brown-headed cowbird that flourishes in disturbed habitats and preys on smaller and more vulnerable birds such as the painted bunting, a prized resident of St. Johns County and a species of great concern to the Audubon Society and wildlife biologists.

The area immediately adjacent to wetlands is often a transition zone between wetlands and uplands. It is a zone that exhibits vegetation, soils, and hydrologic characteristics that are similar and intermediate between wetlands and uplands. To protect the values and functions of wetlands, protection must be afforded to the transition zone and adjacent upland. Disturbance and alteration of the transition zone and adjacent uplands result in elimination of wildlife species that utilize both uplands and wetlands, a loss in plant species diversity, and alteration in hydrologic patterns within both the uplands and wetlands.

It has long been regarded that the highest plant species diversity occurs in transition zones between wetlands and uplands. Studies of Florida landscapes indicate that plant species diversity is higher in transition zones than either the adjacent wetland or upland (Clewett et al. 1982, Gross 1987, Hart 1984). Likewise, wildlife species richness also shows direct spatial relationships to the increased diversity of the transition zone. Vickers et al. (1984) found that species richness and abundance of herpetofauna were greater along the edge of six wetlands in north central Florida than in either the wetland or upland habitat. Harris and Vickers (1984) found that virtually all mammals, because of their cursorial mode of locomotion and frequent herbivorous food habits, reside in transition zones. Presumably, these species utilize both uplands and wetlands in their life cycles. When water levels rise in wetlands, wildlife movement to peripheral areas also increases, suggesting the importance of transition zones in providing refuge for wildlife.

The water quality benefits of buffer zones are related to the ability of the zone to abate destructive water velocities and quantities of pollutants carried by surface runoff from uplands into the wetland. Pollutants adhere to sediments and enable sediments to provide a vehicle by which pollutants are transported. Thus, every effort should be made to maintain a vegetative buffer between wetlands

RANK EXPLANATIONS

for FNAI Global Rank, FNAI State Rank, Federal Status, and State Status

The Nature Conservancy and the Natural Heritage Program Network (of which FNAI is a part) define an element as any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature. An element occurrence (EO) is a single extant habitat that sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element.

Using a ranking system developed by The Nature Conservancy and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks to each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element occurrences, estimated abundance (number of individuals for species; area for natural communities), range, estimated adequately protected EOs, relative threat of destruction, and ecological fragility.

Federal and State status information is from the U.S. Fish and Wildlife Service; and the Florida Game and Freshwater Fish Commission (animals), and the Florida Department of Agriculture and Consumer Services (plants), respectively.

FNAI GLOBAL RANK DEFINITIONS

- G1** = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- G2** = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3** = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- G4** = apparently secure globally (may be rare in parts of range)
- G5** = demonstrably secure globally
- GH** = of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
- GX** = believed to be extinct throughout range
- GXC** = extirpated from the wild but still known from captivity or cultivation
- G#?** = tentative rank (e.g., G2?)
- G#G#** = range of rank; insufficient data to assign specific global rank (e.g., G2G3)
- G#T#** = rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)
- G#Q** = rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)
- G#T#Q** = same as above, but validity as subspecies or variety is questioned.
- GU** = due to lack of information, no rank or range can be assigned (e.g., GUT2).
- G?** = not yet ranked (temporary)

FNAI STATE RANK DEFINITIONS

- S1** = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2** = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3** = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- S4** = apparently secure in Florida (may be rare in parts of range)
- S5** = demonstrably secure in Florida

FNAI STATE RANK DEFINITIONS (cont.)

- SH** = of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)

SX	=	believed to be extinct throughout range
SA	=	accidental in Florida, i.e., not part of the established biota
SE	=	an exotic species established in Florida may be native elsewhere in North America
SN	=	regularly occurring, but widely and unreliably distributed; sites for conservation hard to determine
SU	=	due to lack of information, no rank or range can be assigned (e.g., SUT2).
S?	=	not yet ranked (temporary)

LEGAL STATUS

N	=	Not currently listed, nor currently being considered for listing, by state or federal agencies.
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FEDERAL (Listed by the U. S. Fish and Wildlife Service - USFWS)

LE	=	Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species which is in danger of extinction throughout all or a significant portion of its range.
PE	=	Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.
LT	=	Listed as Threatened Species. Defined as any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
PT	=	Proposed for listing as Threatened Species.
C	=	Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological vulnerability and threats to support proposing to list the species as endangered or threatened.
E(S/A)	=	Endangered due to similarity of appearance.
T(S/A)	=	Threatened due to similarity of appearance.

