VICTORIA PARK

SITE MITIGATION AND MANAGEMENT PLAN

Fresh Water Marshes

Pine Flatwoods

VOLUME I

MAY 1, 2000

VICTORIA PARK

SITE MITIGATION AND MANAGEMENT PLAN

This Site Mitigation and Management Plan is submitted by St. Joe Residential Acquisitions, Inc. in conformity with Condition IV.7 of the Development of Regional Impact Development Order issued by the City of DeLand on May 17, 1999 and the City of Lake Helen on May 20, 1999.

May 1, 2000

CONSULTANTS:

AKERMAN, SENTERFITT & EIDSON, P. A.
CANIN ASSOCIATES
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ACOE PERMIT

DEPARTMENT OF THE ARMY PERMIT

Permittee: ST. JOE RESIDENTIAL ACQUISITIONS, INC./ARVIDA CORPORATION

PERMIT No: 199707347(IP-SS)

Issuing Office : U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, mean the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The permittee is authorized to place fill material over 32.5 acres of waters of the United States (wetlands) to construct a mixed use residential development with a golf course and a commercial/office complex.

The work is to be completed in accordance with the attached plans numbered 199707347(IP-SS) in 5 sheets dated August 9, 1999.

Project Location: The project is located in wetlands at adjacent to County Road 4101 (Martin Luther King, Jr. Beltway), Orange Camp Road, Taylor Road, State Road 472, Blue Lake Road, and Interstate 4. The site is located in Sections 22, 23, 24, 25, 26, 34, 35 and 36, Township 17 South, Range 30 East, Deland, Volusia County, Florida. Latitude 28° 15' 23" North, Longitude 81° 15' 33" West

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on MAY 05 2015. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. Within 60 days of completion of the work authorized and mitigation required, the attached "Self-Certification Statement of Compliance" must be completed and submitted to the U.S. Army Corps of Engineers. Mail the completed form to the Regulatory Division, Enforcement Branch, Post Office Box 4970, Jacksonville, Florida, 32232-0019.

2. The following Reasonable and Prudent Measures to minimize the impacts of incidental take are agreed to by the permittee:

Florida scrub-jays

a. The applicant should avoid the potential of Florida scrub jays to be injured or killed by heavy equipment. Also avoid the destruction of active scrub-jay nest, with or without eggs.

b. Designation of a 110.7 acre scrub conservation area, containing scrub habitat that will be restored and managed, long term, to provide habitat to two Florida scrub-jay territories.

c. An annual monitoring program should take place on the management area to assess the success of the proposed habitat restoration and management techniques.

d. The on-site conservation area should be placed in a conservation easement and the integrity of the preserve habitat protected.

e. The Service should be notified of any unauthorized take of Florida scrub jays.

Eastern Indigo Snake

a. The applicant should avoid the potential of eastern indigo snakes to be injured or killed by heavy equipment. This can be avoided by following the standard protection measure for the indigo snake.

b. Only individuals with permits should attempt to capture the eastern indigo snakes.

c. If eastern indigo is held in captivity it should be released as soon as possible in release sites.

d. Appropriate monitoring should occur.

3. To implement the reasonable and prudent measures noted above, the following terms and conditions are agreed to by the permittee:

Florida scrub jay

a(1). No clearing of vegetation within and immediately adjacent to occupied territory on the project site will take place during the Florida scrub-jay nesting season (typically March 1 through June 30), removing the potential to destroy active nests and kill or injure nestling. Scrub jays are also less likely to display territorial/nest defense behavior during the non-nesting season and therefore more likely to stay away from heavy equipment within their territory.

a(2). Mechanical and fire management can take place in the occupied territory during the scrub-jay nesting season, however the management area should be carefully inspected to locate any active nests and protect the nests from any kind of management that may occur to prevent "take" of scrub-jays.

b The scrub management area will be restored and managed long term, through mechanically thinning of the pine canopy by logging operations and clearing groundcover for open spaces. This will be followed by prescribed burn as detailed in the Management plan for the proposed project, submitted by the applicant on December 15, 1999.

c. A comprehensive monitoring program for the scrub management area will be implemented annually for five years to determine the distribution and status of the resident Florida scrub-jay populations and evaluate their responses to the vegetative communities after mechanical and fire management treatments have been applied.

d. The scrub conservation area is to be placed in a conservation easement and be maintained, in long term, as a natural area in perpetuity.

e. If a dead Florida scrub jay is found on the project site, the specimen should be thoroughly soaked in water and frozen, and the applicant should notify the Jacksonville Field Office, U.S. Fish and Wildlife Service immediately at 904-232-2580.

Eastern Indigo Snake

a. An eastern indigo snake protection/education plan shall be developed by the applicant for all construction personnel to follow. The plan shall be provided to the Service for review and approval at least 30 days prior to any cleaning activities. The educational material for the plan may consist of a combination of posters, videos, pamphlets, and lectures (e.g., an observer trained to identify eastern indigo snakes could use the protection/education plan to instruct construction personnel before any clearing activities occur). Informational signs should be posted throughout the construction site and contain the following information.

- a description of the eastern indigo snake, its habits, and protection under Federal Law;
- instructions not to injure, harm, harass or kill this species;
- directions to cease cleaning activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming clearing and,
- telephone numbers of pertinent agencies to be contacted if a dead eastern indigo snake is encountered. The dead specimen should be thoroughly soaked in water, then frozen.

b. Only an individual who has been either authorized by a section 10(a)(1)(A) permit issued the U.S. Fish and Wildlife Service, or designated as an agent of the State of Florida by the Florida Fish and Wildlife conservation Commission for such activities, is permitted to come in contact with or relocate an eastern indigo snake.

c. If necessary, eastern indigo snakes shall be held in captivity only long enough to transport them to a release site; at no time shall two snakes be kept in the same container during transportation.

d. An eastern indigo snake monitoring report must be submitted to the appropriate Florida Field Office within 60 days of the conclusion of clearing phases. The report should be submitted whether or not eastern indigo snakes are observed. The report should contain the following information:

- any sightings of eastern indigo snakes
- summaries of any relocated snakes if relocation was approved for the project (e.g. locations of where and when they were found and relocated);
- other obligations required by the Florida Fish and Wildlife conservation commission, as stipulated in the permit.

4. The following conservation recommendations to help minimize or avoid adverse effects of the project on the endangered species are agreed to by the permittee:

a. If the scrub management area is to be used for passive recreation (foot trails) signs should be placed at the entrance of the trails to inform and educate the residents of the primary purpose of the scrub management area, to protect the Florida scrub jays and eastern indigo snake. This information should include how human-related disturbances such as domestic pets (particularly cats) and invasive exotic/ornamental vegetation has adverse affects on the scrub jays. Also, signs explaining the fire management and what kind of benefits prescribed fires have on the habitat and in controlling wildfires.

b. If foot trails are to be placed in the scrub management area they should be left in the sandy state not packed with clay or mulched.

5. The attached mitigation plan in 14 sheets is hereby incorporated into and made a part of this permit.

6. The permittee is required to perform mitigation action by Regulatory Specific Conditions number 28 and 29 of permit number 4-127-0369C-ERP, issued by the St. Johns River Water Management District on October 12, 1999.

7. The permittee agrees to provide the Corps of Engineers (Corps) a copy of the recorded easement and any subsequent reports concerning the mitigation and preservation area mentioned in the attached mitigation plan. The easement will be provided to the Corps within 120 days of the issuance date of this permit, which is considered to be the date signed. The easement, as well as all other information and reports submitted with regards to the mitigation area, shall be provided to the U.S. Army Corps of Engineers, Regulatory Division, Enforcement Branch, Post Office Box 4970, Jacksonville, Florida 32232-0019.

8. The permittee agrees that the following uses and/or activities will be prohibited on the preserved lands noted in Special Condition 7.

- Construction or placing buildings, roads, signs, billboards or other advertising, utilities or other structures on or above the ground. Elevated boardwalks, hiking trails and camping areas will be permitted as long as they do not involve any of the other prohibited uses listed below.
- Dumping or placing soil or other substance or material as landfill or dumping or placing of trash, waste or unsightly or offensive material.
- Removing or destroying of trees, shrubs, or other vegetation.
- Excavating, dredging or removing loam, peat, gravel, soil, rocks, or other material substances in such a manner as to affect the surface.
- Surface use, except for purposes that permit the land or water area to remain predominantly in its natural condition.
- Activities that are detrimental to drainage, flood control, water conservation, erosion control, soil conservation, or fish and wildlife habitat preservation.
- Acts or uses detrimental to such retention of land or water areas.
- Acts or uses detrimental to the preservation of the structural integrity or the physical appearance of sites or properties of historical, architectural, or cultural significance.
- Uses for hunting or trapping

9. The permittee agrees to avoid impacts to the Victoria park Overseer's House, an historical sites designated as 8VP0131 by the State Historic Preservation Officer.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, and local authorization required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

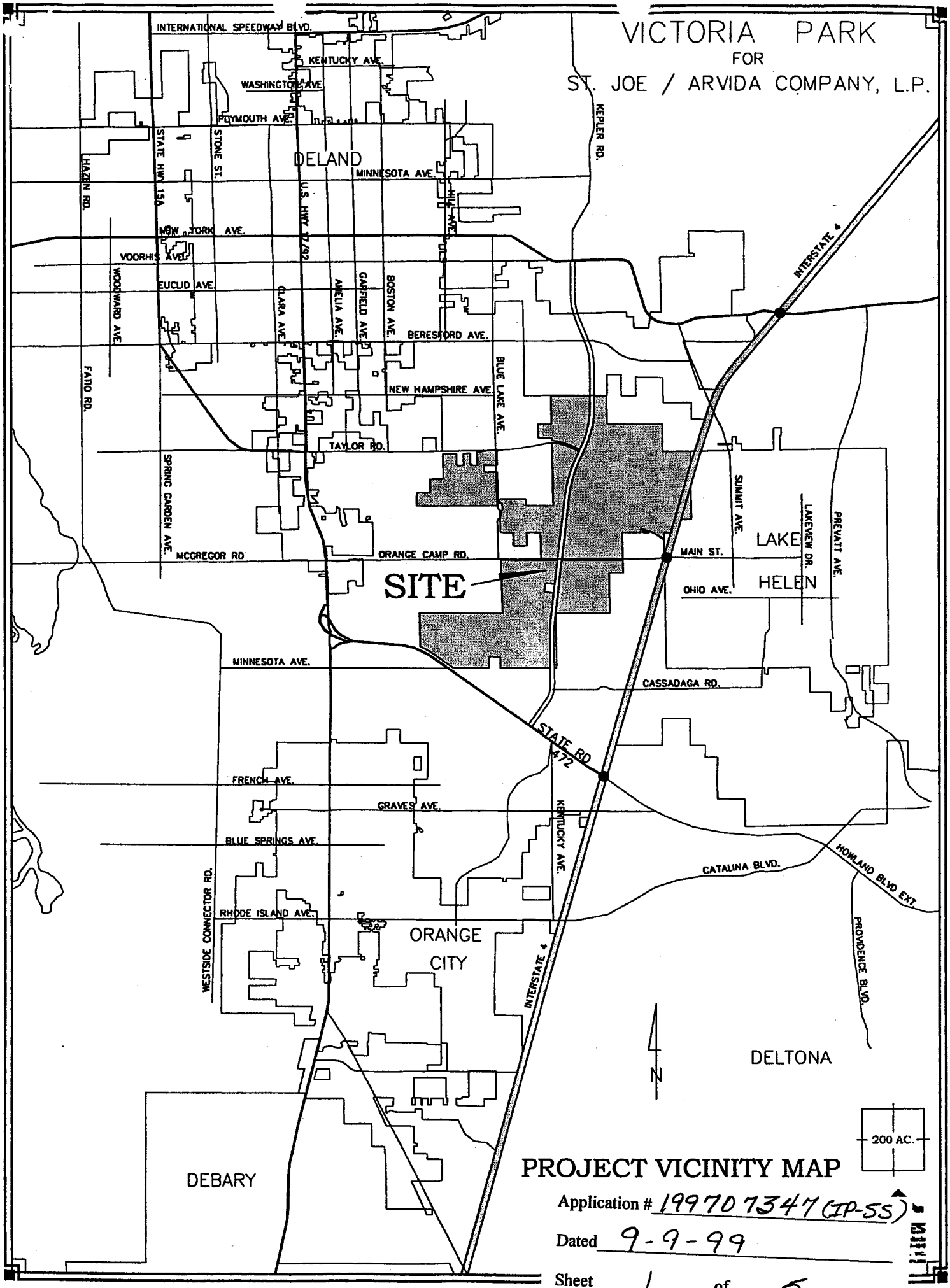
a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

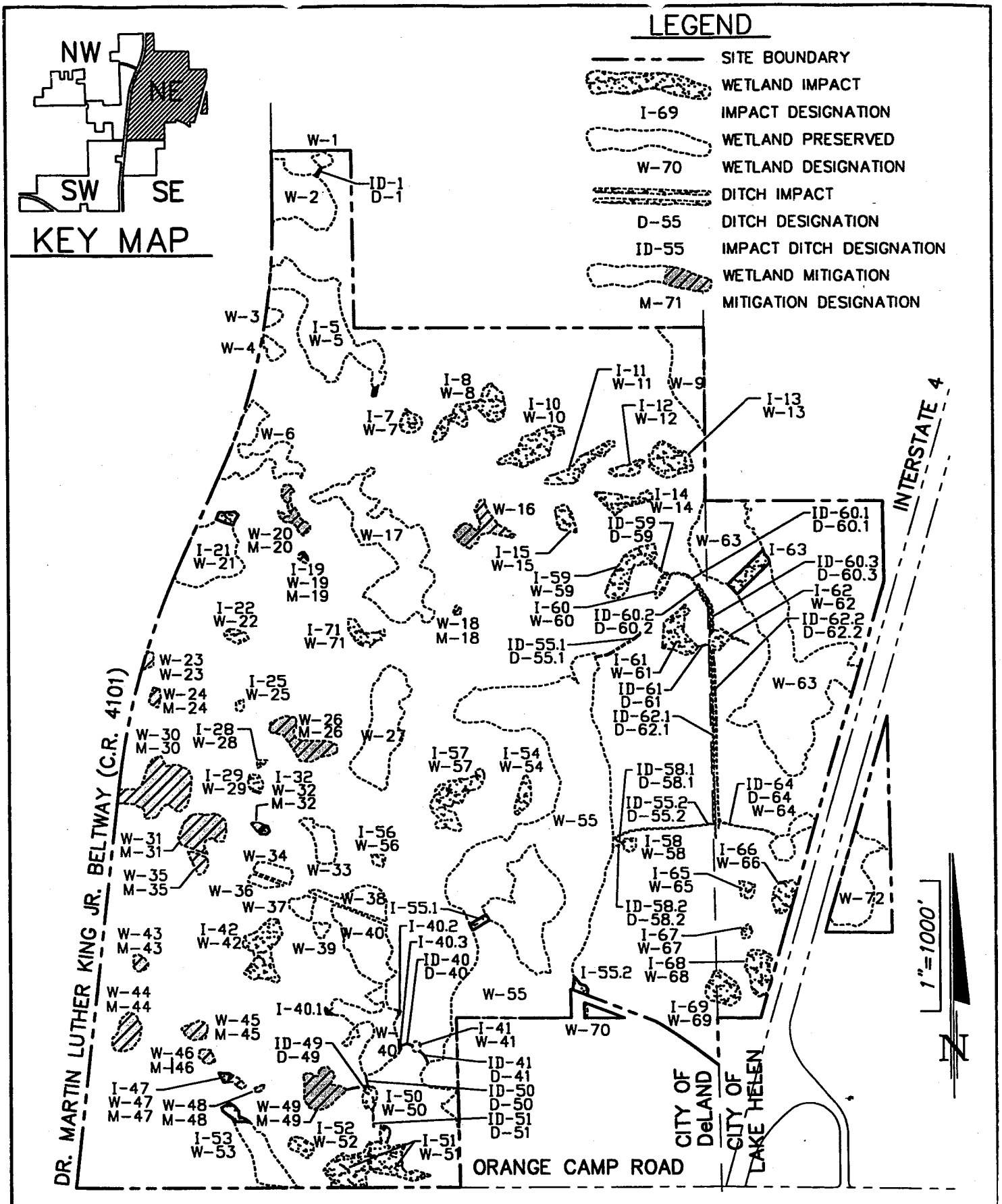


PROJECT VICINITY MAP

Application # 19970734T (CP-55)

Dated 9-9-99

Sheet 1 of 5



DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

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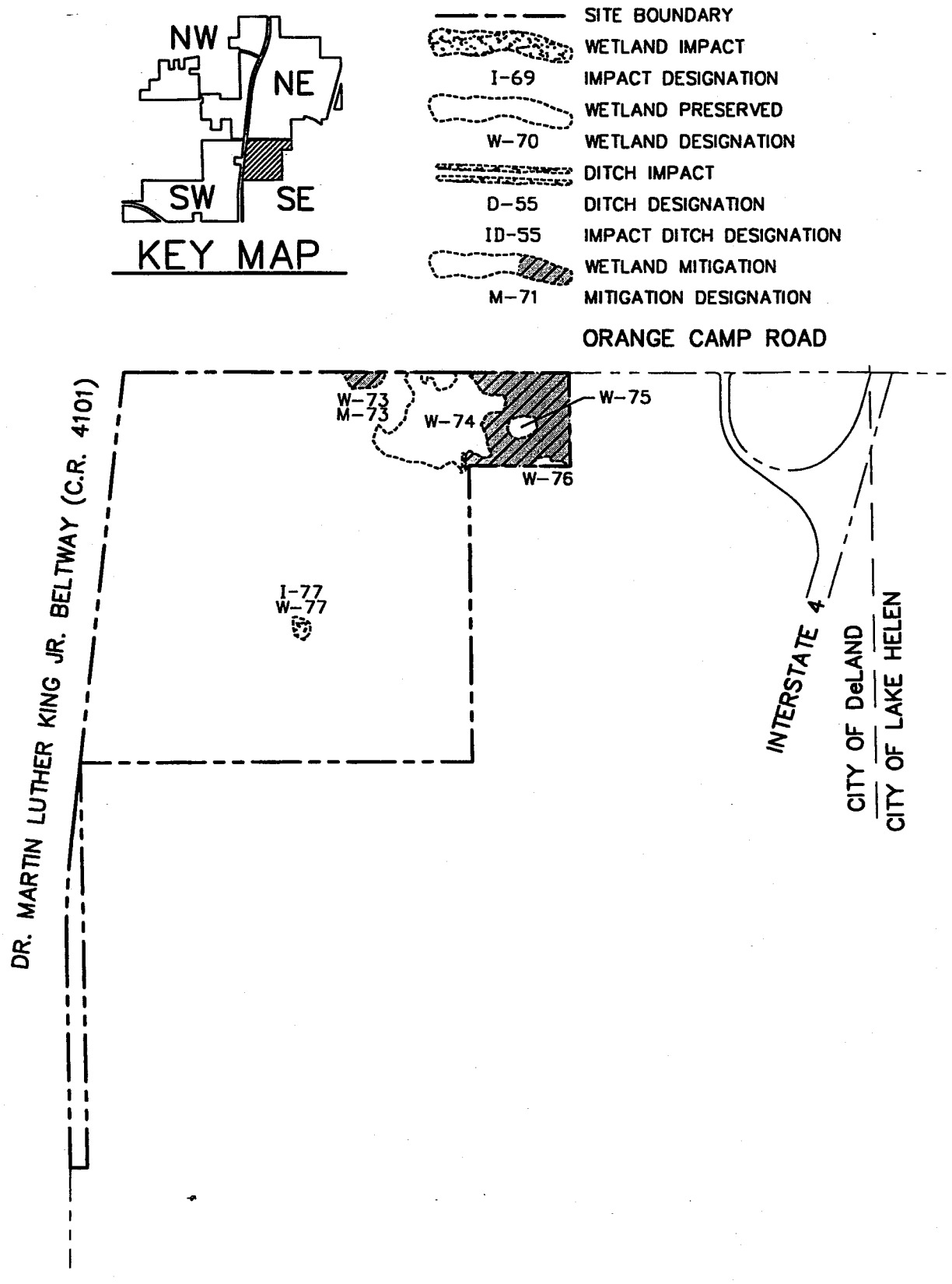
Application # 19970734 7(IP-55)

Dated 9-9-99

Sheet 2 of 5



DONALD W. McINTOSH ASSOCIATES, INC
ENGINEERS PLANNERS SURV
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407)

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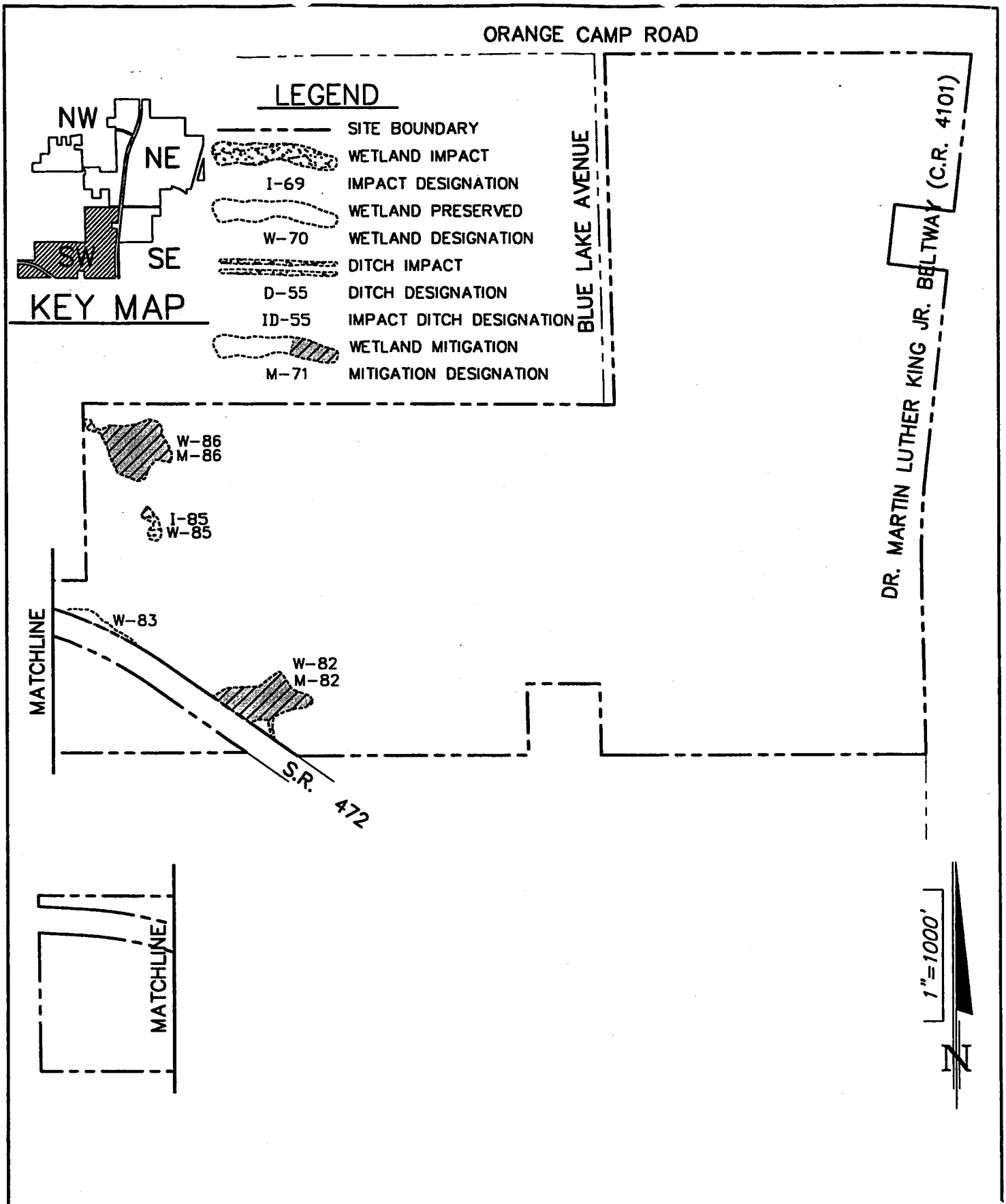
Application: 19970734? (IP-SS)

Dated: 9-9-99

Sheet 3 of 5



DONALD W. McINTOSH ASSOCIATES, INC
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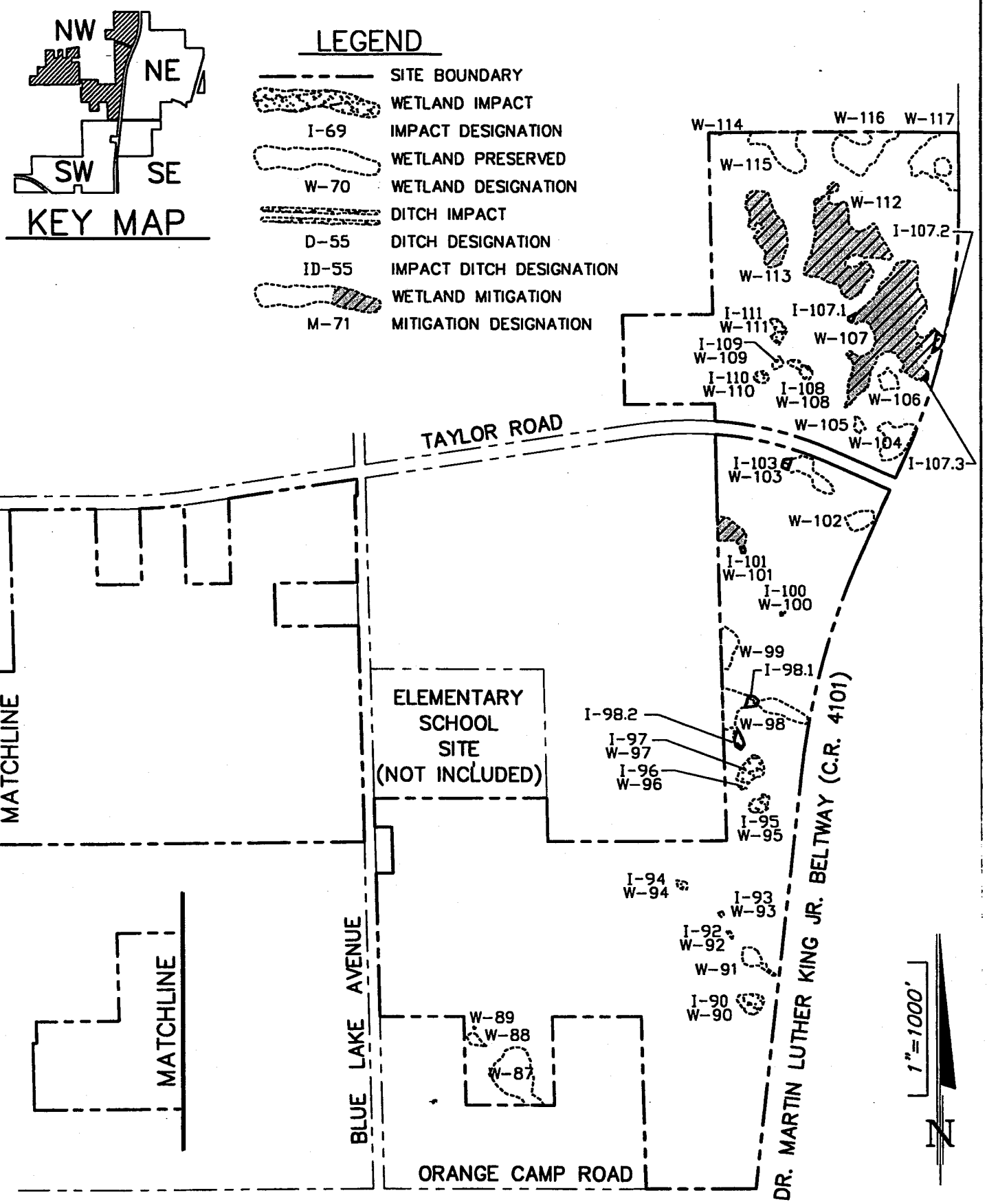
Application: 19970 7347 (IP-55)

Dated: 9-9-99

Sheet 4 of 5



DONALD W. McINTOSH ASSOCIATES, IN
ENGINEERS PLANNERS SUR
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407)

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DATE: 6/25/99	DATE: 6/25/99	DATE: 6/25/99	AS SHOWN	VP(

Application: 199707347 (CIP-SS)

Dated: 9-9-99

Sheet 5 of 5

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE) (DATE) 5/5/00

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

(DISTRICT ENGINEER) (DATE) 5/5/00
Joe R. Miller
Colonel, U.S. Army

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

(TRANSFEREE - SIGNATURE) (DATE)

_____

(NAME-PRINTED)

_____

(ADDRESS)

_____

(CITY, STATE, AND ZIP CODE)

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

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(TRANSFEREE - SIGNATURE) (DATE)

(NAME-PRINTED)

(ADDRESS)

(CITY, STATE, AND ZIP CODE)

Wetlands

The Site Mitigation and Management Plan (SMMP) includes the preservation of approximately **183 acres** of wetlands, of which several will be enhanced. This equates to approximately **85%** of the on-site wetlands. This preservation will consist of **75.5 acres** of forested wetlands and **107.4 acres** of herbaceous wetlands. These preserved wetlands consist of large forested systems that have remained, for the most part, unaltered and the larger, more pristine, herbaceous wetlands **(Appendix 2, Photo 3** and **4).** These wetlands along with several upland preservation areas will be part of on-site wildlife corridors. The proposed wetland preservation/enhancement reference numbers are listed in **Table 8.** All wetland fill impacts and mitigation area plan view and cross-sections are included under separate cover in **Appendix 4.**

The property owners of the Victoria Park project site have designed a SMMP that articulates mitigation and perpetual management. The plan includes the preservation, enhancement, creation and management of wetlands. The majority of the more ecologically important wetlands will be preserved. These consist of wetlands that are large and not disturbed. Many smaller wetlands, which are disturbed to some degree due to past land management practices will enhanced as part of the SMMP.

All mitigation will occur with the goal of maximizing the habitat value for both listed and non-listed wildlife and plant species. Development plans include special efforts and set-asides for the listed wildlife species utilizing this property.

Each wetland at the Victoria Park project site was assessed to determine its overall value for mitigation purposes. Wetland value was based on its existing condition, hydrologic connection, uniqueness, location, size, wildlife utilization and presence of, or use by listed plant or wildlife species. Four of the preserved herbaceous wetlands were utilized as nesting habitat for the Florida Sandhill Crane *(Grus canadensis pratensis)* in 1998. This bird is classified as a threatened species by the Florida Fish and Wildlife Conservation Commission (FFWCC). Some additional protected wading birds, such as the Little Blue Heron *(Egretta caerulea),* are also foraging in many of the more intact and vegetatively diverse wetlands.

Wetland Enhancement

Many of the wetlands have become disturbed due to road and fence construction, invasion of upland pine trees and other undesirable plants, an existing cattle operation, berms associated with an abandoned railroad and drainage ditches. Mitigation in the form of enhancement will occur to approximately **21 wetlands** which total **22 acres** at the Victoria Park Project, especially Wetlands 16, 18, 19, 20, 23, 24, 26, 30, 31, 32, 35, 43, 44, 45, 46, 47, 48, 49, 73, 82 and 86. These wetlands have been altered and are very disturbed.

Enhancement activities include removing cattle, filling drainage ditches, breaching a historical railroad berm to reconnect wetland areas, controlling invasive/exotic plant species such as longleaf pine trees and Carolina willow and establishing upland buffers around each wetland preserve **(Appendix 2, Photo 7 – 14** and **Photo 18).** Removal of the cattle will allow native plant species in the over-grazed wet prairie wetlands to flourish and slowly replace carpet grass, an invasive species that currently dominates many of the shallow herbaceous wetland systems on the site. Water quality in many wetlands will also be increased due to the removal of cattle. The enhanced wetlands will be preserved in perpetuity. The wetlands for which enhancement mitigation is planned are listed in **Table 8.**

Mitigation Plan
In 14 Sheets
Dated 4/10/2000
w/MARS

Table 8. Wetland Preservation and Enhancement Summary.

Wetland Number	FLUCFCS Code	Total Size (ac)	Preservation (ac)	Enhancement Activities to occur in wetland (√)
W1	320	0.29	0.29	
W2	641/411-W	4.08	4.08	
W3	641	0.33	0.33	
W4	641/643	0.41	0.41	
W5	641	7.64	7.61	
W6	643	3.27	3.27	
W9	621	4.08	4.08	
W16	643	1.38	**1.38**	√
W17	641/643	8.77	8.77	
W18	643	0.07	**0.07**	√
W19	643	0.09	**0.07**	√
W20	643	0.72	**0.72**	√
W21	641	4.33	4.08	
W23	641	0.20	**0.20**	√
W24	641	0.23	**0.23**	√
W26	643	1.65	**1.65**	√
W27	643	5.06	5.06	
W30	643	3.55	**3.55**	√
W31	643	1.76	**1.76**	√
W32	643	0.18	**0.12**	√
W33	643	1.15	1.15	
W34	643	0.68	0.68	
W35	643	0.37	**0.37**	√
W36	643	0.32	0.32	
W37	643	0.60	0.60	
W38	643	1.63	1.63	
W39	643	0.24	0.24	
W40	641/643	7.21	7.18	
W43	643	0.25	**0.25**	√
W44	643	1.03	**1.03**	√
W45	643	0.47	**0.47**	√
W46	643	0.23	**0.23**	√
W47	643	0.25	**0.10**	√
W48	643	0.06	**0.06**	√
W49	643	1.55	**1.55**	√
W51	641/643	3.38	0.17	
W53	643	2.42	2.13	
W55	630	43.54	43.19	
W63	621/630/643	21.69	20.82	
W64	641	1.13	1.13	
W70	630	0.37	0.37	
W72	630/643	3.53	3.53	
W73	643	0.55	**0.55**	√
W74	641/643	7.69	7.69	
W75	643	0.53	0.53	
W76	643	0.23	0.23	
W82	641	3.54	**3.54**	√

Mitigation Plan
In 14 Sheets
Dated 4/10/2000

Table 8 continued.

W83	643	0.45	0.45	
W86	641	3.97	**3.97**	√
W87	641/643	2.23	2.23	
W88	643	0.17	0.17	
W89	643	0.01	0.01	
W91	641	0.45	0.45	
W98	643	2.00	1.71	
W99	643	0.68	0.68	
W101	643	0.75	0.73	
W102	643	0.53	0.53	
W103	643	0.92	0.83	
W104	643	1.15	1.15	
W105	643	0.14	0.14	
W106	411-W	0.36	0.36	
W107	411-W/641/643	7.90	7.69	
W112	643	6.12	6.12	
W113	643	2.41	2.41	
W114	643	0.02	0.02	
W115	643	1.62	1.62	
W116	641	1.93	1.93	
W117	411-W	2.18	2.18	
Total		188.7	183	**(21 wetlands enhanced)**

Mitigation Plan
In 14 Sheets
Dated 4/10/2000

Wetland Preservation

Many of the wetlands at the Victoria Park Project have not become as disturbed as those for which enhancement is planned, however the SMMP includes a high degree of maintenance of these wetlands to ensure each wetland remains viable. This includes Wetlands 1, 2, 3, 4, 5, 6, 17, 21, 27, 33, 34, 36, 37, 38, 39, 40, 53, 55, 63, 64, 74, 75, 76, 83, 87, 88, 89, 91, 98, 99, 101, 104, 107, 112, 113, 114, 115 and 116. Approximately **161 acres** of these wetlands will be preserved in perpetuity. This preservation will consist of approximately **75.5 acres** of forested wetlands and approximately **85.5 acres** of herbaceous wetlands. These wetlands consist of the more functional and ecologically sound ecosystems. Although no enhancement mitigation credit is being requested for these wetlands, water quality and plant diversity will be positively affected by the removal of the cattle operation in all areas where cattle currently exist. These wetlands are also listed in **Table 8.**

Forested wetland preservation will involve Wetlands 9, 55, 63, 70, 72, 106, 107 and 117. The proposed forested preservation acreages and reference numbers are also listed in **Table 8**. These wetlands consist of large forested systems that have remained, for the most part, unaltered. These wetlands as well as the previously described enhancement and preservation wetlands are very important ecologically. These wetlands along with several upland preservation areas form an extensive corridor for all wildlife on the site. Wetland dependent species will be able to travel throughout the site by using these networks of corridors that will exist on the property.

The following lists the proposed wetland preservation and enhancement mitigation at the Victoria Park Project site:

Preservation and Enhancement Mitigation:

Wetland 1 (0.29 ac) will be preserved. This wetland is classified as Shrub Brushland (320) by the Florida Land Use, Forms and Classification System, Level III (FLUCFCS) and is hydrologically connected to W2 and to off-site wetlands via a ditch. This wetland is located along the most northern property boundary and is connected to W2 by a upland-cut ditch. Common plant species observed in this community included shiny lyonia, carpet grass, slender spikerush, broomsedge, St. Johns wort, yellow-eyed grass, little-blue maidencane and redroot.

Wetland 2 (4.08 ac.) will be preserved. This wetland is classified as Freshwater Marsh (641) by the FLUFCFS and is just south of W1. Common plant species observed in this wetland included slender spikerush, St. Johns wort, redroot, pickerelweed, carpet grass, maidencane, fragrant water lily, spadderdock, broomsedge, coinwort, little-blue maidencane, yellow-eyed grass and water pennywort. Invasive pines and Carolina willow exist in this wetland as well. This wetland is hydrologically connected to W1 and to off-site wetlands via a ditch. Although no enhancement credit is requested for this wetland, invasive upland pines and undesirable or nuisance species such as Carolina willow will be controlled in this wetland. Water quality will also be improved by removing cattle.

Wetland 3 (0.33 ac.) is classified as Freshwater Marsh (641). This small, isolated wetland is just east of Dr. Martin Luther King, Jr. Beltway and is dominated by spadderdock. St. Johns wort, maidencane, fragrant water lily, yellow-eyed grass and water pennywort were also observed. This wetland will be preserved.

Wetland 4 (0.41 ac.) is isolated and just east of Dr. Martin Luther King, Jr. Beltway and is classified as Wet Prairie (643). Common plant species observed in this shallow depression

included slender spikerush, broomsedge, St. Johns wort, little-blue maidencane, coinwort, maidencane, sundew, yellow eyed grass and water pennywort. This wetland will be preserved.

Wetland 5 (7.61 ac.) is located near the northern limits of the site, just east of the Martin Luther King Jr. Beltway. This **7.64-acre** wetland is classified as Freshwater Marsh (641). Common vegetative species observed in this community included pickerelweed, broomsedge, duck potato, St. Johns wort, maidencane and fragrant water lily. A total of **0.03 acres** (0.4% of the wetland) of impacts are planned for this wetland due to lot layout and site configuration. This wetland is isolated and slightly disturbed from the cattle operation on the site (i.e. grazing, dominance of carpet grass). Removal of the cattle operation will enhance the remaining 99.6% of this wetland. The remainder of the wetland will be preserved.

Wetland 6 (3.27 ac.) is just south of W5. This isolated wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, broomsedge, St. Johns wort, little-blue maidencane and water pennywort. This wetland is also marginally disturbed from the cattle operation and the proximity of Martin Luther King, Jr. Beltway. The preservation and management of this wetland will result in increased water quality and native plant species diversity.

Wetland 9 (4.08 ac.) is classified as Cypress (621). This wetland is located in the northeast corner of the property and is dominated by a dense canopy of bald cypress, slash pine and pond pine. Saw palmetto, cinnamon fern, dahoon holly and wax myrtle were also commonly observed in the understory and groundcover. This wetland is hydrologically connected to W63 and to off-site wetlands. This wetland will be preserved.

Wetland 16 (1.38 ac.) will be preserved and enhanced. This wetland is classified as Wet Prairie (643) and is located just south of W10. Common plant species is this wetland included carpet grass, broomsedge, slender spikerush, St. Johns wort, little-blue maidencane and water pennywort. Upland pines have also invaded this wetland. Removal of cattle and invading pines will enhance this wetland. Herbaceous plant diversity will increase as well.

Wetland 17 (8.77 acres), which is west of W16 will be preserved. This wetland is comprised of deep areas, Freshwater Marsh (641), that are inundated year-round and shallow areas, Wet Prairie (643), that are rarely inundated. Vegetative species observed in the deeper water areas included fragrant water lily, spadderdock and maidencane. Carpet grass, slender spikerush, St. Johns wort, sundew, little-blue maidencane, swamp daisy, maidencane, coinwort, yellow-eyed grass and water pennywort were common in the shallow areas. This wetland is isolated and in good shape, but has become slightly disturbed due to the cattle operation on the site. Although the developer is not requesting enhancement credit for this wetland, removal of the cattle will increase native plant diversity and water quality.

Wetland 18 (0.07 ac.) is just east of W17. This wetland is classified as Wet Prairie (643). This small wetland is dominated by carpet grass. This wetland is isolated and disturbed due to the cattle operation. This wetland will be enhanced and preserved.

Wetland 19 (0.07 ac.) is west of W17. This **0.09-acre** wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes a minor impact **(0.02 ac)** to this wetland due to lot layout, road construction and site configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance. The preserved portion of W19 will be enhanced once cattle are removed from the site. Water quality and plant species diversity will increase in this wetland.

Wetland 20 (0.72 ac.) will be preserved and enhanced due to the removal of cattle. This wetland is classified as Wet Prairie (643) by the FLUCFCS and is located in the northeast quadrant of the site, just north of W19. Carpet grass is very common in this wetland. St. Johns wort, broomsedge, yellow-eyed grass, little-blue maidencane, carpet grass, slender spikerush, coinwort and water pennywort were also observed.

Wetland 21 (4.08 ac.) will be mostly preserved. This **4.33-acre** isolated wetland is just south of W6 and is just east of the Martin Luther King Jr. Beltway and classified as Freshwater Marsh (641). Common vegetative species observed W21 included St. Johns wort, yellow-eyed grass, little-blue maidencane, water pennywort, coinwort, pickerelweed and fragrant water lily. A total of **0.31 acres** (7.2% of the wetland) of impacts are planned for this wetland due to a planned road. This wetland is isolated and disturbed due to the cattle operation and the proximity of the Martin Luther King, Jr. Beltway. The remaining 92.8% of this wetland will be preserved.

Wetland 23 (0.20 ac.) will be preserved and enhanced due to the removal of cattle. This isolated wetland is west of W22 and classified as Wet Prairie (643). Yellow-eyed grass, carpet grass and goldenrod were common in this wetland.

Wetland 24 (0.23 ac.) will be preserved and enhanced due to the removal of cattle. This isolated wetland is just south of W23 and classified as (Wet Prairie) by the FLUCFCS. St. Johns wort, carpet grass, maidencane, little-blue maidencane, fragrant water lily, broomsedge, coinwort and water pennywort are common in this wetland.

Wetland 26 (1.65 ac.) will be preserved and enhanced due to the removal of cattle and removal of invading pine trees. This wetland, which is east of W25 in the northeast quadrant is isolated and classified as Wet Prairie (643). Carpet grass is very common in this wetland. Broomsedge, St. Johns wort, yellow-eyed grass, maidencane, little-blue maidencane, coinwort, slash pine and water pennywort were also observed.

Wetland 27 (5.06 acres) will be preserved. This wetland is classified as Wet Prairie (643) and dominated by St. Johns wort. Other common plant species in this wetland included broomsedge, hatpin, beakrush, sundew, maidencane, carpet grass, slender spikerush, little-blue maidencane, yellow-eyed grass and water pennywort. This wetland is isolated and functioning quite well. The SMMP includes enhancing and preserving this wetland. Wetland 27 is in a high cattle-use area and although no enhancement credit is requested for this wetland, removal of cattle will positively affect the water quality of this system.

Wetland 30 (3.55 ac.) will be preserved and enhanced due to the removal of cattle. This wetland is just south of W24 and classified as Wet Prairie (643) by the FLUCFCS. Carpet grass dominates this isolated wetland. Other observed plant species included slender spikerush, St. Johns wort, broomsedge, goldenrod, dog fennel, hatpin, sundew, little-blue maidencane and water pennywort. Several Sandhill Cranes were observed foraging in this wetland. The preservation and enhancement of this shallow wetland will provide good foraging habitat for cranes.

Wetland 31 (1.76 ac.) will also be preserved and enhanced. This wetland is just east of W30 and classified as Wet Prairie (643) by the FLUCFCS. Carpet grass dominates this isolated wetland as well. Slender spikerush, St. Johns wort, little-blue maidencane, flat-topped goldenrod, coinwort and water pennywort were also observed. A historical railroad berm along W31 will be breached to reconnect this wetland area to W32. This will help to restore the original wetland hydrology of this area. Water quality and native plant diversity and total coverage will be improved in this wetland once cattle are removed.

Wetland 32 (0.12 ac.) is just south of W29 and will be partially impacted **(0.06 ac.).** This **0.18-acre** wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. The site plan includes completely filling a portion of this wetland due to golf course layout and site configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance. The preserved portion of this wetland will be enhanced.

Wetland 33 (1.15 ac.) is east of W32 and will not be impacted. This isolated wetland is classified as Wet Prairie (643). Common plant species observed in this shallow depression included wiregrass, slender spikerush, broomsedge, St. Johns wort, little-blue maidencane, coinwort, maidencane, sundew, yellow eyed grass and water pennywort. Although this wetland appears to be functioning quite well and no enhancement credit is requested, the vegetative diversity and water quality of this system will be positively affected by the removal of cattle from the property.

Wetland 34 (0.68 ac.) will not be impacted. This wetland is southwest of W33 and classified as Wet Prairie (643). This isolated wetland is dominated by St. Johns wort. Maidencane, coinwort, carpet grass and yellow-eyed grass were also observed. Although this wetland appears to be functioning quite well and no enhancement credit is requested, the vegetative diversity and water quality of this system will be positively affected by the removal of cattle from the property. A historical railroad berm along W34 will be breached to reconnect this wetland area to W36. This will help to restore the original wetland hydrology of this area.

Wetland 35 (0.37 ac.) will be preserved and enhanced due to the removal of cattle. This wetland is classified as Wet Prairie (643) and is isolated. This shallow depression is dominated by carpet grass. Maidencane, coinwort and water pennywort were also observed. Water quality, native plant diversity and total coverage will increase in this wetland.

Wetland 36 (0.32 ac.) will be preserved. This wetland is classified as Wet Prairie (643) and is isolated. St. Johns wort, maidencane, pipewort, slender spikerush, coinwort, yellow-eyed grass, broomsedge and water pennywort were common in this wetland. Although no enhancement credit is requested for this wetland, water quality, native plant diversity and total coverage will increase in this wetland.

Wetland 37 (0.60 ac.) will be preserved. This wetland is classified as Wet Prairie (643) and is isolated. Maidencane, St. Johns wort, pipewort, slender spikerush, coinwort, yellow-eyed grass, broomsedge and water pennywort were common in this wetland. Although no enhancement credit is requested for this wetland, water quality, native plant diversity and total coverage will increase in this wetland.

Wetland 38 (1.63 ac.) will be preserved. This wetland is classified as Wet Prairie (643) and is isolated. St. Johns wort, maidencane, pipewort, slender spikerush, coinwort, yellow-eyed grass, broomsedge and water pennywort were common in this wetland. Although no enhancement credit is requested for this wetland, water quality, native plant diversity and total coverage will increase in this wetland. A historical railroad berm along W38 will be breached to reconnect this wetland area to W40. This will help to restore the original wetland hydrology of this area.

Wetland 39 (0.24 ac.) will be preserved. This wetland is classified as Wet Prairie (643) and is isolated. Maidencane, St. Johns wort, pipewort, slender spikerush, coinwort, yellow-eyed grass, broomsedge and water pennywort were common in this wetland. Although no enhancement credit is requested for this wetland, water quality, native plant diversity and total coverage will increase in this wetland.

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Wetland 40 (7.18 acres) is southeast of W32 and will be mostly preserved. This **7.21-acre** wetland is comprised of a Freshwater Marsh (641) and Wet Prairie (643) cover. Dominant vegetative species observed in the deep-water areas included pickerelweed, maidencane and fragrant water lily. St. Johns wort, pipewort, beakrush, sundew, bacopa, red ludwigia, carpet grass, slender spikerush, little-blue maidencane, hatpin, soft rush, sphagnum moss, yellow-eyed grass, coinwort and water pennywort were common in the shallow areas. Hooded pitcher plant, a listed species was also obsrved in this wetland. A total of **0.04 acres** of impacts are planned for this wetland due to road construction. This wetland is functioning quite well, but has become slightly disturbed due to the cattle operation on the site. The area of the planned impact is dominated by carpet grass and bahia grass and is quite disturbed. Removal of cattle and invasive pines will enhance this wetland. This wetland is also very important for Sandhill Cranes. Wetland surveys in 1998 detected a crane nest in this wetland.

Wetland 43 (0.25 ac.) will be preserved and enhanced due to the removal of cattle from the property. This isolated wetland is classified as Wet Prairie (643) and dominated by carpet grass. This wetland is located within the planned Scrub Jay Preserves and is considered to be Type III Jay habitat by USFWS and FFWCC, which are habitats that are within 1/4 of a mile from uplands used by Scrub Jays.

Wetland 44 (1.03 ac.) will be preserved and enhanced. This isolated wetland is classified as Wet Prairie (643) and dominated by carpet grass. Little-blue maidencane, St. Johns wort, water pennywort, coinwort and slender spikerush were also observed. Removal of cattle will increase plant diversity and water quality in this wetland. This wetland is located within the planned Scrub Jay Preserves and is considered to be Type III Jay habitat by USFWS and FFWCC, which are habitats that are within 1/4 of a mile from uplands used by Scrub Jays.

Wetland 45 (0.47 ac.) will be preserved and enhanced. This isolated wetland is dominated by carpet grass and also within the Scrub Preserves. Water quality and plant diversity will also improve in this small wetland.

Wetland 46 (0.23 ac.) will be preserved and enhanced. This isolated wetland is dominated by carpet grass and also within the Scrub Preserves. Water quality and plant diversity will also improve in this small wetland.

Wetland 47 (0.10 acres) is just south of W42. This **0.25-acre** wetland is classified as Wet Prairie (643). Carpet grass dominates this isolated system. Other common plant species in this wetland included slender spikerush, little-blue maidencane, coinwort and water pennywort. The site plan includes impacting **0.10 acres** (40.5%) due to road construction. This wetland is isolated and somewhat disturbed due to the cattle operation. The remaining **0.15 acres** will be preserved and enhanced.

Wetland 48 (0.06 ac.) will be preserved and enhanced as a result of removing cattle from the property. This wetland is very small, isolated and dominated by carpet grass.

Wetland 49 (1.55 ac.) will be preserved and enhanced. This wetland is very disturbed due to the cattle operation and existing drainage ditches. Dominant plant species are carpet grass and frog's fruit. This wetland will be enhanced by the proposed development plan.