STATE

Animals (Listed by the Florida Game and Fresh Water Fish Commission - FGFWFC)

LE	=	Listed as Endangered Species by the FGFWFC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.
LT	=	Listed as Threatened Species by the FGFWFC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.
LS	=	Listed as Species of Special Concern by the FGFWFC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species.

Plants (Listed by the Florida Department of Agriculture and Consumer Services - FDACS)

LE	=	Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.
LT	=	Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.

Florida Natural Areas Inventory

1010 Thomasville Rd., 200-C
Tallahassee, FL 32303
(850) 224-8207

Federal and State Listed Species, St. Johns County

LEGEND

Element Occurrences:

● Federally Listed Species
(may also be state listed)

○ State Listed Only

▬ Principal highways

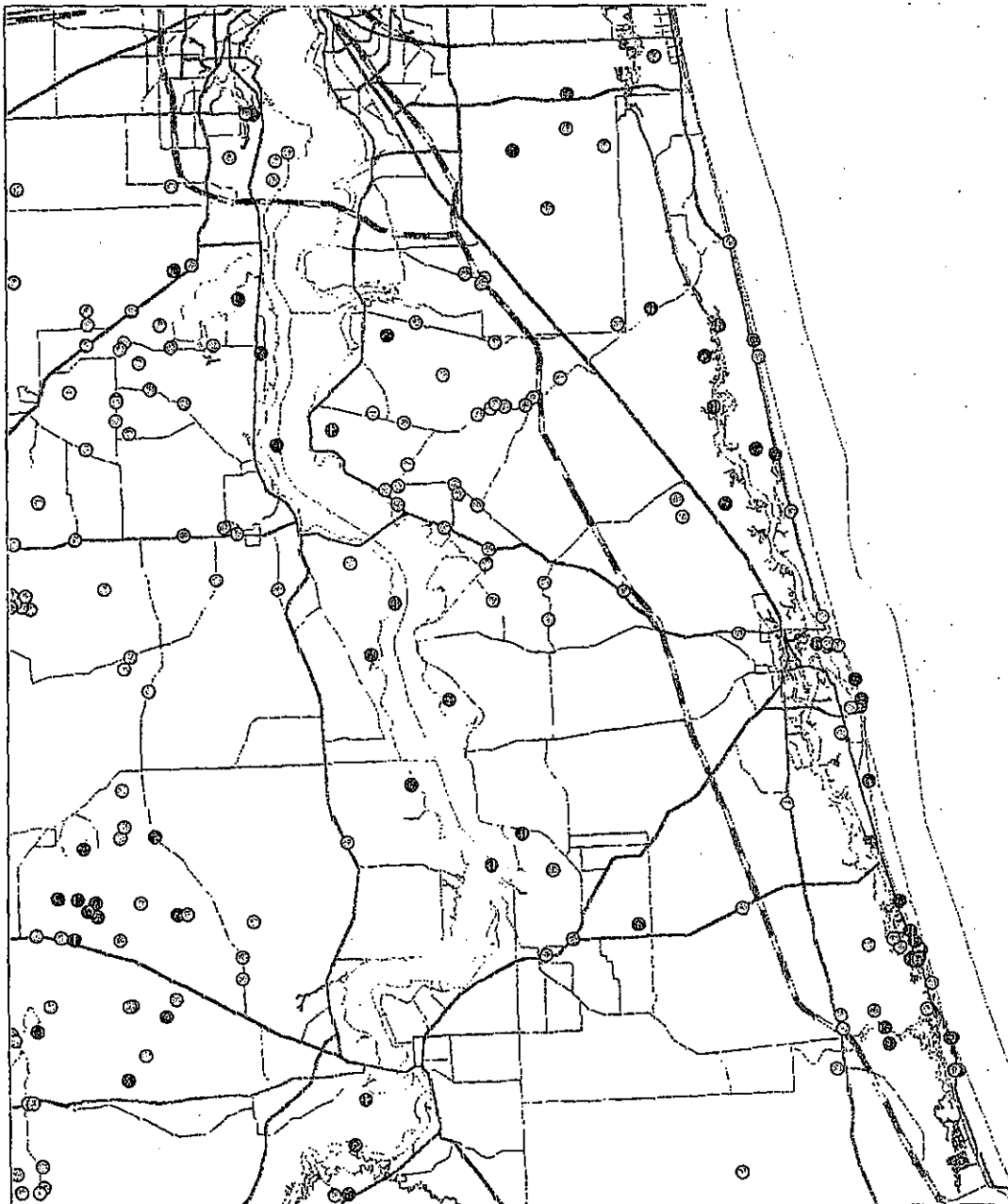
▬ Secondary highways

▬ Local roads

▭ Water



Prepared by J. Oetting
21 May 1999
Data Source: FNAI 2/99



5 0 5 10 15 20 25 30 35 40 45 50 Miles

APPENDIX F

STORMWATER GUIDELINES

40C-42.026 Specific Design and Performance Criteria.