Wetland 51 (0.17 ac.) will be partially preserved and enhanced. This **3.38-acre** wetland is very disturbed due to the cattle operation, fill material and drainage ditches. Carpet grass and frog's fruit dominate the areas planned for impact. The preservation area is small, but is the most viable portion of the wetland. St. Johns wort, bacopa water lilys, slender spikerush, yellow-eyed grass and water pennywort dominate the preservation area.

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Wetland 53 (2.13 ac.) will be mostly preserved. This wetland is SW of W52 and just north of Orange Camp Road. This **2.42-acre** wetland is dominated by St. Johns wort and appears to be in good shape. Site plans require **0.29 acres** of impacts due to road construction. Other species observed in this wetland included slender spikerush, water pennywort, maidencane and yellow-eyed grass. The remaining **2.13 acres** of this wetland will be preserved. Although no enhancement credit is requested, water quality will be improved in this wetland.

Wetland 55 (43.19 ac.) will be preserved. This **43.54-acre** wetland is the largest wetland community on the Victoria Park site. This wetland is just east of W54 and classified as Wetland Forested Mixed (630). This wetland is dominated by a mixed canopy of loblolly bay, red maple, slash pine and pond pine. Also observed in the canopy was cabbage palm and sweet gum. The understory and groundcover is mostly comprised of dahoon holly, saw palmetto, cinnamon fern and gallberry. Site plans include impacting approximately **0.35 acres** of this wetland due to road construction and lot layout. The remaining 99% of this wetland will be preserved. Although no enhancement credit is requested for this wetland, water quality will be improved due to removal of the cattle operation.

Wetland 63 (20.82 acres) is just east of W62. This **21.69-acre** wetland is classified as Wetland Forested Mixed (630), Cypress (621) and Wet Prairie (643), but mostly consist of forested wetlands. The wetland forested mixed cover is dominated by a mix of loblolly bay, red maple, slash pine and pond pine. Bald cypress dominates the cypress cover. The understory and groundcover in the forested areas are mostly comprised of dahoon holly, wax myrtle, saw palmetto, cinnamon fern and gallberry. A small portion of W63 is comprised of non-forested, wet prairie community, which resulted due to timbering for a powerline. Vegetation observed in this area included carpet grass, slender spikerush, sundew, little-blue maidencane, soft rush, St. Johns wort, pipewort, hatpins, hooded pitcher-plant *(Serracenia minor),* pale-meadow beauty *(Rhexia marinana),* clubmoss *(Lycopodium* spp.) and water pennywort. Site plans include impacting **0.87 acres (4%)** of this wetland due to road construction necessary to access a large upland area. The remaining 96% of this wetland will be preserved. Water quality in this wetland will be improved as result of removing cattle from the property. Finally, hooded pitcher plant is a listed plant species and is quite common in the non-forested portion of this preservation area.

Wetland 64 (1.13 ac.) is just west of I-4 and will be preserved. This wetland is isolated and classified as Freshwater Marsh (641). Pickerelweed dominates this wetland. This wetland was utilized by nesting cranes in 1998. Removal of the cattle operation will improved water quality in this wetland, as well as prevent cattle from disturbing any future nesting attempts which occurred in 1998.

Wetland 70 (0.37 ac.) will be preserved. This wetland is classified as Wetland Forested Mixed (630). Dominant plant species in this community are very similar to those observed in W55 as these areas were part of the same wetland before dirt road was constructed that now separates these areas.

Wetland 72 (3.53 ac.) will be preserved. This wetland is east of I-4 and is comprised of Wetland Forested Mixed (630) and Wet Prairie (643) cover. This wetland is connected to drainage ditches along I-4. The forested portions are dominated by the same species observed within W55 and the herbaceous portions are dominated by redroot, broomsedge, chain fern, yellow-eyed grass, maidencane, carpet grass, water pennywort and St. Johns wort.

Wetland 73 (0.55 ac.) will be preserved and enhanced. This wetland is classified as Wet Prairie (643) and is just south of Orange Camp Road in the southeast quadrant. This small wetland is isolated and dominated by maidencane, St. Johns wort, coinwort, yellow-eyed grass,

carpetgrass and broomsedge. Removal of invasive species such as Carolina willow and carpet grass will enhance this wetland.

Wetland 74 (7.69 ac.) will be preserved. This wetland, which consist of deep and shallow areas, is located within the southeast quadrant of the property. Maidencane, pickerelweed, broomsedge, sawgrass, water lily, St. Johns wort, little-blue maidencane, wax myrtle, carpet grass, slender spikerush, sand cordgrass, sundew, bacopa, beakrush, red ludwigia, spadderdock, pipewort, carpet grass, water pennywort, coinwort, yellow-eyed grass and a few pond and slash pines were observed in this wetland. This isolated wetland was utilized by nesting Sandhill Cranes in 1998 and is an important component of overall Crane Management Plan.

Wetland 75 (0.53 ac.) will be preserved. This isolated wetland is just east of W74 and dominated by many of the same species within W74. This wetland will provide valuable habitat for wildlife such as the Sandhill Crane.

Wetland 76 (0.23 ac.) will not be impacted. This isolated wetland extends off-site to the property. This wetland is very similar vegetatively to W75 and will provide additional foraging habitat for cranes.

Wetland 82 (3.54 ac.) will be enhanced and preserved. This isolated wetland is located in the southwest quadrant and classified as Freshwater Marsh (641). Common species in this wetland included slender spikerush, water pennywort, maidencane and spadderdock. Little-blue maidencane, coinwort and St. Johns wort were also observed. Water quality and plant diversity will be greatly enhanced due to the removal of cattle from this area. This wetland, which has deep water and shallow areas, will provide substantial habitat for a variety of wildlife species including valuable foraging habitat for Sandhill Cranes.

Wetland 83 (0.45 ac.) will be preserved. Maidencane, wax myrtle, redroot, St. Johns wort, broomsedge, water pennywort and slender spikerush were observed in this wetland. This wetland is connected to a roadside ditch along SR 472.

Wetland 86 (3.97 ac.) will be preserved and enhanced. This wetland is located in the SW quadrant and is quite disturbed. This wetland is comprised of deep and shallow areas (Freshwater Marsh and Wet Prairie cover). Little-blue maidencane, carpet grass, maidencane, water lilys, coinwort, water pennywort, slender spikerush and St. Johns wort were observed in this wetland. Water quality and plant diversity will be greatly enhanced due to the removal of cattle from this area. This wetland will provide substantial habitat for a variety of wildlife species.

Wetland 87 (2.23 ac.) will be preserved. This wetland is comprised of deep areas and shallow areas (Wet Prairie - 643 and Freshwater Marsh - 641). Fragrant water lilys, water shield and spadderdock were common in the deeper areas. Little-blue maidencane, umbrella grass, yellow-eyed grass, carpet grass, sundew, water pennywort, maidencane, St. Johns wort and broomsedge were common in the shallow areas. A Sandhill Crane nest was also observed in this wetland in 1998.

Wetland 88 (0.17 ac.) will be preserved. This wetland is dominated by carpet grass and broomsedge. This isolated wetland will provide foraging habitat for cranes, as well as nesting habitat for other species such as wetland-dependent frogs.

Wetland 89 (0.01 ac.) will be preserved and is vegetatively similar to W88. Although this wetland is very small, it will provide valuable foraging habitat for cranes, as well as nesting habitat for other wetland-dependent species such as frogs. This wetland is classified as Wet Prairie (643).

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Wetland 91 (0.45 ac.) will be preserved. This isolated wetland is dominated by fragrant water lily and maidencane. Other species observed included St. Johns wort, broomsedge, coinwort, water pennywort, carpet grass, slender spikerush, slash pine and yellow-eyed grass. This wetland is functioning quite well. All wetland preservation areas will be provided a 25-foot (on average) upland buffer on average to avoid any secondary impacts.

Wetland 98 (1.71 acres) is just north of W97. This **2.00-acre** wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, St. Johns wort and water pennywort. The site plan includes impacting **0.29 acres** of this wetland due to site configuration and road construction. This wetland is isolated and somewhat disturbed. Site constraints related to road construction require the filling of this wetland. The remaining **1.71 acres** of this wetland will be preserved.

Wetland 99 (0.68 ac.) will be preserved. This isolated wetland is classified as Wet Prairie (643) and comprised of St. Johns wort, carpet grass, broomsedge, coinwort, yellow-eyed grass, slender spikerush, water pennywort and a few small pines. The limits of this wetland community extends off-site.

Wetland 101 (0.73 acres) is northwest of W100. This **0.75-acre** wetland is classified as Wet Prairie (643) and dominated by carpet grass. Other common plant species in this wetland included slender spikerush, St. Johns wort and water pennywort. The site plan includes impacting **0.02 acres (3%)** of this wetland due to site configuration and lot layout. This wetland is isolated and somewhat disturbed. The planned impact is due to lot-layout. The preserved portion of this wetland will provide valuable habitat for species such as leopard frogs.

Wetland 102 (0.53 ac.) is east of W101. This preservation area is classified as Wet Prairie (643). Common plant species in this wetland include St. Johns wort, slender spikerush, maidencane, broomsedge and water pennywort. This wetland is isolated and appears to be functioning quite well.

Wetland 103 (0.83 acres) is northwest of W102 and just south of Taylor Road. This **0.92-acre** wetland is classified as Wet Prairie (643) and dominated by carpet grass and broomsedge. Other plant species observed in this wetland included maidencane, slender spikerush, little-blue maidencane and coinwort. The site plan includes impacting **0.09 acres** of this wetland due to road construction. This wetland is isolated and somewhat disturbed. Its proximity to Taylor Rd. lowers the overall habitat value of this wetland. The preserved portion of this wetland will provide valuable habitat for wildlife, particularly small vertebrates such as leopard frogs.

Wetland 104 (1.15 ac.) will be preserved. This isolated wetland is classified as Wet Prairie (643) and is dominated by St. Johns wort. Broomsedge, carpet grass, pipewort, maidencane, spikerush, water pennywort, coinwort and yellow-eyed grass were also observed.

Wetland 105 (0.14 acres) is just north of Taylor Road. This preservation area is classified as Wet Prairie (643). Common plant species in this wetland include St. Johns wort, carpet grass, spikerush and water pennywort. This wetland appears to be in good condition and functioning well.

Wetland 106 (0.36 ac.) will be preserved. This small isolated wetland area is dominated by slash and pond pines with a sparse groundcover. This wetland is classified as pine flatwoods (411-w). Vehicle traffic is also common through this wetland, which will be eliminated once this wetland is placed into a conservation easement. This will allow existing plants and trees to flourish in this area.

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Wetland 107 (7.69 acres) is just north of W105. This **7.89-acre** isolated wetland is comprised of Pine Flatwoods-Wet (411-W), Freshwater Marsh (641) and Wet Prairie (643), but mostly consist of herbaceous wetlands. The forested portion is dominated a slash pine and pond pine mixed canopy. The understory and groundcover is sparse in the forested areas, but carpet grass, St.Johns wort, broomsedge and pine seedlings were observed. The majority of W107 is comprised of a herbaceous community. Vegetation observed in these areas included St. Johns wort, slender spikerush, sundew, little-blue maidencane, buttonbush, coinwort, carpet grass,and water pennywort in the shallow areas and water lilies, maidencane and pickerelweed in the deeper areas. Site plans include impacting **0.2 acres** of this wetland due to road construction. The remaining 99% of this wetland will be preserved. Invasive pines will also be removed from this wetland.

Wetland 112 (6.12 ac.) will be preserved. This isolated wetland is classified as Wet Prairie (643) and isolated. Dominant vegetation in this wetland is very similar to that observed in W107. This wetland and W107 are very valuable as habitat for many species, including potential nesting habitat for Sandhill Cranes. In addition, this wetland and Wetlands 113, 114, 115, 116, 117 and several acres of adjacent uplands will function as a large contiguous preserve area that connects to off-site natural communities. Invasive pines will also be removed from this wetland.

Wetland 113 (2.41 ac.) will be preserved. This isolated wetland is comprised of Wet Prairie (643) cover. Common vegetation observed in this wetland included St. Johns wort, slender spikerush, little-blue maidencane, coinwort, carpet grass, broomsedge and scattered pines. Invasive pines will also be removed from this wetland.

Wetland 114 (0.02 ac.) will be preserved. The extent of this wetland area is off-site to the north. This small area is connected to a large wetland that exist to the north of the Victoria Park site. Vegetation observed in the on-site portion included carpet grass, yellow-eyed grass and water pennywort. This wetland is classified as Wet Prairie (643).

Wetland 115 (1.62 acres) will be preserved. This isolated wetland is classified as Wet Prairie (643) and located along the northern property limits of the quadrant north of Taylor Road and west of the MLK Beltway. Common vegetation in this wetland included St. Johns wort, slender spikerush, little-blue maidencane, coinwort, carpet grass and broomsedge. Portions of this wetland extent off-site to the north.

Wetland 116 (1.93 ac.) will be preserved. This isolated wetland is classified as (Freshwater Marsh (641) and located along the northern property limits. Common vegetation in this wetland included St. Johns wort, slender spikerush, little-blue maidencane, yellow-eyed grass, coinwort, carpet grass and broomsedge in shallow areas. A deep-water area also exist, which is dominated by fragrant water lilies, in this wetland. Portions of this wetland extent off-site to the north as well.

Wetland 117 (2.18 ac.) will be preserved. This isolated wetland is classified as pine flatwoods (411-w) and also extends off-site. Slash pine and pond pine dominate the canopy of this forested wetland. Plant species observed in the understory and groundcover of this wetland community included dahoon holly, shiny lyonia, St. Johns wort, broomsedge, carpet grass, chain fern, yellow-eyed grass, slender spikerush, water pennywort and redroot.

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Mitigation Monitoring and Maintenance for Wetlands:

The areal coverage of vegetation in the created wetland will be monitored semi-annually. The wetland will be monitored for a period of five (5) years. Annual reports will be submitted to the District. Wetland 74 will serve as a "reference wetland" for the created wetland. A quantitative analysis of the vegetative composition of W74 will be conducted (via the quadrat method). These results will function as a benchmark for the created wetland. In addition, the vegetative composition of Wetlands 50, 66 and 77 will be quantified (via the quadrat method) before being impacted. This information will be included in the first annual monitoring report submitted to the SJRWMD, FFWCC, USFWS and the USACOE.

The records of the monitoring events, which will be provided to the District on an annual basis, will include the following:

1) The date, exact place and time of sampling or measurements.
2) The person responsible for performing the sampling, measurements and analysis.
3) The analytical techniques or methods utilized.
4) The results of such analyses including:
    a) Plant species coverage.
    b) Status of invader species.
    c) A description of any problems encountered during evaluation and proposed solutions.
    d) Panoramic photographs of the created wetland.

The applicant will quantify percent cover of the herbaceous species utilizing the quadrat method. Monitoring of the herbaceous material is to include the use of transects (200 feet in length) with 1-meter by 1-meter quadrat stations every 25 feet. The percentage of areal coverage by each plant species in each quadrat of each transect will be documented during each monitoring event. The data collected from each transect is to be summarized and presented (along with the raw data) in each subsequent monitoring report. This information is to be presented as the total areal coverage by each plant species observed in each transect.

The success criteria for the created wetland will be to obtain a percent vegetation coverage equal to, or exceeding 80 percent of the surface area after a period of five (5) years (following construction), with a positive growth trend through this five year (5) time period. The dominant plant species will be similar to the dominant species detected in the reference wetland.

In addition to the vegetative portion of the monitoring to be conducted, wildlife information will be recorded and photographic documentation will be provided. All wildlife utilization will be noted within and around the creation area. Photographic documentation will consist of panoramic photographs obtained at permanent locations at each monitoring transects as well as random locations throughout the created area. These photographs will be taken during each semi-annual monitoring event and included in annual monitoring reports.

Maintenance to be completed as part of the mitigation plan for the created wetland will be conducted on an as-needed basis (i.e. quarterly). All maintenance will consist of hand-removal and, if necessary, herbicide application where the percent coverage of nuisance species exceeds 10%.

Mitigation Plan
In 14 Sheets
Dated 4/10/2000

Wetland Creation

In addition to the described upland preservation, wetland preservation and wetland enhancement, the developers of the Victoria Park project also plan to create **6.8 acres** of herbaceous wetlands on-site to further off-set wetland habitat loss. This mitigation will be implemented within 90 days of the issuance of the final environmental permit for the project, which will be long before the majority of the planned wetland impacts actually occur. The following provides a detailed description of the wetland creation area.

The wetland creation area will adjacent to Wetland 74 in the SE quadrant of the property. This created area will provide ideal habitat for a variety of wildlife species, including Sandhill Cranes which nested in W74 in 1998. This created wetland area will be part of a large green area in the SE quadrant, which is illustrated on the appended Sandhill Crane Map **(Appendix 1).**

The created wetland will be provided with a transplanted muck layer from Wetlands #50, #66 and #77. The muck will be transferred from these wetlands, once permitted, by scraping the top two (2) feet of these wetland areas with bulldozers and/or front-end loaders and then transporting the material to the created wetland area via truck. The material will then be evenly distributed across the created wetland area to a minimum thickness of 4 plus inches.

The muck will be removed from the donor sites through the use of bulldozers and/or front-end loaders. The donor wetland areas will be de-watered prior to the removal of organic material. The top two feet of organic material will then be removed and then transported to the created wetland. This will occur concurrent with the grading of the wetland creation area.

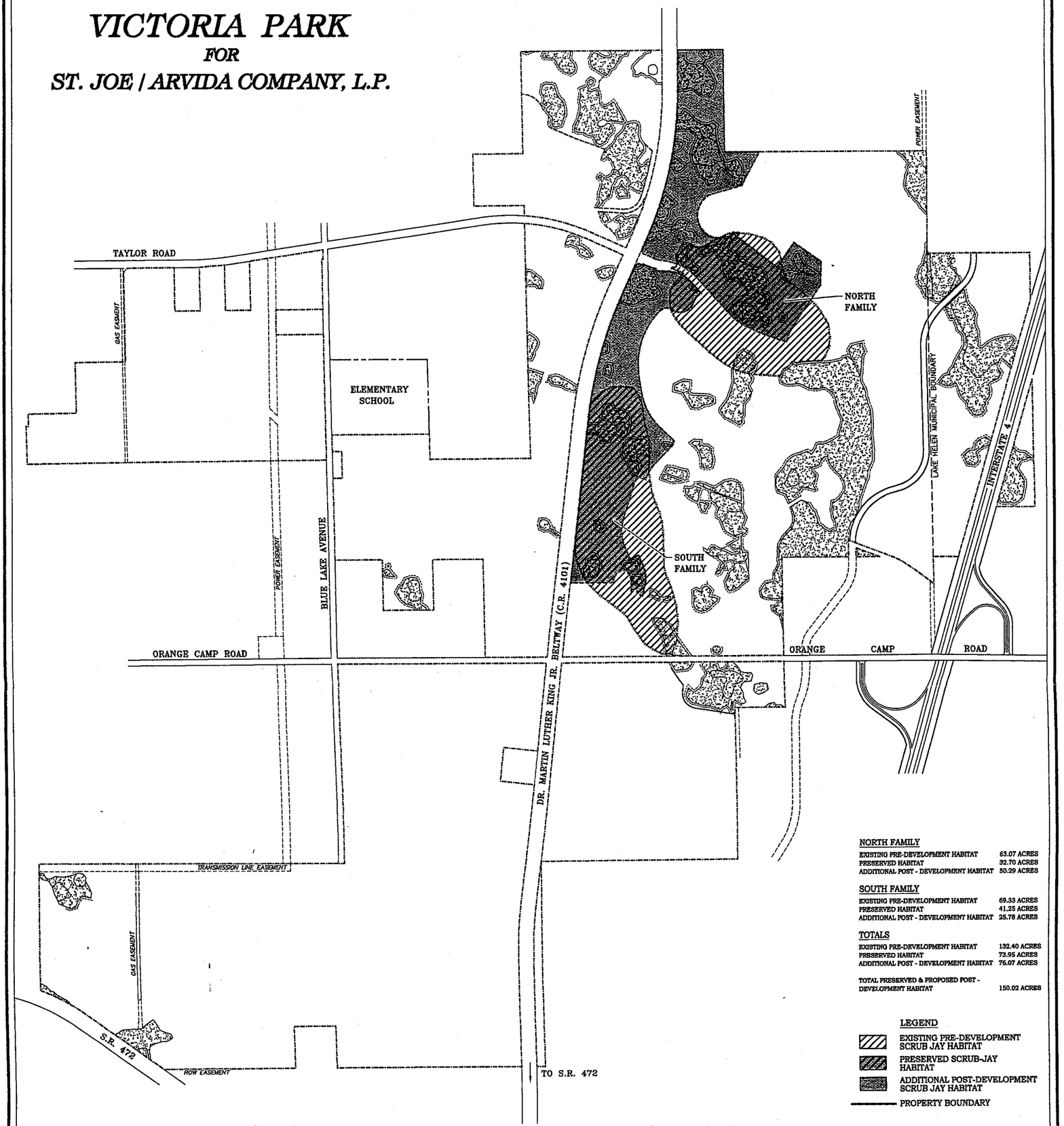
St. Joe/Arvida will plant wax myrtle *(Myrica cerifera)* and dahoon holly *(Ilex cassine)* on 10-foot centers along the perimeter of the created wetland area. These native plant species are ideal for the perimeter planting, as each species is very hardy and can be subjected to both dry and saturated soil conditions. In addition, these species will provide a good buffer between the wetlands and the adjacent development. This buffer effect will be especially valuable for an future nesting Florida Sandhill Cranes in the man-made wetland. The planted wax myrtle and dahoon holly will provide substantial habitat for a variety of other wildlife, particularly small avian species.

The created wetland area will be designed with a variable topography and small hummocks or islands. These varying areas of elevation will results in increased plant diversity in the created wetlands and potentially benefit Sandhill Cranes during fluctuating water levels throughout the nesting season.

The created wetland will be provided with a seed source from the transplanted muck obtained from Wetlands 50, 66 and 77 once permitted. The provided seed source will enhance the recruitment of desirable wetland species. Desirable wetland plants observed in Wetlands 50, 66 and 77 included pickerelweed, maidencane, water hyssop, St. Johns wort, slender spikerush, beakrush, soft rush, yellow-eyed grass, bogrush, little-blue maidencane and water pennywort. This seed source and recruitment from adjacent Wetland 74, combined with the varying topography, will ensure substantial plant diversity. We anticipate that the created wetland will be dominated by maidencane *(Panicum hemitomon),* pickerelweed *(Pontederia lancifolia),* St. Johns wort *(Hypericum fasciculatum),* little-blue maidencane *(Amphicarpum muhlenbergianum),* beakrush *(Rhynchospora* spp.) and yellow-eyed grass *(Xyris* spp.). This in combination with the management plan for the created wetland (i.e. control of exotic/native invasive plants) will result in a viable wetland system that is similar to the adjacent Wetland 74, which was utilized by nesting Florida Sandhill Cranes in 1998.

Mitigation Plan
In 14 Sheets
Dated 4/10/2000

VICTORIA PARK
FOR
ST. JOE / ARVIDA COMPANY, L.P.



NORTH FAMILY

EXISTING PRE-DEVELOPMENT HABITAT	63.07 ACRES
PRESERVED HABITAT	32.70 ACRES
ADDITIONAL POST - DEVELOPMENT HABITAT	50.29 ACRES

SOUTH FAMILY

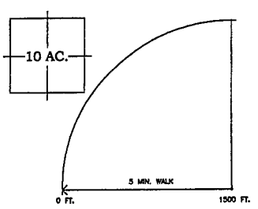
EXISTING PRE-DEVELOPMENT HABITAT	69.33 ACRES
PRESERVED HABITAT	41.25 ACRES
ADDITIONAL POST - DEVELOPMENT HABITAT	25.78 ACRES

TOTALS

EXISTING PRE-DEVELOPMENT HABITAT	132.40 ACRES
PRESERVED HABITAT	73.95 ACRES
ADDITIONAL POST - DEVELOPMENT HABITAT	76.07 ACRES
TOTAL PRESERVED & PROPOSED POST - DEVELOPMENT HABITAT	150.02 ACRES

LEGEND

- EXISTING PRE-DEVELOPMENT SCRUB JAY HABITAT
- PRESERVED SCRUB-JAY HABITAT
- ADDITIONAL POST-DEVELOPMENT SCRUB JAY HABITAT
- PROPERTY BOUNDARY



400' 0 400' 800'
SCALE IN FEET

N

MAP 11
SCRUB JAY MAP

Consultant / Subconsultant List

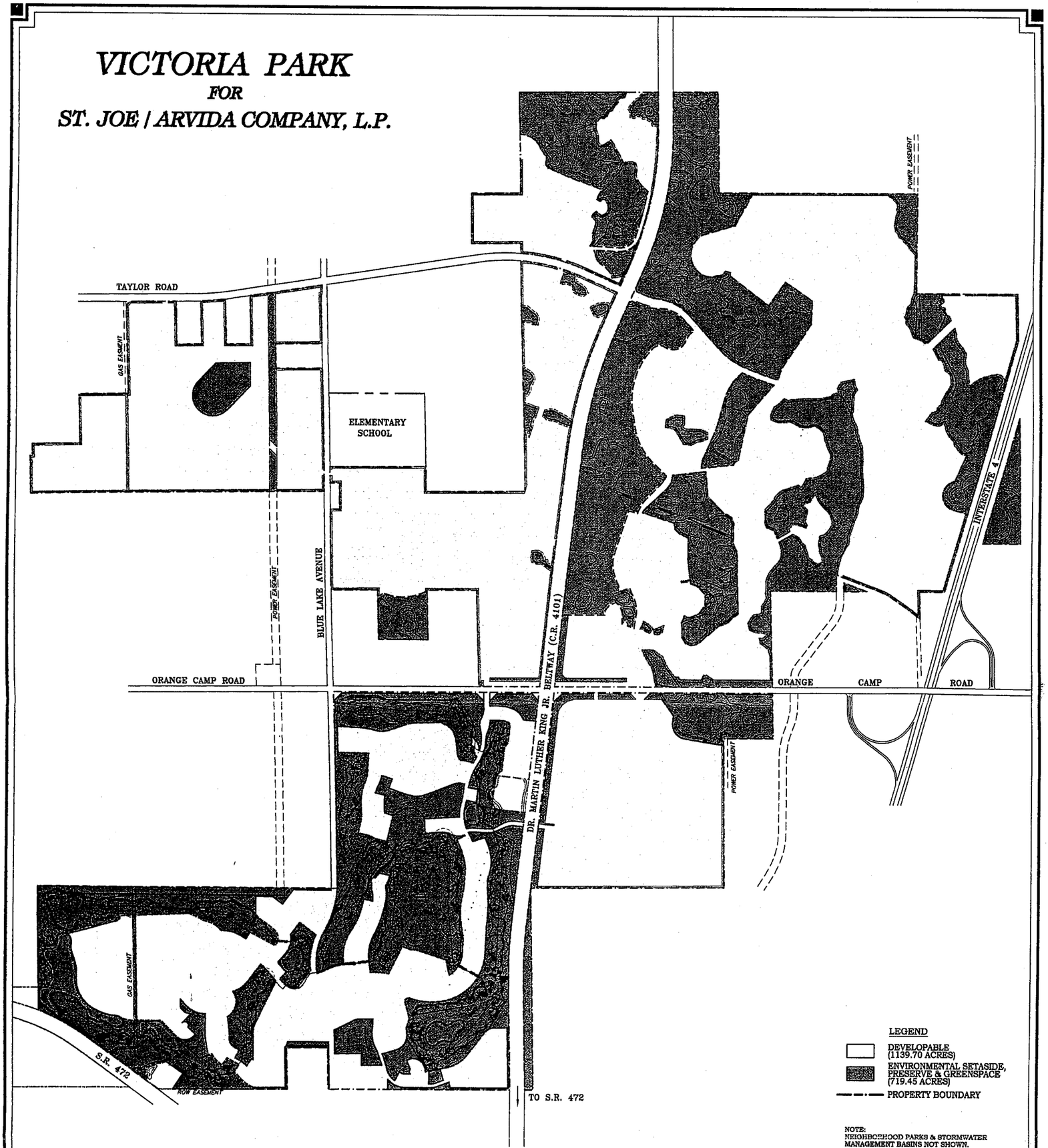
Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

The GOPHER TORTOISE MANAGEMENT PLAN represents a work in progress and shall not be a part of the Victoria Park Development Order. The plan is provided for information purposes only, to reflect the site planning approach. This plan will change evolve to reflect the permitting and final engineering studies currently in progress.

canin associates
Urban & Environmental Planners • Landscape Architects
500 Delaney Avenue, Orlando, Florida 32801 (407) 422-4040

\PLAN\97034\WA\DWG\SCRUB_JAY\MAP11.DWG
REVISED: FEB. 18, 2000

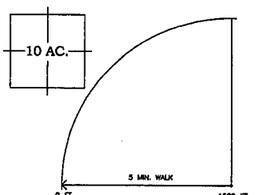
VICTORIA PARK
FOR
ST. JOE / ARVIDA COMPANY, L.P.

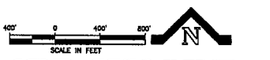


LEGEND

- DEVELOPABLE (1139.70 ACRES)
- ENVIRONMENTAL SETASIDE, PRESERVE & GREENSPACE (719.45 ACRES)
- PROPERTY BOUNDARY

NOTE:
NEIGHBORHOOD PARKS & STORMWATER MANAGEMENT BASINS NOT SHOWN.





MAP 7
ENVIRONMENTAL SETASIDE, PRESERVES & GREENSPACE MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

The ENVIRONMENTAL SETASIDE, PRESERVES & GREENSPACE exhibit represents a work in progress and shall not be a part of the Victoria Park Development Order. This plan is provided for information purposes only, to reflect the site planning approach. This plan will change evolve to reflect the permitting and final engineering studies currently in progress.

canin associates
Urban & Environmental Planners • Landscape Architects
500 Delaney Avenue, Orlando, Florida 32801 (407) 422-4040

MAR. 18,1999 \97034\RAY\DW_\DW_COMBO.DWG
REVISED: FEB. 18, 2000

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
TELEPHONE 904-329-4500 SUNCOM 904-860-4500
TDD 904-329-4450 TDD SUNCOM 860-4450
FAX (Executive) 329-4125 (Legal) 329-4485 (Permitting) 329-4315 (Administration/Finance) 329-4506

SERVICE CENTERS

618 E. South Street
Orlando, Florida 32801
407-897-4300
TDD 407-897-5960

7775 Baymeadows Way
Suite 102
Jacksonville, Florida 32256
904-730-6270
TDD 904-448-7900

PERMITTING:
305 East Drive
Melbourne, Florida 32904
407-984-4940
TDD 407-722-5368

OPERATIONS:
2133 N. [illegible]ham Road
Melbourn
407-752-
TDD 407

PERMITS
DWM.
JSW.
JMF
FILE.

OCTOBER 12, 1999

ST. JOE RESIDENTIAL ACQUISITIONS, INC.
C/O AKERMAN, SENTERFITT/TED R BROWN
255 S. ORANGE AVE.
ORLANDO, FL 32801

C: JIM MODICA
HILBURN HILLSTAT
BILL GARDINER

SUBJECT: Management and Storage of Surface Waters Individual Permit Number 4-127-0369C-ERP

Dear Sir:

Enclosed is your permit as authorized by the Governing Board of the St. Johns River Water Management District on OCTOBER 12, 1999.

This permit is a legal document and should be kept with your other important documents. The attached MSSW/Stormwater As-Built Certification Form should be filled in and returned to the Palatka office within thirty days after the work is completed. By so doing, you will enable us to schedule a prompt inspection of the permitted activity.

In addition to the MSSW/Stormwater As-Built Certification Form, your permit also contains conditions which require submittal of additional information. All information submitted as compliance to permit conditions must be submitted to the Palatka office address.

Permit issuance does not relieve you from the responsibility of obtaining permits from any federal, state and/or local agencies asserting concurrent jurisdiction for this work.

In the event you sell your property, the permit will be transferred to the new owner, if we are notified by you within thirty days of the sale. Please assist us in this matter so as to maintain a valid permit for the new property owner.

Thank you for your cooperation and if this office can be of any further assistance to you, please do not hesitate to contact us.

Sincerely,

Quen Johnson

Quen Johnson, Data Control Technician
Permit Data Services Division

Enclosures: Permit with EN form(s), if applicable
cc: District Permit File

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

PERMIT NO. 4-127-0369C-ERP, **DATE ISSUED:** OCTOBER 12, 1999

A PERMIT AUTHORIZING:

THIS PERMIT IS FOR THE CONCEPTUAL APPROVAL OF AN 1859 ACRE COMPREHENSIVE DEVELOPMENT KNOWN AS VICTORIA PARK. THE CONCEPTUALLY PROPOSED SURFACE WATER MANAGEMENT SYSTEM INCLUDES SINGLE FAMILY RESIDENTIAL DEVELOPMENT WITH 18 AND 9 HOLE GOLF COURSES TOGETHER WITH MULTI-FAMILY AND COMMERCIAL SECTIONS, ASSOCIATED ROADS, AND BOTH WET AND DRY RETENTION BASINS.

LOCATION: Section(s) 22-27, 34,35,36, Township 17 South, Range 30 East

COUNTY: Volusia

ISSUED TO:
(owner)

ST. JOE RESIDENTIAL ACQUISITIONS, INC.
255 S. ORANGE AVE.
ORLANDO, FL 32801

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This Permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated OCTOBER 12, 1999

AUTHORIZED BY: St. Johns River Water Management District

Department of Resource Management Governing Board

By: _____
(DIRECTOR)
JEFF ELLEDGE

By: _____
(ASSISTANT SECRETARY)
HENRY DEAN

ST. JOE RESIDENTIAL ACQUISITIONS, INC.
OCTOBER 12, 1999
4-127-0369C-ERP

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activities and the conditions for undertaking that activity shall constitute a violation of this permit.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner, which do not cause violations of state water quality standards.

4. Prior to and during construction, the permittee shall implement and maintain all erosion and sediment control measures (best management practices) required to retain sediment on-site and to prevent violations of state water quality standards. All practices must be in accordance with the guidelines and specifications in Chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988), which are incorporated by reference, unless a project specific erosion and sediment control plan is approved as part of the permit, in which case the practices must be in accordance with the plan. If site specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediment, beyond those specified in the erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the specifications in Chapter 6 of the Florida Land Development Manual: A Guide To Sound Land and Water Management (Florida Department of Environmental Regulation 1988). The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

5. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

6. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a Construction Commencement Notice Form No. 40C-4.900(3) indicating the actual start date and the expected completion date.

7. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual Status Report Form No. 40C-4.900(4). These forms shall be submitted during June of each year.

8. For those systems which will be operated or maintained by an entity which will require an easement or deed restriction in order to provide that entity with the authority necessary to operate or maintain the system, such easement or deed restriction, together with any other final operation or maintenance documents as are required by Subsections 7.1.1. through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, must be submitted to the District for approval. Documents meeting the requirements set forth in these Subsections of the Applicants Handbook will be approved. Deed restrictions, easements and other operation and maintenance documents which require recordation either with the Secretary of State or the Clerk of the Circuit Court must be so recorded prior to lot or unit sales within the project served by the system, or upon completion of construction of the system, whichever occurs first. For those systems which are proposed to be maintained by county or municipal entities, final operation and maintenance documents must be received by the District when maintenance operation of the system is accepted by the local governmental entity. Failure to submit the appropriate final documents referenced in this paragraph will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system.

9. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government.

10. Within 30 days after completion of construction of the permitted system, or independent portion of the system, the certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing As-Built Certification Form 40C-1.181(13) or 40C-1.181(14) supplied with this permit. When the completed system differs substantially from the permitted plans, any substantial deviations shall be noted and explained and two copies of as-built drawings submitted to the District. Submittal of the completed form shall serve to notify the District that the system is ready for inspection. Statement of completion and certification shall be based on the on-site observation of construction (conducted by the registered professional engineer, or other appropriate individual as authorized by law, or under his her direct supervision) or review of as-built drawings for the purpose of determining if the work was completed in compliance with approved plans and specifications. As-built drawings shall be the permitted drawings revised to reflect any changes made during construction. Both the original and any revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor. The following information, at a minimum, shall be certified on the as-built drawings:

   A. Dimensions and elevations of all discharge structures including all weirs, slots, gates, pumps, pipes, and oil and grease skimmers;

   B. Locations, dimensions, and elevations of all filter, exfiltation, or underdrain systems including cleanouts, pipes, connections to control structures, and points of discharge to the receiving waters;

C. Dimensions, elevations, contours, or cross-sections of all treatment storage areas sufficient to determine stage-storage relationships of the storage area and the permanent pool depth and volume below the control elevation for normally wet systems, when appropriate;

D. Dimensions, elevations, contours, final grades, or cross-sections of the system to determine flow directors and conveyance of runoff to the treatment system;

E. Dimensions, elevations, contours, final grades, or cross-sections of all conveyance systems utilized to convey off-site runoff around the system;

F. Existing water elevations(s) and the date determined; and

G. Elevation and location of benchmark(s) for the survey.

11. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of general condition no. 9 above, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District in accordance with Subsections 7.1.1. through 7.1.4 of the Applicants Handbook: Management and Storage of Surface Waters, accepts responsibility for operation and maintenance of the system. The permit may not be transferred to such an approved operation and maintenance entity until the operation phase of the permit become effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible approved operation and maintenance entity, if different from the permittee. Until the permit is transferred pursuant to Section 7.1 of the Applicants Handbook: Management and Storage of Surface Waters, the permittee shall be liable for compliance with the terms of the permit.

12. Should any other regulatory agency require changes to the permitted system, the permittee shall provide written notification to the District of the changes prior to implementation so that a determination can be made whether a permit modification is required.

13. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40C-4 or Chapter 40C-40, F.A.C.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer or ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Section 40C-1.612, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to the sale conveyance or other transfer.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

20. Pursuant to Section 3.4.2(s) of the MSSW Applicant's Handbook, this permit does not authorize any construction, operation, or alteration of the proposed system.

21. This Conceptual Approval permit is valid for twenty years from the date of issuance, provided that construction of the initial phase of the system is permitted and construction undertaken within two years of the issuance of this conceptural approval permit, and provided that all phases of the system are designed and built in accordance with the terms of the conceptual approval permit and that all required permits for subsequent phases are obtained.

22. The surface water management system is conceptually approved pursuant to the information received by the District on July 14, 1999, as amended by the information received by the District on August 24, 1999.

23. Mitigation is conceptually approved for the specific, limited impacts shown on "Mitigation map" by Canin and Associates that was submitted to the District in Response to request for additional information: Exhibit B to the RAI on July 14, 1999.

24. No specific hydrologic impacts have been reviewed or approved under this conceptual application. Future construction permits will be required to provide data to describe and compare the project's impacts on the pre-development hydrologic regime of each on-site wetland, including contributing basins, normal wet season water elevations, duration of inundation, frequency of inundation, and mean annual flood elevations.

25. Beginning December 1999, the permittee must monitor all site wetlands monthly during December through June for presence and use of sandhill crane nests. Monitoring must include at least one aerial survey over all site wetlands to locate nests. Data describing the extent of sampling effort, nest occurrence, nest status and other appropriate information must

be submitted to the District by the following October for each sample season for the life of this permit.

26. Wetland limits established for this project shall remain valid for the life of Formal Wetland Determination #16-127-0062 or for five years after the issuance date of this permit, whichever occurs later, provided physical conditions on the property do not change so as to alter the wetland boundaries during that period. Changes in surface waters or wetland boundaries resulting from work authorized by a permit pursuant to part IV, chapter 373, F.S., will not be considered as altering the boundary for the purposes of this condition. This condition cannot be modified to allow for a longer duration without modifying or extending the Formal Wetland Determination or otherwise without evaluating thoroughly the limits of onsite surface waters and wetlands.

27. Enhancement of uplands and wetlands through effective (and perpetual) land management techniques is an important part of the conceptual mitigation plan that was approved for this project. Subsequent construction permits that require mitigation for wetland impacts shall be required to implement specific land-management measures (e.g., controlled burns, limited vegetation clearing, or other land management activities) and a maintenance schedule prior to undertaking wetland impacts.

28. No controlled burns, vegetation clearing, or other land management activities may occur within the mitigation preserves (as shown on the approved conceptual mitigation plan) without the District's written approval. The permittee must describe specific land management objectives as well as the techniques, equipment, and implementation schedule for accomplishing the objectives. Sufficient maps (to scale) and aerial photographs (with acetate overlays) shall be provided to describe the specific extent of all proposed land management activities. The District shall have 30 days to review and act on the permittee's work scope upon receipt of a land-management activity request.

29. The permittee must submit a written report (three copies) to summarize all land management work that was acccomplished for the year. The report must be submitted to the District by September 30 of each year for the duration of this permit.

H:\pds\data\palpds4standardconditions.DOC

AS-BUILT CERTIFICATION BY OWNER

Submit this form to the U.S. Army Corps of Engineers, Enforcement Branch, Post Office Box 4970, Jacksonville, Florida 32232-0019. If you have questions regarding this requirement, please contact the Enforcement Section at 904-232-2907.

1. Department of the Army Permit Number:_____

2. Permittee Information:

Name _____

Address _____

_____

3. Project Site Identification:

Physical location/address _____

_____

4. As-Built Certification:

I hereby certify that the authorized work, including any mitigation required by Special Conditions of the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled and conducted by me.

_____ _____

Signature **Name (Please type)**

_____

Street Address

_____

City **State** **ZIP**

_____ _____

Date **Telephone Number**

SJRWMD PERMIT

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

PERMIT NO. 4-127-0369C-ERP, DATE ISSUED: OCTOBER 12, 1999

A PERMIT AUTHORIZING:

THIS PERMIT IS FOR THE CONCEPTUAL APPROVAL OF AN 1859 ACRE COMPREHENSIVE DEVELOPMENT KNOWN AS VICTORIA PARK. THE CONCEPTUALLY PROPOSED SURFACE WATER MANAGEMENT SYSTEM INCLUDES SINGLE FAMILY RESIDENTIAL DEVELOPMENT WITH 18 AND 9 HOLE GOLF COURSES TOGETHER WITH MULTI-FAMILY AND COMMERCIAL SECTIONS, ASSOCIATED ROADS, AND BOTH WET AND DRY RETENTION BASINS.

LOCATION: Section(s) 22-27, 34,35,36, Township 17 South, Range 30 East

COUNTY: Volusia

ISSUED TO:
(owner)

ST. JOE RESIDENTIAL ACQUISITIONS, INC.
255 S. ORANGE AVE.
ORLANDO, FL 32801

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PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated OCTOBER 12, 1999

AUTHORIZED BY: St. Johns River Water Management District

Department of Resource Management Governing Board

By: _____
(DIRECTOR)
JEFF ELLEDGE

By: _____
(ASSISTANT SECRETARY)
HENRY DEAN

ST. JOE RESIDENTIAL ACQUISITIONS, INC.
OCTOBER 12, 1999
4-127-0369C-ERP

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activities and the conditions for undertaking that activity shall constitute a violation of this permit.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner, which do not cause violations of state water quality standards.

4. Prior to and during construction, the permittee shall implement and maintain all erosion and sediment control measures (best management practices) required to retain sediment on-site and to prevent violations of state water quality standards. All practices must be in accordance with the guidelines and specifications in Chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988), which are incorporated by reference, unless a project specific erosion and sediment control plan is approved as part of the permit, in which case the practices must be in accordance with the plan. If site specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediment, beyond those specified in the erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the specifications in Chapter 6 of the Florida Land Development Manual: A Guide To Sound Land and Water Management (Florida Department of Environmental Regulation 1988). The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

5. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

6. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a Construction Commencement Notice Form No. 40C-4.900(3) indicating the actual start date and the expected completion date.

7. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an annual Status Report Form No. 40C-4.900(4). These forms shall be submitted during June of each year.

8. For those systems which will be operated or maintained by an entity which will require an easement or deed restriction in order to provide that entity with the authority necessary to operate or maintain the system, such easement or deed restriction, together with any other final operation or maintenance documents as are required by Subsections 7.1.1. through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, must be submitted to the District for approval. Documents meeting the requirements set forth in these Subsections of the Applicants Handbook will be approved. Deed restrictions, easements and other operation and maintenance documents which require recordation either with the Secretary of State or the Clerk of the Circuit Court must be so recorded prior to lot or unit sales within the project served by the system, or upon completion of construction of the system, whichever occurs first. For those systems which are proposed to be maintained by county or municipal entities, final operation and maintenance documents must be received by the District when maintenance operation of the system is accepted by the local governmental entity. Failure to submit the appropriate final documents referenced in this paragraph will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system.

9. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government.

10. Within 30 days after completion of construction of the permitted system, or independent portion of the system, the certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing As-Built Certification Form 40C-1.181(13) or 40C-1.181(14) supplied with this permit. When the completed system differs substantially from the permitted plans, any substantial deviations shall be noted and explained and two copies of as-built drawings submitted to the District. Submittal of the completed form shall serve to notify the District that the system is ready for inspection. Statement of completion and certification shall be based on the on-site observation of construction (conducted by the registered professional engineer, or other appropriate individual as authorized by law, or under his her direct supervision) or review of as-built drawings for the purpose of determining if the work was completed in compliance with approved plans and specifications. As-built drawings shall be the permitted drawings revised to reflect any changes made during construction. Both the original and any revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor. The following information, at a minimum, shall be certified on the as-built drawings:

   A. Dimensions and elevations of all discharge structures including all weirs, slots, gates, pumps, pipes, and oil and grease skimmers;

   B. Locations, dimensions, and elevations of all filter, exfiltation, or underdrain systems including cleanouts, pipes, connections to control structures, and points of discharge to the receiving waters;

C. Dimensions, elevations, contours, or cross-sections of all treatment storage areas sufficient to determine stage-storage relationships of the storage area and the permanent pool depth and volume below the control elevation for normally wet systems, when appropriate;

D. Dimensions, elevations, contours, final grades, or cross-sections of the system to determine flow directors and conveyance of runoff to the treatment system;

E. Dimensions, elevations, contours, final grades, or cross-sections of all conveyance systems utilized to convey off-site runoff around the system;

F. Existing water elevations(s) and the date determined; and

G. Elevation and location of benchmark(s) for the survey.

11. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of general condition no. 9 above, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District in accordance with Subsections 7.1.1. through 7.1.4 of the Applicants Handbook: Management and Storage of Surface Waters, accepts responsibility for operation and maintenance of the system. The permit may not be transferred to such an approved operation and maintenance entity until the operation phase of the permit become effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible approved operation and maintenance entity, if different from the permittee. Until the permit is transferred pursuant to Section 7.1 of the Applicants Handbook: Management and Storage of Surface Waters, the permittee shall be liable for compliance with the terms of the permit.

12. Should any other regulatory agency require changes to the permitted system, the permittee shall provide written notification to the District of the changes prior to implementation so that a determination can be made whether a permit modification is required.

13. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40C-4 or Chapter 40C-40, F.A.C.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer or ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Section 40C-1.612, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to the sale conveyance or other transfer.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

20. Pursuant to Section 3.4.2(s) of the MSSW Applicant's Handbook, this permit does not authorize any construction, operation, or alteration of the proposed system.

21. This Conceptual Approval permit is valid for twenty years from the date of issuance, provided that construction of the initial phase of the system is permitted and construction undertaken within two years of the issuance of this conceptural approval permit, and provided that all phases of the system are designed and built in accordance with the terms of the conceptual approval permit and that all required permits for subsequent phases are obtained.

22. The surface water management system is conceptually approved pursuant to the information received by the District on July 14, 1999, as amended by the information received by the District on August 24, 1999.

23. Mitigation is conceptually approved for the specific, limited impacts shown on "Mitigation map" by Canin and Associates that was submitted to the District in Response to request for additional information: Exhibit B to the RAI on July 14, 1999.

24. No specific hydrologic impacts have been reviewed or approved under this conceptual application. Future construction permits will be required to provide data to describe and compare the project's impacts on the pre-development hydrologic regime of each on-site wetland, including contributing basins, normal wet season water elevations, duration of inundation, frequency of inundation, and mean annual flood elevations.

25. Beginning December 1999, the permittee must monitor all site wetlands monthly during December through June for presence and use of sandhill crane nests. Monitoring must include at least one aerial survey over all site wetlands to locate nests. Data describing the extent of sampling effort, nest occurrence, nest status and other appropriate information must

be submitted to the District by the following October for each sample season for the life of this permit.

26. Wetland limits established for this project shall remain valid for the life of Formal Wetland Determination #16-127-0062 or for five years after the issuance date of this permit, whichever occurs later, provided physical conditions on the property do not change so as to alter the wetland boundaries during that period. Changes in surface waters or wetland boundaries resulting from work authorized by a permit pursuant to part IV, chapter 373, F.S., will not be considered as altering the boundary for the purposes of this condition. This condition cannot be modified to allow for a longer duration without modifying or extending the Formal Wetland Determination or otherwise without evaluating thoroughly the limits of onsite surface waters and wetlands.

27. Enhancement of uplands and wetlands through effective (and perpetual) land management techniques is an important part of the conceptual mitigation plan that was approved for this project. Subsequent construction permits that require mitigation for wetland impacts shall be required to implement specific land-management measures (e.g., controlled burns, limited vegetation clearing, or other land management activities) and a maintenance schedule prior to undertaking wetland impacts.

28. No controlled burns, vegetation clearing, or other land management activities may occur within the mitigation preserves (as shown on the approved conceptual mitigation plan) without the District's written approval. The permittee must describe specific land management objectives as well as the techniques, equipment, and implementation schedule for accomplishing the objectives. Sufficient maps (to scale) and aerial photographs (with acetate overlays) shall be provided to describe the specific extent of all proposed land management activities. The District shall have 30 days to review and act on the permittee's work scope upon receipt of a land-management activity request.

29. The permittee must submit a written report (three copies) to summarize all land management work that was acccomplished for the year. The report must be submitted to the District by September 30 of each year for the duration of this permit.

H:\pds\data\palpds4standardconditions.DOC

FFWCC PERMIT

January 10, 2000

OFFICE OF ENVIRONMENTAL SERVICES
BRADLEY J. HARTMAN, DIRECTOR
(850)488-6661 TDD (850)488-9542
FAX (850)922-5679

Mr. Bill Gardiner
St. Joe/Arvida Co., LP
1800 Pembrook Drive, Suite 320
Orlando, FL 32810

Re: Gopher Tortoise Incidental Take Permit
#VOL-20, Volusia County

Dear Mr. Gardiner:

Enclosed is permit VOL-20 for the incidental taking of gopher tortoises, their eggs and their burrows within the development boundaries specified. The 246 acres of gopher tortoise habitat included within designated tortoise preserves and other open space areas, as denoted on Attachment 2, are not authorized for taking of gopher tortoises. The application for this permit was complete as of January 7, 2000.

Please contact me or Mr. Steve Lau at (561) 778-5094 if you have any questions regarding this permit.

Sincerely,

Bradley J. Hartman

Bradley J. Hartman, Director
Office of Environmental Services

BJH/tgw
ENV 3-2/5
Enclosure
gtpermit.ltr
cc: Mr. Palmer Panton, Volusia County Planning Department
Mr. Rick Spratt, Central Region, FWC
Major Love, Central Region, FWC
Mr. Steve Lau, OES, FWC
Mr. Jim Modica, Modica and Associates
Ms. Angela Williams, Division of Wildlife, FWC

PERMIT FOR TAKING OF GOPHER TORTOISES AND

THEIR BURROWS

Chapter 39-27.002(4) FAC

STATE OF FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

Issuance Date: January 10, 2000

Permittee: St. Joe/Arvida Co., LP
Street Address: 1800 Pembrook Drive, Suite 320
Orlando, Florida 32810
Attention: Mr. Bill Gardiner

Authorized Agent: Mr. Jim Modica
Address: Modica and Associates
310 Almond St.
Clermont, Florida 34711

Permit Number: VOL-20

Location of Affected Site: 1,613 acres of the proposed 1,859-acre Victoria Park project site, including 1,034 acres of impacted gopher tortoise habitat, situated west of I-4, northeast of S.R. 472, and bisected by Dr. Martin Luther King Jr. Beltway (CR 4101), within Sections 23, 24, 25, 26, 35, and 36, Township 17S, and Range 30E, Volusia County. See the attached location maps (Attachments 1 and 2). The 246 acres of gopher tortoise habitat included within designated tortoise preserves and other open space areas, as denoted on Attachment 2, are not authorized for taking of gopher tortoises.

Permitted Action: The permittee or its agents are authorized to take gopher tortoises, their eggs and their burrows within its development boundaries where such taking is incidental to development activities. The criteria of Rule 39-27.002(4), F.A.C., have been satisfied and the taking, as conditioned below, will not be detrimental to the survival potential of the species.

Provisions/Conditions:

1. The applicant shall protect at least 110.7 acres of gopher tortoise habitat within the tortoise preserve areas shown on Attachment 2, and grant a perpetual conservation easement over these lands to the Florida Fish and Wildlife Conservation Commission (FWC). The applicant shall submit a draft copy of the conservation easement to the FWC for review and approval prior to executing and recording the easement. A copy of the certified as recorded easement shall be provided to the FWC at the Office of Environmental Services, 620 South Meridian Street, Tallahassee, Florida, 32399-1600. The areas covered by conservation easements shall be surveyed, with the boundaries clearly marked on the ground. These boundary markers shall be maintained for the life of the easement.

2. This permit will not go into effect until permittee has obtained a receipt from the FWC for the approved and recorded conservation easement for the areas described in Condition #1. As described in the permit Notice of Rights Statement, issuance of this permit may be appealed by a concerned party within 21 days of the permittee's receipt of this notice. If a Petition for Administrative Hearing is timely filed within the prescribed time period, the permittee will be notified by the FWC. Upon such notification, the permittee shall cease all work authorized by this permit until the petition is resolved.

3. The applicant shall have the obligation to manage and maintain the protected 110.7 acres for gopher tortoises in accordance with the habitat management plan included in the Victoria Park Gopher Tortoise Incidental Take Permit Application dated 23 August 1999.

4. The permittee shall keep written records of the habitat management activities conducted and provide a copy of said activities upon request of the FWC.

5. This permit does not relieve the permittee from any other "taking" requirements by the U.S. Fish and Wildlife Service (USFWS) or the FWC as to other listed species. Specifically, this permit does not authorize any destruction of scrub jays or scrub jay habitat. Consultation with the USFWS should be sought if this species is present.

6. The permittee, or authorized agents of the permittee, are authorized to move tortoises, at their discretion, within the property boundaries to minimize taking. This permit does not authorize the permittee or its authorized agent(s) to possess or move tortoises off the contiguous ownership of the permittee or to move tortoises into areas previously authorized as a relocation site by FWC permit. A separate relocation permit from FWC shall be required for those activities.

7. This permit does not authorize any taking of gopher tortoises beyond that which is a direct result of development activities or the on-site movement of animals addressed in Condition #6. Any other form of taking or relocation will require a separate permit from the Executive Director.

8. This permit must be available for inspection at all times while engaged in the permitted activity.

9. This permit is transferrable to subsequent owners of the property.

Notice of Rights Statement: In accordance with Rules 28-5.111 and 28.6.008, Florida Administrative Code, and Section 120.60, Florida Statutes, any party may request a hearing on this matter pursuant to Section 120.57, Florida Statutes by filing a completed Election of Rights form (copy attached) by certified mail, return receipt requested, with the undersigned within

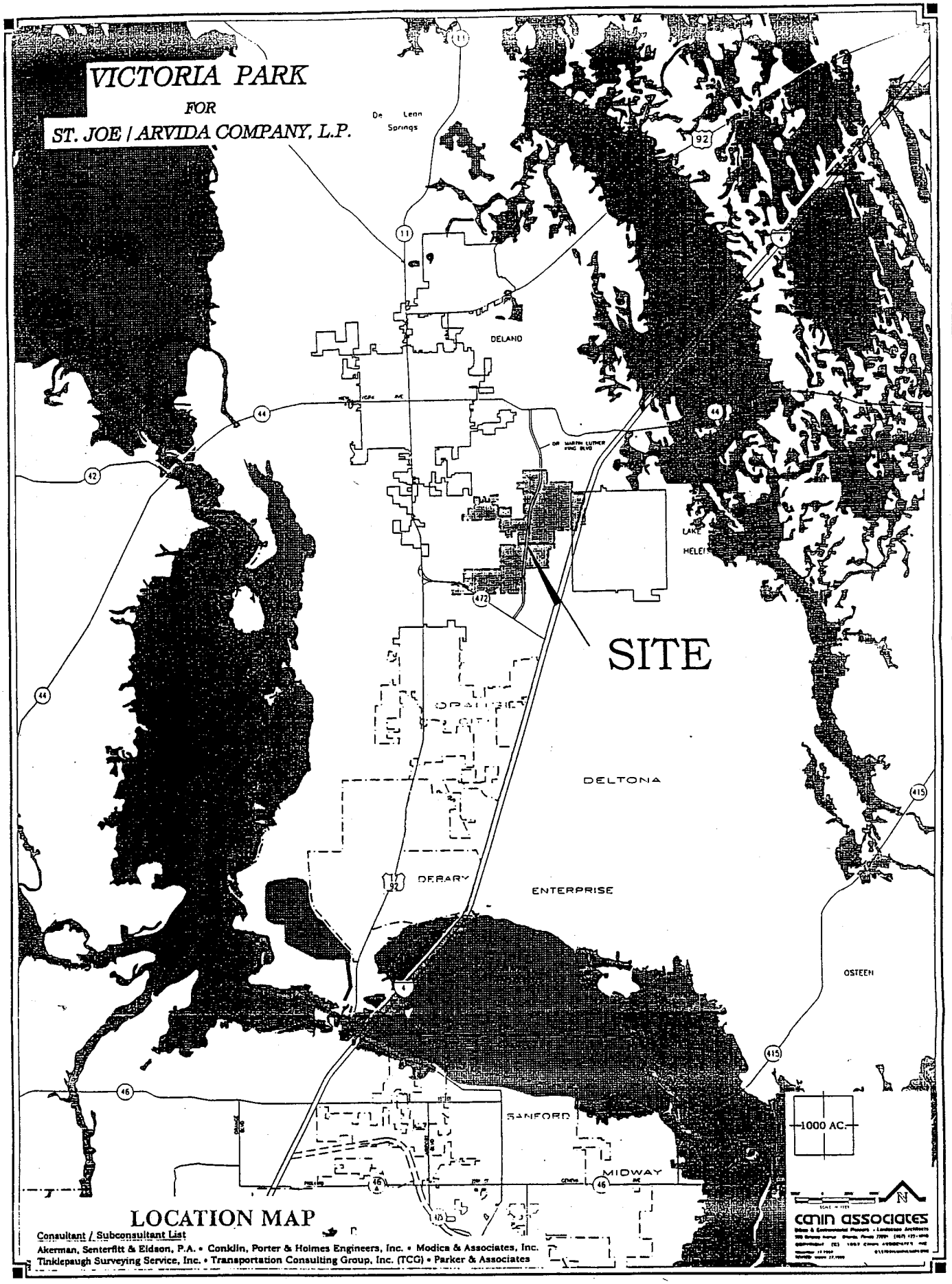
twenty-one (21) days of receipt of this permit and notice. If timely requested and a hearing is granted, the hearing will be conducted under the procedures established by Section 120.57, Florida Statutes. A party will be given the opportunity to be represented by counsel or other qualified representative, to take testimony, to call and cross-examine witnesses, and to have subpoenas issued on your behalf.

Allan L. Egbert, Ph.D.
Executive Director

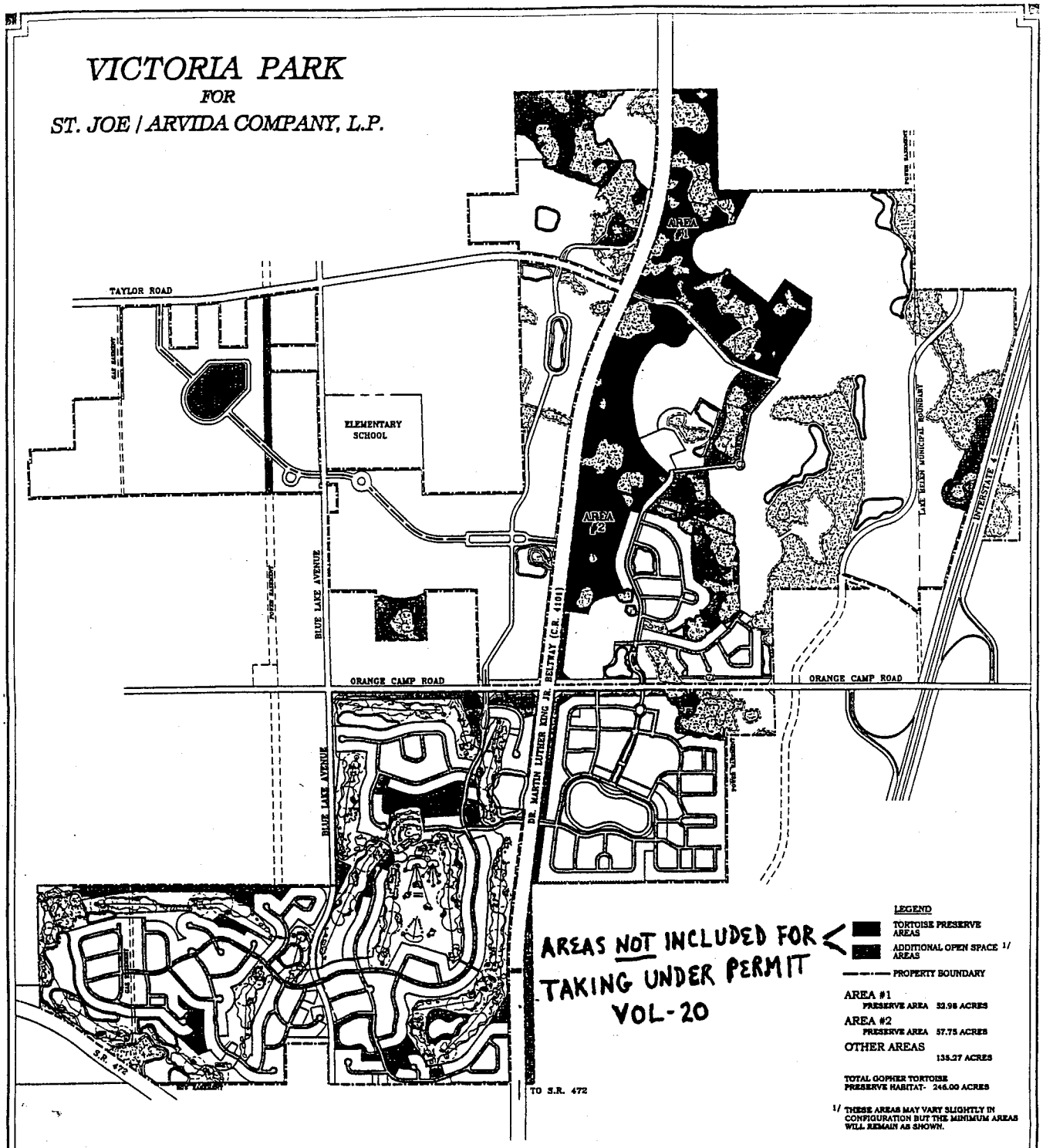
By: Bradley J. Hartman

ENV 3-2/5
Attachments:
1. General location map
2. Project boundaries, habitat preserves, and excluded areas map
3. Election of Rights form

vol-20


VICTORIA PARK
FOR
ST. JOE / ARVIDA COMPANY, L.P.
De Leon Springs
DELAND
SITE
DELTONA
DEBARY
ENTERPRISE
OSTEEN
SANFORD
MIDWAY
1000 AC.
LOCATION MAP
Consultant / Subconsultant List
Akerman, Senterfitt & Eidson, P.A. • Conklin, Porter & Holmes Engineers, Inc. • Modica & Associates, Inc.
Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG) • Parker & Associates
conin associates

VICTORIA PARK
FOR
ST. JOE / ARVIDA COMPANY, L.P.



AREAS NOT INCLUDED FOR TAKING UNDER PERMIT VOL-20

LEGEND

TORTOISE PRESERVE AREAS

ADDITIONAL OPEN SPACE AREAS 1/

PROPERTY BOUNDARY

AREA #1
PRESERVE AREA 32.98 ACRES

AREA #2
PRESERVE AREA 57.75 ACRES

OTHER AREAS
135.27 ACRES

TOTAL GOPHER TORTOISE PRESERVE HABITAT- 246.00 ACRES

1/ THESE AREAS MAY VARY SLIGHTLY IN CONFIGURATION BUT THE MINIMUM AREAS WILL REMAIN AS SHOWN.

10 AC.

MAP G1A
GOPHER TORTOISE PRESERVE HABITAT

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinkelspaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

canin associates

PERMIT # VOL-20

STATE OF FLORIDA
FISH AND WILDLIFE CONSERVATION COMMISSION

ELECTION OF RIGHTS

I have read the Explanation of Rights form and understand my options.

(You may select one of the options below and return with this form to the Florida Fish and Wildlife Conservation Commission (Commission) no later than twenty-one (21) days from the receipt of the Notice of Agency Action).

1. ( ) I do not dispute the allegations of fact in the Notice of Agency Action but do wish to be accorded an informal hearing or proceeding, pursuant to Section 120.57(2), Florida Statutes, at which time I will be permitted to submit oral or written evidence in mitigation of the complaint to the agency head or his representative.

2. ( ) I do dispute the allegations of fact contained in the Notice of Agency Action, submit an attached statement of all disputed allegations of fact, and request a formal hearing, pursuant to Section 120.57(1), Florida Statutes, before a hearing officer appointed by the Division of Administrative Hearings.

3. ( ) I do not dispute the allegations of fact in the Notice of Agency Action and waive my right to object or to be heard.

I have read and understand the Election of Rights form and understand that I have the right to be represented by counsel at either the informal or formal hearing. I also

FWS BIOLOGICAL OPINION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
6620 Southpoint Drive South
Suite 310
Jacksonville, Florida 32216-0958

IN REPLY REFER TO:
FWS/R4/ES-JAFL

January 19, 2000

Colonel Joe Miller
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Dear Colonel Miller:

This document transmits the Fish and Wildlife Service's biological opinion based on our review of the proposed Victoria Park (199707347 [IP-SS], Service Log No: 99-769) located in Volusia County, Florida, and its effects on the Florida scrub-jay (*Aphelocoma coerulescens*) and eastern indigo snake (*Drymarchon corais couperi*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). Your September 13, 1999, letter, requesting formal consultation was received on September 16, 1999. The Service responded with a letter dated September 29, 1999, requesting more information from the applicant. Formal consultation was initiated on December 16, 1999.

This biological opinion is based on information provided in your September 13, 1999, letter; field inspections; and other sources of information. A complete administrative record of this consultation is on file in the Jacksonville Field Office.

CONSULTATION HISTORY

The U.S. Fish and Wildlife Service (Service) involvement in this project began on May 18, 1998, with a letter requesting more information regarding Florida scrub-jays on the project site. On March 9, 1999, Service biologists met with the applicant's consultant at the project site. On September 13, 1999, the Corps sent a letter requesting initiation of formal consultation pursuant to their review of a permit application for wetland impacts. On September 29, 1999, the Service sent a letter to the Corp requesting more information on the proposed project. On November 4, 1999, the Service and Corp met with the applicant's consultant to discuss what information we needed to complete the biological opinion. On December 16, 1999, the Service sent a letter to the Corp initiating formal consultation.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

St. Joe/Arvida Group is proposing to impact 32.5 acres of wetlands for the development of the proposed Victoria Park project. The 1860-acre development will consist of single family and multi-family residential units, commercial units, a golf course, and conservation areas that will be restored and managed. The proposed project will impact 55.3 acres of the 112.4 acres occupied Florida scrub-jay habitat. There are two families of scrub-jays located within the proposed project site.

The project site is located in Sections 22, 23, 24, 25, 26, 34, 35, and 36, Township 17 South, Range 30 East within Deland, Volusia County, Florida. The Project site is bounded or intersected by County Road 4101 (Martin Luther King, Jr. Beltway), Orange Camp Road, Taylor Road, State Road 472, Blue Lake Road, and Interstate 4.

The scrub conservation area is composed of 57.1 acres of occupied habitat and 53.6 acres of presently unoccupied, but restorable habitat. This 110.7 acre area will be restored and managed, long term, to provide optimal scrub-jay habitat for the two scrub-jay territories. This area will be managed with various techniques including mechanical and prescribed fire management actions for restoration.

STATUS OF THE SPECIES/CRITICAL HABITAT

This section summarizes Florida scrub-jay and eastern indigo snake biology and ecology as well as information regarding the status and trends of the Florida scrub-jay throughout its entire range. The Service uses this information to assess whether a Federal action is likely to jeopardize the continued existence of the Florida scrub-jay and eastern indigo snake. The "Environmental Baseline" section summarizes information on status and trends of the Florida scrub-jay and eastern indigo snake specifically within the action area. These summaries provide the foundation for the Service's assessment of the effects of the proposed action, as presented in the "Effects of the Action" section.

Species/critical habitat description

Florida scrub-jay (*Aphelocoma coerulescens*)

Florida scrub-jays are about 10 to 12 inches long and weigh about 3 ounces. They are similar in size and shape to the blue jay (*Cyanocitta cristata*), but differ significantly in coloration (Woolfenden and Fitzpatrick 1996a). Unlike the blue jay, scrub-jays do not have a crest. They also lack the conspicuous white-tipped wing and tail feathers, black barring and bridle of the blue jay. The Florida scrub-jay's head, nape, wings, and tail are pale blue, and it is pale grey on its back and belly. Its throat and upper breast are lightly striped and bordered by a pale blue-grey

"bib". The sexes of the scrub-jay are not distinguishable by plumage, and males average only slightly larger than females (Woolfenden 1978). The sexes may be differentiated by a distinct "hiccup" call vocalized only by females (Woolfenden and Fitzpatrick 1986). Scrub-jays less than about five months of age are easily distinguishable from adults; their plumage is smokey grey on the head and back, and they lack the blue crown and nape of the adults. Molting occurs between early June and late November, and peaks between mid-July and late September (Bancroft and Woolfenden 1982). During late summer and early fall, when the first basic molt is nearly complete, fledgling scrub-jays may be indistinguishable from adults in the field (Woolfenden and Fitzpatrick 1984). The wide variety of vocalizations of the scrub-jay are described in detail in Woolfenden and Fitzpatrick (1996b).

Scrub-jays are non-migratory, extremely sedentary, and have very specific habitat requirements (Woolfenden 1978). They usually reside in oak scrub vegetated with sand live oak, myrtle oak, inopine oak, and Chapman oak, along with saw palmetto, scrub palmetto, scattered sand pine, and rosemary. Such habitat occurs only on fine, white, drained sand, along the coastlines in Florida, and in dunes deposited during the Pleistocene, when sea levels were much higher than at present (Laessle 1958, 1968). Scrub-jays are rarely found in habitats with more than 50 percent canopy cover over three meters in height (U.S. Fish and Wildlife Service 1990). The habitat required for the scrub-jay greatly restricts the bird's distribution. Active management either through burning or mechanical clearing is necessary to maintain optimum conditions. In general, scrub-jay habitat consists of dense thickets of scrub oaks less than nine feet tall, interspersed with bare sand used for foraging and storing of acorns (U.S. Fish and Wildlife Service 1990).

The Florida scrub-jay was federally listed as threatened in 1987 primarily because of habitat fragmentation, degradation, and loss (52 FR 20719). Scrub habitats associated with Florida's barrier islands, mainland coasts, and Lake Wales Ridge are some of the most imperiled natural communities in the United States, with estimates of habitat loss since presettlement time ranging from 70 to more than 80 percent (Bergen 1994, Fitzpatrick et al. 1991). Historically, this vegetative community type occurred as large, contiguous patches, some of them over hundreds of miles (Cox 1987). Today only relict patches of xeric oak scrub remains. Throughout the northern part of the range, population declines of the Florida scrub-jay are attributed to scrub fragmentation and degradation, due primarily to widespread fire suppression. Citrus conversion and residential development continues to be the most important factors causing the decline of the scrub-jay populations in the southern extremes of their range (Fernald 1989, Fitzpatrick et al. 1991). No "critical habitat" has been designated for this species.

Life history/Population Dynamics

Florida scrub-jays are monogamous and remain mated throughout the year (Sprunt 1946, Woolfenden 1978). Scrub-jays have a social structure that involves cooperative breeding, a trait that the western North American populations of scrub-jays do not exhibit (Woolfenden and Fitzpatrick 1984). The offspring generally stay with the parents for at least one year, forming a family group consisting of three or more family members. These "helpers" assist the breeding pair

in all territorial and breeding activities except nest construction, egg-laying, and incubation. The family group resides in a territory with a well-defined boundary, defended year-round by all group members (Woolfenden and Fitzpatrick 1984). A well-developed intra-familial dominance hierarchy exists with breeding males being the most dominant, followed by helper males, breeding females, and finally, helper females (Woolfenden and Fitzpatrick 1977). Helpers participate in sentinel duties (McGowan and Woolfenden 1989), territorial defense, predator mobbing, and feeding both nestlings (Stallcup and Woolfenden 1978) and fledglings (McGowan and Woolfenden 1990). The presence of helpers generally increases reproductive success and survival within the group, which naturally causes family size to increase (Woolfenden and Fitzpatrick 1978). However, the presence of humans near populations of scrub-jays results in a variety of incidental encounters that usually increase the mortality of both juveniles and adults (Fitzpatrick et al. 1991).

Florida scrub-jay pairs occupy year-round, multi-purpose territories (Woolfenden and Fitzpatrick 1984, Fitzpatrick et al. 1991, Fitzpatrick et al. 1994). Territory size averages 22 to 25 acres, with a minimum size of about 12 acres. Territories are a limiting factor for scrub-jay populations. Because of this limitation, non-breeding males may remain in their natal territory as helpers for up to five years, waiting for either a mate or territory to become available (Fitzpatrick et al. 1991). New territories are established several ways: by replacing a lost breeder on a territory (Woolfenden and Fitzpatrick 1984); through "territorial budding", where a helper male becomes a breeder in a segment of his natal territory (Woolfenden and Fitzpatrick 1978); by inheriting a natal territory following the death of a breeder; or by establishing a new territory between existing territories (Woolfenden and Fitzpatrick 1984). Territories can also be obtained by creating suitable habitat in areas that were previously unsuitable through effective habitat management (Thaxton and Hingtgen 1994).

To become a breeder, a scrub-jay must acquire a territory as well as a mate. Evidence presented by Woolfenden and Fitzpatrick (1984) suggests that scrub-jays are permanently monogamous and occupy the same territory year after year. Courtship to form the pair is lengthy and ritualized, and involves posturing and vocalizations made by the male to the female (Woolfenden and Fitzpatrick 1996b). Copulation between the pair is generally out of the sight of other jays (Woolfenden and Fitzpatrick 1984). These authors also reported never observing copulation between unpaired jays, nor courtship behavior between a female and a jay other than her mate. Age at first breeding varies from one to seven years, although most breed between two and four years of age (Fitzpatrick and Woolfenden 1988). Persistent breeding populations of scrub-jays exist only where there are scrub oaks in sufficient quantities to provide an ample winter acorn supply, cover from predators, and nest sites during spring (Woolfenden and Fitzpatrick 1996a).

Nesting is synchronous, normally occurring from March through June (Woolfenden and Fitzpatrick 1990, Fitzpatrick et al. 1991). In the suburban habitats, nesting is consistently initiated earlier (March and April) than in natural scrub habitat (Fleischer 1996). Clutch size ranges from 1 to 5 eggs, but is usually 3 or 4 eggs. Clutch sizes are generally larger (up to 6 eggs) in suburban habitats, and the birds attempt to rear more broods (Fleischer 1996). Eggs are incubated for 17 to

18 days, and fledging occurs 16 to 21 days after hatching (Woolfenden 1974, 1978, Fitzpatrick et al. 1991). Only the breeding female broods the eggs and nestlings (Woolfenden and Fitzpatrick 1984). Average survival is two fledglings per pair per year (Woolfenden and Fitzpatrick 1990, Fitzpatrick et al. 1991), and the presence of helpers improves success (Mumme 1992). Annual productivity must average at least 2 young per pair for a pair to maintain long term stability (Fitzpatrick et al. 1991). Data from Indian River County shows that mean annual productivity declines in suburban areas. Toland (1991) reported that productivity averaged 2.2 young fledged per pair in contiguous, optimal scrub, 1.8 young fledged per pair in fragmented, moderately developed scrub, 1.2 young per pair in suboptimal and only about 0.5 young fledged per pair in residential lawns.

Nesting failures are almost always caused by predation, most frequently by ground-based predators including eastern coach whip (*Masticophis flagellum*), eastern indigo snake (*Drymarchon corais couperi*), rat snake (*Elaphe obsoleta*), corn snake (*E. guttata*), raccoon (*Procyon lotor*), and domestic cat (*Felis catus*) (Fitzpatrick et al. 1991, Schaub et al. 1992).

Fledglings remain nutritionally dependent for about 10 weeks, during which time they are fed by both parents and helpers (Woolfenden 1975, McGowan and Woolfenden 1990). Survival of scrub-jay fledglings to yearling class averages about 35 percent, while annual survival of adult males and females is around 80 percent (Fitzpatrick et al. 1991). The maximum observed lifespan of a Florida scrub-jay is 15.5 years (Woolfenden and Fitzpatrick 1996b).

Juveniles remain in their natal territory for up to five years before dispersing (Woolfenden and Fitzpatrick 1984). Once they pair and become breeders, generally within two territories of their natal grounds, they remain in their breeding territory until death. In suitable habitat, fewer than five percent of scrub-jays disperse more than five miles (Fitzpatrick et al. 1991). All documented long distance dispersals have been in unsuitable habitat such as woodland, pasture, or suburban plantations. Scrub-jay dispersal behavior is affected by intervening landscape matrix. Protected scrub habitats will most effectively sustain scrub-jay populations if they are located within a matrix that can be utilized and traversed by scrub-jays. Brushy pastures, scrubby corridors along railways, and county road right-of-ways, and open burned flatwoods provide links for colonization among scrub-jay subpopulations. Stith et al. (1996) believed that a dispersal distance of five miles is closer to biological maximum for scrub-jays.

Scrub-jays forage on or near the ground, often along the edge of natural or man-made openings. Insects, particularly, orthopteran and lepidopteran larvae, comprise the majority of the animal diet throughout most of the year (Woolfenden and Fitzpatrick 1984). Acorns are by far the most important plant food and from August to November scrub-jays harvest and cache thousands of scrub oak acorns throughout their territory (Fitzpatrick et al. 1991). It is estimated that 1/3 of these acorns are later recovered and eaten. Caching allows scrub-jays to eat acorns every month of the year. This reliance on acorns and caching may constitute a major reason for the scrub-jay's restriction to the oak scrub and sandy ridges within Florida (Fitzpatrick et al. 1991).

Eastern Indigo Snake (*Drymarchon corias couperi*)

The eastern indigo snake is one of eight subspecies of a primarily tropical species; only the eastern indigo and the Texas indigo (*Drymarchon corais erebennus*) occur within the United States (U.S. Fish and Wildlife Service 1982). The eastern indigo snake is isolated from the Texas indigo snake by more than 600 miles (Moler 1992). The eastern indigo snake is the longest snake in North America, obtaining lengths of up to 104 inches (Ashton and Ashton 1981). Its color is uniformly lustrous-black, dorsally and ventrally, except for a red or cream-colored suffusion of the chin, throat, and sometimes the cheeks. Its scales are large and smooth (central 3-5 scale rows are lightly keeled in adult males) in 17 scale rows at midbody. Its anal plate is undivided. Its antepenultimate supralabial scale does not contact the temporal postocular scales.

Historically, the eastern indigo snake occurred throughout Florida and into the coastal plain of Georgia, Alabama, and Mississippi (Loding 1922, Haltom 1931, Carr 1940, Cook 1954, Diemer and Speake 1983, Moler 1985a). It may have occurred in South Carolina, but its occurrence there cannot be confirmed. Georgia and Florida currently support the remaining, endemic populations of eastern indigo snake (Lawler 1977). In 1982, only a few populations remained in the Florida panhandle and the species was considered rare in that region. Nevertheless, based on museum specimens and field sightings, the eastern indigo snake still occurs throughout Florida even though they are not commonly seen (Moler 1985a).

In south Florida the eastern indigo snake is thought to be widely distributed and probably more abundant than in the northern limits of the range, especially compared to the low densities found in the panhandle of Florida. Given their preference for upland habitats, indigos are not found in great numbers in wetland complexes of the Everglades region, even though they are found in pinelands and tropical hardwood hammocks in extreme south Florida (Steiner *et al.* 1983).

Indigo snakes also occur in the Florida Keys. They have been collected from Big Pine and Middle Torch Keys, and are reliably reported from Big Torch, Little Torch, Summerland, Cudjoe, Sugarloaf, and Boca Chica Keys (Lazell 1989). Given the ubiquitous nature of the eastern indigo throughout the remainder of its range, it is likely that it also occurs on other Keys.

No critical habitat has been designated for the eastern indigo snake.

Life history/Population Dynamics

Over most of its range, the eastern indigo snake frequents a diversity of habitat types such as pine flatwoods, scrubby flatwoods, xeric sandhill communities, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human altered habitats. Eastern indigo snakes need a mosaic of habitats to complete their annual cycle. Interspersion of tortoise inhabited sandhills and wetlands improves habitat quality for the indigo snakes (Landers and Speake 1980, Auffenberg and Franz 1982). Eastern indigo snakes require sheltered "retreats" from winter cold and desiccation (Bogert and Cowles 1947). Whenever the eastern indigo snake

occurs in xeric habitats, it is closely associated with the gopher tortoise (*Gopherus polyphemus*), the burrows of which shelter the indigo snakes from the winter cold and desiccating sandhills environment (Bogert and Cowles 1947, Speake *et al.* 1978, Layne and Steiner 1996). This dependence seems especially pronounced in Georgia, Alabama, and the panhandle of Florida, where the eastern indigo snake is largely restricted to the vicinity of the sandhill habitats occupied by gopher tortoises (Diemer and Speake 1981, Moler 1985b, Mount 1975). The high use of xeric sandhill habitats throughout the northern portion of the eastern indigo's range can be attributed primarily to the availability of thermal refuge afforded by gopher tortoise burrows in the winter. No such refugia is widely available off of the sandhills regions of southern Georgia and northern Florida. In wetter habitats that lack gopher tortoises, eastern indigo snakes may take shelter in hollowed root channels, hollow logs, or the burrow of rodents, armadillos, or crabs (Lawler 1977, Moler 1985b, Layne and Steiner 1996).

In the milder climates of central and southern Florida, eastern indigo snakes exist in a more stable thermal environment, where the availability of thermal refugia may not be as critical to the snakes survival, especially in extreme southern Florida. Throughout peninsular Florida, the eastern indigo snake can be found in all terrestrial habitats which have not suffered high urban development. They are especially common in hydric hammocks throughout this region (Moler 1985a). In central and coastal Florida, eastern indigo snakes are typically found in the State's high, sandy ridges. In extreme south Florida, these snakes are mainly found in pine flatwoods, pine rockland, and tropical hardwood hammock habitats, and in most other undeveloped areas (Kuntz 1977). Eastern indigo snakes also use some agricultural lands (e.g. citrus) and various types of wetlands (Layne and Steiner 1996).

Even though thermal stresses may not be a year round limiting factor in southern Florida, eastern indigo snakes seek and use underground refugia. On the sandy central and coastal ridges of south Florida, indigo snakes use gopher tortoise burrows (62 percent) more than other underground refugia (Layne and Steiner 1996). Other underground refugia used by indigo snakes include burrows of armadillos (*Dasypus novemcinctus*), cotton rats (*Sigmodon hispidus*), and land crabs; burrows of unknown origin; natural ground holes; hollows at the base of trees or shrubs; ground litter; trash piles; and in the crevices of rock-lined ditch walls (Layne and Steiner 1996). These refugia sites are used most frequently where tortoise burrows are not available, principally in the low-lying areas off of the central and coastal ridges.

Smith (1987) radio-tagged hatchling, yearling, and gravid eastern indigo snakes and released them in different habitat types on St. Marks National Wildlife Refuge in Wakulla County, Florida, in 1985 and 1986. Smith monitored the behavior, habitat use, and oviposition sites selected by gravid female snakes and concluded that the diverse habitats, including high pineland, pine-palmetto flatwoods, and permanent open ponds, were important for the eastern indigo snake's seasonal activity. In this study, habitat use also differed by age-class and season; adult indigo snakes often used gopher tortoise burrows during April and May, while juveniles used root and rodent holes. The indigo snakes used gopher tortoise burrows for oviposition sites in high pineland areas, but stumps were chosen in flatwoods and pond edge habitats (Smith 1987).

Monitoring of radio-fitted indigo snakes on the central ridge of south Florida indicate that snakes in this part of the state use a wide variety of natural, disturbed, and non-natural habitat types throughout the year. On the ridge itself, indigos favor mature oak phase scrub, turkey oak sandhill, and abandoned citrus grove habitats, while snakes found off the sandy ridges use flatwoods, seasonal ponds, improved pasture, and active and inactive agricultural lands. There was no apparent selection for one habitat type over another as the use of habitats closely reflected the relative availability and distribution of the vegetation types in these areas (Layne and Steiner 1996).

In extreme south Florida (the Everglades and Florida Keys), indigo snakes are found in tropical hardwood hammocks, freshwater marshes, abandoned agricultural lands, coastal prairie, mangrove swamps, and human altered habitats (Steiner *et al.* 1983). It is suspected that they prefer hammocks and pine forests since most observations occur there and use of these areas are disproportionate compared to the relatively small total area of these habitats (Steiner *et al.* 1983).

Reproduction

Most information on the reproductive cycle of the eastern indigo snake is from data collected in northern Florida. Here, breeding occurs between November and April, and females deposit four to twelve eggs during May or June (Moler 1992). Speake (1993) reported an average clutch size of 9.4 for 20 captive bred females. Young hatch in approximately three months, from late May through August. Peak hatching activity occurs during August and September, while yearling activity peaks in April and May (Groves 1960, Smith 1987). Limited information on the reproductive cycle in south-central Florida suggests that the breeding and egg laying season may be extended in south-central and south Florida. In this region, breeding extends from June to January, laying occurs from April to July, and hatching occurs during mid-summer to early fall (Layne and Steiner 1996).

Female indigo snakes can store sperm and delay fertilization of eggs; there is a single record of a captive snake laying five eggs (at least one of which was fertilized) after being isolated for more than four years (Carson 1945). There is no information on how long eastern indigo snakes live in the wild; in captivity, the longest an eastern indigo snake lived was 25 years, 11 months (Shaw 1959).

Feeding

The eastern indigo snake is an active terrestrial and fossorial predator that will eat any vertebrate small enough to be overpowered. Layne and Steiner (1996) documented several instances of indigos flushing prey from cover and then chasing it. Though unusual, indigo snakes may also climb shrubs or trees in search of prey. An adult eastern indigo snake's diet may include fish, frogs, toads, snakes (venomous and nonvenomous), lizards, turtles, turtle eggs, juvenile gopher tortoises, small alligators, birds, and small mammals (Keegan 1944, Babis 1949, Kochman 1978,

Steiner *et al.* 1983). Juvenile indigo snakes eat mostly invertebrates (Layne and Steiner 1996).

Movements

Indigo snakes range over large areas and into various habitats throughout the year, with most activity occurring during summer and fall (Smith 1987, Moler 1985b, Speake 1993). The average range of an eastern indigo snake is 12 acres during the winter (December - April), 106 acres during late spring early summer (May - July), and 241 acres during late summer and fall (August - November) (Speake *et al.* 1978). Adult male eastern indigo snakes have larger home ranges than adult females and juveniles; their home range may encompass as much as 553 acres in the summer (Moler 1985b, Speake 1993). By contrast, a gravid female may use from 4 to 106 acres (Smith 1987). These estimates are comparable to those found by Layne and Stiener (1996) in south central Florida, who determined adult male home ranges average about 183, while adult females average about 42 acres.

Status and Distribution

Florida scrub-jay (*Aphelocoma coerulescens*)

The Florida scrub-jay is geographically isolated from other subspecies of scrub-jays found in Mexico and the Western United States. The scrub-jay is found almost exclusively in peninsular Florida, and is restricted to scrub habitat (U.S. Fish and Wildlife Service 1990). The estimated population is between 7,000 and 11,000 individuals (Breininger 1989, Fitzpatrick et al. 1991). There are three major concentrations of scrub-jays in Florida:

- Lake Wales Ridge (Polk and Highlands Counties) 1,092 breeding pairs, with 2,569 individual scrub-jays censussed in 1992-1993 (Fitzpatrick et al. 1994). Archbold Biological Station, a private research facility in Highlands County, currently contains 120 breeding pairs of scrub-jays (Glen Woolfenden, Archbold Biological Station, pers. comm., 1998), and is actively managed for that species. The Lake Wales Ridge National Wildlife Refuge has been established on the Lake Wales Ridge, and land acquisition through the state's Conservation and Recreation Lands program and purchases by The Nature Conservancy (TNC) are proceeding. Outside of existing holdings (Avon Park Bombing Range, Archbold Biological Station, Lake Arbuckle State Forest and Preserve, and Highlands Hammock State Park), over 37,000 acres of land has been purchased for conservation in the area (B. Needham, TNC, pers. comm., 1996).

- Private lands in Brevard County contain an estimated 364 breeding pairs of scrub-jays (Swain et al. 1995) and an additional 500 breeding pairs on Federal lands (see discussion below). The scrub-jays found on non-Federal lands are distributed in six spatial groups or populations which are partly to completely isolated: south Brevard (mainland between

Melbourne and the county line, 175 families), central Brevard (mainland between Melbourne and Cocoa, 50 families), north Brevard (between Cocoa and Mims, 101 families), south beaches (barrier island between Satellite Beach and Coconut Point, 10-12 families, updated per D. Breininger, pers. comm. 1998), and Cape Canaveral (16 families) and Merritt Island (3 families).

- The Ocala National Forest (ONF) contains 702 breeding pairs, with an estimate of 2,017 individual scrub-jays (Laura Lowery, ONF, pers. comm., 1996). ONF contains 200,000 acres of sand pine scrub; at any one time, 40,000 acres are suitable scrub-jay habitat in a contiguous block. The population there is considered to be secure.

Scrub has been significantly reduced by development activity and now typically occurs only in scattered and often small patches of scrub in peninsular Florida (Fitzpatrick et al. 1991). Scrub-jays are extirpated in Broward, Dade, Duval, Pinellas, and St. Johns counties, and their numbers are greatly reduced in Brevard, Highlands, Orange, Palm Beach, and Seminole counties (Cox 1984), where development activity is highest. It has been estimated that the scrub-jay population has been reduced by at least half in the last 100 years (52 FR 20719). Because of habitat loss, the species was listed as threatened in 1987. The sites most likely to be destroyed by development in the near future are concentrated in Brevard, Highlands, and Palm Beach Counties, due to accelerated residential and commercial growth.

Eastern Indigo Snake (*Drymarchon corias couperi*)

As stated earlier, the eastern indigo snake was listed based on population decline caused by habitat loss, over collection for the pet trade, and mortality from gassing gopher tortoise burrows to collect rattlesnakes (Speake and Mount 1973, Speake and McGlincy 1981). At the time of listing, the main factor in the decline of the eastern indigo snake was attributed to exploitation for the pet trade. As a result of effective law enforcement, the pressure from collectors has declined, but still remains a concern (Moler 1992).

The eastern indigo snake utilizes a majority of habitats available, but tends to prefer open, undeveloped areas (Kuntz 1977). Because of its relatively large home range, this snake is especially vulnerable to habitat loss, degradation, and fragmentation (Lawler 1977, Moler 1985b). Lawler (1977) noted that eastern indigo snake habitat had been destroyed by residential and commercial construction, agriculture, and timbering. He stated that the loss of natural habitat is increasing because of these threats in Florida and that indigo snake habitat is being lost at a rate of five percent per year. Low density residential housing is also a potential threat to the species, increasing the likelihood that the snake will be killed by property owners and domestic pets. Extensive tracts of wild land are the most important refuge for large numbers of eastern indigo snakes (Diemer and Speake 1981, Moler 1985b).

Additional human population growth will increase the risk of direct mortality of the eastern indigo snake from property owners and domestic animals. Pesticides that bioaccumulate through the

food chain may present a potential hazard to the snake as well pesticide use on crops or for forestry/silviculture would propose a pulse effect to the indigo snake (Speake 1993). Direct exposure to treated areas and secondary exposure by ingestion of contaminated prey could occur. Secondary exposure to rodentacides used to control black rats may also occur (Speake 1993) Mortality from roads is also a pulse effect on this species.

The wide distribution and territory size requirements of the eastern indigo snake makes evaluation of status and trends very difficult. We believe that activities such as collecting and gassing have been largely abated through effective enforcement and protective laws. However, despite these apparent gains in indigo snake conservation, we believe that the threats described above are acting individually and collectively against the eastern indigo snake. Though we have no quantitative data with which to evaluate trends of the eastern indigo snake in Florida, we surmise that the population as a whole is declining because of continued habitat destruction and degradation. Natural communities continue to be altered for agriculture, residential, and commercial purposes, most of which are incompatible with the habitat needs of the eastern indigo snake (Kautz 1993). Habitat destruction and alteration is probably most substantial along the coasts, Keys and high central ridges of southcentral Florida where human population growth is expected to continue to accelerate. Agricultural interests (principally citrus) continue to destroy large expanses of suitable natural habitat in south Florida.

Even with continued habitat destruction and alterations, indigo snakes will probably persist in most localities where small, fragmented pieces of natural habitat remain. Tracts of appropriate habitat of a few hundred to several thousand acres may be sufficient to support a small number of snakes. Unfortunately, we believe that current and anticipated habitat fragmentation will result in a large number of isolated, small groups of indigo snakes. Fragmented habitat patches probably cannot support a sufficient number of indigo snakes to ensure viable populations.

One of the primary reasons for listing of the species was the pressure on wild populations caused by over-collecting for the pet trade and commerce. Since the listing of the species, private collectors have engaged in a very active captive breeding program to fulfill the desires of individuals wanting specimens for personal pets. The Service controls the interstate commerce of the species via a permit program. The Service believes that this has significantly reduced the collection pressures on the species.

Analysis of the Species/Critical Habitat Likely to be Affected

The Service has identified the following broad categories of factors that ultimately affect the status and distribution of the Florida scrub-jay and eastern indigo snake in the Action Area.

Habitat Conservation - As previously reviewed above, the Service believes that upland habitats used by the Florida scrub-jay and eastern indigo snake are rapidly being converted to commercial, residential, and other uses to support a growing human population in the State of Florida.

Demographic Concerns - Small isolated populations remaining on habitat patches can be expected to continue decreasing, largely due to demographic isolation, stochastic events acting on these small populations, increased predation, increased close contact with human populations, and/or continuing degradation of nesting and foraging habitat.

Habitat Loss/Habitat Degradation - By far the most threatening issue facing the survival and recovery of the Florida scrub-jay and eastern indigo snake is habitat loss resulting from the conversion of scrub habitats to residential/commercial uses, and degradation resulting from successional processes affecting the habitat suitability of xeric oak habitats. The natural progression of this vegetative community to xeric oak hammocks, either through neglect and or lack of suitable management regimes (such as periodic prescribed burns and management of exotics) have and will result in localized extirpations of the species across the state.

Human-induced Effects - Indirect adverse effects on the Florida scrub-jay is likely to occur in populations adjacent to or near human habitations. For example, Fitzpatrick et al. (1991) noted that individual encounters between humans and Florida scrub-jays are likely to result in increased mortality rates of both juveniles and adults. Further, as remaining habitat patches are either lost or degraded, the probability of success of dispersing Florida scrub-jays to interact with adjacent territories will likely be reduced. This reduction in dispersal success will result from decreased probability that dispersing Florida scrub-jays will encounter smaller scrub patches. The exact extent of this reduction is not quantifiable; however, past studies (Breininger 1995) of a small population of scrub-jays on the barrier island of Brevard County have revealed that the species has demonstrated the abilities to disperse over longer distances as compared to Florida scrub-jays occupying optimal habitat on the Lake Wales Ridge. As fragmentation of scrub habitat continues, however, increased pressure will be placed on resident scrub-jays, by increased vehicular mortality, increased predation due to poor habitat (through increased edge effect and larger home ranges), and vegetative succession on remaining scrub patches from a lack of management activity (Fitzpatrick et al. 1991).

In addition to the habitat fragmentation factors described above, even very low density development can impact indigo snake populations, since the eastern indigo snake is wide-ranging and requires relatively large tracts of suitable habitat to persist. In situations where development occurs around this species, they are especially vulnerable to vehicles, domestic dogs, and insensitive land owners (Moler 1992).

ENVIRONMENTAL BASELINE

Action Area

Historically, wild fires maintained large contiguous areas of low, open scrub oak habitats throughout the central and coastal ridges in peninsular Florida. Human occupation over time, however, has fragmented the continuous habitat into patches, separating the existing populations

of Florida scrub-jays. Conversion of land for agricultural, residential/commercial development, and fire suppression have combined to greatly diminish the amount of available preferred habitat. Along with habitat destruction and fire suppression, the cumulative impacts of historical development has placed intense survival pressure on the Florida scrub-jays living there. Based on the 1992-93 state-wide Florida scrub-jay survey results, scrub-jays appear in three general locations in Volusia County. The numbers provided below reflect the number of scrub-jays and scrub-jay family groups within the metapopulations being described, not the total number of scrub-jays and scrub-jay groups in Volusia County.

- The northeast metapopulation occurs in Flagler and Volusia Counties. In Volusia County there are approximately 15 family groups consisting of approximately 33 individuals. This metapopulation extends from Ormond Beach, including the Peninsula State Park, and extends north of the Volusia/Flagler County line.

- The southeast metapopulation occurs in Brevard and Volusia Counties. In Volusia County there are approximately 33 family groups consisting of approximately 85 individuals. This metapopulation primarily extends from the City of Edgewater, south to the Canaveral Seashore State Park.

- The southwest metapopulation contains 58 family groups containing 139 scrub-jays. This metapopulation extends from just south of DeLand, south to about Deltona, Florida.

- The last census of Volusia County was conducted during the 1992-93 state-wide survey. This survey documented a significant decline in scrub-jay numbers when compared to the state-wide survey conducted by Cox in 1984. The Service believes that scrub-jay numbers have further declined within Volusia County due to the scrub-jay epidemic suffered during the spring/summer 1998 (D. Breininger, pers. com. 1998, R. Bowman, pers. com. 1998), unchecked residential and commercial development within the County, and continued absence of fire management.

Although, the entire southwest metapopulation would be considered one population, habitat fragmentation in some portions of this area has occurred to such a degree that some of the family groups have become surrounded by residential and commercial construction, impairing their ability to interact with other scrub-jays. The Service has determined that the Action Area for this Biological Opinion is defined as the entire southwestern metapopulation of Florida scrub-jays occurring within Volusia County.

The eastern indigo snake has not been observed on the project site; however, the project site does contain potentially suitable habitat. Because the presence of this species can go unnoticed and surveys are often inconclusive, the applicant will be covered for incidental take should the species be present.

Status of the Species in the Action Area

Quality of the Site's Scrub

The Victoria Park project site consists of overgrown, unburned scrub, of which 112.4 acres is considered occupied by Florida scrub-jays. Most of the habitat on the project site is unmanaged. However, 112.4 acres is a suitable xeric oak community dominated by a stand of semi-mature oaks in the subcanopy. The subcanopy is thick with sand live oak (*Quercus geminata*), myrtle oak (*Quercus myrtifolia*), live oak (*Quercus virginiana*), staggerbush (*Lyonia ferruginea*), and wax myrtle (*Myrica cerifera*), and the groundcover consists of broomsedge (*Andropogon virginicus*), saw palmetto (*Serenoa repens*), Yaupon holly (*Ilex vomitoria*), and juvenile subcanopy species. The rest of scrub management area consists of pine flatwood/xeric oak communities that will be managed and restored to a suitable xeric oak community. However, no active management has taken place on the project site to maintain the scrub at the appropriate successional stage.

Scrub-jay and Eastern Indigo Snake Utilization of the Site

Using aerial photography and ground truthing, Service biologists determined that 112.4 acres of the project site are currently occupied by two families (approximately five individuals in the North family and three individuals in the South family) of Florida scrub-jays. Encroachment from surrounding development on adjacent properties has reduced the amount of available habitat and increased the number of people present in the area. In its current state, the project site lacks habitat adequate for long-term support of scrub-jays (Fitzpatrick *et al.* 1991). However, the survivability of the scrub-jays on the project site is good due to the management plan that will be implemented on 110.7 acres of existing and potential scrub habitat.

As previously noted, the eastern indigo snake has not been observed on the project site; however, the project site does contain potentially suitable habitat.

Relationship of the Site to the Action Area

Based on the 1992-93 state-wide survey results, there were at least 26 families of Florida scrub-jays observed within the action area. During that same survey, 18 families were identified within one mile of the project site. The Service believes that the numbers provided by the 1992-93 state-wide survey may overstate the current population of scrub-jays within the action area due to unchecked residential and commercial development in this area since this survey was conducted, continued habitat fragmentation, and a possible disease epidemic during the spring/summer 1998 (D. Breininger, pers. comm. 1998, R. Bowman, pers. comm. 1998).

By restoring and managing the scrub habitat on-site the accompanying scrub-jay family should be able to continue to occupy and increase their territory into the restored scrub habitat. This should prolong the potential fitness of the metapopulation of which they are a part.