- (1) Retention systems shall:
 - (a) Provide for one of the following:
 - 1. Off-line retention of the first one half inch of runoff or 1.25 inches of runoff from the impervious area, whichever is greater;
 - 2. On-line retention of an additional one half inch of runoff from the drainage area over that volume specified in subparagraph 1., above;
 - 3. On-line retention that provides for percolation of the runoff from the three year, one-hour storm; or

4. On-line retention of the runoff from one inch of rainfall or 1.25 inches of runoff from the impervious area, whichever is greater, for systems which serve an area with less than 40 percent impervious surface and that contain only U.S. Department of Agriculture Soil Conservation Service (SCS) hydrologic group "A" soils.

(b) Provide retention in accordance with one of the following for those systems which have direct discharge to Class I, Class II, Outstanding Florida Waters, or Class III waters which are approved, conditionally approved, restricted, or conditionally restricted for shellfish harvesting:

1. At least an additional fifty percent of the applicable treatment volume specified in subparagraph 1., above. Off-line retention must be provided for at least the first one half inch of runoff or 1.25 inches of runoff from the impervious area, whichever is greater, of the total amount of runoff required to be treated;

2. On-line retention of an additional fifty percent of the treatment volume specified in subparagraph 2., above;

3. On-line retention that provides percolation of the runoff from the three-year, one-hour storm; or

4. On-line retention that provides at least an additional 50 percent of the runoff volume specified in subparagraph 40C-42.026(1)(a)4., above, for systems which serve an area with less than 40 percent impervious surface and that contain only U.S. Department of Agriculture Soil Conservation Service (SCS) hydrologic group "A" soils.

(c) Provide the capacity for the appropriate treatment volume of stormwater specified in paragraphs (a) or (b) above, within 72 hours following the storm event assuming average antecedent moisture conditions. The storage volume must be provided by a decrease of stored water caused only by percolation through soil, evaporation or evapotranspiration.

(d) Be stabilized with pervious material or permanent vegetative cover. Permanent vegetative cover must be utilized, except for pervious pavement systems, when U.S. Department of Agriculture Soil Conservation Service (SCS) hydrologic group "A" soils underlie the retention basin.

(2) Underdrain stormwater management systems shall:

(a) Provide for either of the following:

1. Off-line storage of the first one half inch of runoff or 1.25 inches of runoff from the impervious area, whichever is greater; or

2. On-line storage of an additional one half inch of runoff from the drainage area over that volume specified in subparagraph 1., above.

(b) Provide either of the following for those underdrain systems which have direct discharge to Class I, Class II, Outstanding Florida Waters, or Class III waters which are approved, restricted, or conditionally restricted for shellfish harvesting:

1. At least an additional fifty percent of the applicable treatment volume specified in subparagraph 1., above. Off-line storage must be provided for at least the first one half inch of runoff or 1.25 inches of runoff from the impervious area, whichever is greater, of the total amount of runoff required to be treated; or

2. On-line storage of the runoff from a three-year, one-hour storm or an additional fifty percent of the treatment volume specified in subparagraph 2., above, whichever is greater.

(c) Provide the capacity for the appropriate treatment volume of stormwater specified in paragraphs (a) or (b), above, within 72 hours following a storm event. The storage volume must be

provided by a decrease of stored water caused only by percolation through soil with subsequent transport through the underdrain pipes, evaporation or evapotranspiration.

(d) Provide at least two feet of indigenous soil between the bottom of the stormwater holding area and the underdrain pipe(s).

(e) Be designed with a safety factor of at least two unless the applicant affirmatively demonstrates based on plans, test results, calculations or other information that a lower safety factor is appropriate for the specific site conditions. Examples of how to apply this factor include but are not limited to reducing the design percolation rate by half or designing for the required drawdown within 36 hours instead of 72 hours.

(f) Contain areas of standing water only following a rainfall event.

(g) Be stabilized with permanent vegetative cover.

(h) Include, at a minimum, a capped and sealed inspection and cleanout ports which extend to the surface of the ground at the following locations of each drainage pipe:

1. The terminus; and

2. Every 400 feet or every bend of 45 or more degrees, whichever is less.

(i) Utilize filter fabric or other means used to prevent the soil from moving and being washed out through the underdrain pipe.