Factors affecting species environment within the action area

Additional habitat losses are expected to occur within the Action area as a result of commercial and residential development; however, the Service is currently in consultation with Volusia County to establish procedures to ensure that scrub habitat is not being indiscriminately impacted and that County and local municipalities are in compliance with the Act, with regard to Florida scrub-jays.

EFFECTS OF THE ACTION

This section includes an analysis of the direct and indirect effects of the proposed action on the species and critical habitat and its interrelated and interdependent activities. To determine whether the proposed action is likely to jeopardize the continued existence of threatened or endangered species in the action area, we focus on consequences of the proposed action that affect rates of birth, death, immigration, and emigration because the probability of extinction in plant and animal populations is most sensitive to changes in these rates.

Factors to be considered

Loss of habitat is one of the primary threats to the scrub-jay population in Volusia County. The proposed residential and commercial development will result in the direct, permanent loss of 55.3 acres of the 112.4 acres of on-site habitat occupied by two families of scrub-jays and any eastern indigo snakes. The proposed project includes a scrub management area that will provide 110.7 acres of scrub habitat that will be restored and managed, in long term, to two scrub-jay territory. The management area is composed of 57.1 acres of occupied habitat and 53.6 acres of presently unoccupied habitat.

Another significant threat to scrub-jays recovery is fire suppression and/or lack of management in scrub habitat (D. Breininger pers. comm.). Mechanical techniques will be used once the permits are obtained and then prescribed burns of the first management units (MU) will be completed. The burn cycle will avoid burning during the nesting season to avoid interference with the nesting and foraging requirements of the scrub-jays. The affected scrub-jay group will hopefully move into the current unoccupied scrub habitat that will be restored in the conservation area. This will provide additional habitat within the action area. The scrub management area will be managed by both mechanical and fire management actions. An annual monitoring program for the management area will assess the success of the restoration and management treatments.

During the construction phase of the project, the potential exists for scrub-jays to be injured or killed and for nests and eggs to be destroyed by site clearing and heavy equipment. Post construction human-related affects include predation by domestic cats and encroachment of exotic/ornamental vegetation into the preserved or adjacent land.

CUMULATIVE EFFECTS

Cumulative effects include the affects of future State, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the Act. The Service considered cumulative effects with respect to this project and determined they do not apply.

CONCLUSION

This project will result in the loss of 55.3 acres of occupied Florida scrub-jay habitat. In order to minimize the adverse effects, the applicant proposed to preserve 110.7 acres of on-site scrub habitat that will be restored and managed, in long term, to provide habitat for two families of scrub-jays. The Service has reviewed the best available scientific and commercial information, the current status of the Florida scrub-jay and eastern indigo snake, the environmental baseline for the action, the affects of the proposed action, and cumulative effects. Based upon this information, it is the Service's biological opinion that the above-reviewed adverse effects of the proposed project to the scrub-jay and eastern indigo snake are not likely to jeopardize the continued existence of the Florida scrub-jay or eastern indigo snake. No critical habitat has been designated for these species, therefore, none will be affected.

INCIDENTAL TAKE

Sections 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" and "harass" are further defined in Service regulations (50 CFR 17.3). "Harm" is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. "Harass" is defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding or sheltering.

Under the terms of sections 7(b)(4) and 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply.

The Federal agency has a continuing responsibility to regulate the activity that is covered by this incidental take statement. If the agency (1) fails to require the applicant to adhere to the terms and

conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The Service has reviewed the biological information for this species, information presented by the applicant's consultants, and other available information relevant to this action, and based on our review, incidental take, in the form of harm or harassment, is anticipated for the two families of Florida scrub-jays and any eastern indigo snakes on the project site. If during the course of this action, this level of take is exceeded, such take would represent new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the cause of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

When providing an incidental take statement the Service is required to give reasonable and prudent measures it considers necessary or appropriate to minimize the take along with terms and conditions that must be complied with, to implement the reasonable and prudent measures. Furthermore, the Service must also specify procedures to be used to handle or dispose of any individuals taken. The Service believes the following reasonable and prudent measures are necessary and appropriate to reduce take:

Florida scrub-jay

1. The applicant should avoid the potential of Florida scrub-jays to be injured or killed by heavy equipment. Also avoid the destruction of active scrub-jay nest, with or without eggs.

2. Designation of a 110.7 acre scrub conservation area, containing scrub habitat that will be restored and managed, long term, to provide scrub habitat to two Florida scrub-jay territories.

3. A annual monitoring program should take place on the management area to assess the success of the proposed habitat restoration and management techniques.

4. The on-site conservation area should be placed in a conservation easement and the integrity of the preserve habitat protected.

5. The Service should be notified of any unauthorized take of Florida scrub-jays.

Eastern Indigo Snake

1. The applicant should avoid the potential of eastern indigo snakes to be injured or killed by heavy equipment. This can be avoided by following the standard protection measures for the indigo snake.

2. Only individuals with permits should attempt to capture the eastern indigo snakes.

3. If eastern indigo is held in captivity it should be released as soon as possible in release sites.

4. Appropriate monitoring should occur.

Terms and Conditions

To implement the above reasonable and prudent measure, the Service has outlined the following terms and conditions for incidental take. In accordance with the Interagency Cooperation Regulation (50 CFR 402), these terms and conditions must be complied with to implement the reasonable and prudent measure(s) for incidental take:

Florida scrub-jay

1a. No clearing of vegetation within and immediately adjacent to occupied territory on the project site will take place during the Florida scrub-jay nesting season (typically March 1 through June 30), removing the potential to destroy active nests and kill or injure nestlings. Scrub-jays are also less likely to display territorial/nest defense behavior during the non-nesting season and therefore more likely to stay away from heavy equipment within their territory.

1b. Mechanical and fire management can take place in the occupied territory during the scrub-jay nesting season, however the management area should be carefully inspected to locate any active nests and protect the nests from any kind of management that may occur to prevent "take" of scrub-jays.

2. The scrub management area will be restored and managed, long term, through mechanically thinning of the pine canopy by logging operations and clearing groundcover for open space. This will be followed by prescribed burn as detailed

in Management plan for the proposed project, submitted by the applicant on December 15, 1999.

3. A comprehensive monitoring program for the scrub management area will be implemented annually for five years to determine the distribution and status of the resident Florida scrub-jay populations and evaluate their responses to the vegetative communities after mechanical and fire management treatments have been applied.

4. The scrub conservation area is to be placed in a conservation easement and be maintained, in long term, as a natural area in perpetuity.

5. If a dead Florida scrub-jay is found on the project site, the specimen should be thoroughly soaked in water and frozen, and the applicant should notify the Jacksonville Field Office immediately, at 904-232-2580.

Eastern Indigo Snake

1. An eastern indigo snake protection/education plan shall be developed by the applicant for all construction personnel to follow. The plan shall be provided to the Service for review and approval at least 30 days prior to any clearing activities. The educational materials for the plan may consist of a combination of posters, videos, pamphlets, and lectures (*e.g.*, an observer trained to identify eastern indigo snakes could use the protection/education plan to instruct construction personnel before any clearing activities occur). Informational signs should be posted throughout the construction site and contain the following information:

a. a description of the eastern indigo snake, its habits, and protection under Federal Law;
b. instructions not to injure, harm, harass or kill this species;
c. directions to cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming clearing; and,
d. telephone numbers of pertinent agencies to be contacted if a dead eastern indigo snake is encountered. The dead specimen should be thoroughly soaked in water, then frozen.

2. Only an individual who has been either authorized by a section 10(a)(1)(A) permit issued by the Service, or designated as an agent of the State of Florida by the Florida Fish and Wildlife Conservation Commission for such activities, is permitted to come in contact with or relocate an eastern indigo snake.

3. If necessary, eastern indigo snakes shall be held in captivity only long enough to transport them to a release site; at no time shall two snakes be kept in the same

container during transportation.

4. An eastern indigo snake monitoring report must be submitted to the appropriate Florida Field Office within 60 days of the conclusion of clearing phases. The report should be submitted whether or not eastern indigo snakes are observed. The report should contain the following information:

a. any sightings of eastern indigo snakes;
b. summaries of any relocated snakes if relocation was approved for the project (*e.g.*, locations of where and when they were found and relocated);
c. other obligations required by the Florida Fish and Wildlife Conservation Commission, as stipulated in the permit.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purpose of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. If the scrub management area is to be used for passive recreation (foot trails) signs should be placed at the entrance of the trails to inform and educate the residents of the primary purpose of the scrub management area, to protect the Florida scrub-jays and eastern indigo snake. This information should include how human-related disturbances such as domestic pets (particularly cats) and invasive exotic/ornamental vegetation has adverse affects on the scrub-jays. Also, signs explaining the fire management and what kind of benefits prescribed fires have on the habitat and in controlling wildfires.

2. If foot trails are to be placed in the scrub management area they should be left in the sandy state, not packed with clay or mulched.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation measures.

REINITIATION OF SECTION 7 CONSULTATION

This concludes formal consultation on the actions outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required when discretionary Federal agency involvement or control over the action has been retained and if: (1) New information reveals effects of the agency action that may effect listed species or critical habitat in a manner or to an extent not considered in this biological opinion, (2) the Corps' action is subsequently modified in

a manner that causes an effect to the listed species or critical habitat not considered in this biological opinion, or (3) a new species is listed or critical habitat designated that may be effected by the action.

Sincerely,

/s/ PMS

For David L. Hankla
Field Supervisor

bcc: Ms. Barbara Samler
2033 Penncrest Ct.
Deland, FL 32724

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Final Revision

VICTORIA PARK PROJECT

SITE MITIGATION AND MANAGEMENT PLAN

VOLUSIA COUNTY, FLORIDA

Supporting document
for the:

Conceptual ERP Application &
Section 404 Dredge and Fill Application
United States Army Corp of Engineers
602 N. Palm Avenue
Palatka, Florida 32177-2502

ERP No. 4-127-0369 AC-ERP
Corps No. 199707347 (IP-SS)

Prepared by:

Hilburn O. Hillestad, PhD
Project Manager
Environmental Consultant

Jim Modica
Modica and Associates, Inc.

Applicant:

St. Joe Residential Acquisitions, Inc.
c/o Ted R. Brown, Esq.
Akerman, Senterfitt & Eidson, P.A.
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EXECUTIVE SUMMARY

The Victoria Park project is a **1,859-acre** multi-use Development of Regional Impact (DRI #698-06) located in southern Volusia County. The project, which has been approved by the East Central Florida Regional Planning Council (ECFRPC), includes residential communities, golf courses, commercial tracts and numerous preservation areas. The project is currently comprised of **1,643.7 acres** of uplands and **215.5 acres** of wetlands. The developable acreage for this project is **1,139.7 acres**. The preservation and greenspace acreage, which totals **719.5 acres** (**39%** of the site), will consist of naturally vegetated community-types and other green areas such as parks and golf course. Approximately **183 acres** of wetlands on the site will be preserved, of which approximately **74 acres** will be large forested systems. In addition, a **6.8-acre** herbaceous wetland will also be created.

The Victoria Park Project will impact a total of **32.5 acres** of wetlands. The wetland impacts will occur in mostly small, highly disturbed herbaceous wetlands. Much of the impacted uplands have also been disturbed due to land management practices (i.e. cattle operation, timbering). The impacts were deemed unavoidable for this project due to site constraints and configurations, avoidance of high quality wetlands, uplands and protected species preserves, lot-layout, stormwater design and road construction. All wetland impacts will be mitigated on site by utilizing a combination of wetland creation, upland and wetland preservation and upland and wetland enhancement opportunities.

Habitat preservation and management for the protected wildlife species utilizing the Victoria Park project is centered around management plans for the Florida Sandhill Crane, Florida Scrub Jay, gopher tortoise and associated commensal species. These management plans include several hundred acres of environmental set-aside, greenspace and preserve areas for these species. The preserves include **110.7 acres** of habitat for gopher tortoises, **185.9 acres** of primary habitat for Sandhill Cranes and **150.0 acres** of habitat for Scrub Jays. Portions of these preserve acreages overlap with each other. These preservation areas were designed as specified by the guidelines of the Florida Fish and Wildlife Conservation Commission (FFWCC) and the United States Fish and Wildlife Service (USFWS).

St. Joe/Arvida is using an integrated approach for the development of a Site Mitigation and Management Plan (SMMP) that addresses the mitigation and management requirements for unavoidable impacts of this project. This plan is based upon site surveys and associated data, the known habitat requirements of the species inhabiting the property, the characteristics of the property and specified impacts, and an intense review of the project by state and federal agencies. The SMMP emphasizes the preservation, enhancement and management of the natural features including wetlands, high quality xeric systems and other upland areas to minimize development impacts to the environmental features of the site. This will ensure that the development impacts are minimized for the resident wildlife, wetlands, and other important features of the site. The SMMP includes improving several of the existing vegetative communities by prescribed fire, replanting with native species, by removing cattle, removing drainage ditches and through the management of exotics plants. Conservation Easements will be placed against all wetlands and natural upland preserve areas.

The created wetland area and enhancement areas will be monitored for a period of five (5) years or until deemed successful by the St. Johns River Water Management District, FFWCC, United States Army Corps of Engineers and the USFWS. The management and monitoring programs will be implemented and initially funded by St. Joe/Arvida. The homeowner's association will assume the responsibility of the programs after permit conditions have been met. A qualified biologist will oversee the implementation of the SMMP during the construction phase of the project and as part of the long-term maintenance and monitoring portion of the plan. The SMMP will be incorporated into the home-owner's documents via Conditions, Covenants and Restrictions.

INTRODUCTION

The Victoria Park Project covers **1,859 acres** and is located in Volusia County in Sections 23, 24, 25, 26, 35 and 36; Township 17 South and Range 30 East near the city of Deland. St. Joe/Arvida plans a multi-use community including single family, apartments, shopping areas and commercial developments. The project is adjacent to County Road 4101 (Martin Luther King, Jr. Beltway), Orange Camp Road, Taylor Road, State Road 472, Blue Lake Road and Interstate-4. **Appendix 1** includes a location map for the Victoria Park Project **(Map 1).**

The project site is divided into quadrants by two roadways: Martin Luther King, Jr. Beltway and Orange Camp Road. The quadrants are identified, for explanatory purposes, as the Northeast (NE), Northwest (NW), Southeast (SE) and Southwest (SW). The Northwest Quadrant is divided into three tracts by two roadways as well: Blue Lake Road and Taylor Road. The location of each quadrant is described in **Table 1.**

The developer of the Victoria Park project, the St. Joe/Arvida Corporation, and its consultants have developed a Site Mitigation and Management Plan (SMMP), to mitigate all unavoidable impacts upon the site's wetlands and wildlife. The development of this plan is based on the proposed work in relation to the natural characteristics of the property, including vegetative cover and wildlife utilization.

The following pages include a description of the site development plan, environmental setting, development impacts, the planned site mitigation and management, stormwater management plan, golf course management plan, cultural resources features, mitigation and management compliance responsibilities and several appendices. The appendices include a Wetland Resource Assessment Procedure (WRAP), Binding Jurisdictional letter from the St. Johns River Water Management District, Eastern Indigo Snake Management Plan and various maps and photographs.

Table 1. Quadrant Location and Size at the Victoria Park Project.

Quadrant	Size (ac)	Location
NE	709.7	east of Martin Luther King, Jr. Beltway (MLK) and north of Orange Camp Road
SE	161.8	east of MLK and south of Orange Camp Road
SW	516.3	west of MLK and south of Orange Camp Road
NW	471.4	west of MLK and north of Orange Camp Road
TOTAL	1,859.2	

SITE DEVELOPMENT PLAN

Development plans for this project include residential communities, golf courses and commercial tracts and numerous preserve areas, which are integrated within the development. The developed areas will consist of housing units, golf course, parks, stormwater ponds and commercial lots.

The southeast quadrant (161.8 ac) will be the first development phase. The Village Center will be constructed on this tract. This tract will also consist of residential communities and associated stormwater system, commercial areas, preservation areas and a created wetland.

The southwest quadrant (516.3 ac) will consist of an 18-hole golf course, residential communities, stormwater lakes and preservation areas. A clubhouse and driving range will also be constructed on this phase of the Victoria Park development.

The northeast quadrant (709.7 ac) will be the largest phase of development at the Victoria Park project site. This quadrant will be comprised of residential areas, commercial developments, stormwater lakes, enhancement areas and preservation areas. The commercial property will be located on the east side of this quadrant, near Interstate-4.

The northwest quadrant (471.4 ac.) will consist of residential developments, parks, stormwater lakes and preservation areas. As mentioned, this quadrant is divided into three tracts by roadways. A park will be constructed just west of the Martin Luther King, Jr. Beltway and consist of tennis courts, soccer fields and other active areas. A second park will be constructed south of Taylor Road and west of Blue Lake Avenue. The development plan for this park will be more passive and will be comprised of some natural areas.

The SMMP for the Victoria Park development addresses avoidance and minimization measures taken during the site-design process and incorporates the special habitat requirements of protected wildlife species utilizing the property after build-out. Several preservation areas will be managed to ensure perpetual habitat for wildlife at the Victoria Park Project. The site development plan is illustrated on the appended **Development Plan Map (Appendix 1 - Map 2).** The planned land uses for the project are listed in **Table 2.**

Table 2. Planned Land Uses at the Victoria Park project.

Land Use	Size (ac)	
Residential - Low Density	840.0	
Residential – High Density	41.0	
Commercial	4.0	
Village Center (office/retail)	10.0	(2.0/8.0)
Workplace (office/hotel)	68.0	(58.0/10.0)
Institutional (fire station/water plant)	2.5	(0.5/2.0)
Lake (includes dry detention ponds)	174.2	
Other Green Space	340.5	
Wetland Preservation	182.9	
Upland Preservation (Tortoise, Scrub Jay & Sandhill Crane Preserves)	196.1	
TOTAL	1,859.2	

ENVIRONMENTAL SETTING

The environmental consultants for the Victoria Park site (Hilburn Hillestad, PhD and Modica and Associates, Inc.) intensely surveyed the vegetative communities on and adjacent to the property to determine the presence of protected species, general wildlife populations and vegetative community types, which exist on the property. The vegetative communities and other cover-types are described and referenced to a code system, the Florida Land Use, Cover and Forms Classification System, Level III (FLUCFCS) by the Florida Department of Transportation (FDOT). This system is widely accepted as an effective method for identifying land use types. This system has been utilized as a complimentary tool to augment information accrued from field evaluations. Surveys were performed as required per the federal, state and county criteria.

Surrounding Land Uses

Much of the surrounding land uses or adjacent properties have been altered or managed to some degree. The surrounding land uses mostly consist of low-density residential housing. Several of the surrounding areas are also comprised of undeveloped areas, pastureland, roadways and power easements. The size and location of the surrounding land uses illustrated on the appended **Florida Land Use, Cover and Forms Classification System, Level III (FLUCFCS) Map (Appendix 1 - Map 3).**

Current Land Uses

The Victoria Park project site is currently comprised of several different upland and wetland communities. Although some of this property is relatively undisturbed, several hundred acres of these cover-types have been altered from a cattle operation and other agricultural practices.

The current land-uses or FLUCFCS codes, which follow the cover-types in parentheses in the following paragraphs, at the Victoria Park Project site are shown on the appended FLUCFCS Map **(Appendix 1 - Map 3)**. The vegetative cover-types and acreages are listed in **Table 3.** Several photographs of the vegetative communities and other important features of the Victoria Park project site are included in the Appendix. The following pages describe the vegetative communities, wildlife, soil-types, surface water and groundwater at the Victoria Park project site.

Table 3. Existing Vegetative Cover-types at the Victoria Park Project site, June 1999.

Cover-type (FLUCFCS)	Size (ac)
Uplands:	
Longleaf Pine - Xeric Oak (412)	1,235.3
Improved Pasture (211)	156.5
Shrub and Brushland (320)	146.4
Pine Flatwoods (411)	55.6
Unimproved Pasture (212)	19.4
Xeric Oak (421)	11.4
Transmission Lines (817/832)	16.6
Borrow Areas (742)	2.5
Total:	1,643.7
Wetlands:	
Wet Prairie (643)	110.0
Wetland Forested Mixed (630)	58.8
Freshwater Marsh (641)	26.3
Cypress (621)	12.9
Pine Flatwoods (411-W)	6.3
Shrub and Brushland (320)	0.3
Ditch (Streams and Waterways - 510)	1.1
Total:	215.5
TOTAL	1,859.2

Uplands

Several different upland cover-types were identified during the evaluation of the Victoria Park project site **(Table 3).** These areas cover approximately **1,644 acres.** These upland communities, in descending order of total acreage, include sandhill or Longleaf Pine-Xeric Oak (412), Improved Pasture (211), Shrub and Brushland (320), Pine flatwoods (411), Unimproved Pasture (212), Oil Transmission Line Easements (817), Electrical Power Transmission Line Easements (832), Xeric Oak (421) and Borrow Area (742).

The uplands on the site are mostly comprised of longleaf pine-xeric oak communities. Many of these areas and the remaining naturally vegetated upland communities are comprised of endemic plant species. However, exotic and/or invasive plant species were observed in a portion of these areas. Land management practices including timbering, pasture creation, cattle management, upland-cut ditching and fire suppression have altered many of these communities. The appended **Photo 1** and **Photo 2** illustrate uplands comprised of sandhill and pasture cover-types **(Appendix 2).**

Soils

The general soil types at the Victoria Park project consist of Astatula-Tavares and Myakka-Smyrna-Immokalee. The Astatula-Tavares association is described as broad, undulating ridges of excessively drained and moderately well drained, brownish and grayish sandy soils; interspersed with a few sinks, lakes and depressions. The Myakka-Smyrna-Immokalee association is described as nearly level, poorly drained soils that have a dark, organic-stained subsoil underlain by sandy material; interspersed with swamps and poorly defined drainage ways.

According to the United States Department of Agriculture Soil Conservation Service, several additional specific soil-types exist at the Victoria Park Project. These soil-types consist of the following:

- Astatula fine sands (0-8% and 8-17% slopes)
- Cassia fine sand
- Daytona fine sand (0-5% slopes)
- Deland fine sand (0-5% slopes)
- Immokalee sand
- Immokalee sand (depressional)\
- Myakka fine sand
- Myakka fine sand (depressional)
- Placid fine sand (depressional)
- Samsula muck
- Smyrna fine sand
- St. Johns fine sand
- Tavares fine sand (0-5% slopes).

The soil-types at the Victoria Park project are illustrated on the appended **Soils Map (Appendix 1 - Map 4).**

Vegetation

The Victoria Park project site is comprised of several different upland vegetative communities including pine flatwoods, xeric oak (scrub), longleaf pine/xeric oak (sandhill), shrub and brushland, pasture and borrow pits. All land use and community type classifications are from the Florida Department of Transportation's Florida Land Use, Cover and Forms Classification System, Level III (FLUCFCS).

The upland vegetative communities at the Victoria Park project site are dominated by the sandhill, pasture and shrub and brushland cover-types. Endemic plant species dominate many of these areas. These include turkey oak, scrub oaks, longleaf pine, fetterbush, and reindeer moss in the higher elevations (sandhill and scrub communities) and slash pine trees, saw palmetto and gallberry in lower areas. The lower upland areas are comprised of pine flatwoods and shrub and brushland vegetative communities.

Many of the upland areas have been disturbed from past land management practices and are vegetated with certain exotic species such as carpet grass and soda apple. The pasture, borrow, and power easement areas are dominated by pasture grasses. In addition, many of the sandhill areas, particularly in the southwest quadrant have been altered by the cattle operation. The following further describes these upland areas:

Modica and Associates conducted inspections of the site to document vegetative community-types. This was accomplished by conducting a series of belt transects, vehicular surveys and pedestrian surveys. The total area of the survey transects covered more than 15% of the different ecological communities that occur on the Victoria Park project site. The survey transects were visually surveyed for plant species composition through ground-truthing. Finally, the various vegetative communities were also surveyed in conjunction with the wildlife surveys to determine the presence or absence of any federally or state "listed" plant species. The following describes the upland vegetative communities at the Victoria Park site.

Longleaf Pine-Xeric Oak (FLUCFCS 412 – 1,235.3 acres)

This community covers most of the uplands. Many of these areas are comprised of a dense canopy of longleaf pine, sand live oak and turkey oak *(Quercus laevis).* Common understory and groundcover species observed in these areas included Chapman's oak *(Quercus chapmanii),* myrtle oak *(Quercus myrtifolia),* saw palm *(Serenoa repens),* bracken fern *(Pteridium aquilinum),* reindeer moss *(Cladina evansii),* prickly-pear cactus *(Opuntia stricta)* and greenbriar *(Smilax* spp.). Also observed, but less frequently wca *(Yucca filamentosa),* sand pine *(Pinus clausa),* Spanish moss *(Tillandsia usneoides),* wiregrass *(Aristida stricta),* tarflower *(Beferia racemosa),* grapevines *(Vitis rotundifolia),* goldenrod *(Solidago* spp.), gopher apple *(Licania michauxii),* tread softly *(Cnidoscolus stimulosus)* and pawpaw *(Asimina obovata).* Groundcover in these areas varies greatly due to past land management practices such as timbering and a historical cattle operation. Some areas of this cover-type are comprised of a pasture grass-dominated groundcover.

Improved pastures (FLUCFCS 211 – 156.5 acres)

These areas are composed of land which has been cleared, tilled, re-seeded with specific grass types and periodically improved with brush control and fertilizer application. The largest improved pasture area is located in the northeastern portion of the property. Bahia grass *(Paspalum notatum)* and beggar weed *(Desmodium triflorum)* are very common in these areas. Some scattered longleaf pine *(Pinus palustris),* saw palmetto *(Serenoa repens),* sedge plants *(Carex* spp.), soda apple *(Solanum capsicoides),* blackberry *(Rubus cuneifolius),* muscadine grapevines,

flat-topped goldenrod *(Euthamia minor),* dog fennel *(Eupatorium capillifolium),* carpet grass *(Axonopus affinis),* wax myrtle *(Myrica cerifera),* prickly-pear cactus were also observed, but less frequently.

Shrub and Brushland (FLUCFCS 320 – 146.4 acres)

These areas are thickly vegetated with groundcover and midstory plants. Common species observed in this community type include, saw palmetto *(Serenoa repens),* staggerbush *(Lyonia fruticosa),* tarflower, rusty lyonia *(Lyonia ferruginea),* shiny blueberry *(Vaccinium myrsinites),* gallberry *(Ilex glabra)* and scattered young oak and pines *(Quercus* spp. and *Pinus* spp.). Blackberry *(Rubus cuneifolius),* Sabal palm *(Sabal palmetto),* flat-topped goldenrod, dog fennel, prickly-pear cactus, greenbriar *(Smilax* spp.) were also observed, but less frequently.

Pine Flatwoods (FLUCFCS 411 – 55.6 acres)

Longleaf pine *(Pinus palustris)* and slash pine *(Pinus elliottii)* dominate the canopy in these areas. Saw palmetto dominates the groundcover. Wax myrtle *(Myrica cerifera),* gallberry, shiny lyonia *(Lyonia lucida),* Sabal palm, bracken fern *(Pteridium aquilinum),* grapevines, goldenrod and greenbriar were also observed.

Unimproved Pastures (FLUCFCS 212 – 19.4 acres)

These areas have become overgrown due to lack of brush control, mowing or intense grazing. This cover type is comprised of those species observed in the improved pastures, but gallberry, dog fennel, blackberry, saltbush *(Baccharis halimifolia),* sand pine and staggerbush are also common. This upland community also makes up a small portion of the site.

Xeric Oak (FLUCFCS 421 – 11.4 acres)

This cover-type was observed in the NE quadrant. These areas are dominated by several species of oaks including, sand live oak *(Quercus geminata),* Chapman's oak *(Quercus chapmanii)* and myrtle oak *(Quercus myrtifolia).* Minimal groundcover vegetation is present due to the dense, overgrown condition of the oaks. The groundcover that does exist is mostly comprised of saw palm, bracken fern *(Pteridium aquilinum)* and reindeer moss *(Cladina evansii).* Tarflower, sand pine, greenbriar, pawpaw, flat-topped goldenrod, yucca and gopher apple were also observed, but less frequently.

The remaining 19.1 acres of uplands on the property consist of Borrow Area (2.5 ac.) and Transmission Lines (16.6 ac.). These areas are mostly comprised of pasture grasses.

Wetlands

A total of **215.5 acres** of wetlands exist at the Victoria Park Project site. A Formal Wetland Determination with the St. Johns River Water Management District (SJRWMD) was conducted at this site in 1998 **(Appendix 3 - No. 16-127-0062A).** The United States Army Corp of Engineers (USACOE) also conducted a jurisdictional determination on the property **(JD# 1997-07347-JD-SS)**. One hundred and twelve (112) wetlands were identified, field delineated and the boundaries approved by SJRWMD and USACOE within the Victoria Park project site.

The wetlands at the Victoria Park site consist of **214.4 acres** of forested, herbaceous and a shrub-dominated wetlands and **1.1 acres** of ditches. These areas total **215.5 acres.** The location and size of each wetland community is illustrated on **Map 3 (Appendix 1)**. The reference number, size and FLUCFCS code for each wetland are listed in **Table 4**. Please note that there is a gap in the numbering system between Wetland 77 (W77) and W82 and between W83 and W85 due to a reduction in the size of the site and the exclusion of an outparcel. Wetland areas W78, 79, 80, 81 and 84 are no longer are part of the Victoria Park project site.

The wetlands at Victoria Park were field delineated by Rodney Hudson and Pete Johnson of Modica & Associates, Inc., field checked by Hilburn O. Hillestad, Ph.D and surveyed by Tinklepaugh Surveying. The wetland lines were flagged pursuant to the methodologies outlined in The Florida Wetlands Delineation Manual (1995) and Corps of Engineers Wetlands Delineation Manual (January 1987). These wetland lines were inspected and approved of by the St. Johns River Water Management District and the U.S Army Corps of Engineers. Some minor changes in the location of the flagged wetland lines occurred during the inspections by Lance Hart, Lisa Grant and Dar-Guam Cheng of the District's Orlando Service Center and Thad Hart and Shirley Stokes of the Corps of Engineers' Palatka Field Office.

Types

Several different wetland cover-types were identified during the evaluation of the Victoria Park project site **(Appendix 2, Photo 3 – 14).** These communities are, in descending order of total acreage, Wet Prairie (643), Wetland Forested Mixed (630), Freshwater Marsh (641), Cypress (621), Pine Flatwoods-wetland (411-w), ditch and Shrub and Brushland-wetland (320-w). The total acreages and location of these areas are illustrated on **Map 3 (Appendix 1).**

Many endemic plant species exists within these wetlands. However, exotic and/or invasive plant species were observed as well. Land management practices including timbering, pasture creation, ditching and cattle rearing have altered many of these communities.

Slash pine, sweetbay, bald cypress, red maple and loblolly bay were frequently observed in the forested wetlands (Cypress, Pine Flatwoods-wetland and Wetland Forested Mixed). St. Johns wort, maidencane, maidencane, carpet grass and waterlilys were common in many of the herbaceous wetlands, which included the freshwater marshes and wet prairies. The following describes the wetland cover-types observed at the Victoria Park Project site:

Table 4. Existing Wetlands at the Victoria Park Project, June 1999.

Wetland Number	Community Type	FLUCFCS Code (Level III)	Total Size (acres)
W1	Shrub and Brushland	320	0.29
W2	Herbaceous	641/411-W	4.08
W3	Herbaceous	641	0.33
W4	Herbaceous	643	0.41
W5	Herbaceous	641/643	7.64
W6	Herbaceous	643	3.27
W7	Herbaceous	643	0.48
W8	Herbaceous	641/643	1.80
W9	Forested	621	4.08
W10	Herbaceous	643	1.66
W11	Herbaceous	643	1.06
W12	Herbaceous	643	0.43
W13	Herbaceous	643	1.46
W14	Herbaceous	643	0.85
W15	Herbaceous	643	0.53
W16	Forested/Herbaceous	411-W/643	1.38
W17	Herbaceous	641/643	8.77
W18	Herbaceous	643	0.07
W19	Herbaceous	643	0.09
W20	Herbaceous	643	0.72
W21	Herbaceous	641	4.33
W22	Herbaceous	643	0.32
W23	Herbaceous	641	0.20
W24	Herbaceous	641	0.23
W25	Herbaceous	643	0.10
W26	Herbaceous	643	1.65
W27	Herbaceous	643	5.06
W28	Herbaceous	643	0.07
W29	Herbaceous	643	0.29
W30	Herbaceous	643	3.55
W31	Herbaceous	643	1.76
W32	Herbaceous	643	0.18
W33	Herbaceous	643	1.15
W34	Herbaceous	643	0.68
W35	Herbaceous	643	0.37
W36	Herbaceous	643	0.32
W37	Herbaceous	643	0.60
W38	Herbaceous	643	1.63
W39	Herbaceous	643	0.24
W40	Herbaceous	641/643	7.22
W41	Herbaceous	643	0.10
W42	Herbaceous	643	2.00
W43	Herbaceous	643	0.25
W44	Herbaceous	643	1.03
W45	Herbaceous	643	0.47
W46	Herbaceous	643	0.23
W47	Herbaceous	643	0.25

Table 4 continued.

W48	Herbaceous	643	0.06
W49	Herbaceous	643	1.55
W50	Herbaceous	641	0.34
W51	Herbaceous	641/643	3.34
W52	Herbaceous	643	0.44
W53	Herbaceous	643	2.42
W54	Herbaceous	643	0.52
W55	Forested	630	43.54
W56	Herbaceous	643	0.17
W57	Herbaceous	643	1.81
W58	Herbaceous	643	0.20
W59	Herbaceous	643	1.53
W60	Herbaceous	643	0.25
W61	Herbaceous	643	1.30
W62	Herbaceous	643	0.47
W63	Forested/Herbaceous	621/630/643	21.69
W64	Herbaceous	641	1.13
W65	Herbaceous	643	0.28
W66	Herbaceous	643	0.80
W67	Herbaceous	643	0.14
W68	Forested	630	1.23
W69	Herbaceous	641	1.10
W70	Forested	630	0.37
W71	Herbaceous	643	0.61
W72	Forested/Herbaceous	630/643	3.53
W73	Herbaceous	643	0.55
W74	Herbaceous	641/643	7.69
W75	Herbaceous	643	0.53
W76	Herbaceous	643	0.23
W77	Herbaceous	643	0.30
*			
W82	Herbaceous	641	3.54
W83	Herbaceous	643	0.45
*			
W85	Herbaceous	643	0.44
W86	Herbaceous	641	3.97
W87	Herbaceous	641/643	2.23
W88	Herbaceous	643	0.17
W89	Herbaceous	643	0.01
W90	Herbaceous	641	0.51
W91	Herbaceous	641	0.45
W92	Herbaceous	643	0.03
W93	Herbaceous	643	0.02
W94	Forested	411-W	0.10
W95	Herbaceous	643	0.33
W96	Herbaceous	643	0.02
W97	Herbaceous	643	0.64
W98	Herbaceous	643	2.00
W99	Herbaceous	643	0.68
W100	Herbaceous	643	0.02
W101	Herbaceous	643	0.75

Table 4 continued.

W102	Herbaceous	643	0.53
W103	Herbaceous	643	0.92
W104	Herbaceous	643	1.15
W105	Herbaceous	643	0.14
W106	Forested	411-W	0.36
W107	Forested/Herbaceous	411-W/641/643	7.89
W108	Herbaceous	643	0.27
W109	Herbaceous	643	0.10
W110	Herbaceous	643	0.17
W111	Herbaceous	643	0.32
W112	Herbaceous	643	6.12
W113	Herbaceous	643	2.41
W114	Herbaceous	643	0.02
W115	Herbaceous	643	1.62
W116	Herbaceous	641	1.93
W117	Forested	411-W	2.18
Ditches	510		app. 1
TOTAL			215.5

* Denotes gap in numbering system.

Wet Prairie (FLUCFCS 643 – 110.0 acres)

The majority of the wetlands on the site are comprised of Wet Prairie cover. These communities consist of shallow depressions that are only seasonally inundated. Wetland 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46,47, 48, 49, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 63, 65, 66, 67, 71, 72, 73, 74, 75, 76, 77, 83, 85, 87, 88, 89, 92, 93, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 107, 108, 109, 110, 111, 112, 113, 114 and 115 are either partially or entirely comprised of this cover-type. Many of these systems (94 total) are dominated by carpet grass *(Axonopus* spp.), an invasive species that is common in disturbed areas. Also commonly observed in many of these communities was slender spikerush *(Eleocharis baldwinii),* St. Johns wort, yellow-eyed grass *(Xyris elliottii),* little-blue maidencane *(Amphicarpum muhlenbergianum),* water pennywort *(Hydrocotyle umbellata),* sundew *(Drosera* spp.), beakrushes *(Rhynchospora* spp.), broomsedge *(Andropogon* spp.), coinwort *(Centella asiatica)* and maidencane *(Panicum hemitomon).* Most of these wetlands are very small as well.

Wetland Forested Mixed (FLUCFCS 630 – 58.8 acres)

These communities, in which neither hardwoods or conifers achieve a 66 percent dominance of the crown canopy, also exist at the Victoria Park project site. Wetlands 55, 68, 70 and portions of Wetlands 63 and 72 are dominated by this cover type. These forested wetlands are dominated by mixture of loblolly bay, red maple *(Acer rubrum),* slash pine and pond pine. Also common in the canopy of these wetlands are cabbage palm and sweet gum *(Liquidambar styraciflua).* The understory and groundcover is mostly comprised of dahoon holly, saw palmetto, cinnamon fern and gallberry.

Freshwater Marsh (FLUCFCS 641 – 26.3 acres)

These wetlands consist of deeper water herbaceous wetlands that are inundated, at least partially, throughout the year. Wetlands 2, 3, 5, 8, 17, 21, 40, 50, 51, 64, 69, 74, 82, 86, 87, 90, 91, 107 and 116 are either partially or entirely comprised of this cover-type. Common vegetative species observed in these communities included pickerelweed *(Pontederia lanceolata),* duck potato *(Sagittaria lancifolia),* water hyssop *(Bacopa monnieri),* St. Johns wort *(Hypericum fasciculatum),* maidencane *(Panicum hemitomon)* and fragrant water lily *(Nymphaea odorata).* The majority of these marshes are small, isolated systems.

Cypress (FLUCFCS 621 – 12.9 acres)

Two wetland areas classified as Cypress (621) by the FLUCFCS exist at the Victoria Park project site. These include wetlands all of Wetland 9 and a portion of Wetland 63. Common vegetative species observed in these wetland areas include bald cypress *(Taxodium distichum),* loblolly bay *(Gordonia lasianthus),* pond pine *(Pinus serotina),* dahoon holly *(Ilex cassine)* and wax myrtle *(Myrica cerifer*a). Chain fern *(Woodwardia virginica),* cinnamon fern *(Osmunda cinnamomea),* saw palm, sphagnum moss *(Sphagnum* spp.), lizard's tail *(Saururus cernuus)* and water pennywort *(Hydrocotyle umbellata)* were also commonly observed.

Pine Flatwoods (FLUCFCS 411w – 6.3 acres)

Wetlands 94, 106, 117 and portions of Wetlands 2, 16, 51 and 107 are comprised of this vegetative community type. The canopy in these wetland areas is mostly comprised of slash pine *(Pinus elliottii)* and pond pine *(Pinus serotina).* Common understory and groundcover species

observed in these areas included dahoon holly, cinnamon fern, St. Johns wort *(Hypericum fasciculatum),* spikerush *(Eleocharis baldwinii),* carpet grass *(Axonopus* spp.), water pennywort and gallberry *(Ilex glabra).*

Shrub and Brushland (FLUCFCS 320 – 0.3 acre)

A single wetland area (W1) classified as Shrub and Brushland (320) due to dominant coverage of shrubby plant species and hydric soils exist at the Victoria Park site. This wetland is located along the most northern property boundary and is connected to W2 by a upland-cut ditch. This community is comprised of many of the same species observed within the wet prairie and wet pine flatwoods with the addition of a dominant coverage of shrubs. These plant species included shiny lyonia, carpet grass, slender spikerush, St. Johns wort, yellow-eyed grass, little-blue maidencane and redroot.

Ditch (FLUCFCS 510 – app. 1 acre)

These areas are classified as Streams and Waterways (510) by the FLUCFCS. Several ditches are located on the project site and appear to have been dug several years ago in an effort to control water levels on the site. For the most part, these areas are dominated by carpet grass, bahia grass *(Paspalum notatum),* red ludwigia *(Ludwigia repens)* and water pennywort.

Distribution and acreage

The location and size of each wetland is illustrated on **Map 3 (Appendix 1)**. The reference number, size and Florida Land-Use, Cover and Forms Classification, Level III code (FLUCFCS) for each wetland is listed in **Table 4**. A gap in the numbering system between Wetland (W) 77 and W82 and between W83 and W85 exist due to a reduction in the project size. There is not a Wetland 78, 79, 80, 81 or 84 on the Victoria Park project site due to the removal of an outparcel from the project area.

Approximately **12%** of the Victoria Park project site is comprised of wetlands. The majority of these wetlands (Wetlands 1 - 71) are located in the northeast quadrant of the project, which is west of I-4, east of the Martin Luther King, Jr, Beltway (CR 4101), and north of Orange Camp Road. The project is comprised of a total of **215.5 acres** of wetlands of which approximately **136 acres** are herbaceous wetlands, **78 acres** are forested wetlands and approximately **1 acre** is ditch.

Wildlife

The Victoria Park project was evaluated to determine what wildlife species inhabit the site. All surveys were performed in accordance with the guidelines published by the Florida Fish and Wildlife Conservation Commission (FFWCC) in Wildlife Methodology Guidelines for Section 18.D of the Application for Development Approval (ADA). The following describes the wildlife survey methodologies and results.

Vegetation and land use cover types were identified by evaluating aerial photographs (1 inch = 400 feet, dated March 1990), United States Geological Survey Quadrangle Maps, Soil Conservation Service soil maps (dated 1970, 1 inch = 1,666 feet) and ground-truthing. The ground-truthing consisted of inspecting the site on foot and through the use of a four-wheel drive vehicle.

The Florida Committee on Rare and Endangered Plants and Animals (FCREPA) were examined to develop lists of species possibly occurring within, or in the vicinity of, the proposed site. The current listings of animal species considered as endangered, threatened, rare, commercially exploited or of special concern by the U.S. Fish and Wildlife Services (USFWS) and the Florida Fish and Wildlife Conservation Commission (FFWCC) were also reviewed. Literature searches were also completed with regard to information and data previously collected and documented on this site.

The site was surveyed for the existence of gopher tortoises through the use of random transects. The survey transects were drawn on an aerial photograph prior to being traversed in the field. This was done to ensure the survey transects covered a random area of at least 15 percent of each community-type that is described as suitable habitat. A field survey was then conducted to traverse the survey transects. The number of active and inactive gopher tortoise burrows was recorded. The location of the mentioned wildlife survey transects are illustrated on the appended **Survey Transect Maps (Appendix 1 - Map 5** and **Map 6).**

Funnel trapping and small mammal trapping was conducted on the site to identify commensal species that utilize tortoise burrows such as indigo snakes, pine snakes and gopher frogs. Funnel trapping was performed in areas comprised of dense tortoise populations (greater than 0.4/acre) and were checked twice daily for four days in selected burrows. Trappings occurred in April of 1998. Funnel traps were also be set in burrows that were in close proximity of freshwater marshes typically utilized by gopher frogs.

A small mammal survey, which targeted the Florida mouse, was also conducted. This survey consisted of random trapping and was conducted under the guidance of the FFWCC. Traps were checked twice daily and were set in conjunction with other surveys including the previously mentioned herpeto-faunal surveys. The small mammal trapping was also conducted in April of 1998.

A Scrub Jay survey was also conducted at the Victoria Park Project. This included a survey of all suitable habitat for a period of 6 days. Surveys were conducted on calm, clear days between the hours of 8:00 am and 3:00 pm on October 13, 14, 15, 16, 17 and 24, 1998. A full inventory of the number of Florida Scrub Jays and the extent of each family's territory was established. This information was augmented by the information generated during the construction of the Martin Luther King, Jr. Beltway. Additional jay observations have been noted throughout all subsequent field surveys for other species and during wetland determinations. All follow-up observations conducted over the following year until June of 1999, confirm the number of jay families and their locations from the October, 1998 survey.

The site was also visually survey for the Red-cockaded Woodpecker. The survey focused on the mature stand of longleaf pines located in the southeastern portion of the site. The trees were visually scanned for cavities. No Red-cockaded Woodpeckers or evidence thereof were observed on the site.

Wetland areas were examined for the presence and usage by listed wading birds and other bird species. Methodologies consisted of whole area visual scanning, spot searches, and pedestrian surveys. The specific method(s) chosen depended upon the vegetative characteristics of each wetland. In general, visual scanning was used to evaluate freshwater marshes, while spot searches and pedestrian surveys were used to investigate forested wetlands. Surveys were conducted during the fall season of 1997 and during the Sandhill Cranes surveys conducted between January and July of 1998 and 1999. These surveys were conducted on several days and range between 8:00 am and 4:00 pm on sunny and partly cloudy days.

Surveys for the Southeastern American Kestrel were conducted by making observations of any area where the kestrel could perch, nest or forage. Particular attention was devoted to power lines, fence lines and any trees, which could serve for perching/nesting, particularly snags. This survey was conducted during in April of 1998.

Although no Bald Eagles were observed during the surveys and no nest exist on site, the FFWCC, which inventories the location of eagle nests, was contacted to determine the location of the closest known nest. According to John White of FFWCC, the nearest eagle nest (#83) is more than 5 miles in a southeast direction from the Victoria Park site.

Protected Species

A total of eleven (11) wildlife species which are listed in the Florida Fish and Wildlife Conservation Commission's (FFWCC) Florida's Endangered Species, Threatened Species and Species of Special Concern - Official Lists were observed at the Victoria Park site. These species and the current state and federal status of each are listed in **Table 5**.

The SMMP plan integrates upland preservation, wetland preservation, wetland enhancement, wetland creation and management of wildlife preserves to allow for the co-existence of the observed wildlife species and the proposed development within functioning ecosystems and ecotones. Further details on the planned management for these species is included in the Site Mitigation and Management section of this narrative.

Wading Birds

All wetland areas were examined for the presence and usage by listed wading birds as well as other bird species. Several wading birds were observed during theses surveys including common species such as Great Blue Herons and listed species such as the White Ibis, Little Blue Heron, Snowy Egret , Tricolored Heron and Sandhill Cranes. The general wildlife section of this narrative includes a complete list of all birds observed on the Victoria Park project site.

Table 5. Protected Wildlife Species at the Victoria Park Project Site, June 1998.

Species	Listed Status:	
	FFWCC	USFWS
Florida Scrub Jay *(Aphelocoma coerulescens)*	T	T
Florida Sandhill Crane *(Grus canadensis)*	T	Not Listed
Eastern indigo snake *(Drymarchon corais couperi)*	T	T
gopher tortoise *(Gopherus polyphemus)*	SSC	Not Listed
White Ibis *(Eudocimus albus)*	SSC	Not Listed
Little Blue Heron *(Egretta caerulea)*	SSC	Not Listed
Snowy Egret *(Egretta thula)*	SSC	Not Listed
Tricolored Heron *(Egretta tricolor)*	SSC	Not Listed
Florida mouse *(Podomys floridanus)*	SSC	Not Listed
American alligator *(Alligator mississippiensis)*	SSC	T (S/A)
Sherman's fox squirrel *(Sciurus niger shermani)*	SSC	Not Listed

FFWCC - Florida Fish and Wildlife Conservation Commission
USFWS - United States Fish and Wildlife Service
SSC - Species of Special Concern
T - Threatened
T (S/A) - Threatened due to Similarity of Appearance

General Wildlife Populations

A variety of common birds, amphibians, reptiles and mammals were observed on the property. These consisted of wetland and terrestrial species. Frequent observations of species such as leopard frogs, herons and egrets occurred in and near inundated areas. Sixed-lined racerunners, Mourning Doves and gray squirrels were commonly observed in terrestrial areas such as the longleaf pine-xeric oak (sandhill) cover. Several avian species were observed soaring above the property, including Turkey Vultures and Red-shouldered Hawks.

Although some species were not directly observed, the presence of a species was identified due to evidence (i.e. tracks, burrows, bird calls, scat, etc). The following wildlife species were directly observed, as well as indirectly observed by evidence of a particular species, at the Victoria Park project site:

Fish:

mosquitofish *(Gambusia affinis)*

Amphibians and Reptiles:

pig frog *(Rana grylio)*
oak toad *(Bufo quercicus)*
cricket frog *(Acris gryllus)*
bronze frog *(Rana clamitans clamitans)*
southern leopard frog *(Rana utricularia)*
green treefrog *(Hyla cinerea)*
Eastern coral snake (*Micrurus fulvius)*
black racer *(Coluber constrictor)*
Eastern diamondback rattlesnake *(Crotalus adamanteus)*
garter snake *(Thamnophis sauritus)*
brown anole *(Anolis sagrei)*
green anole *(Anolis carolinensis)*
redbelly turtle *(Pseudemys nelsoni)*
Southeastern five-lined skink *(Eumeces inexpectatus)*
six-lined racerunner *(Cnemidophorus sexlineatus)*
fence lizard *(Sceloporus undulatus)*
box turtle *(Terrepene carolina)*
American alligator *(Alligator mississippiensis)*
Eastern indigo snake *(Drymarchon corais couperi)*
gopher tortoise *(Gopherus polyphemus)*

Birds:

Great Blue Heron *(Ardea herodias)*
Great Egret *(Casmerodius albus)*
Cattle Egret *(Bubulcus ibis)*
Black Vulture *(Coragyps atratus)*
Mallard *(Anas platyrhincus)*
American Kestrel *(Falco sparverius)*
Common Moorhen *(Gallinula chloropus)*

Red-headed Woodpecker *(Melanerpes erythrocephalus)*
American Crow *(Corvus ossifragus)*
Turkey Vulture *(Cathartes aura)*
Yellow-bellied Sapsucker *(Sphyrapicus varius)*
Mourning Dove *(Zenaida macroura)*
Pileated Woodpecker *(Dryocopus pileatus)*
Red-bellied Woodpecker *(Melanerpes carolinus)*
Turkey *(Meleagris gallopavo)*
Red-shouldered Hawk *(Buteo lineatus)*
Killdeer *(Charadrius viciferus)*
Common Snipe *(Gallinago gallinago)*
Common Nighthawk *(Chordeiles minor)*
Northern Cardinal *(Cardinalis cardinalis)*
Anhinga *(Anhinga anhinga)*
Red-winged Blackbird *(Agelaius phoeniceus)*
Loggerhead Shrike *(Lanius ludovicianus)*
American Swallow-tailed Kite *(Elanoides forficatus)*
Common Ground Dove *(Columbina passerina)*
Blue Jay *(Cyanocitta cristata)*
Carolina Wren *(Thryothorus ludovicianus)*
Great Crested Flycatcher *(Myiarchus crinitus)*
Northern Mockingbird *(Mimus polyglottos)*
Gray Catbird *(Dumetella carolinensis)*
Northern Bobwhite *(Colinus virginianus)*
Rufous-sided Towhee *(Pipilo erythrophthalmus)*
Common Yellowthroat *(Geothlypis trichas)*
Brown Thrasher *(Toxostoma rufum)*
White Ibis *(Eudocimus albus)*
Little Blue Heron *(Egretta caerulea)*
Snowy Egret *(Egretta thula)*
Sandhill Crane *(Grus canadensis)*
Tricolored Heron *(Egretta tricolor)*
Florida Scrub Jay *(Aphelocoma coerulescens)*

Mammals:

nine-banded armadillo *(Dasypus novemcinctus)*
bobcat *(Lynx rufus)*
Southeastern pocket gopher *(Geomys pinetis)*
white-tailed deer *(Odocoileus virginianus)*
raccoon *(Procyon lotor)*
gray squirrel *(Sciurus carolinensis)*
Florida mouse *(Podomys floridanus)*
Sherman's fox squirrel *(Sciurus niger shermani)*

Surface Water

No named waterbodies (i.e. lakes, rivers, streams) exist at the Victoria Park site. However, some deep-water areas within the mentioned wetlands on the property remain inundated throughout the year. Portions of Wetland 5, 17 and 21, which are all being preserved as part of the SMMP, remain inundated year-round. These areas are very minimal compared to the overall property, but provide valuable habitat to a variety of wildlife species including the American alligator, Anhinga and largemouth bass.