(3) Underground exfiltration trench systems shall:

(a) Provide for either of the following:

1. Off-line storage of the first one half inch of runoff or 1.25 inches of runoff from the impervious area, whichever is greater; or

2. On-line storage of an additional one half inch of runoff from the drainage area over that volume specified in subparagraph 1., above.

(b) Provide either of the following for those exfiltration trench systems which have direct discharge to Class I, Class II, Outstanding Florida Waters, or Class III waters which are approved, conditionally approved, restricted, conditionally restricted for shellfish harvesting:

1. At least an additional fifty percent of the applicable treatment volume specified in subparagraph 1., above. Off-line storage must be provided for at least the first one half inch of runoff or 1.25 inches of runoff from the impervious area, whichever is greater, of the total amount of runoff required to be treated; or

2. On-line storage of the runoff from the three-year, one-hour storm or an additional fifty percent of the treatment volume specified in subparagraph 2., above, whichever is greater.

(c) Provide the capacity for the appropriate treatment volume of stormwater specified in paragraphs (a) or (b), above, within 72 hours following a storm event assuming average antecedent moisture conditions. The storage volume must be provided by a decrease of stored water caused only by percolation into the soil.

(d) Be designed with a safety factor of at least two unless the applicant affirmatively demonstrates based on plans, test results, calculations or other information that a lower safety factor is appropriate for the specific site conditions. Examples of how to apply this factor include but are not limited to reducing the design percolation rate by half or designing for the required drawdown within 36 hours instead of 72 hours.

(e) Be designed with a twelve (12) inch minimum pipe diameter.

(f) Be designed with a three (3) foot minimum trench width.

(g) Be designed so that aggregate in the trench is enclosed in filter fabric.

(h) Provide cleanout and inspection structures which extend to the surface of the ground at the inlet and terminus of each pipe. Inlet structures should include sediment sumps.

(i) Be designed so that the invert elevation of the trench must be at least two feet above the seasonal high ground water table elevation unless the applicant demonstrates based on plans, test results, calculations or other information that a alternative design is appropriate for the specific sit conditions.

(j) Be designed so that the system must have the capacity to retain the required treatment volume without considering discharges to ground or surface waters.

(4) Wet detention stormwater management systems shall:

(a) Provide a treatment volume of the greater of the following:

1. First one inch of runoff; or
2. 2.5 inches of runoff from the impervious area.

(b) Be designed so that the outfall structures shall bleed down one-half the volume of stormwater specified in paragraph (a), above, within 48 to 60 hours following a storm event, but no more than one-half of this volume will be discharged within the first 48 hours.

(c) Contain a permanent pool of water sized to provide an average residence time of at least 14 days during the wet season (June - October).

(d)1. Provide a littoral zone to be designed as follows:

a. The littoral zone shall be gently sloped (6:1 or flatter). At least 30 percent of the wet detention system surface area shall consist of a littoral zone. The percentage of littoral zone is based on the ratio of vegetated littoral zone to surface area of the pond at the control elevation.

b. The treatment volume should not cause the pond level to rise more than 18 inches above the control elevation unless the applicant affirmatively demonstrates that the littoral zone vegetation can survive at greater depths.

c. Eighty percent coverage of the littoral zone by suitable aquatic plants is required within the first twenty-four months of completion of the system or as specified by permit conditions.

d. To meet the 80% coverage requirement, planting of the littoral zone is recommended. As an alternative, portions of the littoral zone may be established by placement of wetland top soils (at least a four inch depth) containing a seed source of desirable native plants. When utilizing this alternative, the littoral zone must be stabilized by mulching or other means and at least the portion of the littoral zone within 25 feet of the inlet and outlet structures must be planted.

2. In lieu of the requirements of subparagraph 1., above, the applicant may provide either of the following:

a. At least fifty percent additional permanent pool volume over that specified in paragraph (c), above; or

b. Treatment of the stormwater pursuant to subparagraphs 40C- 42.024(2)(b)2., 3., 4., or 6., F.A.C., prior to the stormwater entering the wet detention pond.

(e) Be designed so that the mean depth of the permanent pool is between 2 and 8 feet and the maximum depth does not exceed 12 feet below the invert of the bleed down device, unless the applicant affirmatively demonstrates that alternative depths will not inhibit the physical, chemical, and biological treatment processes or cause the resuspension of pollutants into the water column due to anaerobic conditions in the water column.