Groundwater

A general representation of the site's surficial soil conditions is found on the NRCS (SCS) mapping of the area. This indicates that the western soils are nearly all A (HSG) types while on the northeast quadrant there is a mixture of A, B and A/D types. Sitewide, a tabulation of these soil variations can be summarized as clean sands with little or no organic content.

The specific soils conditions in the project area, both shallow and deep, are well documented in the "Geotechnical Findings Report, Victoria Park Development", dated April 7,1999 by Universal Engineering Sciences. Borings have been made at more than 75 locations throughout the site with sample recoveries for lab analysis. Additionally, piezometric wells have been installed at the boring locations for observations of aquifer conditions.

The northeast area, where most of the wetland areas occur, is covered with 39 soil boring and piezometer locations. Many of these borings are located in the SCS-mapped A/D soils areas. While these soils may be very wet in situ, the lab analysis of the upper 10 to 15 feet of depth are shown to be free of organics and of other fines. In further depth, the boring logs indicate some silty and clayey sand stratification but no impermeable layers.

The seasonal high groundwater estimates by the geotechnical engineer and the biological indications around wetlands, which have been surveyed for elevation, indicate regular wet-season inundation over much of the northeast basin area. The lack of a shallow well-defined impermeable layer to effect a perched water table must point to other causes for this saturation. This is probably a result of a combination of the poorer soils in depths together with a restricted surfacewater drainage system. Both of these conditions extend beyond the alterable domain of the proposed development. The soil conditions are too deep to change by normal excavation. The restricted drainage is constructed with the Interstate-4 interchange system.

Protection of Wetlands – Groundwater

Since the wetlands are sustained in most cases by ambient shallow groundwater levels it is imperative that the development not effect any lowering of these levels adjacent to wetlands. This condition applies mostly in the NE quadrant where there is limited offsite discharge capacity. The typical plan and profile scheme for the retention ponds in this quadrant consist of a wet pond adjacent to a wetland buffer on the up-gradient side of the wetlands. This pond will be allowed to stage up to a limited height above the ambient level, which is both the normal groundwater and wetland level. The recovery of this captured stormwater will be accomplished by percolation into the surrounding surficial sands. This positive gradient of groundwater flow will result in a controlled recharge of highly filtered stormwater into the wetlands. The proposed system will thereby maintain and enhance the groundwater levels in the vicinity of the wetlands.

Protection of Wetlands – Surfacewater

The wetlands will be protected from stormwater collection system by the above methods and the concept of avoiding direct use of the wetlands. All runoff from the development will be treated in water quality retention ponds prior to discharge at any point. Most of the discharge points will be into connected wetlands for subsequent conveyance offsite. The temporary conveyance and detention through the wetlands will be controlled to limits of existing and beneficial levels for these areas.

There is protection from the development implicit in the basic plan layout. The current development plan avoids the majority of the isolated wetlands lying just east of Martin Luther King Blvd. Placing most development eastward and down gradient from these sensitive areas further aids the avoidance of wetland impacts in a hydraulic sense. Additionally, a long contiguous corridor for wildlife has been provided.

DEVELOPMENT IMPACTS

The Victoria Park project site is comprised of naturally vegetative communities and numerous disturbed areas. The development plan includes impacting the majority of the site that has become disturbed due to agricultural practices and preserving several hundred acres of the more viable habitat associated with the non-disturbed vegetative communities. Many of the preserve areas include habitat that is important to protected species.

Approximately **1,140 acres (61 %)** of the entire property acreage **(1,859 ac.)** is planned for development (residential or commercial use). The location of the planned impacts at the Victoria Park project site are illustrated on the appended **Development Plan Map (Appendix 1 – Map 2).** The remaining **719 acres (39 %)** will consist of environmental set-aside, preserves and green space. The planned green space areas are illustrated on the appended **Environmental Set-aside, Preserve and Greenspace Map (Appendix 1 - Map 7).** The following describes the planned impacts to wetlands, avoidance and minimization measures taken by the property owners and impacts to uplands on the property.

Upland Acreage

Approximately **1,644 acres** of the Victoria Park site is comprised of uplands, which consist of longleaf pine - xeric oak, pine flatwoods, pastureland, shrub and brushland, xeric oak, borrow areas, and power/gas line easements. Many of these areas have been altered and managed for agricultural purposes (timbered, cattle rearing, car paths, etc). The SMMP includes impacting many of the uplands for development into the above land uses and managing the preserved upland areas. Impacts on the property will include the development of approximately **67%** of the identified upland vegetative communities **(1,107 of 1,644 acres).**

A large portion of the uplands planned for development have already been impacted due to past land management practices, including cattle rearing, drainage ditches and timbering. Development plans include preserving several hundred acres of the most unaltered upland communities.

Upland Forests

Upland forest at the Victoria Park project site cover approximately **1,291 acres** of Longleaf Pine-Xeric Oak (412) and Pine Flatwoods (411). The Longleaf Pine/Xeric Oak forest is the dominate vegetative community-type on the site. These forested areas exist on the higher slopes of the property and are dominated by turkey oak and longleaf pine. Groundcover in the sandhill areas varies due to land management practices associated with the cattle operation **(Appendix 2 - Photo 1).** Bahia grass dominates the groundcover in many of these disturbed areas.

Impacts to the forested uplands at Victoria Park were avoided whenever possible, especially in the NE and SW quadrants, where the most frequent and abundant numbers of protected species were observed. However, impacts were deemed unavoidable due to site configuration constraints, the topography of the site, wetlands, protected species territories and the planned lot-layout.

The developers plan to avoid as many specimen trees and young stands as possible during the development of the project, especially in the NW and SW Quadrants of the site. Many of the upland forests will be preserved and managed at the Victoria Park project site. In addition, the planned golf course in the SW Quadrant will be comprised of several large and contiguous forested areas. Habitat management of the forested preservation areas will be important for several wildlife species, including listed species such as the Sherman's fox squirrel. These preservation areas are illustrated on the appended Development Plan Map **(Appendix 1 - Map 2)** and Environmental Set-aside, Preserve and Greenspace Map **(Appendix 1 - Map 7).**

Wetlands

As mentioned, one-hundred and twelve (112) wetlands were identified and claimed as Jurisdictional wetlands by the St. Johns River Water Management District (SJRWMD) and the United States Army Corp of Engineers (USACOE) at the Victoria Park project site. The jurisdictional limits for each agency was exactly the same for this project. These wetlands consist of **214.4 acres** of natural wetlands (forested wetlands, herbaceous wetlands and a shrub-dominated wetland) and approximately **1 acre** of ditches. The location and size of each wetland community is illustrated on **Map 3 (Appendix 1)**. The reference number, size and FLUCFCS code for each wetland is listed in **Table 4**.

The planned wetland impacts, which total **32.5 acres,** are listed in **Table 6.** The location of wetland impacts is illustrated on the appended **Wetland Impact Map (Appendix 1 - Map 8)**. All wetland fill impacts and mitigation area plan-views and cross-sections are included in **Appendix 4**. The majority of the planned wetland impacts will occur in wetlands that are small, disturbed and low in overall habitat value. Many of these wetlands are connected to drainage ditches, heavily grazed by cattle, comprised of exotic or invasive plant species and provide minimal habitat for wildlife **(Appendix 2, Photos 7 – 14). Thirty (30)** of the wetlands which are planned to be impacted are less than one-half acre and entirely located within the Victoria Park project limits. In addition, many of these are dominated by carpet grass *(Axonopus affinis),* an invasive species that typically occurs in disturbed areas. The following further details the site development impacts to the vegetative communities:

The applicant committed a substantial amount of resources as part of the site planning process to identifying the critical areas on the site that need to be incorporated into the site plan. This included the delineation and confirmation by the regulatory agencies of all wetland communities on the site. The location of the wetland boundaries has been memorialized via a Binding Jurisdictional Determination with the St. Johns River Water Management District. The applicant also conducted several specific wildlife studies including funnel and small mammal trapping. After it became apparent during several detailed environmental studies of the property that there were numerous environmental issues to consider, including several listed wildlife species inhabiting the site, the applicant began to take the project through an intense avoidance and minimization process.

In addition to avoiding and minimizing impacts, the applicant focused on a site plan that integrated several different wetland and upland areas to provide a comprehensive wildlife management program. This process considered the needs of the wildlife observed utilizing the habitat at this property, especially the needs of the listed species observed on the property. Additionally, there are several forested areas that received special consideration due to the mature canopy including areas containing specimen trees. The 18-hole golf course was relocated from the northeast sector to the southwest sector based on wetland presence and other considerations. Numerous other examples of changes in planning to accommodate various environmental issues are presented elsewhere.

The feasibility of this project is dependent upon several factors, including lot yield versus the cost of preserving upland and wetland habitat for listed wildlife and plant species. The current site plan will generate a needed lot-yield for the applicant while at the same time, provide perpetual habitat for a variety of upland and wetland wildlife species. The current site plan also will preserve substantial areas of mature forested communities by integrating them into the built landscape.

Table 6. Wetland Impact Summary at the Victoria Park Site.

Wetland Number	FLUCFCS Code	Total Size (acres)	Impact Size (acres)
W5	641	7.64	0.03
W7	643	0.48	0.48
W8	641/643	1.80	1.80
W10	643	1.66	1.66
W11	643	1.06	1.06
W12	643	0.43	0.43
W13	643	1.46	1.46
W14	643	0.85	0.85
W15	643	0.53	0.53
W19	643	0.09	0.02
W21	641	4.33	0.26
W22	643	0.32	0.32
W25	643	0.10	0.10
W28	643	0.07	0.07
W29	643	0.29	0.29
W32	643	0.18	0.07
W40	641/643	7.22	0.06
W41	643	0.10	0.10
W42	643	2.00	2.00
W47	643	0.25	0.09
W50	641	0.34	0.34
W51	641/643	3.34	3.16
W52	643	0.44	0.44
W53	643	2.42	0.23
W54	643	0.52	0.52
W55	630/641/643	43.54	0.35
W56	643	0.17	0.17
W57	643	1.81	1.81
W58	643	0.20	0.20
W59	643	1.53	1.53
W60	643	0.25	0.25
W61	643	1.30	1.30
W62	643	0.47	0.47
W63	621/630/643	21.69	0.88
W65	643	0.28	0.28
W66	643	0.80	0.80
W67	643	0.14	0.14
W68	630	1.23	1.23
W69	641	1.10	1.10
W71	643	0.61	0.61
W77	643	0.30	0.30
W85	643	0.44	0.44
W90	641	0.51	0.51
W92	643	0.03	0.03
W93	643	0.02	0.02

Table 6 continued.

W94	411-W	0.10	0.10
W95	643	0.33	0.33
W96	643	0.02	0.02
W97	643	0.64	0.64
W98	643	2.00	0.28
W100	643	0.02	0.02
W101	643	0.75	0.02
W103	643	0.92	0.09
W107	411-W/641/643	7.89	0.20
W108	643	0.27	0.27
W109	643	0.10	0.10
W110	643	0.17	0.17
W111	643	0.32	0.32
Ditches	510	1.0	1.0
TOTAL		129.2	32.5

Development plans, for the most part, include either partially or entirely filling or dredging within small, disturbed wetlands that have become dominated by carpet grass and preserving the more pristine wetlands. Forested wetlands have been, for the most part, avoided (3% impacted) and the majority of high quality wetlands have been avoided as well. Many of the wetlands planned for impacts are also connected to drainage ditches.

Development plans include partially or entirely impacting **59** of the **112** wetlands on the site, which will involve **15% (32.5 acres)** of the total wetlands within the project limits **(215.5 ac.).** Site development plans include entirely impacting **forty-five (45)** of the wetlands. These wetlands total **25.5 acres** and average **0.6 acre/wetland. Fourteen (14)** other wetlands will be partially impacted at the Victoria Park Project. These partial impacts total approximately **6 acres** or **0.4 acre/wetland**. Approximately **28.8 acres** of the planned impacts will be to herbaceous wetlands and approximately **2.7 acres** will be to forested wetlands. The remaining impacts (app. **1 acre**) will occur to ditches.

No impacts are planned for the following wetlands at the Victoria Park Project: W1, 2, 3, 4, 6, 9, 16, 17, 18, 20, 23, 24, 26, 27, 30, 31, 33, 34, 35, 36, 37, 38, 39, 43, 44, 45, 46, 48, 49, 64, 70, 72, 73, 74, 75, 76, 82, 83, 86, 87, 88, 89, 91, 99, 102, 104, 105, 106, 112, 113, 114, 115, 116 and 117.

Wetlands: 5, 7, 8, 10, 11, 12, 13, 14, 15, 19, 21, 22, 25, 28, 29, 32, 40, 41, 42, 47, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 65, 66, 67, 68, 69, 71, 77, 85, 90, 92, 93, 94, 95, 96, 97, 98, 100, 101, 103, 107, 108, 109, 110, 111 and some ditches will be either partially or entirely filled or dredged. These impacts total **32.5 acres.**

Thirty (30) of the wetlands planned to be impacted are less than one-half acre and entirely located within the Victoria Park property limits. In addition, carpet grass is common in these wetlands, which are located in rangeland or pastureland. These include Wetland 7, 12, 19, 22, 25, 28, 29, 32, 41, 47, 50, 52, 56, 58, 60, 62, 65, 67, 77, 85, 92, 93, 94, 95, 96, 100, 108, 109, 110 and 111. These impacts total **6.4 acres.**

The following briefly describes the planned wetland impacts. Wetlands that will not be impacted are described in the Mitigation and Management Section.

Wetland 5 (0.03 ac.) is located near the northern limits of the site in the NE quadrant, just east of the Martin Luther King Jr. Beltway. This **7.64-acre** herbaceous wetland is comprised of deep-water areas (Freshwater Marsh - 641) and shallow-water areas (Wet Prairie – 643). Common vegetative species observed in this wetland included broomsedge, pickerelweed, broomsedge, carpet grass, slender spikerush, pipewort, duck potato, St. Johns wort, maidencane, fragrant water lily, beakrush and longleaf pine. A total of **0.03 acres (0.4% impact)** of impacts are planned for this wetland due to lot layout and site configuration. This wetland is isolated and slightly disturbed from the cattle operation on the site (i.e. grazing, dominance of carpet grass). Removal of the cattle operation will enhance the remaining 99.6% of this wetland. The remainder of the wetland will be preserved. .

Wetland 7 (0.48 ac.) is just east of W6. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. Other plant species observed in this wetland included slender spikerush, broomsedge, little-blue maidencane and water pennywort. The site plan includes completely filling this wetland due to lot layout and site configuration. This wetland is isolated and quite disturbed due to the cattle operation.

Wetland 8 (1.80 ac.) is just east of W7. This wetland is comprised of freshwater marsh and wet prairie cover. Common vegetative species observed in the deep-water areas included

pickerelweed and fragrant water lily. Carpet grass, broomsedge, slender spikerush, little-blue maidencane and water pennywort were observed in the shallow areas. The site plan includes completely filling this wetland. This impact was deemed unavoidable due to lot layout and site configuration. This wetland is isolated and quite disturbed due to the cattle operation.

Wetland 10 (1.66 ac.) is just east of W8. Site plans include completely filling this wetland. This isolated wetland (643) is dominated by carpet grass. Slender spikerush, St. Johns wort, broomsedge, little-blue maidencane, longleaf pine, wiregrass, coinwort and water pennywort were also observed. Plant diversity and percent coverage of native/desirable species in this wetland has been significantly reduced due to past agricultural practices including the introduction of carpet grass, an invasive species, and managing cattle which graze on native wetland plants.

Wetland 11 (1.06 ac.) is just east of W10. This wetland is classified as Wet Prairie (643) and dominated by carpet grass as well. Also commonly observed in this wetland was slender spikerush, broomsedge, little-blue maidencane and water pennywort. The site plan includes completely filling this wetland due to lot layout and site configuration. This wetland is isolated and disturbed due to the cattle operation.

Wetland 12 (0.43 ac.) is just east of W11. This wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. Slender spikerush, St. Johns wort, broomsedge, little-blue maidencane, water pennywort and longleaf pine was also observed in this wetland. The site plan includes completely filling this wetland. This impact was deemed unavoidable due to lot layout and site configuration at the Victoria Park project site. This wetland is isolated and disturbed due to the cattle operation and invasion of undesirable plant species.

Wetland 13 (1.46 ac.) is just east of W12. This wetland is classified as Wet Prairie (643). Common plant species observed in this wetland included carpet grass, broomsedge, slender spikerush, St. Johns wort, little-blue maidencane and water pennywort. Invasive pines were also observed in this wetland. The site plan includes completely filling this wetland due to lot layout and site configuration. This wetland is isolated and disturbed due to the cattle operation and invasive species.

Wetland 14 (0.85 ac.) is just south of W12. This wetland is classified as Wet Prairie (643). Common plant species observed in this wetland included carpet grass, slender spikerush, broomsedge, little-blue maidencane and water pennywort. The site plan includes completely filling this wetland due to lot layout and site configuration. This wetland is isolated and disturbed due to the cattle operation and invasive species.

Wetland 15 (0.53 ac.) is just west of W14. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. Other common plant species observed in this wetland included slender spikerush, broomsedge, little-blue maidencane and water pennywort. The site plan includes completely filling this wetland due to lot layout and site configuration. This wetland is isolated and somewhat disturbed due to the cattle operation and carpet grass dominance.

Wetland 19 (0.02 ac.) is west of W17. This **0.09-acre** wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes a minor impact **(0.02 ac)** to this wetland due to lot layout, road construction and site configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance.

Wetland 21 (0.26 ac.) will be partially impacted due to road construction. This wetland is just south of W6 and is just east of the Martin Luther King Jr. Beltway. This **4.33-acre** wetland is comprised of shallow and deep-water areas. Common vegetative species observed in this wetland included St. Johns wort, fragrant water lily, yellow-eyed grass, little-blue maidencane, water pennywort, broomsedge, pipewort, coinwort, pickerelweed and fragrant water lily. A total of

0.26 acres (7.2% of the wetland) of impacts are planned for this wetland due to a planned road. This wetland is isolated and disturbed due to the cattle operation and the proximity of the Martin Luther King, Jr. Beltway. The remaining area of this wetland will be preserved.

Wetland 22 (0.32 acres) is south of W21. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. Other common plant species observed in this wetland included slender spikerush and water pennywort. The site plan includes completely filling this wetland due to lot-layout and site configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance.

Wetland 25 (0.10 acres) is just south of W22. This wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. Other common plant species observed in this wetland included slender spikerush, little-blue maidencane and water pennywort. The site plan includes completely filling this wetland due to lot-layout and site configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance.

Wetland 28 (0.07 ac.) is south of W25. This wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. Other plant species observed in this wetland included slender spikerush, little-blue maidencane and water pennywort. The site plan includes completely filling this wetland due to lot-layout and site configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance.

Wetland 29 (0.29 ac.) is just south of W28. This wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. Other plant species observed in this wetland included slender spikerush, little-blue maidencane and coinwort. The site plan includes completely filling this wetland due to lot-layout and site configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance.

Wetland 32 (0.07 ac.) is just south of W29 and will be partially impacted. This **0.18-acre** wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. The site plan include partially filling this wetland due to lot layout and site configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance.

Wetland 40 (0.06 acres) is southeast of W32. This **7.22-acre** wetland is comprised of freshwater marsh and wet prairie cover-types (deep and shallow herbaceous wetland areas). Common vegetative species observed in the deeper water areas included pickerelweed, duck potato, horsetail spikerush and fragrant water lily and St. Johns wort, slender spikerush, little-blue maidencane, beakrushes, bacopa, soft rush, broomsedge, carpet grass, longleaf pine and water pennywort in the shallow areas. A total of **0.06 acres** of impacts are planned for this wetland due to road construction and site constraints. This wetland is in good shape, but has become slightly disturbed due to the cattle operation on the site (i.e. grazing, carpet grass). The area of planned impact for this wetland is dominated by carpet grass and bahia grass and is the most disturbed portion of the wetland. Removal of the cattle operation will enhance the remainder of this wetland. The developer also plans to fill drainage ditches connected to this wetland.

Wetland 41 (0.10 ac.) is east of W40. This wetland is classified as Wet Prairie (643). Carpet grass and bahia grass dominate this wetland. The site plan includes completely filling this wetland due to lot-layout and site configuration constraints. This wetland is connected to W40 and W55 by upland cut ditches. This small wetland is very disturbed due to the cattle operation and drainage ditches.

Wetland 42 (2.00 ac.) is west of W40. This wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, maidencane, St. Johns wort, little-blue maidencane and water pennywort. The site plan includes completely filling

this wetland due to lot-layout and site constraints. This wetland is isolated and somewhat disturbed due to the cattle operation.

Wetland 47 (0.09 acres) is just south of W42. This **0.25-acre** wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, little-blue maidencane, coinwort and water pennywort. The site plan includes impacting **0.09 acres** due to road construction. This wetland is isolated and somewhat disturbed due to the cattle operation.

Wetland 50 (0.34 acres) will be completely filled due to site constraints and lot-layout. This wetland is east of W47 and south of W40. This wetland is dominated by pickerelweed. Maidencane and water hyssop were also observed in this wetland. This wetland appears to be in good shape, however drainage ditches connect to this wetland. Development plans include filling all drainage ditches. Although this wetland appears to be in good shape, water quality and wildlife usage in this wetland have become disturbed due to the cattle operationl.

Wetland 51 (3.16 ac.) will be impacted due to loy layout. A total of **3.16 acres**, which is quite disturbed, will be filled in this **3.38-acre** wetland. The majority of this wetland is dominated by carpet grass and frog's fruit. The most functional portion of this wetland will be preserved. This low area remains somewhat saturated throughout the dry season, which allows native wetland plants such as St. Johns wort, water lilys and maidencane to survive.

Wetland 52 (0.44 ac.) is just west of W51. Common plant species observed in this wetland included carpet grass, slender spikerush, little-blue maidencane and water pennywort. The site plan includes completely filling this wetland due to lot layout and site contraints. This wetland is isolated and disturbed due to the cattle operation.

Wetland 53 (0.23 ac.) is west of W52 and just north of Orange Camp Road. This **2.42-acre** wetland is dominated by St. Johns wort and appears to be in good shape. Site plans require **0.23 acres** of impacts to this wetland due to road construction and site constraints. Other species observed in this wetland included slender spikerush, water pennywort, water lily, beakrush, broomsedge, hatpin, pipewort, coinwort, maidencane and yellow-eyed grass.

Wetland 54 (0.52 ac.) is west of W55 near the center of northeast quadrant of the Victoria Park project site (northeast of the intersection of Orange Camp and Martin Luther King, Jr. Blvd.). This wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, St. Johns wort, little-blue maidencane and water pennywort. The site plan includes completely filling this wetland due lot layout and site configuration constraints. This wetland is isolated and somewhat disturbed due to the cattle operation.

Wetland 55 (0.35 ac.) is the largest wetland community on the Victoria Park project site. This wetland is just east of W54. This **43.54-acre** wetland is classified as Wetland Forested Mixed (630) and mostly comprised of a mixed canopy of loblolly bay, red maple, slash pine and pond pine. Cabbage palm and sweet gum were also observed in the canopy of this wetland. The understory and groundcover is mostly comprised of dahoon holly, saw palmetto, cinnamon fern and gallberry. This wetland is also comprised of two small herbaceous areas (app. 1.8 acres). These areas are comprised of maidencane, St. Johns wort, carpet grass, broomsedge and water pennywort. Site plans include impacting **0.35 acres** of the forested portion of this wetland due to road construction and lot layout (see Appendix 1 - Wetland Impact Map). The remaining portion of this wetland will be preserved in perpetuity.

Wetland 56 (0.17 ac.) is west of W55. This wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. Other plant species observed in this wetland included slender spikerush, coinwort and water pennywort. The site plan includes completely filling this wetland

due to constraints related to lot-layout and road construction. This wetland is isolated and disturbed due to the cattle operation.

Wetland 57 (1.81 ac.) is west of W54. This wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, St. Johns wort, little-blue maidencane and water pennywort. In addition, a few scattered slash pines were observed in this wetland. The site plan includes completely filling this wetland due to constraints related to lot-layout, road construction and the site stormwater system. This wetland is isolated and somewhat disturbed due to the cattle operation.

Wetland 58 (0.20 ac.) is just east of W55. This wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. The site plan includes completely filling this disturbed wetland. This wetland is hydrologically connected to W55 and is very disturbed due to the cattle operation. Impacts are necessary for this wetland due to the site lot-layout and road construction.

Wetland 59 (1.53 ac.) is north of W55. This wetland is classified as Wet Prairie (643). This wetland is dominated by carpet grass, St. Johns wort, slender spikerush, little-blue maidencane and water pennywort. A single black gum tree also exist in this wetland. The site plan includes completely filling this wetland. This wetland is drained by a ditch connected to W60. This wetland is in a high-use cattle area.

Wetland 60 (0.25 ac.) is southeast of W59. This wetland is classified as Wet Prairie (643). Carpet grass dominates this disturbed wetland. The site plan includes completely filling this wetland, which is connected to W59 and W62 by ditches. The cattle operation and ditches have lowered the habitat value of this wetland. Site constraints related to road construction and lot-layout require the filling of this wetland.

Wetland 61 (1.30 ac.) is southeast of W59. This wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. The site plan includes completely filling this wetland, which is directly connected to W60 and W62 by ditches. This wetland is quite disturbed due to the cattle operation and ditching. Site constraints related to road construction and lot-layout require the filling of this wetland.

Wetland 62 (0.47 ac.) is just east of W61. This wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, little-blue maidencane, soft rush and water pennywort. The site plan includes completely filling this wetland, which is directly connected to W60 and W61 by ditches. This wetland is quite disturbed due to the cattle operation and ditches. Site constraints related to road construction and lot-layout require the filling of this wetland.

Wetland 63 (0.88 acres) is just east of W62. This **21.69-acre** wetland is classified as Wetland Forested Mixed (630), Cypress (621) and Wet Prairie (643), but mostly consist of forested wetlands. The forested portion of W63 is dominated by a mixed canopy of loblolly bay, red maple, slash pine and pond pine in the wetland mixed forest cover and bald cypress in the cypress cover. The understory and groundcover in the forested areas is dominated by dahoon holly, wax myrtle, saw palmetto, cinnamon fern and gallberry. A small portion of W63 is comprised of non-forested, wet prairie community due to timbering for a powerline. Common vegetation observed in this area included carpet grass, slender spikerush, little-blue maidencane, soft rush, St. Johns wort, pipewort, hatpins, water pennywort and hooded-pitcher plant. This wetland area is hydrologically connected to Wetlands 59, 60, 61 and 62, as well as off-site wetlands. Site plans include impacting **0.88 acres (app. 4%)** of this wetland due to road construction needed to access a large upland area on the property. The remaining area of this wetland will be preserved.

Wetland 65 (0.28 ac.) is south of W63. This wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush and water pennywort. The site plan includes completely filling this wetland. This wetland is isolated and quite disturbed due to the cattle operation. Site constraints related to road construction and lot-layout require the filling of this wetland.

Wetland 66 (0.80 ac.) is just east of W65 and just west of Interstate-4. This wetland is classified as Wet Prairie (643). Common plant species observed in this wetland included carpet grass, slender spikerush, beakrush, broomsedge, soft rush, yellow-eyed grass, bogrush, little-blue maidencane, coinwort and water pennywort. The site plan includes completely filling this wetland. Site constraints related to road construction and lot-layout require filling this wetland. This wetland is isolated and quite disturbed due to the cattle operation.

Wetland 67 (0.14 ac.) is just south of W65. This wetland is classified as Wet Prairie (643). Carpet grass dominates this small wetland. Other plant species observed is this wetland included slender spikerush and water pennywort. The site plan includes completely filling this wetland. This wetland is isolated and disturbed due to the cattle operation. Site constraints related to road construction and lot-layout require filling this wetland.

Wetland 68 (1.23 acres) is south of W67. This wetland is classified as Wetland Forested Mixed (630) and is dominated by a sparse canopy of loblolly bay, red maple, slash pine and pond pine. The understory and groundcover in the forested areas are mostly comprised of dahoon holly, wax myrtle, muscadine grapevine, saw palmetto, cinnamon fern and gallberry. Site constraints related to road construction, lot-layout and planned stormwater management system require the filling of this wetland. The quality of this wetland has diminished due to drainage ditches and the cattle operation.

Wetland 69 (1.10 ac.) is just west of W68. This wetland is classified as Freshwater Marsh (641). Common plant species in this wetland included sand cordgrass, maidencane, pickerelweed, soft rush, carpet grass and water lilies. The site plan includes completely filling this wetland, which is isolated and somewhat disturbed due to the cattle operation. Site constraints require this impact.

Wetland 71 (0.61 ac.) is located near the center of the northeast quadrant, just north of W27 and just south of W17. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes completely filling this wetland. This wetland is isolated and quite disturbed due to the cattle operation and invasive plants. Site constraints related to road construction and lot-layout require filling this wetland.

Wetland 77 (0.30 ac.) is located south of Orange Camp Road and east of CR 4101 (Martin Luther King, Jr. Beltway). This wetland is classified as Wet Prairie (643). Dominant plant species in this wetland included carpet grass, slender spikerush and water pennywort. St. Johns wort, beakrush and little-blue maidencane were also observed. Upland pines have invaded this wetland as well. The site plan includes completely filling this wetland, which is isolated and somewhat disturbed. Site constraints related to road construction and stormwater management require filling this wetland.

There are no wetlands areas designated as **Wetlands 78, 79, 80, 81** and **84** due to a reduction in the Victoria Park Project size, after initial field surveys were conducted.

Wetland 85 (0.44 ac.) is located in the southwest quadrant of the property. This wetland is classified as Wet Prairie (643) and is hydrologically connected to a man-made pond. Common plant species in this wetland included carpet grass, slender spikerush, coinwort and water pennywort. The site plan includes completely filling this wetland, which is isolated and very

disturbed due to the cattle operation. Site constraints related to road construction and lot-layout require filling this wetland.

Wetland 90 (0.51 ac.) is just west of MLK beltway and north of Orange Camp Road. This wetland is classified as Freshwater Marsh (641). Common plant species observed in this wetland included St. Johns wort, water lilies, carpet grass, slender spikerush, yellow-eyed grass and water pennywort. The site plan includes completely filling this wetland, which is isolated and somewhat disturbed. Site constraints related to road construction and lot-layout require filling this wetland.

Wetland 92 (0.03 ac.) is north of W90. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes completely filling this wetland. This wetland is isolated, very small and quite disturbed. Site constraints related to road construction require the filling of this wetland.

Wetland 93 (0.02 ac.) is just north of W92. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes completely filling this wetland. This wetland is isolated, very small and quite disturbed. Site constraints related to road construction require the filling of this wetland.

Wetland 94 (0.10 ac.) is northwest of W93. This wetland is classified as Pine Flatwoods-wet (411-w) due to a dominant canopy coverage of slash pine. Maidencane, carpet grass, slender spikerush and broomsedge dominate the groundcover. The site plan includes completely filling this wetland, which is isolated and very small. This impact was deemed unavoidable due to site configuration and planned construction of roads.

Wetland 95 (0.33 ac.) is northeast of W94. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes completely filling this wetland. This wetland is isolated, very small and quite disturbed. Site constraints require the filling of this wetland, which is in an area planned for recreational use.

Wetland 96 (0.02 ac.) is west of W95. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes completely filling this wetland. This wetland is isolated, very small and disturbed. Road construction and a recreation area is planned for the area of this disturbed wetland.

Wetland 97 (0.64 ac.) is just north of W96. This wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, St. Johns wort, yellow-eyed grass and water pennywort. A healthy scrub oak (xeric species) is also present in the middle of this wetland. The site plan includes completely filling this wetland, which is isolated and disturbed. The site plan for the Victoria Park project includes a recreation land-use for the area of this wetland.

Wetland 98 (0.28 ac.) is just north of W97. This **2.00-acre** wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, St. Johns wort and water pennywort. The site plan includes impacting **0.28 acres** of this wetland due to site configuration and road construction. This wetland is isolated and somewhat disturbed. The remaining **1.72 acres** of this wetland will be preserved and enhanced.

Wetland 100 (0.02 ac.) is just north of W98. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes completely filling this wetland, which is isolated, very small and disturbed. A stormwater lake is planned for this area.

Wetland 101 (0.02 ac.) is northwest of W100. This **0.75-acre** wetland is classified as Wet Prairie (643). Plant species observed in this wetland included carpet grass, slender spikerush, St.

Johns wort, yellow-eyed grass, coinwort, little-blue maidencane and water pennywort. The site plan includes impacting **0.02 acres (3%)** of this wetland due to site configuration and lot layout. This wetland is isolated and somewhat disturbed.

Wetland 103 (0.09 ac.) is northwest of W102 and just south of Taylor Road. This **0.92-acre** wetland is classified as Wet Prairie (643). Dominant plant species observed in this wetland included broomsedge and carpet grass. The site plan includes impacting **0.09 acres (10% impact)** of this wetland due to road construction. This wetland is isolated and somewhat disturbed. Its proximity to Taylor Rd. lowers the overall habitat value of this wetland. The remainder of the wetland will be enhanced and preserved in perpetuity.

Wetland 107 (0.20 ac.) is just north of W105. This **7.89-acre** wetland is comprised of Pine Flatwoods-Wet (411-W), Freshwater Marsh (641) and Wet Prairie (643) cover-types, but mostly consist of herbaceous wetlands. The forested portion of this wetland is dominated by slash pine and pond pine with a groundcover dominated by carpet grass. Common vegetation observed in the herbaceous areas included St. Johns wort, slender spikerush, little-blue maidencane, yellow-eyed grass, broomsedge, coinwort and water pennywort in the shallow areas and water lilies, pickerelweed and maidencane in the deeper areas. Site plans include impacting **0.20 acres** of this wetland due to road construction. The remainder of this wetland will be preserved.

Wetland 108 (0.27 ac.) is just west of W107. This wetland is classified as Wet Prairie (643) and dominated by carpet grass and broomsedge. St. Johns wort, slender spikerush and coinwort were also observed. The site plan includes completely filling this wetland. This wetland is isolated, very small and disturbed. Impacts are necessary due to lot-layout, stormwater management requirements and site configuration constraints.

Wetland 109 (0.10 ac.) is just west of W108. This wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes completely filling this wetland. This wetland is isolated, very small and somewhat disturbed. Impacts to this wetland were deemed unavoidable due to site configuration constraints and a planned stormwater pond.

Wetland 110 (0.17 ac.) is just west of W108. This wetland is classified as Wet Prairie (643) and dominated by carpet grass and broomsedge. The site plan includes completely filling this wetland, which is isolated, very small and disturbed. Impacts to this wetland were deemed unavoidable due to site configuration constraints and a stormwater pond.

Wetland 111 (0.32 ac.) is just west of W108. This wetland is classified as Wet Prairie (643) and dominated by carpet grass and broomsedge. The site plan includes completely filling this wetland. This wetland is isolated, very small and disturbed. Impacts to this wetland were deemed unavoidable due to site configuration constraints, lot-layout and road construction.

A total of approximately **1.0 acres** of ditches are planned to be filled at the Victoria Park site as well. The majority of these ditches were created through uplands to control water levels on the site many years ago. These areas are mostly dominated by carpet grass, water pennywort and bahia grass.

Protected Species

Proposed impacts also involve some areas that are being utilized by listed wildlife species and vegetated with listed plant species. These impacts were minimized during the site planning stage, but were deemed unavoidable due the configuration of the site and other constraints such as wetlands, particularly those being utilized by nesting Sandhill Cranes and the habitat being used by Scrub Jays.

The development of the Victoria Park project site will impact existing natural habitat, however, a plan has been designed by the developer and project consultants that provides mitigation and perpetual management of the most pristine and suitable habitats, particularly those being utilized by protected species. Additional information in regards to the planned mitigation and management for the protected species is included in the Site Mitigation and Management chapter of this narrative.

Water Resources

Very minimal water resources will be impacted by the proposed development. There are no named water bodies on the property. Only a few of the wetland areas on the property consist of deep-water. Most of the impacted wetlands are comprised of shallow depressions that are only inundated during peak wet-season rainfall events.

Some of the freshwater marshes on the project site are comprised of deeper open water (**Appendix 2 - Photo 15**). These areas include parts of Wetland 5, 17, 21 and 90. Wetland 90 is the only wetland on the project site, for which impacts are planned, that appears to be inundated throughout the year. This wetland is isolated and very small (0.5 ac). No impacts are planned for the remaining open water areas, which will be enhanced (i.e. water quality) by the SMMP due to the removal of the cattle operation. The SMMP also includes the creation of several deep-water lakes on site, which will also provide habitat for many wildlife species.

SITE MITIGATION AND MANAGEMENT

The overall goal of the Site Mitigation and Management Plan (SMMP) is to create a development that will provide and maintain perpetual upland and wetland habitat for wildlife currently using the property. The SMMP involves a combination of wetland and upland preservation, wetland enhancement, and on-site creation of herbaceous wetlands. The avoidance and minimization process for wetland impacts resulted in the less significant and functional wetlands being impacted, while preserving the more valuable and pristine wetlands. The preservation areas will also be managed and maintained to provide ideal habitat for wildlife species that are endemic and dependent to particular habitat types.

Uplands

The Victoria Park project will be comprised of approximately **719 acres** of Environmental Set-asides, Preserve and Greenspace areas **(Appendix 1 - Map 7).** Within this acreage, approximately **536 acres** will consist of upland preserves and other greenspace areas. These upland areas will be comprised of a gopher tortoise, Scrub Jay and Sandhill Crane preserve areas, buffers adjacent to wetland preserves, golf courses, parks and other green space areas **(Appendix 2, Photos 16 - 20).** Many of these upland areas will be part of wildlife corridors on the project site that also connect to natural areas off-site. A large portion of the preserve areas will be enhanced, managed and monitored as well to ensure that ideal habitat exist for protected wildlife species. The upland preserve and greenspace areas are listed in **Table 7**.

Portions of the upland areas at the Victoria Park project site are currently being inhabited by listed wildlife and plant species. The wildlife species include the Florida Scrub Jay *(Aphelocoma coerulescens coerulescens),* gopher tortoise *(Gopherus polyphemus),* Eastern indigo snake *(Drymarchon corais couperi),* Sherman's fox squirrel *(Sciurus auger)* and Florida mouse *(Peromyscus floridanus).* Portions of the xeric uplands are vegetated with a listed plant species, Garberia *(Garberia Heterophylla).*

The preserve areas will be preserved in perpetuity and managed as described in the management protocols. Undesirable plant species (i.e. exotic plants) will be controlled in the upland preserves. Management activities such as controlled burns will be implemented as well to improve and maintain a more natural vegetative composition in the upland preserves. These management techniques, which are described in the protected species section of this narrative, will be conducted on a regular basis. A Conservation Easement for the preserve areas will be assigned to the FFWCC and SJRWMD.

Upland Forests:

The upland forests cover approximately **1,291 acres** on the site. These forests are comprised of Longleaf Pine-Xeric Oak (412) and Pine Flatwoods (411) per the FLUCFCS codes. Several forested upland areas will exist at the Victoria Park development. The SMMP includes preserve areas and greenspace areas comprised of upland forest habitat that will be managed and/or avoided as part of the management plans for listed species on the site including the Florida Scrub Jay, Sherman's fox squirrel, Sandhill Crane and gopher tortoise. A large forested park is also planned for the project. The location and size of the forested upland greenspace and preserves are illustrated on the appended the Environmental Set-aside, Preserve and Greenspace Map **(Appendix 1 - Map 7).**

Table 7. Upland Preserve and Greenspace Summary at the Victoria Park Project.

Preserve and Greenspace Uplands	Size (ac)
Upland Preserves:	
Gopher Tortoise, Scrub Jay, Sandhill Crane Preserves	196.1
Additional Uplands (25-foot on average buffers adjacent to Wetland Preserves)	19.7 *
Upland Greenspace Areas	320.8
TOTAL	536.6

* Acreage consist of upland buffers adjacent to wetland preserves that are outside of Gopher Tortoise, Scrub Jay, Sandhill Crane Preserves.

The developer will also preserve many specimen trees and tree-stands in other upland areas at the Victoria Park project site, especially in the SW Quadrant **(Appendix 2 - Photo 16).** The developer and its consultants are planning to preserve many of the "specimen" trees in the uplands, which include turkey oaks, laurel oaks, live oaks, sand live oaks, longleaf pine, slash pine, sand pine, wild cherry and Sabal palm. In addition, many young stands of oaks will also be preserved. These forested areas will provide valuable habitat to many wildlife species such as the Pileated Woodpecker and Sherman's fox squirrel.

Other Upland Preserve and Greenspace Areas:

A total of **110.7 acres** of xeric uplands in the NE Quadrant will be preserved in perpetuity as part of the protected species management plans, which is described in further detail in the Protected Species section of this narrative. This upland preservation will include habitat for many wildlife and plant species, but is centered around the management plans for the Florida Scrub Jay and gopher tortoise **(Appendix 2 - Photo 17).** This preserve area is comprised of several upland cover-types including longleaf pine/xeric oak, xeric oak, improved pasture and shrub and brushland.

Several upland areas on the property will also be preserved in perpetuity as part of the Sandhill Crane Mitigation and Management Plan. These areas cover approximately **85.4 acres** and are classified as Primary Sandhill Crane Uplands. These uplands are comprised of different cover-types that will be managed to benefit cranes, as well as many other species **(Appendix 2 - Photos 19 and 20).** These primary habitat upland areas, which are detailed in the Florida Sandhill Crane Plan section, are adjacent to or contiguous with potential nest sites for Sandhill Cranes. These areas, many of which are connected to off-site natural areas, will provide valuable foraging and/or buffer for any future nesting cranes.

The developers of the Victoria Park project also plan to preserve a total of **52.6 acres** of upland buffer around the wetland preservation areas **(Appendix 2 - Photo 18).** A portion of this acreage (app. 33 ac.) overlaps with the gopher tortoise preserve (110.7 ac.) and the Sandhill Crane primary upland preserves (85.4 ac.). Upland buffers outside of the gopher tortoise and Sandhill Crane Preserves will total 19.7 acres. These buffers, which are comprised of pine flatwoods, improved pasture, shrub and brushland and sandhill vegetative communities, will be 25 feet on average in width and will be recorded into a Conservation Easement. These buffers will provide valuable habitat for many wildlife species.

Several additional upland greenspace areas are planned at the Victoria Park project site **(Appendix 1 – Environmental Set-aside Map).** This habitat includes a large area east of I-4 and other areas associated with the gopher tortoise and Sandhill Crane Mitigation and Management Plans (i.e. golf course, parks). These areas, which cover approximately **321 acres**, will provide valuable habitat for wildlife and will function as a corridor between several large wetland preservation areas and other off-site natural areas.

Wetlands

The Site Mitigation and Management Plan (SMMP) includes the preservation of approximately **183 acres** of wetlands, of which several will be enhanced. This equates to approximately **85%** of the on-site wetlands. This preservation will consist of approximately **74 acres** of forested wetlands and approximately **109 acres** of herbaceous wetlands. These preserved wetlands consist of large forested systems that have remained, for the most part, unaltered and the larger, more pristine, herbaceous wetlands (**Appendix 2, Photo 3** and **4).** These wetlands along with several upland preservation areas will be part of on-site wildlife corridors. The proposed wetland preservation/enhancement reference numbers are listed in **Table 8.** All wetland fill impacts and mitigation area plan view and cross-sections are included in **Appendix 4.**

The property owners of the Victoria Park project site have designed a SMMP that articulates mitigation and perpetual management. The plan includes the preservation, enhancement, creation and management of wetlands. The majority of the more ecologically important wetlands will be preserved. These consist of wetlands that are large and not disturbed. Many smaller wetlands, which are disturbed to some degree due to past land management practices will enhanced as part of the SMMP.

All mitigation will occur with the goal of maximizing the habitat value for both listed and non-listed wildlife and plant species. Development plans include special efforts and set-asides for the listed wildlife species utilizing this property.

Each wetland at the Victoria Park project site was assessed to determine its overall value for mitigation purposes. Wetland value was based on its existing condition, hydrologic connection, uniqueness, location, size, wildlife utilization and presence of, or use by listed plant or wildlife species. Four of the preserved herbaceous wetlands were utilized as nesting habitat for the Florida Sandhill Crane *(Grus canadensis pratensis)* in 1998. This bird is classified as a threatened species by the Florida Fish and Wildlife Conservation Commission (FFWCC). Some additional protected wading birds, such as the Little Blue Heron *(Egretta caerulea),* are also foraging in many of the more intact and vegetatively diverse wetlands.

Wetland Enhancement

Many of the wetlands have become disturbed due to road and fence construction, invasion of upland pine trees and other undesirable plants, an existing cattle operation, berms associated with an abandoned railroad and drainage ditches. Mitigation in the form of enhancement will occur to approximately **21 wetlands** which total approximately **22 acres** at the Victoria Park Project, especially Wetlands 16, 18, 19, 20, 23, 24, 26, 30, 31, 32, 35, 43, 44, 45, 46, 47, 48, 49, 73, 82 and 86. These wetlands have been altered and are very disturbed.

Enhancement activities include removing cattle, filling drainage ditches, breaching a historical railroad berm to reconnect wetland areas, controlling invasive/exotic plant species such as longleaf pine trees and Carolina willow and establishing upland buffers around each wetland preserve **(Appendix 2, Photo 7 – 14** and **Photo 18).** Removal of the cattle will allow native plant species in the over-grazed wet prairie wetlands to flourish and slowly replace carpet grass, an invasive species that currently dominates many of the shallow herbaceous wetland systems on the site. Water quality in many wetlands will also be increased due to the removal of cattle. The enhanced wetlands will be preserved in perpetuity. The wetlands for which enhancement mitigation is planned are listed in **Table 8.**

Table 8. Wetland Preservation and Enhancement Summary.

Wetland Number	FLUCFCS Code	Total Size (ac)	Preservation (ac)	**Enhancement Activities to occur in wetland (√)**
W1	320	0.29	0.29	
W2	641/411-W	4.08	4.08	
W3	641	0.33	0.33	
W4	641/643	0.41	0.41	
W5	641	7.64	7.61	
W6	643	3.27	3.27	
W9	621	4.08	4.08	
W16	643	1.38	**1.38**	√
W17	641/643	8.77	8.77	
W18	643	0.07	**0.07**	√
W19	643	0.09	**0.07**	√
W20	643	0.72	**0.72**	√
W21	641	4.33	4.07	
W23	641	0.20	**0.20**	√
W24	641	0.23	**0.23**	√
W26	643	1.65	**1.65**	√
W27	643	5.06	5.06	
W30	643	3.55	**3.55**	√
W31	643	1.76	**1.76**	√
W32	643	0.18	**0.11**	√
W33	643	1.15	1.15	
W34	643	0.68	0.68	
W35	643	0.37	**0.37**	√
W36	643	0.32	0.32	
W37	643	0.60	0.60	
W38	643	1.63	1.63	
W39	643	0.24	0.24	
W40	641/643	7.22	7.16	
W43	643	0.25	**0.25**	√
W44	643	1.03	**1.03**	√
W45	643	0.47	**0.47**	√
W46	643	0.23	**0.23**	√
W47	643	0.25	**0.16**	√
W48	643	0.06	**0.06**	√
W49	643	1.55	**1.55**	√
W51	641/643	3.34	0.18	
W53	643	2.42	2.19	
W55	630/641/643	43.54	43.19	
W63	621/630/643	21.69	20.81	
W64	641	1.13	1.13	
W70	630	0.37	0.37	
W72	630/643	3.53	3.53	
W73	643	0.55	**0.55**	√
W74	641/643	7.69	7.69	
W75	643	0.53	0.53	
W76	643	0.23	0.23	
W82	641	3.54	**3.54**	√

Table 8 continued.

W83	643	0.45	0.45	
W86	641	3.97	**3.97**	√
W87	641/643	2.23	2.23	
W88	643	0.17	0.17	
W89	643	0.01	0.01	
W91	641	0.45	0.45	
W98	643	2.00	1.72	
W99	643	0.68	0.68	
W101	643	0.75	0.73	
W102	643	0.53	0.53	
W103	643	0.92	0.83	
W104	643	1.15	1.15	
W105	643	0.14	0.14	
W106	411-W	0.36	0.36	
W107	411-W/641/643	7.89	7.69	
W112	643	6.12	6.12	
W113	643	2.41	2.41	
W114	643	0.02	0.02	
W115	643	1.62	1.62	
W116	641	1.93	1.93	
W117	411-W	2.18	2.18	
Total		app. 189	app. 183	**(21 wetlands enhanced)**

Wetland Preservation

Many of the wetlands at the Victoria Park Project have not become as disturbed as those for which enhancement is planned, however the SMMP includes a high degree of maintenance of these wetlands to ensure each wetland remains viable. This includes Wetlands 1, 2, 3, 4, 5, 6, 17, 21, 27, 33, 34, 36, 37, 38, 39, 40, 53, 55, 63, 64, 74, 75, 76, 83, 87, 88, 89, 91, 98, 99, 101, 104, 107, 112, 113, 114, 115 and 116. Approximately **161 acres** of these wetlands will be preserved in perpetuity. This preservation will consist of approximately **74 acres** of forested wetlands and approximately **87 acres** of herbaceous wetlands. These wetlands consist of the more functional and ecologically sound ecosystems. Although no enhancement mitigation credit is being requested for these wetlands, water quality and plant diversity will be positively affected by the removal of the cattle operation in all areas where cattle currently exist. These wetlands are also listed in **Table 8.**

Forested wetland preservation will involve Wetlands 9, 55, 63, 70, 72, 106, 107 and 117. The proposed forested preservation acreages and reference numbers are also listed in **Table 8.** These wetlands consist of large forested systems that have remained, for the most part, unaltered. These wetlands as well as the previously described enhancement and preservation wetlands are very important ecologically. These wetlands along with several upland preservation areas form an extensive corridor for all wildlife on the site. Wetland dependent species will be able to travel throughout the site by using these networks of corridors that will exist on the property.

The following lists the proposed wetland preservation and enhancement mitigation at the Victoria Park Project site:

Preservation and Enhancement Mitigation:

Wetland 1 (0.29 ac) will be preserved. This wetland is classified as Shrub Brushland (320) by the Florida Land Use, Forms and Classification System, Level III (FLUCFCS) and is hydrologically connected to W2 and to off-site wetlands via a ditch. This wetland is located along the most northern property boundary and is connected to W2 by a upland-cut ditch. Common plant species observed in this community included shiny lyonia, carpet grass, slender spikerush, broomsedge, St. Johns wort, yellow-eyed grass, little-blue maidencane and redroot.

Wetland 2 (4.08 ac.) will be preserved. This wetland is classified as Freshwater Marsh (641) by the FLUFCFS and is just south of W1. Common plant species observed in this wetland included slender spikerush, St. Johns wort, redroot, pickerelweed, carpet grass, maidencane, fragrant water lily, spadderdock, broomsedge, coinwort, little-blue maidencane, yellow-eyed grass and water pennywort. Invasive pines and Carolina willow exist in this wetland as well. This wetland is hydrologically connected to W1 and to off-site wetlands via a ditch. Although no enhancement credit is requested for this wetland, invasive upland pines and undesirable or nuisance species such as Carolina willow will be controlled in this wetland. Water quality will also be improved by removing cattle.

Wetland 3 (0.33 ac.) is classified as Freshwater Marsh (641). This small, isolated wetland is just east of Dr. Martin Luther King, Jr. Beltway and is dominated by spadderdock. St. Johns wort, maidencane, fragrant water lily, yellow-eyed grass and water pennywort were also observed. This wetland will be preserved.

Wetland 4 (0.41 ac.) is isolated and just east of Dr. Martin Luther King, Jr. Beltway and is classified as Wet Prairie (643). Common plant species observed in this shallow depression included slender spikerush, broomsedge, St. Johns wort, little-blue maidencane, coinwort, maidencane, sundew, yellow eyed grass and water pennywort. This wetland will be preserved.

Wetland 5 (7.61 ac.) is located near the northern limits of the site, just east of the Martin Luther King Jr. Beltway. This **7.64-acre** wetland is classified as Freshwater Marsh (641). Common vegetative species observed in this community included pickerelweed, broomsedge, duck potato, St. Johns wort, maidencane and fragrant water lily. A total of **0.03 acres** (0.4% of the wetland) of impacts are planned for this wetland due to lot layout and site configuration. This wetland is isolated and slightly disturbed from the cattle operation on the site (i.e. grazing, dominance of carpet grass). Removal of the cattle operation will enhance the remaining 99.6% of this wetland. The remainder of the wetland will be preserved.

Wetland 6 (3.27 ac.) is just south of W5. This isolated wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, broomsedge, St. Johns wort, little-blue maidencane and water pennywort. This wetland is also marginally disturbed from the cattle operation and the proximity of Martin Luther King, Jr. Beltway. The preservation and management of this wetland will result in increased water quality and native plant species diversity.

Wetland 9 (4.08 ac.) is classified as Cypress (621). This wetland is located in the northeast corner of the property and is dominated by a dense canopy of bald cypress, slash pine and pond pine. Saw palmetto, cinnamon fern, dahoon holly and wax myrtle were also commonly observed in the understory and groundcover. This wetland is hydrologically connected to W63 and to off-site wetlands. This wetland will be preserved.

Wetland 16 (1.38 ac.) will be preserved and enhanced. This wetland is classified as Wet Prairie (643) and is located just south of W10. Common plant species is this wetland included carpet grass, broomsedge, slender spikerush, St. Johns wort, little-blue maidencane and water pennywort. Upland pines have also invaded this wetland. Removal of cattle and invading pines will enhance this wetland. Herbaceous plant diversity will increase as well.

Wetland 17 (8.77 ac.), which is west of W16 will be preserved. This wetland is comprised of deep areas, Freshwater Marsh (641), that are inundated year-round and shallow areas, Wet Prairie (643), that are rarely inundated. Vegetative species observed in the deeper water areas included fragrant water lily, spadderdock and maidencane. Carpet grass, slender spikerush, St. Johns wort, sundew, little-blue maidencane, swamp daisy, maidencane, coinwort, yellow-eyed grass and water pennywort were common in the shallow areas. This wetland is isolated and in good shape, but has become slightly disturbed due to the cattle operation on the site. Although the developer is not requesting enhancement credit for this wetland, removal of the cattle will increase native plant diversity and water quality.

Wetland 18 (0.07 ac.) is just east of W17. This wetland is classified as Wet Prairie (643). This small wetland is dominated by carpet grass. This wetland is isolated and disturbed due to the cattle operation. This wetland will be enhanced and preserved.

Wetland 19 (0.07 ac.) is west of W17. This **0.09-acre** wetland is classified as Wet Prairie (643) and dominated by carpet grass. The site plan includes a minor impact **(0.02 ac)** to this wetland due to lot layout, road construction and site configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance. The preserved portion of W19 will be enhanced once cattle are removed from the site. Water quality and plant species diversity will increase in this wetland.

Wetland 20 (0.72 ac.) will be preserved and enhanced due to the removal of cattle. This wetland is classified as Wet Prairie (643) by the FLUCFCS and is located in the northeast quadrant of the site, just north of W19. Carpet grass is very common in this wetland. St. Johns wort,

broomsedge, yellow-eyed grass, little-blue maidencane, carpet grass, slender spikerush, coinwort and water pennywort were also observed.

Wetland 21 (4.07 ac.) will be mostly preserved. This **4.33-acre** isolated wetland is just south of W6 and is just east of the Martin Luther King Jr. Beltway and classified as Freshwater Marsh (641). Common vegetative species observed W21 included St. Johns wort, yellow-eyed grass, little-blue maidencane, water pennywort, coinwort, pickerelweed and fragrant water lily. A total of **0.26 acres** (7.2% of the wetland) of impacts are planned for this wetland due to a planned road. This wetland is isolated and disturbed due to the cattle operation and the proximity of the Martin Luther King, Jr. Beltway. The remaining 92.8% of this wetland will be preserved.

Wetland 23 (0.20 ac.) will be preserved and enhanced due to the removal of cattle. This isolated wetland is west of W22 and classified as Wet Prairie (643). Yellow-eyed grass, carpet grass and goldenrod were common in this wetland.

Wetland 24 (0.23 ac.) will be preserved and enhanced due to the removal of cattle. This isolated wetland is just south of W23 and classified as (Wet Prairie) by the FLUCFCS. St. Johns wort, carpet grass, maidencane, little-blue maidencane, fragrant water lily, broomsedge, coinwort and water pennywort are common in this wetland.

Wetland 26 (1.65 ac.) will be preserved and enhanced due to the removal of cattle and removal of invading pine trees. This wetland, which is east of W25 in the northeast quadrant is isolated and classified as Wet Prairie (643). Carpet grass is very common in this wetland. Broomsedge, St. Johns wort, yellow-eyed grass, maidencane, little-blue maidencane, coinwort, slash pine and water pennywort were also observed.

Wetland 27 (5.06 ac.) will be preserved. This wetland is classified as Wet Prairie (643) and dominated by St. Johns wort. Other common plant species in this wetland included broomsedge, hatpin, beakrush, sundew, maidencane, carpet grass, slender spikerush, little-blue maidencane, yellow-eyed grass and water pennywort. This wetland is isolated and functioning quite well. The SMMP includes enhancing and preserving this wetland. Wetland 27 is in a high cattle-use area and although no enhancement credit is requested for this wetland, removal of cattle will positively affect the water quality of this system.

Wetland 30 (3.55 ac.) will be preserved and enhanced due to the removal of cattle. This wetland is just south of W24 and classified as Wet Prairie (643) by the FLUCFCS. Carpet grass dominates this isolated wetland. Other observed plant species included slender spikerush, St. Johns wort, broomsedge, goldenrod, dog fennel, hatpin, sundew, little-blue maidencane and water pennywort. Several Sandhill Cranes were observed foraging in this wetland. The preservation and enhancement of this shallow wetland will provide good foraging habitat for cranes.

Wetland 31 (1.76 ac.) will also be preserved and enhanced. This wetland is just east of W30 and classified as Wet Prairie (643) by the FLUCFCS. Carpet grass dominates this isolated wetland as well. Slender spikerush, St. Johns wort, little-blue maidencane, flat-topped goldenrod, coinwort and water pennywort were also observed. A historical railroad berm along W31 will be breached to reconnect this wetland area to W32. This will help to restore the original wetland hydrology of this area. Water quality and native plant diversity and total coverage will be improved in this wetland once cattle are removed.

Wetland 32 (0.11 ac.) is just south of W29 and will be partially impacted **(0.07 ac.).** This **0.18-acre** wetland is classified as Wet Prairie (643). Carpet grass dominates this wetland. The site plan includes completely filling a portion of this wetland due to golf course layout and site

configuration. This wetland is isolated and disturbed due to the cattle operation and carpet grass dominance. The preserved portion of this wetland will be enhanced.

Wetland 33 (1.15 ac.) is east of W32 and will not be impacted. This isolated wetland is classified as Wet Prairie (643). Common plant species observed in this shallow depression included wiregrass, slender spikerush, broomsedge, St. Johns wort, little-blue maidencane, coinwort, maidencane, sundew, yellow eyed grass and water pennywort. Although this wetland appears to be functioning quite well and no enhancement credit is requested, the vegetative diversity and water quality of this system will be positively affected by the removal of cattle from the property.

Wetland 34 (0.68 ac.) will not be impacted. This wetland is southwest of W33 and classified as Wet Prairie (643). This isolated wetland is dominated by St. Johns wort. Maidencane, coinwort, carpet grass and yellow-eyed grass were also observed. Although this wetland appears to be functioning quite well and no enhancement credit is requested, the vegetative diversity and water quality of this system will be positively affected by the removal of cattle from the property. A historical railroad berm along W34 will be breached to reconnect this wetland area to W36. This will help to restore the original wetland hydrology of this area.

Wetland 35 (0.37 ac.) will be preserved and enhanced due to the removal of cattle. This wetland is classified as Wet Prairie (643) and is isolated. This shallow depression is dominated by carpet grass. Maidencane, coinwort and water pennywort were also observed. Water quality, native plant diversity and total coverage will increase in this wetland.

Wetland 36 (0.32 ac.) will be preserved. This wetland is classified as Wet Prairie (643) and is isolated. St. Johns wort, maidencane, pipewort, slender spikerush, coinwort, yellow-eyed grass, broomsedge and water pennywort were common in this wetland. Although no enhancement credit is requested for this wetland, water quality, native plant diversity and total coverage will increase in this wetland.

Wetland 37 (0.60 ac.) will be preserved. This wetland is classified as Wet Prairie (643) and is isolated. Maidencane, St. Johns wort, pipewort, slender spikerush, coinwort, yellow-eyed grass, broomsedge and water pennywort were common in this wetland. Although no enhancement credit is requested for this wetland, water quality, native plant diversity and total coverage will increase in this wetland.

Wetland 38 (1.63 ac.) will be preserved. This wetland is classified as Wet Prairie (643) and is isolated. St. Johns wort, maidencane, pipewort, slender spikerush, coinwort, yellow-eyed grass, broomsedge and water pennywort were common in this wetland. Although no enhancement credit is requested for this wetland, water quality, native plant diversity and total coverage will increase in this wetland. A historical railroad berm along W38 will be breached to reconnect this wetland area to W40. This will help to restore the original wetland hydrology of this area.

Wetland 39 (0.24 ac.) will be preserved. This wetland is classified as Wet Prairie (643) and is isolated. Maidencane, St. Johns wort, pipewort, slender spikerush, coinwort, yellow-eyed grass, broomsedge and water pennywort were common in this wetland. Although no enhancement credit is requested for this wetland, water quality, native plant diversity and total coverage will increase in this wetland.

Wetland 40 (7.16 ac.) is southeast of W32 and will be mostly preserved. This **7.22-acre** wetland is comprised of a Freshwater Marsh (641) and Wet Prairie (643) cover. Dominant vegetative species observed in the deep-water areas included pickerelweed, maidencane and fragrant water lily. St. Johns wort, pipewort, beakrush, sundew, bacopa, red ludwigia, carpet grass, slender spikerush, little-blue maidencane, hatpin, soft rush, sphagnum moss, yellow-eyed

grass, coinwort and water pennywort were common in the shallow areas. Hooded pitcher plant, a listed species was also obsrved in this wetland. A total of **0.06 acres** of impacts are planned for this wetland due to road construction. This wetland is functioning quite well, but has become slightly disturbed due to the cattle operation on the site. The area of the planned impact is dominated by carpet grass and bahia grass and is quite disturbed. Removal of cattle and invasive pines will enhance this wetland. This wetland is also very important for Sandhill Cranes. Wetland surveys in 1998 detected a crane nest in this wetland.

Wetland 43 (0.25 ac.) will be preserved and enhanced due to the removal of cattle from the property. This isolated wetland is classified as Wet Prairie (643) and dominated by carpet grass. This wetland is located within the planned Scrub Jay Preserves and is considered to be Type III Jay habitat by USFWS and FFWCC, which are habitats that are within 1/4 of a mile from uplands used by Scrub Jays.

Wetland 44 (1.03 ac.) will be preserved and enhanced. This isolated wetland is classified as Wet Prairie (643) and dominated by carpet grass. Little-blue maidencane, St. Johns wort, water pennywort, coinwort and slender spikerush were also observed. Removal of cattle will increase plant diversity and water quality in this wetland. This wetland is located within the planned Scrub Jay Preserves and is considered to be Type III Jay habitat by USFWS and FFWCC, which are habitats that are within 1/4 of a mile from uplands used by Scrub Jays.

Wetland 45 (0.47 ac.) will be preserved and enhanced. This isolated wetland is dominated by carpet grass and also within the Scrub Preserves. Water quality and plant diversity will also improve in this small wetland.

Wetland 46 (0.23 ac.) will be preserved and enhanced. This isolated wetland is dominated by carpet grass and also within the Scrub Preserves. Water quality and plant diversity will also improve in this small wetland.

Wetland 47 (0.09 ac.) is just south of W42. This **0.25-acre** wetland is classified as Wet Prairie (643). Carpet grass dominates this isolated system. Other common plant species in this wetland included slender spikerush, little-blue maidencane, coinwort and water pennywort. The site plan includes impacting **0.09 acres** (app. 40%) due to road construction. This wetland is isolated and somewhat disturbed due to the cattle operation. The remaining **0.16 acres** will be preserved and enhanced.

Wetland 48 (0.06 ac.) will be preserved and enhanced as a result of removing cattle from the property. This wetland is very small, isolated and dominated by carpet grass.

Wetland 49 (1.55 ac.) will be preserved and enhanced. This wetland is very disturbed due to the cattle operation and existing drainage ditches. Dominant plant species are carpet grass and frog's fruit. This wetland will be enhanced by the proposed development plan.

Wetland 51 (0.18 ac.) will be partially preserved and enhanced. This **3.34-acre** wetland is very disturbed due to the cattle operation, fill material and drainage ditches. Carpet grass and frog's fruit dominate the areas planned for impact. The preservation area is small, but is the most viable portion of the wetland. St. Johns wort, bacopa water lilys, slender spikerush, yellow-eyed grass and water pennywort dominate the preservation area.

Wetland 53 (2.19 ac.) will be mostly preserved. This wetland is SW of W52 and just north of Orange Camp Road. This **2.42-acre** wetland is dominated by St. Johns wort and appears to be in good shape. Site plans require **0.23 acres** of impacts due to road construction. Other species observed in this wetland included slender spikerush, water pennywort, maidencane and yellow-

eyed grass. The remaining **2.19 acres** of this wetland will be preserved. Although no enhancement credit is requested, water quality will be improved in this wetland.

Wetland 55 (43.19 ac.) will be preserved. This **43.54-acre** wetland is the largest wetland community on the Victoria Park site. The majority of this wetland is classified as Wetland Forested Mixed (630). However, two small herbaceous areas (app. 1.8 acres) also exist. The forested portion of this wetland is dominated by a mixed canopy of loblolly bay, red maple, slash pine and pond pine. Also observed in the canopy was cabbage palm and sweet gum. The understory and groundcover is mostly comprised of dahoon holly, saw palmetto, cinnamon fern and gallberry. Common vegetation observed in the herbaceous areas included maidencane, St. Johns wort, water pennywort, carpet grass and yellow eyed grass. Site plans include impacting approximately **0.35 acres** of the forested cover in this wetland due to road construction and lot layout. The remaining 99% of this wetland will be preserved. Although no enhancement credit is requested for this wetland, water quality will be improved due to removal of the cattle operation.

Wetland 63 (20.81 ac.) is just east of W62. This **21.69-acre** wetland is classified as Wetland Forested Mixed (630), Cypress (621) and Wet Prairie (643), but mostly consist of forested wetlands. The wetland forested mixed cover is dominated by a mix of loblolly bay, red maple, slash pine and pond pine. Bald cypress dominates the cypress cover. The understory and groundcover in the forested areas are mostly comprised of dahoon holly, wax myrtle, saw palmetto, cinnamon fern and gallberry. A small portion of W63 is comprised of non-forested, wet prairie community, which resulted due to timbering for a powerline. Vegetation observed in this area included carpet grass, slender spikerush, sundew, little-blue maidencane, soft rush, St. Johns wort, pipewort, hatpins, hooded pitcher-plant *(Serracenia minor),* pale-meadow beauty *(Rhexia marinana),* clubmoss *(Lycopodium* spp.) and water pennywort. Site plans include impacting **0.88 acres (4%)** of this wetland due to road construction necessary to access a large upland area. The remaining 96% of this wetland will be preserved. Water quality in this wetland will be improved as result of removing cattle from the property. Finally, hooded pitcher plant is a listed plant species and is quite common in the non-forested portion of this preservation area.

Wetland 64 (1.13 ac.) is just west of I-4 and will be preserved. This wetland is isolated and classified as Freshwater Marsh (641). Pickerelweed dominates this wetland. This wetland was utilized by nesting cranes in 1998. Removal of the cattle operation will improved water quality in this wetland, as well as prevent cattle from disturbing any future nesting attempts which occurred in 1998.

Wetland 70 (0.37 ac.) will be preserved. This wetland is classified as Wetland Forested Mixed (630). Dominant plant species in this community are very similar to those observed in W55 as these areas were part of the same wetland before dirt road was constructed that now separates these areas.

Wetland 72 (3.53 ac.) will be preserved. This wetland is east of I-4 and is comprised of Wetland Forested Mixed (630) and Wet Prairie (643) cover. This wetland is connected to drainage ditches along I-4. The forested portions are dominated by the same species observed within W55 and the herbaceous portions are dominated by redroot, broomsedge, chain fern, yellow-eyed grass, maidencane, carpet grass, water pennywort and St. Johns wort.

Wetland 73 (0.55 ac.) will be preserved and enhanced. This wetland is classified as Wet Prairie (643) and is just south of Orange Camp Road in the southeast quadrant. This small wetland is isolated and dominated by maidencane, St. Johns wort, coinwort, yellow-eyed grass, carpetgrass and broomsedge. Removal of invasive species such as Carolina willow and carpet grass will enhance this wetland.

Wetland 74 (7.69 ac.) will be preserved. This wetland, which consist of deep and shallow areas, is located within the southeast quadrant of the property. Maidencane, pickerelweed, broomsedge, sawgrass, water lily, St. Johns wort, little-blue maidencane, wax myrtle, carpet grass, slender spikerush, sand cordgrass, sundew, bacopa, beakrush, red ludwigia, spadderdock, pipewort, carpet grass, water pennywort, coinwort, yellow-eyed grass and a few pond and slash pines were observed in this wetland. This isolated wetland was utilized by nesting Sandhill Cranes in 1998 and is an important component of overall Crane Management Plan.

Wetland 75 (0.53 ac.) will be preserved. This isolated wetland is just east of W74 and dominated by many of the same species within W74. This wetland will provide valuable habitat for wildlife such as the Sandhill Crane.

Wetland 76 (0.23 ac.) will not be impacted. This isolated wetland extends off-site to the property. This wetland is very similar vegetatively to W75 and will provide additional foraging habitat for cranes.

Wetland 82 (3.54 ac.) will be enhanced and preserved. This isolated wetland is located in the southwest quadrant and classified as Freshwater Marsh (641). Common species in this wetland included slender spikerush, water pennywort, maidencane and spadderdock. Little-blue maidencane, coinwort and St. Johns wort were also observed. Water quality and plant diversity will be greatly enhanced due to the removal of cattle from this area. This wetland, which has deep water and shallow areas, will provide substantial habitat for a variety of wildlife species including valuable foraging habitat for Sandhill Cranes.

Wetland 83 (0.45 ac.) will be preserved. Maidencane, wax myrtle, redroot, St. Johns wort, broomsedge, water pennywort and slender spikerush were observed in this wetland. This wetland is connected to a roadside ditch along SR 472.

Wetland 86 (3.97 ac.) will be preserved and enhanced. This wetland is located in the SW quadrant and is quite disturbed. This wetland is comprised of deep and shallow areas (Freshwater Marsh and Wet Prairie cover). Little-blue maidencane, carpet grass, maidencane, water lilys, coinwort, water pennywort, slender spikerush and St. Johns wort were observed in this wetland. Water quality and plant diversity will be greatly enhanced due to the removal of cattle from this area. This wetland will provide substantial habitat for a variety of wildlife species.

Wetland 87 (2.23 ac.) will be preserved. This wetland is comprised of deep areas and shallow areas (Wet Prairie - 643 and Freshwater Marsh - 641). Fragrant water lilys, water shield and spadderdock were common in the deeper areas. Little-blue maidencane, umbrella grass, yellow-eyed grass, carpet grass, sundew, water pennywort, maidencane, St. Johns wort and broomsedge were common in the shallow areas. A Sandhill Crane nest was also observed in this wetland in 1998.

Wetland 88 (0.17 ac.) will be preserved. This wetland is dominated by carpet grass and broomsedge. This isolated wetland will provide foraging habitat for cranes, as well as nesting habitat for other species such as wetland-dependent frogs.

Wetland 89 (0.01 ac.) will be preserved and is vegetatively similar to W88. Although this wetland is very small, it will provide valuable foraging habitat for cranes, as well as nesting habitat for other wetland-dependent species such as frogs. This wetland is classified as Wet Prairie (643).

Wetland 91 (0.45 ac.) will be preserved. This isolated wetland is dominated by fragrant water lily and maidencane. Other species observed included St. Johns wort, broomsedge, coinwort, water pennywort, carpet grass, slender spikerush, slash pine and yellow-eyed grass. This wetland

is functioning quite well. All wetland preservation areas will be provided a 25-foot (on average) upland buffer on average to avoid any secondary impacts.

Wetland 98 (1.72 ac.) is just north of W97. This **2.00-acre** wetland is classified as Wet Prairie (643). Common plant species in this wetland included carpet grass, slender spikerush, St. Johns wort and water pennywort. The site plan includes impacting **0.28 acres** of this wetland due to site configuration and road construction. This wetland is isolated and somewhat disturbed. Site constraints related to road construction require the filling of this wetland. The remaining **1.72 acres** of this wetland will be preserved.

Wetland 99 (0.68 ac.) will be preserved. This isolated wetland is classified as Wet Prairie (643) and comprised of St. Johns wort, carpet grass, broomsedge, coinwort, yellow-eyed grass, slender spikerush, water pennywort and a few small pines. The limits of this wetland community extends off-site.

Wetland 101 (0.73 ac.) is northwest of W100. This **0.75-acre** wetland is classified as Wet Prairie (643) and dominated by carpet grass. Other common plant species in this wetland included slender spikerush, St. Johns wort and water pennywort. The site plan includes impacting **0.02 acres (3%)** of this wetland due to site configuration and lot layout. This wetland is isolated and somewhat disturbed. The planned impact is due to lot-layout. The preserved portion of this wetland will provide valuable habitat for species such as leopard frogs.

Wetland 102 (0.53 ac.) is east of W101. This preservation area is classified as Wet Prairie (643). Common plant species in this wetland include St. Johns wort, slender spikerush, maidencane, broomsedge and water pennywort. This wetland is isolated and appears to be functioning quite well.

Wetland 103 (0.83 ac.) is northwest of W102 and just south of Taylor Road. This **0.92-acre** wetland is classified as Wet Prairie (643) and dominated by carpet grass and broomsedge. Other plant species observed in this wetland included maidencane, slender spikerush, little-blue maidencane and coinwort. The site plan includes impacting **0.09 acres** of this wetland due to road construction. This wetland is isolated and somewhat disturbed. Its proximity to Taylor Rd. lowers the overall habitat value of this wetland. The preserved portion of this wetland will provide valuable habitat for wildlife, particularly small vertebrates such as leopard frogs.

Wetland 104 (1.15 ac.) will be preserved. This isolated wetland is classified as Wet Prairie (643) and is dominated by St. Johns wort. Broomsedge, carpet grass, pipewort, maidencane, spikerush, water pennywort, coinwort and yellow-eyed grass were also observed.

Wetland 105 (0.14 ac.) is just north of Taylor Road. This preservation area is classified as Wet Prairie (643). Common plant species in this wetland include St. Johns wort, carpet grass, spikerush and water pennywort. This wetland appears to be in good condition and functioning well.

Wetland 106 (0.36 ac.) will be preserved. This small isolated wetland area is dominated by slash and pond pines with a sparse groundcover. This wetland is classified as pine flatwoods (411-w). Vehicle traffic is also common through this wetland, which will be eliminated once this wetland is placed into a conservation easement. This will allow existing plants and trees to flourish in this area.

Wetland 107 (7.69 ac.) is just north of W105. This **7.89-acre** isolated wetland is comprised of Pine Flatwoods-Wet (411-W), Freshwater Marsh (641) and Wet Prairie (643), but mostly consist of herbaceous wetlands. The forested portion is dominated a slash pine and pond pine mixed canopy. The understory and groundcover is sparse in the forested areas, but carpet grass,

St.Johns wort, broomsedge and pine seedlings were observed. The majority of W107 is comprised of a herbaceous community. Vegetation observed in these areas included St. Johns wort, slender spikerush, sundew, little-blue maidencane, buttonbush, coinwort, carpet grass,and water pennywort in the shallow areas and water lilies, maidencane and pickerelweed in the deeper areas. Site plans include impacting **0.2 acres** of this wetland due to road construction. The remaining 99% of this wetland will be preserved. Invasive pines will also be removed from this wetland.

Wetland 112 (6.12 ac.) will be preserved. This isolated wetland is classified as Wet Prairie (643) and isolated. Dominant vegetation in this wetland is very similar to that observed in W107. This wetland and W107 are very valuable as habitat for many species, including potential nesting habitat for Sandhill Cranes. In addition, this wetland and Wetlands 113, 114, 115, 116, 117 and several acres of adjacent uplands will function as a large contiguous preserve area that connects to off-site natural communities. Invasive pines will also be removed from this wetland.

Wetland 113 (2.41 ac.) will be preserved. This isolated wetland is comprised of Wet Prairie (643) cover. Common vegetation observed in this wetland included St. Johns wort, slender spikerush, little-blue maidencane, coinwort, carpet grass, broomsedge and scattered pines. Invasive pines will also be removed from this wetland.

Wetland 114 (0.02 ac.) will be preserved. The extent of this wetland area is off-site to the north. This small area is connected to a large wetland that exist to the north of the Victoria Park site. Vegetation observed in the on-site portion included carpet grass, yellow-eyed grass and water pennywort. This wetland is classified as Wet Prairie (643).

Wetland 115 (1.62 ac.) will be preserved. This isolated wetland is classified as Wet Prairie (643) and located along the northern property limits of the quadrant north of Taylor Road and west of the MLK Beltway. Common vegetation in this wetland included St. Johns wort, slender spikerush, little-blue maidencane, coinwort, carpet grass and broomsedge. Portions of this wetland extent off-site to the north.

Wetland 116 (1.93 ac.) will be preserved. This isolated wetland is classified as (Freshwater Marsh (641) and located along the northern property limits. Common vegetation in this wetland included St. Johns wort, slender spikerush, little-blue maidencane, yellow-eyed grass, coinwort, carpet grass and broomsedge in shallow areas. A deep-water area also exist, which is dominated by fragrant water lilies, in this wetland. Portions of this wetland extent off-site to the north as well.

Wetland 117 (2.18 ac.) will be preserved. This isolated wetland is classified as pine flatwoods (411-w) and also extends off-site. Slash pine and pond pine dominate the canopy of this forested wetland. Plant species observed in the understory and groundcover of this wetland community included dahoon holly, shiny lyonia, St. Johns wort, broomsedge, carpet grass, chain fern, yellow-eyed grass, slender spikerush, water pennywort and redroot.

Wetland Creation

In addition to the described upland preservation, wetland preservation and wetland enhancement, the developers of the Victoria Park project also plan to create **6.8 acres** of herbaceous wetlands on-site to further off-set wetland habitat loss. This mitigation will be implemented within 90 days of the issuance of the final environmental permit for the project, which will be long before the majority of the planned wetland impacts actually occur. The following provides a detailed description of the wetland creation area.

The wetland creation area will be adjacent to Wetland 74 in the SE Quadrant of the property. This created area will provide ideal habitat for a variety of wildlife species, including Florida Sandhill Cranes which nested in W74 in 1998. The created wetland area will be part of a large green area in the SE Quadrant, which is illustrated on the appended Sandhill Crane Map **(Appendix 1).**

The created wetland will be provided with a transplanted muck layer from Wetlands #50, #66 and #77 once permitted. The muck will be transferred from these wetlands by scraping the top two (2) feet of these wetland areas with bulldozers and/or front-end loaders and then transporting the material to the created wetland area via truck. The material will then be evenly distributed across the created wetland area to a minimum thickness of 4 plus inches.

The muck will be removed from the donor sites through the use of bulldozers and/or front-end loaders. The donor wetland areas will be de-watered prior to the removal of organic material. The top two feet of organic material will then be removed and then transported to the created wetland. This will occur concurrent with the grading of the wetland creation area.

St. Joe/Arvida will plant wax myrtle *(Myrica cerifera)* and dahoon holly *(Ilex cassine)* on 10-foot centers along the perimeter of the created wetland area. These native plant species are ideal for the perimeter planting, as each species is very hardy and can be subjected to both dry and saturated soil conditions. In addition, these species will provide a good buffer between the wetlands and the adjacent development. This buffer effect will be especially valuable for an future nesting Florida Sandhill Cranes in the created wetland. The planted wax myrtle and dahoon holly will provide substantial habitat for a variety of other wildlife, particularly small avian species.

The created wetland area will be designed with a variable topography and small hummocks or islands. These varying areas of elevation will results in increased plant diversity in the created wetlands and potentially benefit Sandhill Cranes during fluctuating water levels throughout the nesting season.

The created wetland will be provided with a seed source from the transplanted muck obtained from Wetlands 50, 66 and 77 once permitted. The provided seed source will enhance the recruitment of desirable wetland species. Desirable wetland plants observed in Wetlands 50, 66 and 77 included pickerelweed, maidencane, water hyssop, St. Johns wort, slender spikerush, beakrush, soft rush, yellow-eyed grass, bogrush, little-blue maidencane and water pennywort. This seed source and recruitment from adjacent Wetland 74, combined with the varying topography, will ensure substantial plant diversity. We anticipate that the created wetland will be dominated by maidencane *(Panicum hemitomon),* pickerelweed *(Pontederia lancifolia),* St. Johns wort *(Hypericum fasciculatum),* little-blue maidencane *(Amphicarpum muhlenbergianum),* beakrush *(Rhynchospora* spp.) and yellow-eyed grass *(Xyris* spp.). This in combination with the management plan for the created wetland (i.e. control of exotic/native invasive plants) will result in a viable wetland system that is similar to the adjacent Wetland 74, which was utilized by nesting Florida Sandhill Cranes in 1998.

Mitigation Monitoring and Maintenance for Wetlands:

The areal coverage of vegetation in the created wetland will be monitored semi-annually. The wetland will be monitored for a period of five (5) years. Annual reports will be submitted to the District. Wetland 74 will serve as a "reference wetland" for the created wetland. A quantitative analysis of the vegetative composition of W74 will be conducted (via the quadrat method). These results will function as a benchmark for the created wetland. In addition, the vegetative composition of Wetlands 50, 66 and 77 will be quantified (via the quadrat method) before being impacted. This information will be included in the first annual monitoring report submitted to the SJRWMD, FFWCC, USFWS and the USACOE.

The records of the monitoring events, which will be provided to the District on an annual basis, will include the following:

1) The date, exact place and time of sampling or measurements.
2) The person responsible for performing the sampling, measurements and analysis.
3) The analytical techniques or methods utilized.
4) The results of such analyses including:
    a) Plant species coverage.
    b) Status of invader species.
    c) A description of any problems encountered during evaluation and proposed solutions.
    d) Panoramic photographs of the created wetland.

The applicant will quantify percent cover of the herbaceous species utilizing the quadrat method. Monitoring of the herbaceous material is to include the use of transects (200 feet in length) with 1-meter by 1-meter quadrat stations every 25 feet. The percentage of areal coverage by each plant species in each quadrat of each transect will be documented during each monitoring event. The data collected from each transect is to be summarized and presented (along with the raw data) in each subsequent monitoring report. This information is to be presented as the total areal coverage by each plant species observed in each transect.

The success criteria for the created wetland will be to obtain a percent vegetation coverage equal to, or exceeding 80 percent of the surface area after a period of five (5) years (following construction), with a positive growth trend through this five year (5) time period. The dominant plant species will be similar to the dominant species detected in the reference wetland.

In addition to the vegetative portion of the monitoring to be conducted, wildlife information will be recorded and photographic documentation will be provided. All wildlife utilization will be noted within and around the creation area. Photographic documentation will consist of panoramic photographs obtained at permanent locations at each monitoring transects as well as random locations throughout the created area. These photographs will be taken during each semi-annual monitoring event and included in annual monitoring reports.

Maintenance to be completed as part of the mitigation plan for the created wetland will be conducted on an as-needed basis (i.e. quarterly). All maintenance will consist of hand-removal and, if necessary, herbicide application where the percent coverage of nuisance species exceeds 10%.

Mitigation Summary for Off-setting Wetland Impacts

The preserved wetlands and uplands will be managed to ensure that the overall ecological and habitat value of the systems remains functionally viable wetlands. The mitigation program was designed to provide large connected areas of high quality upland and wetland habitat. This was accomplished by identifying and preserving the areas that were being used by listed wildlife species and the wetland areas containing a higher diversity of plant species. To ensure that the wildlife species will be able to move across the site, corridors were established that connected the critical areas of habitat. This approach maximizes the habitat value of the mitigation areas.

The wetlands and uplands on the property were evaluated to determine an overall value for each wetland and therefore established mitigation ratios based on the values. These values were determined by identifying several parameters of each wetland community including vegetative composition, hydrology, wildlife utilization, degree of stress due to changed hydrology, cattle grazing, invasive species, connectivity to off-site natural areas and size of each wetland.

The previously described wetland impacts will be mitigated for under the guidelines of the Environmental Resource Permit (ERP) of the St. Johns River Water Management District (SJRWMD) and Section 404 Dredge and Fill Permit of the United States Army Corp of Engineers (USACOE). The following provides a brief summary of the mitigation for wetland impacts under the jurisdiction of the St. Johns River Water Management District (SJRWMD) and the United States Army Corp of Engineers (USACOE):

St. Johns River Water Management District (SJRWMD)

The mitigation guidelines for the SJRWMD include:

Mitigation Type	Mitigation to Impact Ratios
Wetland Preservation	10:1 to 60:1
Upland preservation	3:1 to 20:1
Enhancement	4:1 to 20:1
Herbaceous Wetland Creation	1.5:1 to 4:1

The mitigation for off-setting the wetland impacts at the Victoria Park project is summarized in **Table 9.** The mitigation ratios are based on several factors including the low quality and small size of the impacted wetlands, the high quality, large size and proposed long-term management of the preserve areas, and the previously permitted mitigation ratios accepted by the regulatory agencies for similar impact types and acreages. The mitigation to impact ratios below fall within the recommended guidelines established by the SJRWMD.

Table 9. Mitigation for Off Setting Wetland Impacts

MITIGATION TYPE	Size (ac)	Mitigation To Impact Ratio	Mitigation Available (credit-acres)
Preservation:			
Herbaceous wetlands	87.2	25:1	3.5
Forested wetlands	73.8	20:1	3.7
Tortoise/Scrub Jay/Sandhill Crane Upland Preserve *	110.7	8:1	13.8
Additional Uplands (Sandhill Crane Primary Habitat) **	85.4	10:1	8.5
Additional Uplands (25-foot Upland Buffers) ***	19.7	10:1	2.0
Enhancement:			
Herbaceous wetlands	21.9	5:1	4.4
Wetland Creation:			
Herbaceous wetlands	6.8	1:1	6.8
Total	405.5		app. 43

* acreage includes SJRWMD 25-foot on average Upland Buffer adjacent to wetland preserves that are within the Tortoise/Scrub Jay preserve

** acreage includes SJRWMD 25-foot on average Upland Buffer adjacent to wetland preserves that are within the Sandhill Crane preserves

*** acreage consist of SJRWMD 25-foot on average Upland Buffer adjacent to wetland preserves outside of Tortoise/Scrub Jay/Sandhill Crane preserves

Based on the above mitigation summary, a total of approximately **43 mitigation credits** in the form of wetland preservation, upland preservation, wetland enhancement and wetland creation are available at the Victoria Park project site. This mitigation will adequately off-set the **32.5 acres** of wetland impacts planned for the entire project. Approximately **5 acres** of the mentioned wetland impacts will be to wetlands that are isolated, disturbed and less than 0.5 acre. Typically, the SJRWMD does not require mitigation for impacts to these areas, however, the SMMP for the Victoria Park project site was designed to off-set all wetland impacts.

The requirements of the SJRWMD were incorporated into the SMMP. A Conceptual Environmental Resource Permit (No. 4-127-0369AC-ERP – **Appendix 5**) was issued from the SJRWMD on October 12, 1999. As part of the Conceptual Permit, the SJRWMD concluded that no mitigation would be required for impacts to **8.4 acres** of wetlands and ditches on the Victoria Park site due to these systems being severely disturbed and functionally isolated. As part of the construction permitting process with the SJRWMD, St. Joe/Arvida will maintain a surplus of mitigation for off-setting wetland impacts during the develop the Victoria Park project.

United States Army Corps of Engineers (USACOE)

As mentioned, the SJRWMD and the USACOE wetland jurisdiction for the Victoria Park project site is comprised of the exact same acreage and areas, number of wetlands and numbering system. Per the guidelines of the USACOE, a Wetland Rapid Assessment Procedure (WRAP) was conducted for the Victoria Park project site. The WRAP is used as a regulatory tool to ensure consistency and accuracy when evaluating a site through the regulatory process of resource

permitting and post-permit compliance. Several wetlands were assessed and used as representative wetlands (i.e. fill and mitigation polygons) for determining the ecological lift that will result from the SMMP for the Victoria Park project site. Categories of representative wetlands included highly disturbed herbaceous wetlands, moderately disturbed herbaceous wetlands and highest quality or undisturbed herbaceous wetlands, and forested wetlands for planned impacts (fill polygons). Preservation, enhancement and created wetland areas (i.e. mitigation polygons) were also placed into categories, which included herbaceous preservation lift, forested preservation lift, enhancement lift and creation lift.

Per the WRAP, the following matrices were assessed when applicable for each of the representative wetlands:

- Wildlife Utilization
- Wetland Overstory/Shrub Canopy of Desirable Species
- Wetland Vegetative Ground cover of Desirable Species
- Adjacent Upland/Wetland Buffer
- Field Indicators of Wetland Hydrology
- Water Quality Input and Treatment Systems

The WRAP scores for many of the wetlands planned for impacts at the Victoria Park project were quite low due to the disturbed condition of these wetlands. A detailed description of the WRAP for the Victoria Park Project is included in **Appendix 6.**

Based on the results of the WRAP conducted for the Victoria Park development, the project will result in a net **ecological "Lift" of + 21.6**. This WRAP score does not include any "Lift" credit for upland preservation at Victoria Park, as the USACOE does not acknowledge upland preservation (and enhancement for this project) as mitigation for wetland loss. Based on the results of the WRAP, the SMMP will provide more than adequate mitigation to off-set the loss wetland habitat. The Wetland Rapid Assessment Procedure (WRAP) for the Victoria Park project is summarized in **Table 10.**

Table 10. WRAP Summary and Ecological Lift for the Victoria Park Project

Polygons	Total Ecological LIFT	Total Ecological LOSS
Mitigation Polygons:		
Enhancment Lift	+ 7.26	
Herbaceous Wetland Preservation Lift	+ 20.52	
Forested Wetland Preservation Lift	+ 4.53	
Wetland Creation Lift	+ 6.8	
Fill Polygons:		
Highly Disturbed Herbaceous Wetlands (Pastureland)		- 1.57
Highly Disturbed Herbaceous Wetlands (Rangeland)		- 4.08
Moderately Disturbed Herbaceous Wetlands		- 7.57
Highest Quality Herbaceous Wetlands		- 0.44
Forested Wetlands		- 0.70
Partial Impacts - Herbaceous		- 2.14
Partial Impacts – Forested		- 0.98
TOTAL	**+ 39.1**	**- 17.5**
NET LIFT = + 21.6		

The overall goal of the SMMP described in this narrative is to create a development that will provide and maintain perpetual upland and wetland habitat for a variety of wildlife species and adequately off-set the planned wetland impacts. Development plans involve a combination of wetland and upland preservation, wetland enhancement, and on-site creation of herbaceous wetlands. The avoidance and minimization process for wetland impacts resulted in the less significant and functional wetlands being impacted, while preserving the more valuable and pristine wetlands.

The preserved, enhanced and created wetlands will have a buffer placed around them to avoid any secondary impacts. Upland buffers around wetlands are necessary components to ensure maximum wetland function. In addition to protecting water quality, buffers can be vegetated to supply visual screens to allow nesting and foraging activities by wading birds with minimal disturbance. They also provide nesting habitat for semi-aquatic species of reptiles and amphibians will reduce the impacts to wildlife from noise and predation. These buffers will also serve as a corridor for wildlife to move between the upland preserves, golf course and wetlands. A Conservation Easement will be recorded over all of the Preserve Areas.

Protected Species

All mitigation will occur with the goal of maximizing the habitat value for both listed and non-listed wildlife and plant species. The SMMP includes special efforts and "set-asides" for the listed wildlife species utilizing this property.

All cover-types at the Victoria Park site were assessed to determine its overall value for mitigation purposes. Wetland value was based on its existing condition, hydrologic connection, uniqueness, location, size, wildlife utilization and presence of, or use by, listed plant or wildlife species. Four of the preserved herbaceous wetlands were utilized in 1998 as nesting habitat by the Florida Sandhill Crane. This avian species is listed as Threatened by the Florida Fish and Wildlife Conservation Commission (FFWCC). Some additional listed wading birds, such as the Little Blue Heron were also observed foraging in many of the more intact and vegetatively diverse wetlands.

Uplands at the Victoria Park site were also intensely surveyed for listed species. The SMMP includes the preservation of the most pristine xeric and sandhill communities that were determined to be important habitat for several listed wildlife and plant species. The gopher tortoise, Florida Scrub Jay and Sherman's fox squirrel were observed in the xeric cover-types, particularly in the NE Quadrant in the planned preservation areas.

The management plan for several of the protected species observed at the Victoria Park project is centered around the habitat management plan for three (3) species: the gopher tortoise, Florida Sandhill Crane and Florida Scrub Jay. The following pages describe the management plans for these species as well as for other protected species detected at the Victoria Park project.

Gopher Tortoise

The wildlife utilization on the Victoria Park site was determined through a series of detailed wildlife surveys. One of the surveys focused on the gopher tortoise *(Gopherus polyphemus),* a state listed Species of Special Concern that was observed on the property.

St. Joe/Arvida Corporation and its consultants have developed a Tortoise Mitigation and Management Plan for the Victoria Park site. The objective of the mitigation and management plan is to provide habitat preservation areas and management protocols for the perpetual preservation of habitat for the onsite gopher tortoise population. The developer obtained an Incidental Take Permit (No. VOL – 20 – **Appendix 7)** for gopher tortoises and this proposed Tortoise Mitigation and Management Plan is responsive to the Take Permit and was designed accordingly.

The Tortoise Mitigation and Management Plan will provide for sufficient preservation of tortoise habitat to minimize development impacts to the environmental features that this species utilizes. This will ensure that the development impacts are minimized for tortoises. This approach will require the creation of active and ongoing mitigation and management. Strict deed restrictions and other legally binding measures will be utilized to ensure the successful implementation of the Tortoise Mitigation and Management Plan. Conservation Easements will be placed against the Tortoise Preserves.

Tortoise Survey Methods and Results

The Victoria Park site is comprised of many different tortoise vegetative communities including scrub, sandhill, pine-oak mixed forests, shrub and brushland and pastureland. The predominant upland community on the site is sandhill. All land use and community type classifications are from the Florida Department of Transportation's Florida Land Use, Cover and Forms Classification System, Level III (FLUCFCS). Vegetative descriptions of these communities is provided in the Environmental Setting Section of this narrative.

Wildlife survey results indicated that tortoises were mostly utilizing the Longleaf Pine-Xeric Oak, Shrub and Brushland and Xeric Oak vegetative communities. However, burrows were also observed in the Improved Pasture, Unimproved Pasture and Electrical Power Transmission Line Easements. Many of these areas and the remaining naturally vegetated upland communities are comprised of endemic plant species. However, exotic and/or invasive plant species were observed in a portion of these areas. Land management practices including timbering, pasture creation, cattle management, upland-cut ditching and fire suppression have altered many of these communities.

Gopher tortoise surveys were conducted at the Victoria Park site by Modica and Associates on September 18 and 19; November 10 and 26, 1997; April 8 and April 29 of 1998. The site was evaluated by using a series of belt transects and pedestrian surveys to document the vegetative communities and wildlife utilization. The transects varied from 400 to 4,500 feet in length and 30 to 50 feet in width. Survey methodologies were followed as set forth by the Florida Fish and Wildlife Conservation Commission (FFWCC). More than 15% of each of the following cover-types were surveyed for gopher tortoise burrows.

Cover-type (FLUCFCS)	Level III Code
Longleaf Pine-Xeric Oak	412
Xeric Oak	421
Shrub and Brushland	320
Pasture	211/212
Borrow Areas	742
Transmission Line	817/832

To determine a more accurate census of the tortoise population, intense surveys of the NW, SW and SE Quadrants (80% - 100%) were conducted on March 2, 3, 4, 9, 11, 12, 16 and 17, 1999. This was easily accomplished in many areas due to the open groundcover, especially in the SW Quadrant. Many burrows were also scoped during this survey. The appended **Survey Transect Map (Appendix 1 – Map 5)** illustrates the approximate location of the survey transects and observed viable (active and inactive) burrows at the Victoria Park Project site. The results of the tortoise surveys are provided in **Table 11.**

Table 11. Victoria Park Gopher Tortoise Survey Results

Quadrant	Total Tortoise Habitat (ac)	Percent Surveyed	Density (tort./ac)	Total Population
NW				
Tract A	171	86	0.2	35
Tract B	48	25	0.6	28
Tract C	178	25	0.5	89
SE	128	32	0.2	29
SW	419	72	0.2	87
NE	335	15	0.3	111
Total	1279	47	NA	379

Results from the tortoise population studies at Victoria Park indicate that approximately **379 tortoises** currently inhabit the project site. The surveys resulted in very accurate account of the tortoise population on the project site and most importantly, the required upland preservation acreage as required by the FFWCC. Tortoises are aggregated in many areas on the property due to past land management practices such as timbering to create pastureland for cattle rearing. Populations were also likely reduced in certain areas from historical collecting. In addition, several areas have become overgrown due to a lack of fire, resulting in dense thickets of vegetation that are unsuitable for tortoises.

All wildlife surveys at the Victoria Park project site were performed in accordance with the guidelines published by the Florida Fish and Wildlife Conservation Commission in Wildlife Methodology Guidelines for Section 18.D of the Application for Development Approval. Tortoise population estimates for each cover-type were calculated by multiplying the estimated total number of viable (active and inactive) tortoise burrows in each cover-type by the Auffenburg-Franz conversion factor of 0.614 tortoises/viable burrow. The estimated total number of viable burrows

for each cover-type were calculated by extrapolating the survey results (i.e. 15% survey) from each cover-type to 100%.

Tortoise Habitat Requirements

Per the guidelines of the FFWCC Incidental Take Permit, the habitat preservation requirements for the gopher tortoise were determined at the Victoria Park project site. The habitat acreage requirements for each quadrant were determined by multiplying a percentage, which is based on the calculated tortoise densities, and specific acreages of suitable tortoise habitat within each quadrant. Acreages with densities of 0.8 tortoise/acre or greater were multiplied by 25% to determine the area of habitat preservation required on the Victoria Park site. Acreages with densities between 0.4 and 0.8 were multiplied by 15% to determine the area of habitat preservation required. Acreages with densities of 0.3 were multiplied by 11.25% to determine the area of habitat preservation required. Acreages with densities of 0.2 were multiplied by 7.5% to determine the area of habitat preservation required. Finally, acreages with densities of 0.1 tortoise per acre or less were multiplied by 3.75% to determine the area of habitat preservation required.

The acreages of tortoise habitat used in the above mentioned formulas included all suitable tortoise habitat on the property that will be impacted by the Victoria Park development. Several upland areas on the project site were not considered to be impacts to tortoise habitat since these areas were not comprised of suitable tortoise habitat, not inhabited by tortoises or were not being impacted by the development of the Victoria Park site. These areas include disturbed pasture areas, pine flatwoods, mesic oak forests, upland buffers surrounding wetlands and large greenspace areas. The tortoise habitat areas that will be avoided and the areas being impacted are illustrated on the appended **Tortoise Map (Appendix 1 – Map 9).**

The habitat requirements per the Incidental Take Permit from the Florida Fish and Wildlife Conservation Commission are provided in **Table 12.**

Table 12. Gopher Tortoise Habitat Preservation Requirements Summary.

Quadrant	Total Population	Tortoise Habitat Impacted (ac)	Impacted Population	Habitat Preservation Requirements (ac)
NW				
Tract A	35	155	31	11.6
Tract B	28	30	18	4.5
Tract C	89	160	80	24.0
SE	29	113	22	8.5
SW	87	368	72	27.6
NE	111	208	70	23.4
Total	379	1034	293	99.6

Tortoise Management Plan:

The preservation acreage will consist of habitat extending for 1.5 miles east and adjacent to Martin Luther King, Jr. Boulevard (MLK). The preservation areas will be preserved in perpetuity and managed as described in the management protocols. The tortoise preservation areas will be created in conjunction with the mitigation and management plan for the Scrub Jay and commensal species, including the Eastern indigo snake and Florida mouse. These areas will be integrated with the Florida Scrub Jay Preserves in the NE Quadrant.