(f) Be designed so the flow path through the pond has an average length to width ratio of at least 2:1. The alignment and location of inlets and outlets should be designed to maximize flow paths in the pond. If short flow paths are unavoidable, the effective flow path should be increased by adding diversion barriers such as islands, peninsulas, or baffles to the pond. Inlet structures shall be designed to dissipate the energy of water entering the pond.

(g) Be designed so that bleed down devices incorporating dimensions smaller than three inches minimum width or less than 20 degrees for "v" notches shall include a device to eliminate clogging. Examples include baffles, grates, and pipe elbows.

(h) Be designed so that bleed down structure invert elevations are at or above the estimated post-development normal ground water table elevation. If the structure is proposed to be set below this elevation, ground water inflow must be considered in the drawdown calculations, calculation of average residence time, estimated normal water level in the pond, and pollution removal efficiency of the system.

(i) Provide for permanent maintenance easements or other acceptable legal instruments to allow for access to and maintenance of the system, including the pond, littoral zone, inlets, and outlets. The easement or other acceptable instrument must cover the entire littoral zone.

(j) Be designed so that the average pond side slope measured between the control elevation and two feet below the control elevation is no steeper than 3:1 (horizontal:vertical).

(k) Wet detention systems which have direct discharge to Class I, Class II Outstanding Florida Waters, or Class III waters which are approved, conditionally approved, restricted, or conditionally restricted for shellfish harvesting shall provide either of the following in addition to the requirements in paragraphs (b), (d), and (e) - (j), above:

1. An additional fifty percent of the applicable treatment volume specified in paragraph (a), above, and an additional fifty percent of the applicable permanent pool volumes specified in paragraphs (c) or subparagraph (d)2., above; or

2. Treatment pursuant to subsections (1), (2), (3) above, or (5) below, prior to discharging into a wet detention pond designed pursuant to paragraphs (a) - (j), above.

(5) Swale systems shall:

(a) Percolate 80% of the runoff from the three year, one-hour storm.

(b) Percolate the runoff from the three-year, one-hour storm for those swale systems which have direct discharge to Class I, Class II, Outstanding Florida Waters, or Class III waters which are approved, conditionally approved, restricted, or conditionally restricted for shellfish harvesting.

(c) Provide the capacity for the given volume of stormwater pursuant to paragraphs (a) or (b), above, and contain no contiguous areas of standing or flowing water within 72 hours following the storm event referenced in paragraphs (a) and (b), above, assuming average antecedent moisture conditions. The storage volume must be provided by a decrease of stored water caused only by percolation through soil, evaporation or evapotranspiration.

(d) Meet the criteria in subsection 40C-42.021(29), F.A.C.

(6) Dry detention systems shall:

(a) Provide off-line detention of the first one inch of runoff or 2.5 inches of runoff from the impervious area, whichever is greater.

Wetland buffers - Alachua County

Geoffrey Sample [GSample@sjrwmd.com]

To:

M

[Chip Ross](#)

Cc:

M

[Mr. Dale L. Martin](#)

Tuesday, January 21, 2020 7:58 A

Commissioner Ross,

To follow up on our discussion Thursday evening, I checked on Alachua County's wetland buffers.

Alachua County adopted wetland buffers in its Comprehensive Plan in 2005, and Land Development Code in 2006, and are:

- Wetlands ½-acre or smaller: 35' minimum, 50' average
- Wetlands over ½-acre: 50' minimum, 75' average (most wetlands fall into this category)
- Wetlands with listed species: 75' minimum, 100' average
- Outstanding Florida Waters (OFW): 100' minimum, 150' buffer

In 2018, these standards were also adopted in their Countywide Water Quality Code (Chapter 77) and are required countywide (including within municipalities).

This past November (2019), they updated our OFW buffer requirements in our Comp Plan to 100' minimum, 200' average.

If you need additional information, you may wish to contact:

Stephen Hofstetter

Natural Resources Program Manager

Alachua County Environmental Protection Department

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Connect with us: [Newsletter](#), [Facebook](#), [Twitter](#), [Instagram](#), [YouTube](#), [Pinterest](#)

We value your opinion. Please take a few minutes to share your comments on the service you received from the District by clicking this [link](#)

Notices

- Emails to and from the St. Johns River Water Management District are archived and, unless exempt or confidential by law, are subject to being made available to the public upon request. Users should not have an expectation of confidentiality or privacy.
- Individuals lobbying the District must be registered as lobbyists (§112.3261, Florida Statutes). Details, applicability and the registration form are available at <http://www.sjrwmd.com/lobbyist/>