The mitigation and management plan for gopher tortoises will be centered around the on-site preservation and management of **110.7 acres** of high quality tortoise habitat in the NE Quadrant. Two preservation areas make up the 110.7 tortoise preserve. These areas are referred to as **Area 1** and **Area 2,** as illustrated on the appended **Tortoise Map (Appendix 1 - Map 9).**

By utilizing the habitat preservation protocols of the FFWCC for Incidental Take Permits, St. Joe/Arvida determined the amount of tortoise habitat preservation needed at the Victoria Park Project site to off-set the loss of tortoise habitat due to the planned development. A total of **99.6 acres** of tortoise habitat preservation was required due the planned development. The applicant performed surveys for tortoises that exceeded the minimum of 15% coverage in many areas in order to determine a more accurate census on the project site. Approximately 50% of the tortoise habitat that will be impacted was surveyed by Modica and Associates for tortoise burrows to accurately estimate the tortoise population being impacted by the development.

St. Joe/Arvida will record the Tortoise Preserve area into a Conservation Easement. The preserve will be intensely managed as part of the Tortoise Mitigation Plan. The habitat cover-types and acreages in the preserves are listed in **Table 13.**

Table 13. Habitat Cover-types and Acreages within the Gopher Tortoise Preserves.

Cover-type (FLUCFCS)	ACREAGES AREA 1	AREA 2	TOTAL
Shrub and Brushland (320)	21.8	8.0	29.8
Xeric Oak (421)	8.0	1.6	9.6
Longleaf Pine – Xeric Oak (412)	16.8	46.2	63.0
Improved Pasture (211)	6.3	0	6.3
Unimproved Pasture (212)	0	2.0	2.0
Total	52.9	57.8	110.7

Each of these tortoise areas are comprised of high quality, well-drained soils that have a vegetative cover of either scrub vegetation or longleaf pine/turkey oak **(Appendix 2 – Photo 17).** Such habitats typically support maximum tortoise populations. The appended **Tortoise Map (Appendix 1)** illustrates the location and size of the tortoise preserve areas.

The first tortoise preserve area **(Area 1)** consist of approximately **52.9 acres** of scrub, sandhill and brushland/scrubby vegetative communities, located in NE Quadrant of the site (NE of the Martin Luther King, Jr. Blvd.- Orange Camp Road intersection). This land is within the Scrub Jay Preserve. Based on estimated tortoise densities for each cover-type within this preserve area, approximately **30 tortoises** currently inhabit Area 1.

The second tortoise preserve area, **Area 2,** is also located within the NE Quadrant of the site. The location of this area is also illustrated on the appended **Tortoise Map (Appendix 1).** This preservation area will consist of approximately **57.8 acres** of contiguous tortoise habitat. Based on estimated tortoise densities for each cover-type within this preserve area, approximately **16 tortoises** currently inhabit Area 2.

The total tortoise population currently inhabiting the preservation area is very low, totaling **46 tortoises.** The population in this area is known to have been subjected to a collecting history. The population in the preserve area will be augmented by introduced tortoises from on-site areas where tortoises may be at risk from development construction. The population will not exceed two tortoises per acre in the preserve areas. Thus, the preserve areas will potentially contain **221 tortoises.**

The applicant is also preserving numerous other upland areas within the development, which are presently occupied by tortoises. The **110.7-acre** preserve described above does not include

several smaller upland areas that will be avoided by development of the Victoria Park site (**see appended Tortoise Map, Appendix 1**). An additional **135 acres** of tortoise habitat will be avoided during the development of the Victoria Park site. This green space will be available for tortoises after the site has been developed. These green space areas do not meet the minimum threshold requirements of the FFWCC, but do consist of suitable tortoise habitat and are inhabited by tortoises. Many of these areas are large enough to provide a setback from each tortoise burrow of 50 feet or greater. Even though the these green space areas do not meet the 25-acre minimum size requirement of the FFWCC, the setback distance from the burrows and the size of the tract will enable many of these tortoises to survive.

Tortoise Habitat Management Techniques:

A combination of management techniques will be used in the upland preservation areas including controlled burns and mechanical chopping and mowing. Fire will be the primary tool utilized for upland habitat management. An initial prescribed burn in the preserve areas will be conducted prior to development. Fire management in this manner will prevent undesirable plant species and an increase in plant density that would otherwise transform good habitat into unsuitable habitat. The use of fire as a management tool in the tortoise preserve areas will closely mimic the natural element of fire in the ecology of scrub habitats. All burns will be sensitive to critical periods for tortoises and Florida Scrub Jays (i.e. the nesting season).

Prescribed burns in the tortoise preserves will be conducted in conjunction with the Scrub Jay Management Plan. Additionally, there are four points that need to be considered while managing these areas:

1. There is need for variability in fire regimes (season, frequency, and regularity), both within and among sites. A single regime or burn prescription for a high pine favors one suite of species at the expense of others and creates a single landscape image.
2. Recognition is needed of the variability that existed among high pine sites. They ranged from open pine-wiregrass stands to red oak woods and from turkey oak barrens to associations transitional to scrub.
3. It is important to maintain ecotones and transitional communities. These are the central habitats of some species.
4. Appreciation is needed of the fact that many other species and communities were dependent on fires that originated in the high pine lands and flatwoods.

The density of the scrub vegetation varies throughout the preserve areas. Some areas have not been subjected to fire or other successional setbacks resulting in a more dense canopy. Other areas appear to have been subject to fire within the last five years resulting in a more open canopy and a low density of woody understory species. Each scrub community will be evaluated to determine the appropriate approach for fire management. After the initial burn occurs, other management techniques may have to be used in conjunction with fire. This would include chopping and mowing

The following details specific measures, which will be taken prior to the implementation of the burn:

1) Develop specific, detailed prescription for the burn area.
2) Secure all necessary control lines.
3) Secure proper equipment.
4) Employ a properly trained and experienced staff.
5) Develop a detailed emergency fire response plan.

Management recommendations for the Victoria Park scrub preservation areas are the result of existing information on gopher tortoises, scrub habitat and the management of scrub habitat. The management objectives in the upland preserves are to provide for Florida Scrub Jays, gopher tortoises, gopher tortoise burrow commensals, and other wildlife that use this sandhill-scrub type of habitat. The preserve areas will be managed to provide the highest quality habitat for these species. The tortoise preserve areas will be actively managed in perpetuity. The following information references the tortoise management protocols and strategies.

The general features characterizing suitable gopher tortoise habitat are similar to the habitat requirements of Florida Scrub Jays. These are: 1) the presence of well-drained, sandy soils which allow easy burrowing; 2) an abundance of herbaceous ground cover; and 3) generally open canopy and sparse shrub cover which allows sunlight to reach the ground floor (Cox et al. 1987).

The Victoria Park Tortoise preserves will be divided into management units; thereby, allowing the differences in vegetative density and age to be considered when determining type and intensity of management. Unit management will allow as much of the preserve as possible to be maintained in optimal condition. The management units will be treated individually with the areas of active management rotated to minimize short-term impacts to wildlife species and to create mosaics in stand age, vegetative diversity, and vegetative density within the area.

Mowing will be used to keep some herbaceous species at lower heights, to increase native herbaceous species, and to discourage woody saplings from growing up and closing in the understory. Mowing would mostly assist in maintaining optimal habitat for gopher tortoises, but will also provide some management value for jays. Bush hogging and/or dry drum chopping would disturb the ground layer by increasing patches of open sand. These methods could also be used to decrease the density of scrubby species in the understory to maintain the necessary ratio of scrub oaks to open space for optimal scrub jay nesting habitat. Bush hogging and chopping would also aid in keeping the trees from closing in the canopy.

The management plan for the preserves includes the removal of mature canopy trees (i.e. longleaf pine and turkey oak) from the tortoise/jay preserves. This activity will open the groudcover for tortoises and jays. This tree removal will be performed as needed to lower the canopy coverage to less than 20% as recommended in the Florida Fish and Wildlife Conservation Commission's *Ecology and Development Related Requirements of the Florida Scrub Jay Nongame Wildlife Program Technical Report No. 8*).

The tortoise/jay preserves will be burned before any development activities occur. The management activities planned for the preserve will be implemented within one year of the issuance of the Section 404 permit. Fire lanes will be created through the preserves. The initial burn will focus on areas that have become dominated by a saw palmetto groundcover and dense canopy. Patches of scrub that are not significantly disturbed will be avoided during the initial burn for jays while the burned areas regenerate.

A second prescribed burn event will be conducted in the tortoise/jay preserves three (3) years after the initial burn. The second burn event will only occur on 25% of each jay preserve area, as recommended in the Florida Fish and Wildlife Conservation Commission in its *Ecology and Development Related Requirements of the Florida Scrub Jay Nongame Wildlife Program Technical Report No. 8.* This is to ensure that the jays and tortoises have adequate habitat while the burned areas regenerate. Subsequent burns will be conducted every three (3) years and will also cover 25% of each preserve per burn to ensure jays have adequate habitat while the burned areas regenerate.

Essentially, after the initial burn, each quarter of the jay preserves will be burned every twelve (12) years. This frequency of burning is ideal for the scrub-habitat requirements of Scrub Jays. As described in the Florida Fish and Wildlife Conservation Commission's *Ecology and Development Related Requirements of the Florida Scrub Jay Nongame Wildlife Program Technical Report No. 8,* the preserve areas should be burned at a minimum of once every five to twenty years for optimum habitat conditions.

The alternating burn program was designed to ensure ideal habitat conditions for jays and tortoises year-round, as well as to focus on the objectives of minimizing saw palmetto coverage, creating open sandy areas and control invasive canopy species such as longleaf pine. As mentioned, mechanical harvesting will supplement the objectives of the burn plan. This burn program will be easily managed due to the lowered fuel that will be available for each prescribed fire and will be safer for adjacent properties. Finally, the prescribed burns will be conducted by an individual that is certified by the Florida Forestry Commission and experienced with burning large tracts of land and small acreages that are adjacent to developed land.

Tortoise Habitat Monitoring:

The success of habitat management efforts and the need for management plan modification for the Victoria Park scrub preserve will be determined by the FFWCC based upon the results of scrub jay, gopher tortoise, and vegetative monitoring.

Vegetative monitoring will assess the variables that indicate whether optimal habitat for listed scrub species is being provided. The variables will include, but not be limited to:

1) An estimate of the number of trees greater than 10 feet tall
2) Percent canopy closure
3) Percent open sandy soil
4) Percent herbaceous and grass ground cover
5) Percent scrubby vegetation 3 to 15 feet tall

All monitoring will be conducted by a qualified biologist between March and June (inclusive) at least once a year for five (5) consecutive years once the management plan has been initiated. Monitoring will then occur every fifth year after that. The tortoise mitigation and management plan will be initiated in the spring prior to any development being initiated, whenever development may occur. Results of the monitoring will be submitted to the FFWCC each year, to determine whether the habitat management program requires modification.

Florida Sandhill Crane

The wildlife utilization on the Victoria Park project site was determined through a series of detailed wildlife surveys. One of the surveys focused on the Florida Sandhill Crane *(Grus canadensis pratensis),* a Threatened species observed on the property.

The developer of the project, the St. Joe/Arvida Corporation and its consultants, have developed a Sandhill Crane Mitigation and Management Plan for the Victoria Park project site. The objective of the mitigation and management plan is to provide habitat preservation areas and management protocols which will protect the onsite Sandhill Crane population in perpetuity.

The Sandhill Crane Mitigation and Management Plan for sufficient preservation of crane habitat to minimize development impacts to the environmental features and upon cranes residing on the property. This approach will require the creation of active and ongoing mitigation and management program will implement the required protocols for habitat preservation in perpetuity. Strict deed restrictions and other legally binding measures will be utilized to ensure the successful implementation of the Sandhill Crane Mitigation and Management Plan and Conservation Easements will be established for the preserved wetlands and uplands.

The Sandhill Crane habitat at the Victoria Park project site is comprised of pastureland and herbaceous wetlands. The post-development crane preservation areas are illustrated on the appended **Post Development Sandhill Crane Map (Appendix 1 - Map 10).**

Sandhill Crane Survey Methods and Results:

The Victoria Park project was evaluated to determine which wildlife species currently inhabit the site. Surveys for Sandhill Cranes were conducted as described in the Florida Fish and Wildlife Conservation Commission's (FFWCC) Wildlife Methodology Guidelines for Section 18.D of the Application for Development Approval. Surveys consisted of 100% visual surveys of each freshwater marsh suitable for cranes (i.e. maidencane marsh) during the breeding season (January - June). Crane nests were observed in four of the wetlands at the Victoria Park site.

The on-site wetlands were surveyed monthly during the nesting seasons in 1998 and 1999. The wetland boundaries of each wetland area was delineated, and inspected by the pertinent regulatory agencies. During the wetland delineation process, wildlife utilization in each wetland was noted. The wetlands were also surveyed specifically for Sandhill Crane nests. Several additional surveys were conducted on the adjacent uplands for the purposes of identifying other listed species including Florida Scrub Jays, gopher frog, Florida mice, Eastern indigo snakes, etc. During each survey, observation of wildlife utilization was made. Additionally, at least 15% of all vegetative communities within the project site were surveyed through random belt transects.

Sandhill Cranes were observed on the property during the surveys. Adult cranes were observed on the property in pairs and a group of six individuals. Sightings were mainly in the Northeast tract (north of Orange Camp Road and east of Martin Luther King, Jr. Blvd) of the property. However, individuals were observed in other areas including the tracts located southeast and southwest of the Orange Camp – Martin Luther King, Jr. Boulevard intersection and the tract located northwest of the Taylor Road-MLK Blvd intersection. The following table provides the location of the observed nests and the observation date.

The appended Sandhill Crane Map **(Appendix 1 - Map 10)** illustrates the location of the preserved wetland communities, as well as the location of each observed crane nest. The following describes the wetlands at the observed crane nest sites.

WETLAND NUMBER	DATE OF OBSERVATION
W40	06/98
W64	03/98
W74	04/98
W87	05/98

Wetland 40 is located near the center of the NE Quadrant of the site and is just south of an old railroad trail. This wetland is dominated by St. Johns wort, however a small island of maidencane was utilized as a nesting site for cranes. This nesting site became more ideal for nesting as water levels receded during the months of May and June, 1998. Before that time, water levels were probably too high. This wetland is heavily grazed by cattle; resulting in an unsuccessful nesting effort. No nesting activity was recorded at this site by late June, 1999.

Wetland 64 is located just west of Interstate-4 in the portion of the site designated as Workplace. This wetland is dominated by pickerelweed and surrounded by improved pasture cover. Two nest were observed in this marsh and were approximately 10 feet apart. The additional nest was most likely an accessory nest often utilized by cranes. Nesting efforts for this site was unsuccessful due to the destruction of the nest by cattle. No nesting activity was recorded at this site by late June, 1999.

Wetland 74 is located just south of Orange Camp Road and is east of Martin Luther King Blvd. A single nest was observed in the northwest portion of this wetland. This wetland is dominated by maidencane, pickerelweed and broomsedge and is surrounded by improved pasture. Cattle graze in this area as well; the nesting effort was also unsuccessful No nesting activity was recorded at this site by late June, 1999.

Wetland 87 is located west of Martin Luther King Boulevard and north of Orange Camp Road. This wetland consists of a deep water area and shallow areas. In 1998 the nest was observed near the southern edge of the wetland, approximately 20 feet from the Victoria Park property line. Dominant vegetation in this wetland is water lilies in the deeper water areas and maidencane and little-blue maidencane in the shallow areas. This wetland is surrounded by upland forest, but is also in close proximity to an existing residential area outside the boundary of the Victoria Park site. This nest contained one egg when discovered, but the nesting attempt was unsuccessful. No nesting activity was recorded at this site by late June, 1999.

Sandhill Crane Habitat

The Sandhill Crane Mitigation and Management Plan for the Victoria Park site consist of **570 acres** of preserves and greenspace for cranes as illustrated on the appended Post Development Crane Map (**Appendix 1 - Map 10).** These preservation areas will include wetland preserves, upland preserve areas, parks, stormwater pond banks, created wetlands, golf course and other greenspace areas. The majority of the more ecologically important wetlands will be preserved. These consist of wetlands that are greater than 0.5 acres and are not significantly disturbed (i.e. connected to drainage ditches and/or dominated by invasive/exotic plant species). Many of the

smaller, less pristine wetlands that are planned for preservation will also be enhanced through vegetative management practices.

The Sandhill Crane Mitigation and Management plan will also provide habitat for other listed species, particularly wading birds. All mitigation will occur with the goal of maximizing the habitat value for both listed and non-listed wildlife and plant species. The Sandhill Crane Mitigation and Management Plan includes special efforts for providing and enhancing habitat for some of the other listed wildlife species utilizing this property including the Little Blue Heron, White Ibis, Snowy Egret, Tricolored Heron and American alligator.

Wetland Preservation and Management for Sandhill Cranes:

The developer of the Victoria Park site is proposing to preserve the most pristine herbaceous wetlands on the property as part of the Sandhill Crane Mitigation and Management Plan. This herbaceous wetland preservation acreage includes approximately 80% of the total herbaceous wetland cover at the Victoria Park site. Additionally, all of the wetlands utilized as nesting habitat by cranes in 1998 are slated as preservation areas **(Appendix 2 - Photo 21 and 22).**

Many of the wetlands at the Victoria Park site have become disturbed due to road and fence construction, invasion of pine trees, cattle grazing and drainage ditches. The SMMP includes enhancement activities for Wetlands 16, 18, 19, 20, 23, 24, 26, 30, 31, 32, 35, 43, 44, 45, 46, 47, 48, 49, 73, 82 and 86. These wetlands will be enhanced by removing cattle, filling drainage ditches and removing and controlling invasive/exotic plant species. The wetland enhancement program will ensure an increase in vegetative diversity, cover and an increase in ecological value, particularly for habitat of the cranes and other wading birds. The herbaceous wetlands (crane habitat) to be preserved and enhanced at the Victoria Park site are listed in **Table 8.**

Removal of the cattle will allow native plant species in the over-grazed wet prairie wetlands to flourish and slowly replace carpet grass as the dominant plant species. The filling of drainage ditches will result in a more natural hydro-period in several of the preserved wetlands. A more natural and consistent hydro-period will benefit cranes, especially during the nesting period by allowing vegetative succession adapted to the hydrologic regime. Cranes nest failure is very susceptible to water levels that are too high or too low. The more natural hydrological regimes will ensure a higher rate of nesting success. A major and immediate habitat enhancement component will consist of the removal of free-ranging cattle from the nesting and foraging habitat areas. The cattle will forage on and trample the crane nests

Upland Preservation and Management for Sandhill Cranes:

The developer of the Victoria Park site will incorporate several upland areas as part of the Sandhill Crane Mitigation and Management Plan **(Appendix 1 - Map 10).** These areas consist of existing upland habitat and created foraging habitat in the form of wetland buffer, additional Sandhill Crane foraging and buffer, golf courses, lakes/retention ponds, parks and other open spaces. Many of these upland preserve areas are located between wetland preservation areas and will provide contiguous foraging zones for cranes moving between wetland areas and the uplands.

Management of these upland areas will consist of a combination of techniques including controlled burns and mechanical chopping and mowing. Fire will be the primary tool utilized for upland habitat management. The upland preservation areas will be divided into management units, with prescribed burns being conducted on an as-needed basis within the upland preservation areas. The longleaf pine community with large areas of open groundcover will be burned more frequently as occurs in nature than the more shrubby areas. Grassed field will be mowed periodically to

maximize forage value for the cranes and to prevent invasion by shrub species. Fire management in this manner will prevent undesirable plant species from recruiting into the good crane habitat and will enhancing habitat that is less suitable. All burns will be sensitive to the nesting seasons of wildlife species.

Upland Buffers:

Upland buffers will be provided around all wetland areas that are not slated for impacts. Per the rules and regulations of the St. Johns River Water Management District, a 25-foot on average buffer will be established around these wetlands. This upland buffer is comprised of several different communities such as shrub and brushland, xeric oak, pine flatwoods. Many of these upland preservation areas will provide foraging and a visual and sound screen.

St. Joe/Arvida will manage the 25-foot average, 15-foot minimum upland buffers around the wetland preserves to maximize their functions as it relates to the adjacent wetlands. There will be no tree removal within the buffers that are to be adjacent to developed areas on the site. The majority of the buffer areas will not be deforested, thinned or burned in any manner. The buffers within the Scrub Jay preserves will be managed and thinned by the prescribed fire program. The barrier effect of the upland buffers will be beneficial to Sandhill Cranes.

Additional Post-Development Uplands:

Several hundred acres **(app. 321 acres)** of golf course and additional greenspace will exist at the Victoria Park site. Sandhill Cranes have proven that they are highly adaptive and commonly utilize golf courses to forage for insects. The golf course pesticide management plan will take into consideration the utilization of these areas by the cranes. These areas will provide additional foraging habitat and compliment the previously described upland foraging areas.

Foraging and Roosting Habitat:

The Florida Sandhill Cranes found on the Victoria Park site are foraging primarily in the herbaceous wetlands and improved pasture communities. Some of the foraging habitat (particularly the improved pasture) for the Sandhill Cranes will be impacted from the planned development. These birds commonly utilize improved pastureland to forage for insects and the plan will substitute that habitat in part with an 18-hole golf course. The golf course will mimic the benefits currently being provided by the improved pasture and literature confirms that the Florida Sandhill Crane adapts readily to golf courses. In addition, the berms of wet-detention ponds and upland buffers around many of the preserved wetlands will provide excellent foraging habitat for cranes.

The Sandhill Crane Mitigation and Management Plan will include the preservation of ideal roosting habitat for cranes as well. Many of the herbaceous wetlands planned for preservation consist of large communities that are inundated with 4 inches or more throughout most of the year. These include Wetlands 2, 5, 17, 21, 27, 40, 74, 82, 86, 87, 107 and 112. The buffers surrounding these wetlands will also increase the suitability of these areas for roosting cranes. Finally, the preserved forested areas (wetlands and uplands) at the site will provide shaded areas for cranes during hotter months. The forested wetlands will be surrounded by a 25-foot on average wetland buffers, which will allow access for the cranes.

Crane Mitigation and Management Plan

St. Joe/Arvida and its consultants designed a Sandhill Crane Mitigation and Management Plan that has been approved of by the Florida Fish and Wildlife Conservation Commission and the St. John River Water Management District during the review process of the Conceptual Permit (No. 4-127-0369 AC-ERP). The appended Post-development Sandhill Crane Map for the Victoria Park project illustrates the crane preserve areas, as well as other green space areas for cranes.

The Sandhill Crane Mitigation and Management Plan is centered around the preservation and management of seven (7) potential nesting sites (see appended Post Development Sandhill Crane Map). Each of these potential nesting sites will be comprised of a significant area of wetland and upland area for flightless cranes. These nesting sites will consist of primary wetland and primary upland foraging areas. In addition, numerous secondary and ancillary forage areas that include natural wetlands, natural uplands, golf courses, parks, dry retention ponds and wet retention pond banks are planned as part of the Sandhill Crane Mitigation and Management Plan. The secondary and ancillary habitat is differentiated on the appended Post Development Sandhill Crane Map with a cross-hatching pattern.

The development plan will be implemented in a phased manner to give the cranes adequate time for adaptation to the preserved versus developed areas. Additionally, the cattle will be removed from the site and the preserved crane areas will be managed (i.e. exotic/native invasive plant species eliminated). This will further increase nesting success. The following describes the different nest areas that will be preserved and managed for the cranes.

All of the Sandhill Crane Primary upland areas will be subjected to mowing to benefit the Florida Sandhill Crane. Two of these areas will also be logged and seeded with grasses. One of the logged areas is located in the NE Quadrant, adjacent to Wetland 40. This area is part of Sandhill Crane Nest Site D. The other area where logging is to occur is in the NW Quadrant. This area is part of Nest Site A and is north of Taylor Road and West of the Martin Luther King, Jr. Beltway.

NORTHWEST QUADRANT

The NW Quadrant is separated into three tracts by existing roadways (Taylor Rd. and Blue Lake Rd.). The Sandhill Crane Mitigation and Management Plan includes the preservation of two (2) potential nesting sites (Site A and B) in the NW Quadrant. These sites will be comprised of primary wetland and upland areas for nesting and foraging. Several secondary upland and wetland areas will also exist in this quadrant.

Nest Site A:

Potential nesting site A (see appended crane map) will be comprised of a total of **18.5 acres** of primary wetland habitat and **19.4 acres** of primary upland foraging habitat. Each potential nest site is comprised of at least one wetland that is comprised of good nesting and foraging habitat for Sandhill Cranes. The primary upland habitat for cranes consist of those upland areas that are comprised of suitable foraging habitat for cranes and are contiguous to the primary wetlands for the Potential Nest Site. The primary wetland habitat at this nesting site will consist of Wetlands 106, 107, 112, 113, 114, 115 and 116. These shallow wetlands consist of ideal nesting and foraging habitat for cranes. A small section of W107 is comprised of open forested wetland cover. This wetland area is comprised of open groundcover that will provide foraging habitat for cranes.

The primary upland foraging habitat for this nesting site will consist of a large grass-dominated area. These upland areas (see appended **Sandhill Crane Map 10 – Appendix 1**) currently consist of shrub and brushland and pine flatwoods vegetative communities. The Crane Management plan includes clearing these areas via mechanical chopping; timbering and then

seeding with native upland grass seeds. A 25-foot buffer will remain intact around the planted grass areas. The upland areas will be periodically mowed and managed with respect to crane habitat needs.

Each potential nest site for Sandhill Cranes will also consist of secondary habitat. An additional **0.6 acres** of secondary uplands and **3.0 acres** of secondary wetlands will exist in this tract (north of Taylor Rd.) for Nest Site A. These secondary areas will consist of retention pond bank, herbaceous wetlands and open forested wetlands (see appended Crane map).

In all, a total of **41.4 acres** of habitat will be provided at Nest Site A.

Nest Site B:

The second nest site, Site B is located in the tract south of Taylor Rd. and bordering Martin Luther King Beltway. A nesting crane was observed in this wetland during the 1998 survey but not in the 1999 survey. The majority of the adjacent upland habitat surrounding this wetland is comprised of a dense sandhill community to the north, west and east. A very small open upland area does exist and will be preserved between W87 and W88. An area south of W87, which is off-site, is comprised of suitable upland forage habitat. Nonetheless, the Sandhill Crane Mitigation and Management Plan includes the preservation of this potential nesting site because it can use the adjacent offsite areas for forage needs. This nesting site will consist of **2.4 acres** of primary wetland habitat that is herbaceous wetland (W87, W88 and W89; Site B on appended crane map).

A total of **4.9 acres** of secondary wetlands and **2.7 acres** of secondary upland habitat are also planned for this nest site. These secondary areas are located in the tract south of Taylor Rd. and bordering Martin Luther King Beltway and will consist of retention pond bank and herbaceous wetlands (W91, W98, W99. W101, W102, W103 - see appended crane map).

In all, a total of **10.0 acres** of habitat will be provided at Nest Site B.

An dense sandhill community surrounding this nest site will function as a valuable buffer from any adjacent development. This greenspace area covers approximately 5 acres and is illustrated on the Environmental Set-aside, Greenspace and Preserve Map **(Appendix 1 – Map 7).**

NORTHEAST QUADRANT

The Sandhill Crane Plan includes three (3) potential nesting sites in the NE Quadrant (Sites C, D, and E). These sites consist of primary wetland and upland habitat. Several secondary and ancillary wetland and upland areas also exist. Two nest sites (Wetlands 40 and 64) were observed on this tract during the 1998 survey, however, neither attempt was successful due to the nests being destroyed by cattle, or from predation. In addition, no nesting attempts were observed on site in 1999. One of the 1998 nest sites is located adjacent to Interstate 4 (W64) and the other is in the interior of the quadrant (W40).

St. Joe/Arvida plans to regularly burn the ancillary upland areas as part of the site management plan. The ancillary areas will be primarily managed for Scrub Jays and gopher tortoises. A combination of management techniques will be used in the upland preservation areas including controlled burns and mechanical chopping and mowing. Fire will be the primary tool utilized for upland habitat management in the Scrub Jay and gopher tortoises. An initial prescribed burn in the jay/tortoise preserve areas will be conducted prior to development. Fire management in this manner will prevent undesirable plant species and result in an increase in plant density that would otherwise transform good habitat into unsuitable habitat. The use of fire as a management tool in these preserve areas will closely mimic the natural element of fire in the ecology of scrub habitats. All burns will be sensitive to critical periods for all protected species utilizing the Victoria Park site

(i.e. the nesting season). The planned management activities (i.e. controlled fire, mechanical thinning) in the ancillary areas will provide more suitable foraging habitat for Sandhill Cranes. The objective of these habitat management activities will be to open up the groundcover, which will benefit Sandhill Cranes.

Controlled burns will be conducted within the managed upland preservation areas (see appended Sandhill Crane Map) as described in the gopher tortoise and Scrub Jay Management Plan.

Nest Site C:

Nest site C will consist of **25.4 acres** of primary wetland habitat and **6.4 acres** of primary upland foraging habitat. All of the preserved herbaceous wetlands in this nesting area are relatively shallow and will provide nesting habitat. These wetlands (W1, W2, W3, W4, W5, W6, W16, W17, W18 and W20) will be contiguous to each other for flightless cranes, as they are connected by existing trails. The primary upland foraging habitat is comprised of a large pasture area adjacent to W17.

Approximately **48.1 acres** of secondary and ancillary upland habitat, which are illustrated on the appended crane map, also exist at this nesting site. The primary purpose of the ancillary forage habitat is to provide habitat for gopher tortoises and the Florida Scrub Jay. However, Sandhill Cranes were observed foraging within this area on numerous occasions. The planned management activities (i.e. controlled fire, mechanical thinning) in the ancillary areas will provide more suitable foraging habitat for cranes. The objective of these habitat management activities will be to open up the groundcover, which will benefit Sandhill Cranes.

In all, a total of **79.9 acres** of habitat will be provided at Nest Site C.

Nest Site D:

Nest Site D will be comprised of **13.6 acres** of primary wetlands and **17.6 acres** of primary upland foraging areas. The primary wetland habitat is comprised of shallow herbaceous wetlands. These include Wetland 33, 34, 36, 38, 39, 40, 47, 48 and 49, which will provide contiguous wetland habitat. The primary uplands will consist of existing pastureland and scrubby uplands. The primary scrubby upland areas at this potential nest site are currently comprised of a dense thicket of vegetation that has resulted due to a lack of fire. These areas will be converted into pastureland. These areas will be cleared (i.e. timbering, mechanical thinning) and seeded with native grass seeds to provide ideal foraging habitat for adult and flightless cranes. These areas will then be regularly mowed as needed to provide foraging habitat for Sandhill Cranes.

A total of **21.4 acres** of secondary wetlands will exist for this nesting site. These areas are separated from Nesting Site D by entrance roads from Martin Luther King Beltway and Orange Camp Road. Secondary wetland habitat for Nest Site D will consist of Wetlands 21, 23, 24, 26, 27, 30, 31, 32, 35, 43, 44, 45, 46, 51 and 53. These wetlands will be preserved and managed for cranes. In addition, enhancement activities are also planned for the majority of these wetlands.

An additional **77.3 acres** of secondary/ancillary uplands will be provided for Nest Site D. The secondary/ancillary upland foraging areas for this nest site will be comprised of approximately **69.9 acres** of managed uplands (via controlled burns, chopping and mowing) and **7.4 acres** of park and retention pond banks. The controlled burn program for the managed upland areas at this nest site will be identical to Nest Site C.

In all, a total of **129.9 acres** of habitat will be provided at Nest Site D.

Nest Site E:

Nest Site E will be comprised of **1.1 acres** of primary wetlands and **8.6 acres** of primary upland foraging areas. The primary wetland habitat will consist of herbaceous wetlands (W64). The primary uplands for this nest site will consist of mostly pastureland. These areas will provide valuable foraging habitat for flightless cranes.

An additional **13.3 acres** of secondary wetlands and **7.8 acres** of secondary uplands will also be available for nest site E. Secondary wetlands will be comprised of herbaceous and open forested wetlands (Appendix 1 - Sandhill Crane Map). Secondary upland foraging areas for this nest site include retention pond banks and managed upland buffers.

Due to the long-term plan for this nest site, the management plan anticipates that the potential for cranes utilizing this area will be shifted to the large crane management area to the west. As with each of the 1998 nesting sites, no chicks were fledged from this site most likely due to either a predator or abandonment by the adults due to its location in a dense cattle area. This area in a post-development condition will have higher quality habitat for nesting even though the immediately adjacent upland forage areas will be smaller. However, the Florida Sandhill Crane has a propensity for adaptation to humans and will forage on any grassed area. There is a good chance that the cranes will continue to utilize this area even though high quality replacement habitat has been provided.

In all, a total of **30.8 acres** of habitat will be provided at Nest Site E.

SOUTHWEST QUADRANT

The Sandhill Crane Mitigation and Management Plan includes one (1) potential nesting site in the SW Quadrant (Sites F). This site consists of primary wetland and upland habitat and several secondary wetland and upland areas. These areas are comprised of herbaceous wetland cover that will be enhanced by the SMMP, open sandhill or Longleaf Pine/Xeric Oak areas, retention pond banks, golf course and power/gas easements.

Nest Site F:

Nest Site F in the SW Quadrant will be comprised of **8.0 acres** of primary wetland habitat and **43.9 acres** of primary upland foraging habitat. Crane nests were not observed in this quadrant during surveys conducted in 1998 or 1999. However, several cranes were observed foraging within the primary areas of Nest Site F on a routine basis.

The primary wetland habitat will consist of W82, 83 and 86. Wetlands 82 and 86 are shallow, herbaceous depressions that will be greatly enhanced by the management activities planned by St. Joe/Arvida. Wetlands 82 and 86 will provide ideal nesting habitat for cranes once the management activities are implemented. Wetland 83, which is not as disturbed as W82 and 86, will provide good foraging habitat for cranes.

The primary upland foraging habitat for this potential nest site will consist of **35.0 acres** of managed uplands and **8.9 acres** of easements (grass-dominated). Periodic mowing and the removal of undesirable vegetation will be implemented in these upland areas to ensure ideal ground cover for cranes This area, which will be contiguous with the primary wetlands, will be managed for cranes and provide valuable forage habitat for flightless cranes.

An additional **190.6 acres** of secondary upland foraging habitat will also exist in this quadrant. Secondary upland habitat for this nest site will be comprised of **116.9 acres** of golf course, **5.3 acres** of retention pond banks and **68.5 acres** of natural areas that will be regularly managed. These areas will be managed to remain vegetatively similar to existing condition, which is mostly rangeland with scattered pines and timbered sandhill communities. These natural upland areas will be contiguous with golf course fairways and rough. Finally, St. Joe/Arvida and its consultants have designed an ecologically sensitive pesticide management plan for the golf course, which will also be beneficial for foraging cranes.

In all, a total of **242.5 acres** of habitat will be provided at Nest Site F.

SOUTHEAST QUADRANT

The Sandhill Crane Plan includes one (1) potential nesting site in the SE Quadrant (Sites G). This site consists of primary wetland and upland habitat and several secondary wetland and upland areas. These areas are comprised of herbaceous wetland cover that will be created and enhanced by the SMMP, as well as open sandhill areas, pastureland, retention pond banks and other greenspace areas.

Nest Site G

A potential nesting site (Site G) is planned for the SE Quadrant that will consist of **20.6 acres** of primary habitat for adult and flightless cranes (see Appendix 1 - Sandhill Crane Map). A crane nest was observed in W74 during the 1998 survey.

The primary wetland habitat for this potential nest site will consist of **15.8 acres** of shallow herbaceous natural wetlands and created herbaceous wetlands. This acreage includes Wetlands 73, 74, 75 and 76 and a **6.8-acre** created wetland. As with the other nesting areas, these wetland areas will be managed for crane usage.

The created wetland will be shallow in design and will be provided with a native plant seed and muck source from a few wetlands on the site which are planned to be filled. The seed source will result in a coverage of native plants such as pickerelweed, maidencane and yellow-eyed grass in the created wetland. The hydrology of the created wetland will be very similar to that of Wetland 74, a 1998 nesting site that was unsuccessful. The created wetlands will also consist of varying topography to allow shallow and deeper areas throughout each year. This will create a varying plant composition in these areas as well as varying water depths. The created wetland is detailed in the Site Mitigation and Management – Wetlands section.

Primary upland foraging habitat for this nest will consist of **4.1 acres** of pastureland and **0.7 acres** of managed uplands. Periodic mowing and controlling undesirable plants will be implemented in these upland areas to ensure ideal vegetation height for cranes. Finally, the large lake in this tract, a park and the natural buffer that will exist along the west and north side of this lake will provide **14.5 acres** secondary upland foraging areas for this potential nest site.

In all, a total of **35.1 acres** of habitat will be provided at Nest Site G.

All crane preserve areas will be managed to provide ideal foraging and nesting habitat. This management will include the chopping of pine flatwoods and seeding with native grasses, the management of scrub communities to provide more open areas, regular mowing of upland forage areas and the control of exotic plant species, invasive native plant species and invasive tree species. Carolina willow *(Salix* spp.) and longleaf pine *(Pinus* spp.) have recruited into several of the

herbaceous wetlands. These invasive species, which will be removed from the preserve areas, can become a serious problem with respect to the habitat requirements of cranes. Removing cattle from the property will also greatly enhance many of the preserved herbaceous wetlands by increasing vegetative diversity and density.

The Florida Sandhill Crane is a highly adaptive, opportunistic bird. Sandhill cranes adapt to humans and the habitat that is generated by developments particularly golf course roughs, stormwater pond banks, and open fields. In all, a total of approximately **570 acres** of habitat will exist for cranes at the post development Victoria Park project. One of the crane's primary forage habitat is shallow herbaceous wetlands. A total of approximately **186 acres** of primary habitat (contiguous with a potential nest site) will exist as part of the Sandhill Crane Mitigation and Management Plan. These primary areas will be protected by a Conservation Easement in perpetuity. An additional **384 acres** of secondary and ancillary habitat will exist as well. These areas will consist of natural wetland and upland areas, golf course, retention pond banks and parks.

It is important to note that the crane preserve areas will be protected and managed years before the impacts occur to most of the existing crane foraging areas. In summary, seven potential crane nesting areas will be exist at the Victoria Park site in post development. These areas include both wetlands and uplands that will be managed for the cranes and other listed species. The existing crane population has had poor nesting success the past two years due to the cattle operation and predators.

Sandhill Crane Habitat Monitoring:

The success of Sandhill Crane habitat management efforts and the need for management plan modification will be determined by the FFWCC and SJRWMD based upon a monitoring program at the Victoria Park site. Crane monitoring will include an inspection of suitable nesting habitat on a monthly basis during the crane-nesting season. The monitoring will include a visual survey of each wetland community that is suitable for nesting by cranes. A single aerial survey will also be conducted each nesting period.

All monitoring will be conducted by a qualified biologist during the crane-nesting season (Dec. – June) as per the St. Johns River Water Management District Conceptual Environmental Resource Permit (No. 4-127-0369AC-ERP – **Appendix 5**). The Sandhill Crane Mitigation and Management Plan will be initiated in the spring prior to the initiation of development. Results of the monitoring will be submitted to the FFWCC and SJRWMD each year.

Florida Scrub Jay

One of the surveys focused on the Florida Scrub Jay *(Aphelocoma coerulescens coerulescens)*, a Threatened species observed on the property. The developer of the project, the St. Joe/Arvida Corporation and its consultants, have developed a Scrub Jay Mitigation and Management Plan for the Victoria Park site. The objective of the mitigation and management plan for the Scrub Jay is to provide habitat preservation areas and management protocols, which will protect the population of this species occurring on the property in perpetuity. The Scrub Jay Mitigation and Management Plan for the Victoria Park was approved of by the Florida Fish and Wildlife Conservation Commission and the U.S. Fish and Wildlife Service (USFWS). The USFWS issued a Biological Opinion (No. 99-769 – **Appendix 8)** for the project on January 19, 2000.

The Mitigation and Management Plan for the Scrub Jay will provide for sufficient preservation of jay habitat types to minimize development impacts to the environmental features of the site. This will ensure that the development impacts are minimized for jays. This approach will require the creation of an active and ongoing mitigation and management. Strict deed restrictions and other legally binding measures will be utilized to ensure the successful implementation of the Jay Mitigation and Management Plan. Conservation Easements will be placed against all acreages in the Scrub Jay preserve areas.

It is important to note that approximately **75 acres** per jay family is being preserved or three (3) times the minimum requirements per the guidelines of the FFWCC and USFWS. This additional preservation, overlapping the on-site occupied ranges will enhance the potential for population expansion over time.

Development in many areas of the Victoria Park site will not occur for several years, however, the mitigation and management of jay habitat on the property will be implemented prior to development of the site. This will allow for a slower and less abrupt transition for the jay families.

Scrub Jay Survey Methods and Results:

The Victoria Park site is comprised of many different Scrub Jay vegetative communities including pine flatwoods, scrub, sandhill, pine-oak mixed forests, shrub and brushland, pastureland and herbaceous wetlands. The uplands are dominated by the sandhill community and the wetlands by herbaceous wetlands. All land use and community type classifications are from the Florida Department of Transportation's Florida Land Use, Cover and Forms Classification System, Level III (FLUCFCS).

A Scrub Jay survey of the property was conducted since birds were known to frequent the area when Martin Luther King Jr. Boulevard was constructed. Also, a mitigation plan for these birds was successfully implemented off-site by Volusia County, when the Martin Luther King, Jr. Beltway was widened.

The Florida Fish and Wildlife Conservation Commission classifies jay habitat as either Type I, II or III. Type I habitat is described as a community comprised of more than 15% scrub oak cover. Type II is described as a community comprised of less than 15% scrub oak cover, but at least one species of scrub oak is represented. Type III is any plant community or seasonally dry wetland within 1/4 mile of any area designated as Type I or Type II habitat. The areas that are being preserved for the Florida Scrub Jay consist of Type I and Type II habitat.

A jay survey was conducted on the Victoria Park site during the month of October (1997) when jays are very vocal and territorial. This included a survey of all suitable habitat over 6 days.

Surveys were conducted on calm, clear days between the hours of 8:00 am and 3:00 pm on October 13, 14, 15, 16, 17 and 24. Parallel line transects and observation stations were drawn on an aerial photograph prior to conducting any field-work. These transects and stations were then established in the field in Type 1, Type II and Type III habitat.

The jay survey was conducted as described by the FFWCC Wildlife Methodology Guidelines for Section 18.D of the Application for Development Approval and was consistent with the methodologies described in Ecology and Development Related Habitat Requirements of the Florida Scrub Jay *(Aphelocoma coerulescens coerulescens)*, Nongame Wildlife Program Technical Report No. 8.

The surveys were performed by biologists experienced in Florida Scrub Jay identification and avian behavior. A cassette tape broadcasting recorded vocalizations of Scrub Jay "scold calls" was played at each station. The recordings were broadcast for a minimum of one minute in four different directions (North, South, West, and East). Observation stations were visited at different times during each survey day. Finally, surveys were terminated or not implemented if weather conditions were not suitable (i.e. windy). Weather conditions during each survey day were very similar, with mostly sunny skies and minimal wind gusts

From the observations recorded during the jay surveys, including numbers of jays per observation, response direction and slight differences in plumage, two families of jays are utilizing (defending) approximately 132 acres on this site. Jays were most often observed in the eastern half of Section 26, but one jay was observed in the southeastern quarter of Section 23. The appended **Scrub Jay Map (Appendix 1 - Map 11)** illustrates the existing jay territories, as well as the planned Scrub Jay preservation areas. The appended **Photo 17 (Appendix 2)** illustrates a portion of the Scrub Jay preserves.

The two families of jays were observed in two distinct areas within the NE Quadrant of the Victoria Park site during the jay surveys. The primary community types that the jays were observed in consisted of Xeric Oak (421), Shrub and Brushland(320) and Longleaf Pine-Xeric Oak (412) and Shrub and Brushland (320) community. The shrub and brushland cover is most likely a product of fire suppression in old scrub areas. The Type I and II Jay habitat is mostly comprised of these community types. Jays were also observed in improved pasture cover.

Jays were also observed in some Type III habitat in the form of Wet Prairie (643) at the Victoria Park project site. These small wetlands consist of very shallow depressions that are rarely inundated. These areas are in close proximity to the Type I and II habitat described above.

Scrub Jay Management Plan:

The Scrub Jay Management Plan involves on-site preservation and management of approximately **150 acres** of habitat for two jay families. The USFWS and the FFWCC require 25 acres of preserved land for each family of jays. This project is rather unique because Volusia County had to mitigate for jay habitat impacts when the Martin Luther King, Jr. Beltway was constructed by the county. Only four jay families existed on the site prior to the construction of Martin Luther King Boulevard. The mitigation was accomplished by the purchase of 100 acres of potential jay habitat. A management plan was developed for the 100 acres to enhance the habitat value for the jays. The mitigation was deemed successful as the Florida Scrub Jay are now inhabiting the mitigation site.

Two of the jay families remained on the project site after the construction of the Martin Luther King, Jr. Beltway. Although mitigation for habitat loss has already occurred for these individuals, the developer will provide additional habitat for the Florida Scrub Jays that are remaining on the

site as part of an overall wildlife management plan. The mitigation acreages provided are based on the recommendations provided in the publication Ecology and Development Related Habitat Requirements of the Florida Scrub Jay *(Aphelocoma coerulescens coerulescens)*, Nongame Wildlife Program Technical Report No. 8.

The proposed on-site Scrub Jay management includes the preservation of ideal foraging and nesting habitat (Type I, Type II and Type III Scrub Jay Habitat) for the two families. This preservation is comprised of xeric uplands and shallow wetlands. The preservation areas will be established within the existing jay territories and were designed (i.e. shape, configuration, etc.) as recommended by the Ecology and Development Related Habitat Requirements of the Florida Scrub Jay *(Aphelocoma coerulescens coerulescens)*, Nongame Wildlife Program Technical Report No. 8.

The management plan will consist of preservation, enhancement and perpetual management of jay habitat. The preserve areas will be protected by a Conservation Easement assigned to the FFWCC, USFWS and/or SJRWMD.

Scrub Jay Preservation Area Description:

The developer of the Victoria Park site is planning to incorporate several upland areas as part of the Scrub Jay Mitigation and Management Plan **(Appendix 1 - Map 12).** This will consist of existing jay habitat and additional areas that are not currently part of the existing jay territories. Many of these upland preserve areas are located between wetland preservation areas and will provide contiguous foraging zones for jays.

The pre- and post-development Scrub Jay acreages are presented in **Table 14.**

Table 14. Scrub Jay Pre- and Post-Development Habitat Acreages

	ACREAGES		
Jay Areas	Uplands	Wetlands	Total
Pre-development (existing territories)			
North Family	52.2	10.9	63.1
South Family	60.2	9.1	69.3
Total	112.4	20.0	132.4
Post-development (jay preserves)			
North Family	56.1	26.9	83.0
South Family	54.6	12.4	67.0
Total	110.7	39.3	app. 150

The Scrub Jay Preserve areas will consist of approximately **150 acres** of jay habitat in the NE Quadrant site (east of Martin Luther King, Jr. Blvd and north of Orange Camp Road). Of this, approximately **111 acres** will be comprised of scrub, sandhill and brushland vegetative communities and approximately **39 acres** will be comprised of shallow wetlands (Type III jay habitat). The location of this area is illustrated on the appended Scrub Jay Habitat Map **(Appendix 1 - Map 12).** These upland and wetland preserves will be regularly managed and legally protected by a Conservation Easement. Approximately 112 acres of uplands and 20 acres of wetlands currently exist within the territories of the two jay families at the Victoria Park project site.

The United States Fish and Wildlife Service has an objective to preserve 2/3 (or 67%) of all jay habitat in the state of Florida in order to perpetuate the existence of the Florida Scrub Jay. The **150-acre** Scrub Jay preserve represents more than 100% of the existing jay habitat (app. 132 acres). The SMMP includes the preservation, management and legal protection of the Scrub Jay preserve areas, which will consist of approximately **74 acres** of the existing jay habitat at the Victoria Park site **(see appended Scrub Jay Map – Appendix 1, Map 11)** and an additional **76 acres** of Scrub Jay habitat (see appended Scrub Jay Map).

The existing habitat condition of the jay territories is very poor. Saw palmetto dominates the majority of the groundcover. A continued lack of fire in these areas has resulted in a denser groundcover with less open areas for jays to bury and recover acorns. In addition, the lack of fire has allowed longleaf pine, sand pine and turkey oak to recruit into xeric oak communities critical to the Scrub Jay. These areas will inevitably make a transition to a sandhill community with a continued suppression of the natural fire regime of the scrub community and would eventually become undesirable to jays. The SMMP will ensure that this does not happen as the jay preserve areas will be actively and aggressively managed to provide optimum conditions for Scrub Jays.

St. Joe/Arvida and its consultants believe that the regular management of the mentioned xeric uplands and the 21 isolated, shallow wetlands that cover **39 acres** (average of 1.8 ac./wetland) will greatly benefit the jays. The SMMP also includes the regular management and maintenance of the wetland areas to inhibit any recruitment of woody species or other large invasive plants. These wetland areas represent good Type III jay habitat (seasonally dry wetlands within 1/4 mile of Type I or Type II habitat) and actually function to connect upland xeric areas that might otherwise become separated by a mature sandhill forest. The majority of these areas are small (less than 1 ac.), rarely inundated, dominated by low-growing herbaceous plants and provide habitat for a variety of invertebrates which provide an alternative food source for jays. These wetlands are valuable Type III habitat because of the small size of each and location within xeric uplands. The fringes of these areas are comprised of a dense mix of scrub oaks and saw palmetto. The perimeter of many of these wetland consist of dry open areas. Jays were observed on numerous occasions perched on small pines and oaks at the fringes of these wetlands and feeding in seveal wetlands.

The Scrub Jay preservation areas will be created in conjunction with the mitigation and management plan for gopher tortoises and commensal species, including the Eastern indigo snake and Florida mouse. Each of these areas is comprised of well-drained soils that have a vegetative cover of either scrub vegetation or longleaf pine/turkey oak. Each of these communities provides excellent habitat for jays. Both preserve areas are located primarily in the existing jay territories.

Scrub Jay Habitat Management Techniques:

Management of these upland preservation areas will consist of a combination of techniques including controlled burns and mechanical chopping, timbering and mowing. Fire will be the primary tool utilized for upland habitat management. The use of fire as a management tool in the jay preserve areas will closely mimic the natural element of fire in the ecology of scrub habitats. The management activities for the jay preserves will only be conducted during non-nesting periods for jays.

Several areas in the jay preserves already consist of a low density and canopy coverage of mature canopy trees (less than 10 trees/ac.). These xeric areas are described as Shrub and Brushland and Xeric Oak by the Florid Land Use, Cover and Forms Classification System (FLUCFCS) Level III. The remaining acreages average between 20 and 60 canopy trees/acre. These areas are currently best described as sandhill or Longleaf Pine/Xeric Oak communities due to the greater density of canopy species.

There are four points that need to be considered while managing these areas:

1. There is need for variability in fire regimes (season, frequency, and regularity), both within and among sites. A single regime or burn prescription for a high pine favors one suite of species at the expense of others and creates a single landscape image.

2. Recognition is needed of the variability that existed among high pine sites. They ranged from open pine-wiregrass stands to red oak woods and from turkey oak barrens to associations transitional to scrub.

3. It is important to maintain ecotones and transitional communities. These are the central habitats of some species.

4. Appreciation is needed of the fact that many other species and communities were dependent on fires that originated in the high pine lands and flatwoods.

The density of the scrub vegetation varies throughout the preserve area. Some areas have not been subjected to fire or other successional setbacks resulting in a more dense canopy. Other areas appear to have been subjected to fire within the last five years resulting in a more open canopy and a low density of woody understory species. The SMMP has taken into consideration the variations in the scrub vegetation in the preserve.

The following details specific measures, which will be taken prior to the implementation of the burn:

1) Develop specific, detailed prescription for the burn area.
2) Secure all necessary control lines.
3) Secure proper equipment.
4) Employ a properly trained and experienced staff.
5) Develop a detailed emergency fire response plan.

Management recommendations for the Victoria Park scrub preservation areas are the result of existing information on Scrub Jays, scrub habitat and the management of scrub habitat. The management objectives in the upland preserves are to provide for Scrub Jays, gopher tortoises, gopher tortoise burrow commensals, and other wildlife that use this type of habitat. The preserve areas will be managed to provide the highest quality habitat for these species. The Scrub Jay preserve areas will be actively managed in perpetuity.

In general, habitat used by Scrub Jays is composed of low dense thickets with numerous open, sandy spaces (Westcott 1970, Woolfenden 1973). Cox (1984) found that often where Scrub Jays were found the habitat shared three features, 1) the presence of at least a few scrubby oaks; 2) an open canopy; and 3) a substantial amount of bare ground, or ground covered only by sparse of very short vegetation.

Specifically, Scrub Jays attain their densities where habitats are characterized by:

1. Oaks three to nine feet tall covering 50 to 75 percent of the area;
2. Open space (bare ground or vegetation less than six inches tall) covering 10 to 30 percent of the area; and

3. Scattered trees, with no more that 20 percent canopy cover (Cox 1987).

Management Units:

The Victoria Park Scrub Jay preserve will be divided into Management Units (MU's); thereby, allowing the differences in vegetative density and age to be considered when determining type and intensity of management. Unit management will allow as much of the preserve as possible to be maintained in optimal condition. The MU's will be treated individually with the areas of active management rotated to minimize short-term impacts to wildlife species and to create mosaics in stand age, vegetative diversity, and vegetative density within the area. A total of 8 MU's will exist on the site (4 MU's in each preserve area)

Controlled Fire:

Initial management with fire will entail a controlled burn throughout the **150 acres** of Scrub Jay preserve areas in late summer (i.e. September) to mimic the natural fire season. The preserve areas will then be regularly managed through a combination of controlled burns and mechanical methods thereafter to keep the groundcover at a low elevation and to provide suitable conditions for the growth of desirable grasses and shrubs. This will provide the most suitable habitat for Scrub Jays.

The jay preserves will be burned before any development activities occur. The management activities planned for the jay preserve will be implemented within one year of the issuance of the Section 404 permit. Fire lanes will be created through the jay preserves. After the initial burn, subsequent burns will focus on areas that are dominated by dense thickets of groundcover vegetation such as saw palmetto. Patches of scrub that are not significantly disturbed and that do not appear to need to be burned will be avoided while the burned areas regenerate.

Subsequent burn events will be conducted in the jay preserves approximately three (3) years after the initial burn. A second burn event will only occur over 25% of each jay preserve area, as recommended in the Florida Fish and Wildlife Conservation Commission in its *Ecology and Development Related Requirements of the Florida Scrub Jay Nongame Wildlife Program Technical Report No. 8.*

Management Units will be established within the jay preserves. The Management Units (MU's) will cover approximately 25% of each Scrub Jay Preserve Area (North Area and South Area). This burn program will ensure that the jays have adequate habitat while the burned areas regenerate. Subsequent burns will be conducted every three (3) years and will also only occur over 25% of each preserve to ensure that the jays have adequate habitat while the burned areas regenerate.

One of the four MU's within each preserve area (North and South) will be burned every 3 years after the initial burn over the entire preserve. Pursuant to the review and recommendations of the USFWS and FFWCC, the land management plan will include burning each MU once approximately every 12 years. The exact timing of the burns in each MU will depend on the results of the habitat monitoring events in the scrub preserves. The monitoring results will provide information on each MU and will dictate the timing and location of the subsequent burns. The management plan for the entire project site is specifically described in the SMMP.

Essentially, after the initial burn, each quarter of the jay preserves will be burned every twelve (12) years. This frequency of burning is ideal for the scrub-habitat requirements of Scrub Jays. As described in the Florida Fish and Wildlife Conservation Commission's *Ecology and Development Related Requirements of the Florida Scrub Jay Nongame Wildlife Program Technical Report*

No. 8, the preserve areas should be burned at a minimum of once every five years and a maximum of once every twenty years for optimum habitat conditions for jays.

The alternating burn program was designed to ensure ideal habitat conditions for jays year-round, as well as to focus on the objectives of minimizing saw palmetto coverage, creating open sandy areas and control invasive canopy species such as longleaf pine. As mentioned, mechanical harvesting will supplement the objectives of the burn plan. This burn program will be easily managed due to the lowered fuel that will be available for each prescribed fire and will be safer for adjacent properties. The burns will be conducted by an individual that is certified by the Florida Forestry Commission and experienced with burning large tracts of land and small acreages that are adjacent to developed land.

Mechanical Clearing, Timbering and Mowing:

Logging, mowing and mechanical thinning will be conducted within the Scrub Jay preserves in the NE Quadrant. The harvested timber within the Scrub Jay preserve will be dropped in selected areas to create "hot spots" during controlled burns. The objective of this activity will be to create open sandy areas for Scrub Jays, which will cache acorns in these areas.

The management plan for the jay preserves includes the removal of mature canopy trees (i.e. longleaf pine and turkey oak) from the jay preserves. It will be necessary to remove or selectively thin large trees to provide better feeding and perching habitat for the Scrub Jays and to allow sun to penetrate to the ground layer. This activity, which will enhance the areas for jays, will be performed as needed to lower the canopy coverage to less than 20% as recommended in the Florida Fish and Wildlife Conservation Commission's *Ecology and Development Related Requirements of the Florida Scrub Jay Nongame Wildlife Program Technical Report No. 8).* This activity was required and has been approved of by the United States Fish and Wildlife Service (USFWS) as well. At the same time large trees are being culled, mechanical trimming of scrub oaks will occur to keep oaks at heights no greater than 13 feet - the optimal height for scrub jay use, with the exception of a few scattered sentinel trees up to 15 feet in height. Sentinel trees may consist of any species and may even be dead.

Mowing will be used to keep some herbaceous species at lower heights, to increase native herbaceous species, and to discourage woody saplings from growing up and closing in the understory. Mowing would mostly assist in maintaining optimal habitat for gopher tortoises, but will also provide some management value for jays. Bush hogging and/or dry drum chopping would disturb the ground layer by increasing patches of open sand. These methods could also be used to decrease the density of scrubby species in the understory to maintain the necessary ratio of scrub oaks to open space for optimal scrub jay nesting habitat. Bush hogging and chopping would also aid in keeping the trees from closing in the canopy.

St. Joe/Arvida will implement shrub thinning management activities within the gopher tortoise/Scrub Jay Preserve via the fire management program. The **110.7-acre** gopher tortoise preserve **(see Appendix 1 - Map 9)** overlaps with the upland acreage within the **150-acre** Scrub Jay Preserve **(see Appendix 1 – Map 11)**. Mechanical habitat management, if used, will be conducted only during October through February to minimize disruption of courtship and reproductive activities of Florida Scrub Jays. This timing will also coincide with the spring growing season, enabling treated species to recover as quickly as possible.

Scrub Jay Habitat Monitoring:

The success of habitat management efforts and the need for management plan modification for the Victoria Park scrub preserve will be determined by the FFWCC and USFWS based upon the results of scrub jay, gopher tortoise, and vegetative monitoring. Scrub jay monitoring will include collection of data on individual/family distribution (territories) and nesting. The monitoring data will also be relevant to the Management Units within the preserves. Vegetative monitoring will assess the variables that indicate whether optimal habitat for listed scrub species is being provided. The variables will include, but not be limited to:

1) An estimate of the number of trees greater than 10 feet tall
2) Percent canopy closure
3) Percent open sandy soil
4) Percent herbaceous and grass ground cover
5) Percent scrubby vegetation 3 to 15 feet tall

All monitoring will be conducted by a qualified biologist between March and June (inclusive) at least once a year for five (5) consecutive years once the management plan has been initiated. Monitoring will then occur every fifth year after that. The Scrub Jay Management Plan will be initiated in the spring prior to any development being initiated, whenever development may occur. Annual reports of the monitoring and management activities in the jay preserve areas as described in the SMMP will be submitted to the USACOE, FFWCC and the United States Fish and Wildlife Service at the end of each year. Results of the monitoring will be used to determine whether the habitat management program requires modification.

The final permitted SMMP for the Victoria Park project will be incorporated into the homeowner's documents via Conditions, Covenants and Restrictions. A special account will be set up for the management activities described by the SMMP and the Section 404 permit. Yearly dues will be incurred to each individual homeowner for the cost associated with the preserve management, as well as other elements of the mitigation plan. An experienced wildlife biologist and fire manager will oversee the management activities described in the SMMP.

Other Protected Species

The following describes the management plans for the remaining protected wildlife and plant species observed during the surveys of the Victoria Park project site. These include the Tricolored Heron, Snowy Egret, White Ibis, Little Blue Heron, American alligator, Eastern indigo snake, Florida mouse, Sherman's fox squirrel, Garberia and hooded pitcher plant.

Wading Birds

The Tricolored Heron, Snowy Egret, White Ibis and Little Blue Heron are all wetland wading birds that prey on small fish, amphibians, reptiles, crustaceans and insects. They may occur singly or in mixed-species groups, feeding in shallow wetlands, creek and lake-edges, and roadside ditches. They typically aggregate into colonies for nesting success. Nesting success is tied to the natural flooding regime of the region's wetlands (Kushlan, 1986).

Little Blue Herons, White Ibis, Tricolored Herons and Snowy Egrets were observed utilizing several of the deeper water and isolated marshes. Each of these species are designated as species of special concern by the FFWCC, but are not Federally listed. The management plan for these avian species is basically the same as described in the management section for Sandhill Cranes. The high quality wetland areas that are presently being used for forage will be preserved and buffered from adjacent development. Since there were no rookeries on the site, nesting habitat management for these species was not an issue.

American Alligator

The American alligator *(Alligator mississippiensis)* occurs in a wide variety of wetland and aquatic habitats throughout Florida. This species is ecologically important as it is a predominant carnivore. The alligator is designated as a species of special concern (SSC) by FFWCC and is classified as threatened, due to similarity of appearance, by USFWS. The similarity of appearance designation reflects that, while the alligator is fully recovered and is not itself threatened, its close resemblance to other crocodilian species, which are endangered or threatened, requires that the alligator also be regulated.

The management plan for American alligator includes the preservation of the higher quality wetlands, particularly those systems that remain inundated throughout the year. The creation of numerous stormwater ponds, many of which will remain wet and will be adjacent to wetland preserve areas, will provide additional habitat for this species. The location of these stormwater ponds is illustrated on the appended Development Plan Map (**Appendix 1 - Map 2**). As with the listed wading birds, the habitat management plan for this reptilian species is basically the same as described in the management section for Sandhill Cranes.

Eastern Indigo Snake and Florida Mouse

Per the guidance of the Florida Fish and Wildlife Conservation Commission and the Wildlife Methodology Guidelines for Section 18.D of the Application for Development Approval, a survey targeting listed commensals such as the gopher frog, indigo snake, Florida pine snake and Florida mouse was conducted at the Victoria Park site. The approximate location of the commensal survey transects and traps (funnel traps and small mammal traps) are illustrated on the appended Survey Transect Map (**Appendix 1 - Map 6**).

Funnel-trapping: Methods and Results

Random sampling of several tortoise burrows was conducted during the commensal survey. Funnel-trapping was mostly restricted to areas of high tortoise densities per the guidelines of the FFWCC. However, some additional traps were set in areas that were determined to be comprised of ideal gopher frog habitat, but were in areas of low tortoise densities (less than 0.4 tortoise/acre). These areas consisted of xeric oak or sandhill communities with tortoise burrows in close proximity to shallow herbaceous wetlands, particularly wetlands which experience only seasonally inundation and lack any fish populations.

Survey transects for listed commensals were set up and checked in conjunction with the small mammal trapping whenever possible. All funnel traps were checked twice daily for 4 days during the month of April, 1998. Trapping was set up in three phases which consisted of a total of 3 weeks of trapping (4 trap nights per week). A total of 36 funnel traps were set during the survey. This number was determined by utilizing the estimated number of tortoise burrows in areas of greater than 0.4 tortoises/acre and multiplying that total by at least 10%. The minimum survey sample of 10% was utilized per the guidance of the FFWCC.

No listed commensals were captured during the funnel trapping at the site. Although none of Florida's protected commensals were captured during the surveys, habitat suitable for commensals such as the gopher frog and indigo will be preserved at the Victoria Park site. This preservation land will be administered as provided for in this narrative to the SMMP.

Eastern Indigo Snake Management Plan

Although no listed commensals were captured during the previously described funnel trapping, a single indigo snake was observed on the property in the NE Quadrant during the pedestrian wildlife surveys. The Eastern indigo snake *(Drymarchon corais couperi)* is a fossorial snake which occasionally inhabits gopher tortoise burrows. Small rodents and other snakes found in oak and pine forests provide food resources for the indigo snake. Eastern indigo snakes are classified as Threatened (T) by FFWCC and USFWS.

The habitat management plan for the indigo snake is basically the same as the plans for the Florida Scrub Jay and gopher tortoise. As previously described, the tortoise preserve areas will consist of ideal indigo snake habitat. In addition, the areas designated for Scrub Jays will also be comprised of ideal indigo snake habitat including wet prairies, sandhill and scrub communities. These areas will provide substantial feeding areas within large wildlife corridors. Tortoise burrow densities will be maximized in the preserve areas (at least 2 burrows/acre) to provide shelter during winter months. An Indigo Snake Management Plan and Educational Brochure is included in **Appendix 9.**

Small Mammal Trapping: Methods and Results

A small mammal survey was conducted to determine if the Florida mouse is utilizing the sandhill and xeric oak communities at the Victoria Park site. The Florida Fish and Wildlife Conservation Commission (FFWCC) was contacted to discuss the survey requirements as outlined in the Wildlife Methodology Guidelines for Section 18.D of the Application for Development Approval. Per conversations with Mr. Steve Lau of the FFWCC, one transect was established per 100 acres of suitable habitat (sandhill and xeric oak). The location of each transect was randomly selected on an aerial photograph. Because approximately 1,200 acres of sandhill and xeric oak exist at the site, 12 transects were set up to survey for the Florida mouse.

Each transect consisted of a total of 50 traps or 2 traps per station. Stations were between 25 and 30 feet apart and traps at each station were within 10 feet of each other. Traps were set under shade as much as possible. Trapping began on April 5, 1998 and consisted of 4 trap-nights per transect. All mammal traps were baited with a seed/nut mix and checked twice daily. A total of 2,600 trap-nights (650 traps for 4 nights) were conducted during April, 1998. The survey involved 16 days of trapping and several hours of checking and re-setting traps.

Three species were caught during the survey: the Florida mouse, the golden mouse *(Ochrotomys nuttalli)* and the cotton rat *(Sigmodon hispidus)*. A total of 38 Florida mice were caught during the survey. The number of Florida mice caught at each transect is listed in **Table 15.**

Table 15. Small mammal trapping results at the Victoria Park Project.

Transect No.	Number Caught
1	0
2	0
3	3
4	6
5	13
6	0
7	0
8	0
9	0
10	5
11	1
12	10
Total	38

Florida mice were caught in several locations throughout the site. Transects 5 and 12 accounted for the most Florida mice with a total of 23 catches. These transects were located within areas of sandhill and xeric oak communities with dense groundcover vegetation.

Florida Mouse Management Plan:

Management plans for this species will involve relocation into the gopher tortoise habitat preserve areas. Any listed commensals captured during trapping at gopher tortoise burrows will also be relocated to the preserve area. As with the gopher tortoise, any Florida mice within the Scrub Jay preservation areas will remain on-site.

Sherman's Fox Squirrel

Sherman's fox squirrels *(Sciurus auger shermani)* were observed at the Victoria Park project site. Wildlife survey transects for fox squirrels were conducted in conjunction with the gopher tortoise surveys, funnel-trapping, Scrub Jay survey and small mammal trapping **(Appendix 1 - Map 5** and **Map 6)**.

Results of the wildlife surveys indicated that the Sherman's fox squirrel, a Species of Special Concern (SSC), is utilizing the Victoria Park property. Most observations of this species were made in the sandhill or longleaf pine-xeric oak communities in the southwest and the northeast quadrants. Sherman's fox squirrels typically utilize open sandhill, live oak hammocks and longleaf pine flatwoods as its preferred habitats.

Fox squirrel habitat will primarily be preserved in the SW and NE Quadrants. Many areas in these quadrants will consist of longleaf pine, live oak and turkey oak stands. Large longleaf pines and turkey oaks, which are important food source for fox squirrels, dominate the canopy in many of these areas. Wildlife corridors will allow movement of this species throughout the site.

The upland areas that will be managed as fox squirrel habitat are illustrated on the appended Environmental Set-aside, Preserve and Greenspace Map **(Appendix 1 - Map 7).** Several hundred acres of naturally vegetated forests are planned for the post-development property. These areas will be comprised of scrub preserves previously described in the management plans for Scrub Jays and gopher tortoises, green space, parks and upland buffers. In addition to these areas, many of the developed areas will be planted with oaks, which will provide a substantial food source.

The natural preserve areas will provide ample nesting habitat for fox squirrels. Special efforts will be made to locate any active fox squirrel nests that may appear on the Victoria Park project site during the development of the site. Observed nesting trees in areas that are slated for development will be avoided during the nesting season.

Listed Flora

The Division of Plant Industry of the Florida Department of Agriculture (FDA) and Consumer Services (FDACS) and the Florida Committee on Rare and Endangered Plants and Animals (FCREPA) were examined to develop lists of species possibly occurring within, or in the vicinity of, the proposed site. The current listings of plant species considered to be endangered, threatened or commercially exploited by the FDA and the U.S. Fish and Wildlife Services (USFWS) were also reviewed (Florida Fish and Wildlife Conservation Commission's (FFWCC) Florida's Endangered Species, Threatened Species and Species of Special Concern - Official Lists). Literature searches were also completed with regard to information and data previously collected and documented on this site.

More than 15% of each vegetative community type was surveyed on the Victoria Park site to determine the presence or absence of any federally or state "listed" plant species. Field surveys detected 2 species listed by the Florida Department of Agriculture (FDA) as endangered or threatened. These species are Garberia *(Garberia heterophylla)* and hooded pitcher plant *(Sarracenia minor).* No federally listed species were observed during the surveys. Surveys (pedestrian transects) were performed in conjunction with the wildlife surveys. The approximate location of observed specimens of the listed plant species are illustrated on **Map 5** and **Map 6**

(Appendix 1). The appended **Photo 22** and **Photo 23** illustrate specimens of these plant species **(Appendix 2).**

Hooded pitcher plant was observed in the herbaceous portion of W63 and W40, which will be preserved. Garberia was observed in scattered areas on sand ridges within the northeast, southeast and northwest quadrants. This species will continue to exist on the property as well in the 110.7 acres of managed xeric uplands in the Scrub Jay/gopher tortoise preserves. In addition, many green space areas **(app. 135 acres)** that will be avoided as part of the gopher tortoise management plan **(see appended Tortoise Map 9, Appendix 1)** will be comprised of Garberia.

Management plans for the listed flora is basically the same as the management plans for the protected upland wildlife species. The tortoise/Scrub Jay preserves and other upland preserves will consist of several areas in which Garberia currently exists. Many of the wetlands planned for preservation at the Victoria Park site will be ideal for hooded pitcher-plant once cattle are removed. Populations of potentially impacted pitcher plants will be transplanted into the preserve areas. In time this plant and others will recruit into these areas. Perpetual preservation of these vegetative communities will allow these plants to flourish. Management activities will be implemented to ensure that existing conditions remain in the healthy scrub and wetland areas.

General Wildlife

The SMMP for the Victoria Park project provides substantial habitat for general wildlife on the property such as wading birds, snakes and rabbits. A substantial amount of terrestrial and aquatic habitat preservation is proposed as part of the SMMP. The planned wet retention ponds for this site will also provide significant habitat for several general wildlife species such as common ducks and wading birds.

The developers and consultants understand that all of the native wildlife species currently utilizing the property play an important role in the site's ecology. Because each species of wildlife has a special niche or habitat needs, the SMMP will include the preservation of forested uplands, non-forested uplands, forested wetlands and herbaceous wetlands. Transitional areas, which exist between wetlands and xeric uplands, will also provide habitat-specific wildlife with significant cover for foraging, nesting and predator avoidance. These community types will be valuable components of the wildlife corridors that will exist on the property.

STORMWATER MANAGEMENT

The following describes the stormwater management system, which was designed by Donald W. McIntosh and Associates, for the Victoria Park project site:

Retention and Water Quality

All development within the project and any area served by a stormwater collection system will be subject the full "first flush" water quality retention requirements of Chapter 40C-42. Facilities which are designed to the criteria of these rules are presumed to meet general water quality standards prior to discharge either to a jurisdictional wetlands or to any offsite receiving water.

The retention facilities will be varied depending upon the quadrant location of the project. In the NW, SW, and SE Quadrants there are no offsite discharges and relatively few wetlands within the project. In these areas the stormwater facilities will consist of singular retention areas designed to capture all stormwater runoff for all events, including and exceeding the 25-year storms. These ponds will be of both normally wet and dry types depending upon location relative to the ambient groundwater. Total retention areas of this design will have retention capacities of an order of magnitude greater than the required water quality volumes.

In the NE Quadrant where there is a predominance of wetlands, both isolated and connected the stormwater system is much more complex. Facilities to meet the 40C-42 rules will consist of wet off-line retention ponds. These will capture and retain all developed runoff. Recovery of these facilities will be accomplished by percolation into the shallow groundwater.

Detention Components

Only in the NE Quadrant will detention of stormwater be a method since no outfalls exist for the other areas. In this area detention ponds will be designed as needed to attenuate peak flows prior to discharge offsite. These will be facilities in addition and in second sequence to the water quality retention ponds. The discharges (after full water quality treatment) will be introduced to the connected wetlands which form the conveyance routing offsite. There will be no discharges to isolated wetlands without some outlet control.

Protection of Groundwater

Since the wetlands are sustained in most cases by ambient shallow groundwater levels it is imperative that the development not affect any lowering of levels in the wetlands areas. This condition applies mostly in the NE Quadrant where a limited offsite discharge capacity exists. The typical profile scheme for the retention ponds in this quadrant will be a wet pond adjacent to a wetland buffer on the up gradient side. This pond will be allowed to stage up a limited height above the ambient or antecedent level, which is both normal groundwater and wetland level. The recovery of this captured stormwater will be accomplished through percolation into the surrounding surficial sands. The positive gradient of groundwater will result in a controlled recharge of highly filtered water into the wetlands. The proposed system will thereby maintain and enhance the groundwater levels in the vicinity of the wetlands.

Protection of Wetlands

The wetlands will be protected from the development and the stormwater collection system by the plan layout and the basic concept of avoiding direct use of the wetlands. The planning layout of the development within the project boundaries is very significant. The development avoids the majority of the isolated wetlands lying east of Martin Luther King Blvd. Being down gradient in surface and groundwater directions from these areas further aids the avoidance of wetland impacts.

As stated above, all runoff from the development will be treated in water quality retention ponds prior to discharge anywhere. At most points the discharge of treated stormwater will be into connected wetlands for subsequent conveyance offsite. This temporary conveyance and detention through the wetlands will be controlled to the limits of existing levels for these areas.

GOLF COURSE MANAGEMENT

Embracing the natural landscape, the Victoria Park golf courses will be managed to provide challenging golf opportunities while protecting the environment through the environmentally sensitive protocols of St. Joe/Arvida golf management. Managers will achieve plant and water conservation, waste management, energy efficiency, and implement a broad array of habitat enhancement projects for wildlife and wetlands of the site.

The following management protocols describe how St. Joe/Arvida will implement the golf course management plan at Victoria Park.

Environmental Objectives

- Comply with all permit conditions,
- Create a management philosophy that is designed to protect the environment,
- Protect surface and groundwater from fertilizer and chemical runoff,
- Provide wildlife habitat,
- Increase the awareness of the homeowners of the advantage of wildlife and environmental management,
- Increase public awareness of the benefits of a golf course especially when managed under the guidelines of St. Joe/Arvida's protocols.

Integrated Pest Management

The following is a description of the Integrated Pest Management (IPM) policy that will be used at Victoria Park. This policy is designed to limit the use of pesticides to the least amount possible while obtaining the desired results in golf course conditions. Sound turf management practices will promote the development of healthy ornamentals and turf, which will have greater disease and pest resistance .

Scouting

Turf and ornamental conditions will be inspected on an as needed basis to determine the degree of pest pressure. A pest will only be controlled with a pesticide if it is above the pressure threshold and no other method of control is feasible. The pressure threshold varies depending on the type of pest and location within the property. The following is a description of the pressure thresholds for various pests in various locations.

Insects - Fairways and in-play rough areas must have a mole cricket population of 2-3 per sq ft, a sod webworm, an armyworm population of 12 per sq ft, a white grub population of 3-5 per sq ft, and a billbug grub population of 10 per sq ft. Out-of-play areas are treated for insects only if plant death is imminent. A zero tolerance for most harmful insects on greens will be practiced. St. Augustine grassed areas must have a chinch bug population of 20-25 per sq ft. before pesticide treatment will be applied.

Fungi - The presence of plant parasitic fungi are always present even in the healthiest of plant materials. Fungi will be treated on greens only when eminent turf damage is likely to occur that would lead to inferior putting or unacceptable visual characteristics. Treatment on fairways and out of play areas would occur only to prevent turf death.

Weeds - The best weed control method will be a strong healthy turf. Post-emergent weed control on greens, tees, fairways, and in-play rough areas will occur in the following order: 1) weeds will be physically removed whenever practical, and 2) weeds will be spot treated as needed using herbicides that have the least environmental impact. Pre-emergent herbicides will be applied only when absolutely necessary to prevent known weed pressures.

All pesticides will be applied according to the label. Environmental conditions will be monitored (wind, rain, soil conditions, temperature, etc.) to prevent off site movement of applied pesticides or herbicides.

Resistant Cultivars

All plant material used at Victoria Park will be selected based on natural pest resistance. Low water requiring plants will be used where possible. All plant material will be well adapted to the Central Florida area and readily available at area nurseries.

Biological Control Agents

Biological control agents will be used where feasible for pest control. Host plants for biological control agents will be planted and/or maintained when necessary.

Cultural Control Practices

Cultural control methods will be used to increase turf vigor and/or to reduce pests where feasible. These methods will include but not be limited to:

1) Height of Cut - Cutting height will be adjusted so that turf is grown at the highest acceptable height.

2) Fertilization - A fertilization program will be devised and implemented that will allow the turf and plant material to grow aggressively but not excessively. Fertilizer will be applied so that nutrients are available at the proper levels and ratio for optimum plant growth. Water soluble or fast release fertilizer will not be applied at rates that would allow movement through the root zone where it would not be available to the plant roots. Usually not more than 1 lb/1000 ft sq of a water-soluble nutrient will be applied at one time. The use of slow release nitrogen fertilizer effectively eliminates any environmental impact of nitrate leaching.

3) Irrigation - All plant material will be irrigated so that the needs of the plant are met but not exceeded. Unless soil tests indicate otherwise, irrigation will be applied so that the root zone is thoroughly moist but not below the root zone. Irrigation will then be withheld until the wilting point is approached. The irrigation schedule incorporates the utilization of reuse water as appropriate and available.

4) Aerification - Aerification practices will be used to control soil compaction especially in high traffic areas. Aerification will be planned during optimum grown periods and during times when weed seeds are least likely to germinate.

An education program will be prepared to keep golfers informed of the IPM efforts that are in place. Through the use of the *Victoria Park Newsletter, Golf Course Update*, and informing golf shop personnel, this information will be disseminated.

Water Quality Management

Water quality management will be accomplished by:

1) Establishing planted berms in areas specified to filter storm water runoff before it goes into surface water features.

2) Maintaining an adequate level of triploid grass carp in water features so that desired aquatic weed control can be achieved with very limited or no aquatic herbicides used.

3) Planting vegetative buffers in areas where the majority of the nutrient loading problems can occur.

4) Limiting the amount and types of fertilizer that will be used in areas near water sources. Slow release fertilizer will be used.

5) Not fertilizing down to the edge of the water. A buffer strip will be left unfertilized. Location and plant material involved will determine the width of the strip. Fertilizer will not be applied when there is a high probability of rain. Computer generated weather radar and forecasting information will be used to help in making fertilization decisions.

6) The use of no-spray zones areas near selected water bodies. The width of the areas where no pesticides are applied will vary depending on the location and the function of the water body and biologically-based pesticides will be utilized wherever possible.

Water Conservation and Irrigation System

The irrigation system at Victoria Park will consist of a computerized system that communicates with satellite controllers located within irrigated areas. This system will give excellent control of irrigation water application. Each feature is described below.

Flo-Management - The computer software balances the system demand at maximum capacity with the efficiency of the pump station. This allows irrigation at the most efficient rate in the least amount of time. This saves time, electricity and pump system wear and tear.

Cycle and Soak - The computer software controls the water application on slopes and poorly drained areas. Any zone can be programmed for water at a specified volume at any one time. The system is also programmed to wait a specified amount of time before that zone can begin watering again to finish the total irrigation time. Most zones are set up for a 15-minute cycle time and a 15 minute soak time.

Evapotranspiration (ET) Adjusted Run Times - The computer software uses data relating to each zone, i.e., precipitation rate, zone gallons per minute, and soil type/conditions, to determine the run time for a zone in order to apply the desired amount of water. This amount of water is measured in inches. Instead of entering a length of time for each zone to run, the inches of water to be applie is specified. The computer calculates the length of time each zone must operate to apply the required amount. This is a very accurate way of applying the desired amount of water evenly to the entire irrigated area.

Automatic rain shut off - A device that will turn the irrigation system off in the event of a predetermined amount of rain will be installed. This saves not only water but electricity as well.

St. Joe/Arvida plans to utilize a weather station that is connected to the irrigation computer. The weather station determines the ET rate then communicates this information to the irrigation computer for use in determining irrigation requirements.

Irrigation start times will be scheduled so the cycle will finish prior to dawn. This not only gives the water time to soak into the soil but also allows the plant material to dry quickly for reduced chance of disease.

Three irrigation water sources will be utilized. These are: 1) reclaimed, 2) lakes, and 3) wells. Reclaimed water will be used to the fullest extent possible.

Approximately 110 acres of the golf course will be irrigated. These areas are to be irrigated on an as needed basis. Reuse of rain water will be accomplished by pumping from lakes. The water conservation plan objectives are to reduce future water requirements.

During the dry season the irrigation system will be checked once a month for heads that do not work properly. Management will constantly monitor the system for areas of improper irrigation coverage. Adjustments will be made as needed. An irrigation technician will be employed and allocated 100% to irrigation related jobs.

The water conservation plan also will include the use of mulch under tree stands in order to eliminate irrigation in these areas.

Areas under pine tree stands will not be irrigated. Pine straw will be allowed to accumulate for moisture retention and weed control. Native plant material will be utilized in out of play areas where possible to reduce irrigation requirements and increase animal habitat.

Maintenance Facility and Equipment Wash Areas

A 200 foot by 50 foot metal maintenance building will be constructed which will be surrounded by asphalt. Any petroleum or chemical spills will be contained using a dried clay absorbent material. Only mix/loading of pesticides will occur in the Pesticide Rinse Water Reuse Area. Employees will be trained on preventing spills and the proper way to clean them up if a spill occurs. Hydraulic fluid and engine oil that is lost while equipment is being repaired will be retained and recycled. All oil filters will be recycled. Cloth shop towels will be cleaned by Safety-Kleen and reused; no petroleum-contaminated towels will be discarded in the dumpster. Oil and hydraulic fluid will be stored in a protected area to prevent accidental spillage.

Containment System

Employees will be trained in chemical spills. This will be part of the Hazard Communication Program.

A pesticide rinse water reuse area will be constructed that will allow the collection of all rinse water for reuse in subsequent spray operations. All pesticide mix/loading will be carried out in the pesticide rinse water reuse area. This area will be constructed so that no chemicals can move off site.

Equipment Wash Pad

An equipment wash pad will be constructed that will filter the water used for washing golf course maintenance equipment.

Fuel Storage

Above ground ConVault Type fuel tanks will be installed for fuel storage. Employees will be instructed how to safely dispense fuel and not to over fill tanks. Dried clay absorbent material will be available for fuel spills. All fuel dispensed will be logged.

Turfgrasses

The turf species to be used on the greens is TifEagle Bermuda; Tifway 419 Bermuda will be used on the tees, fairways, rough areas. The greens, tees, and fairways will be overseeded with cool season grass for the winter months.

Wildlife and Habitat Management

Woodlot Management

When there is no safety hazard, dead trees will be left as snags for cavity nesting animals. When a snag is located near a house the homeowner will be educated on the importance of leaving the tree for wildlife when it poses no safety hazard to residents.

Corridors

Wherever possible habitat areas will be linked. The course design will enhance or preserve travel corridors to allow wildlife to safely move through the course and access food, cover, and water sources.

Victoria Park will be designated as a wildlife sanctuary and thereby preclude shooting or any type of hunting on any part of the property. Signs that warn motorists of road/wildlife crossings will be erected.

Areas on the golf course that have been identified as "Environmentally Sensitive Area" will be protected from human encroachment. These areas will be marked using red or yellow stakes with a green stripe about one to two inches wide at the top of the stake. No activity will be allowed in the areas except for wildlife management projects, i.e., building brush piles, planting desirable plant species, etc. A local rule, "If a ball is in, or there is reasonable evidence that it is lost in an Environmentally Sensitive Area (which is defined as a water hazard or wetland), the player must, under penalty of one stroke, proceed under Rule 26-1" will be incorporated into play rules. A local golf rule that states that a golfer who hits a ball in an ESA cannot play the ball out of the area but must drop an additional ball and resume play will also be incorporated into the rules.

Protection of Preserve Area

Preserve areas at Victoria Park will be protected through the use of signs, education and the Environmental Plan. Employees will be educated on the value of special habitats and the importance of preservation and permit compliance requirements.

Protection of Species of Special Concern

The Mitigation and Management Plan addresses the special requirements of species; all applicable measures of the SMMP will be incorporated into the golf course management.

Wildlife Food Enhancement

Where possible, selected areas will be allowed to remain in a natural state. Native plant material will be introduced that will provide a wildlife food source. Desirable plant materials that will serve as a food source for wildlife such as songbirds, hummingbirds and butterflies will be established. These plantings will consist of flowerbeds, landscaped areas, entry roads, naturalized areas of the golf course and park perimeter.

Wetlands

Wetlands will be protected through education, signage, and employee training. Wetlands on the golf courses will be designated as Environmentally Sensitive Areas.

Signs at selected wetland areas will state that mowing, clearing, filling, dumping, excavating, or alterations without permission is prohibited.

CULTURAL RESOURCES

Description

In July, 1998, the Archaeological and Historical Conservancy, Inc. (AHC) was retained to conduct a Phase I Archaeological and Historical survey of Victoria Park. Background research, a pedestrian survey and 72 shovel tests were conducted for and within the proposed development area. The Phase I report by AHC was issued in September, 1998[1] .

The survey resulted in four sites being recorded and assessed within the property. No prehistoric sites, features or artifacts were recorded. Two historic sites, 8V07130 and 8V07131 were regarded as significant and recommended for further investigation. Site 8V07130 is potentially a homesite or turpentine collection camp and 8V07131 is a remnant of a railroad grade of the Deland spur of the Atlantic and Western, a railway never completed. Two other sites (8V07132 and 8V07133) are not regarded as significant.

A Phase II archaeological investigation of site 8V07130 was conducted by AHC in December, 1998[2] . The site was determined to be significant as it represents a late 19th century homesite of a possible worker or overseer house associated with the local turpentine industry. The investigation recorded representative artifacts typical of the period of occupation interpreted to have been from ca. 1870- 1890's. A literature review of archaeological investigations suggests that the site is the first such investigation in Florida. The site is of local significance and potentially qualifies for the National Register of Historic Places.

Preservation

Both archaeological reports were submitted to the Division of Historical Resources for review during the DRI process. Following their review of the Phase I report, the State responded by letter (dated May 20, 1999 and August 31, 1999; **Appendix 10)** . The State concluded that site 8V07131, the Deland spur of the Atlantic and Western Railroad, was never used by the companies and does not satisfy Criteria D of National Register criterion for inclusion. The Agency recommended that additional studies be conducted of site 8V07130 if it could not be preserved in place.

St. Joe/Arvida has elected to preserve site 8V07130, the "Overseers House" in place and construction at the site will be avoided. The boundaries of the site have been field surveyed and development plans modified to avoid adverse impacts to the site. Passive, interpretative signage will be provided to visitors of the site to explain its historical significance to the area.

Site 8V07139, the Deland/Atlantic and Western Railroad spur, which was never completed, and therefore was not recommended for preservation by the State will, nevertheless, have segments preserved by St. Joe/Arvida. These segments will be incorporated into pedestrian and bike paths for use by residents and guests. Passive, interpretative signage will be erected to aid in visitor use and understanding of the features of the railroad right-of-way and of a railroad which was never completed.

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[1] Carr, R.S., D. Gregory, and C.R. Eck. An Archaeological and Historical Survey of the Victoria Park Project DRI, Volusia County, Florida. AHC Technical Report #227, September, 1998.

[2] Carr, R.S., D. Gregory, and C.R.Eck. A Phase II Archaeological Investigation of site 8V07130, Volusia County, Florida. AHC Technical Report #236, February, 1999

MITIGATION AND MANAGEMENT COMPLIANCE RESPONSIBILITIES

Permits issued by the environmental agencies including the St. Johns River Water Management District (SJRWMD), United States Army Corps of Engineers (USACOE), and Florida Fish and Wildlife Conservation Commission (FFWCC) will include success criteria related to species and habitat preservation and management and wildlife utilization. The overall goal of the SMMP is to provide perpetual and ideal habitat, which will be managed and monitored, for wildlife inhabiting the Victoria Park project site and the preservation of natural and mitigated wetlands on the site.

Permit Conditions Success Compliance

The success criteria of the environmental permits for the Victoria Park project site will describe minimum success goals related to wildlife utilization, habitat viability and wetlands mitigation. These goals will parallel the overall goals of the SMMP. The SMMP shall become incorporated as a Special Condition of all issued permits and shall be included by reference.

Homeowner's Association

Once the success criteria of the environmental permits have been met, the SMMP will be incorporated into the home-owners documents via Conditions, Covenants and Restrictions. The resources needed to maintain the objectives of the SMMP will co-exist with the development of the Victoria Park project.

Contingency

The implementation of the management and monitoring programs will be funded by St. Joe/Arvida initially, and by the Homeowner's Association after permit conditions have been met. A qualified environmental consultant will be retained to oversee the implementation of the SMMP during the construction phase of the project and as part of the long-term maintenance and monitoring portion of the plan.

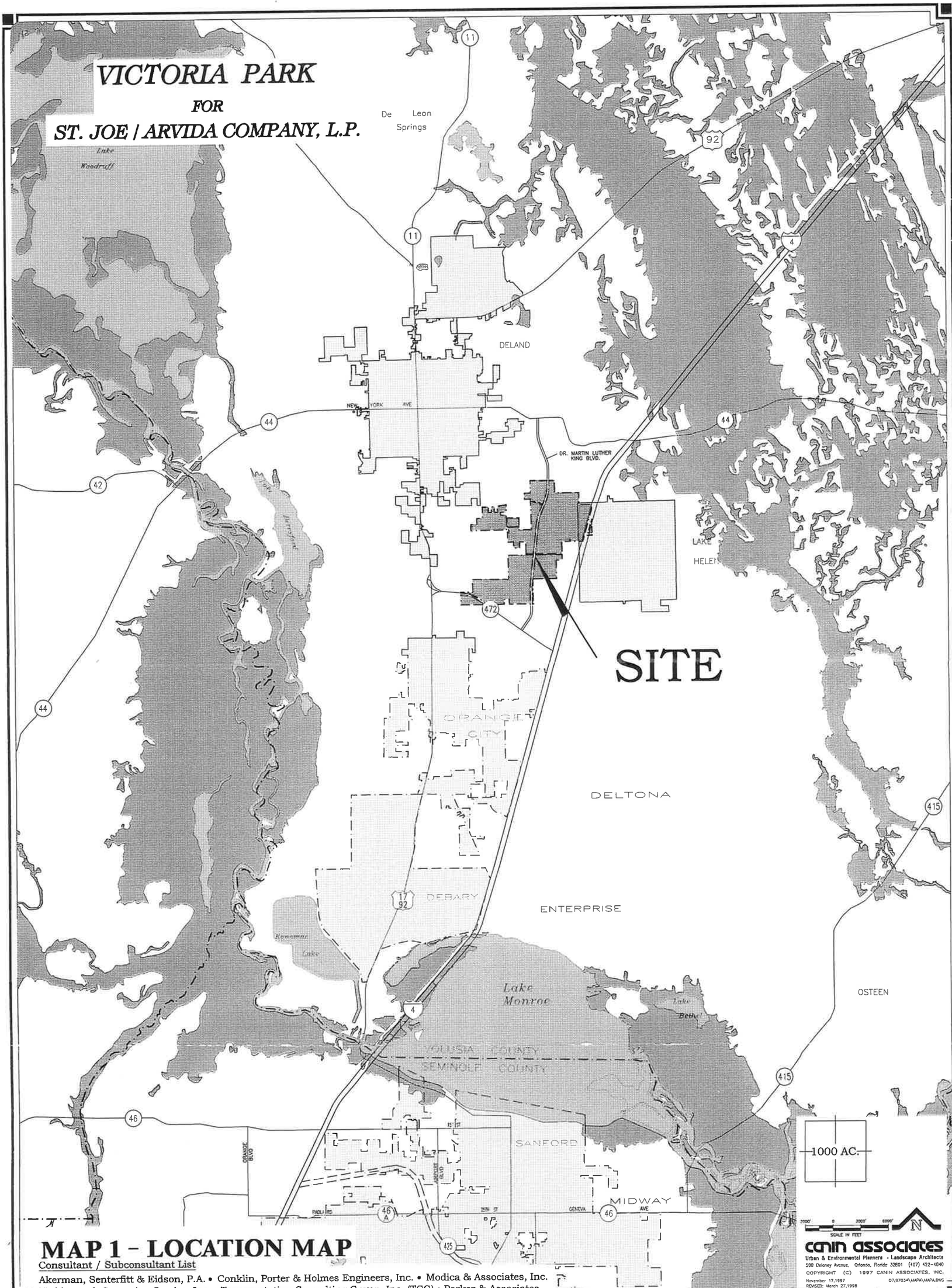
The contingency of the SMMP and thus the success criteria of the permits is directly related to the enforcement of compliance by each environmental agency. The St. Joe/Arvida Corp. and the Victoria Park Homeowner's Association will be legally bound and responsible for the implementation of and longterm administration of the SMMP.

APPENDIX 1

VICTORIA PARK

FOR

ST. JOE / ARVIDA COMPANY, L.P.



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SCALE IN FEET

3000' 0 3000' 6000'

N

MAP 1 - LOCATION MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Conklin, Porter & Holmes Engineers, Inc. • Modica & Associates, Inc.
Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG) • Parker & Associates

canin associates

Urban & Environmental Planners • Landscape Architects

500 Delaney Avenue, Orlando, Florida 32801 (407) 422-4040

November 17,1997

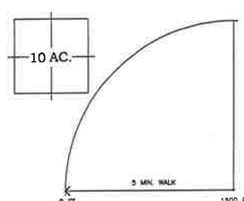
REVISED: March 27,1998

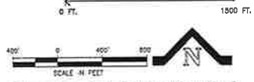
D:\97034\MAPA\MAPA.DWG

VICTORIA PARK
FOR
ST. JOE / ARVIDA COMPANY, L.P.

LEGEND

- = PROPERTY BOUNDARY
- = RESIDENTIAL - SINGLE FAMILY
- = RESIDENTIAL - MULTI-FAMILY
- = INSTITUTIONAL
- = VILLAGE CENTER (RETAIL,OFFICE,RESIDENTIAL)
- = COMMERCIAL (SALES CENTER & CLUBHOUSE)
- = WORKPLACE (OFFICE,HOTEL,SERVICE)
- = LAKES
- = R.O.W.
- = R.O.W. RESERVATION
- = GOLF/OPEN SPACE
- = WETLAND
- = EASEMENT
- = WELL SITE WITH 200' BUFFER





MAP 2
DEVELOPMENT PLAN MAP

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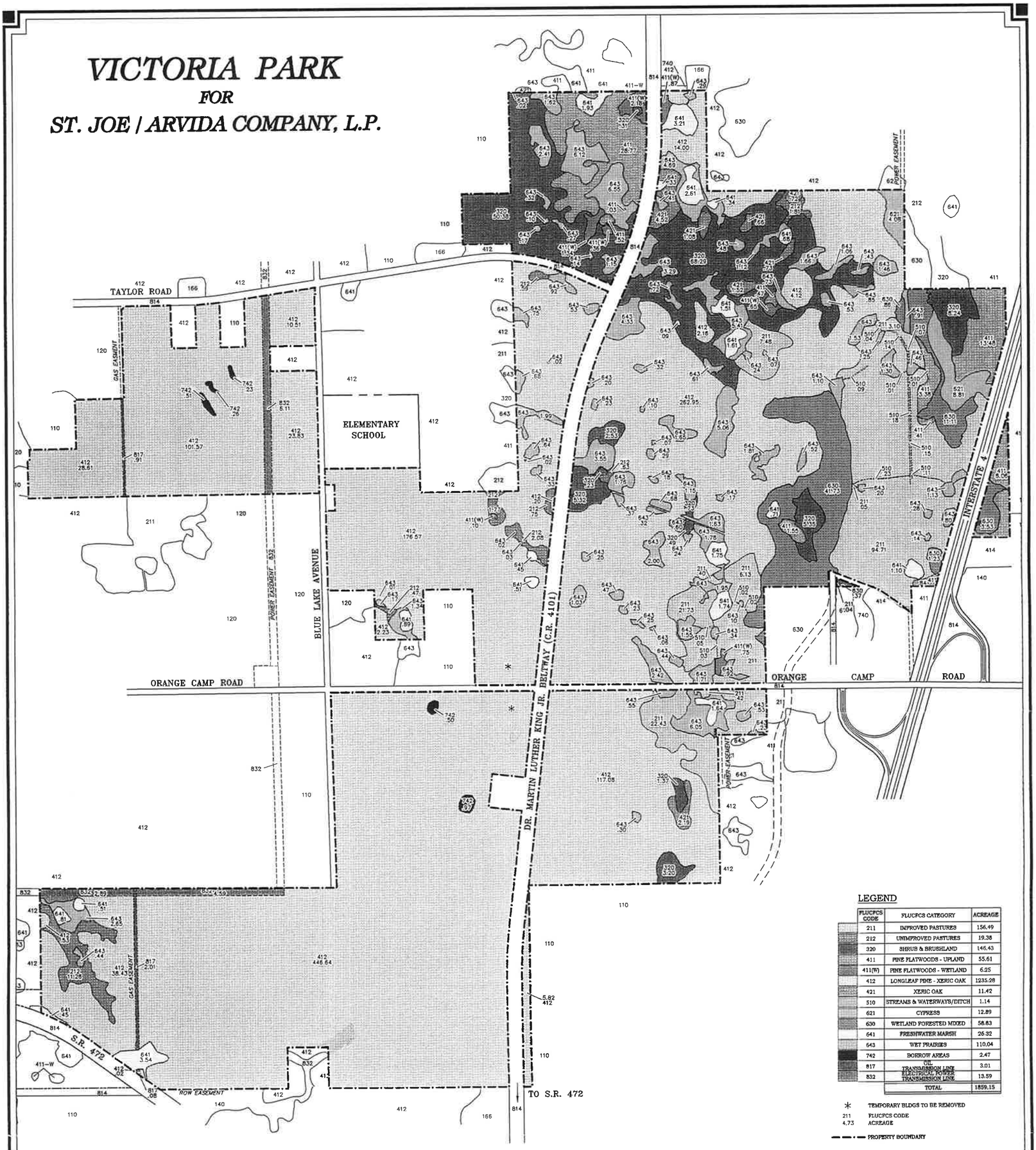
500 Delaney Avenue, Orlando, Florida 32801 (407) 422-6240

Sept. 11, 1998
REVISED, APR. 19, 2000

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

VICTORIA PARK
FOR
ST. JOE / ARVIDA COMPANY, L.P.



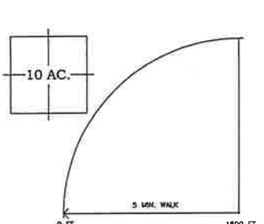
LEGEND

FLUCFCS CODE	FLUCFCS CATEGORY	ACREAGE
211	IMPROVED PASTURES	156.49
212	UNIMPROVED PASTURES	19.38
320	SHRUB & BRUSHLAND	146.43
411	PINE FLATWOODS - UPLAND	55.61
411(W)	PINE FLATWOODS - WETLAND	6.25
412	LONGLEAF PINE - XERIC OAK	1235.28
421	XERIC OAK	11.42
510	STREAMS & WATERWAYS/DITCH	1.14
621	CYPRESS	12.89
630	WETLAND FORESTED MIXED	58.83
641	FRESHWATER MARSH	26.32
643	WET PRAIRIES	110.04
742	BORROW AREAS	2.47
817	OIL TRANSMISSION LINE	3.01
832	ELECTRICAL POWER TRANSMISSION LINE	13.59
	TOTAL	1859.15

* TEMPORARY BLDGS TO BE REMOVED

211 FLUCFCS CODE
4.73 ACREAGE

PROPERTY BOUNDARY



MAP 3
EXISTING COVER-TYPE MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

SCALE IN FEET

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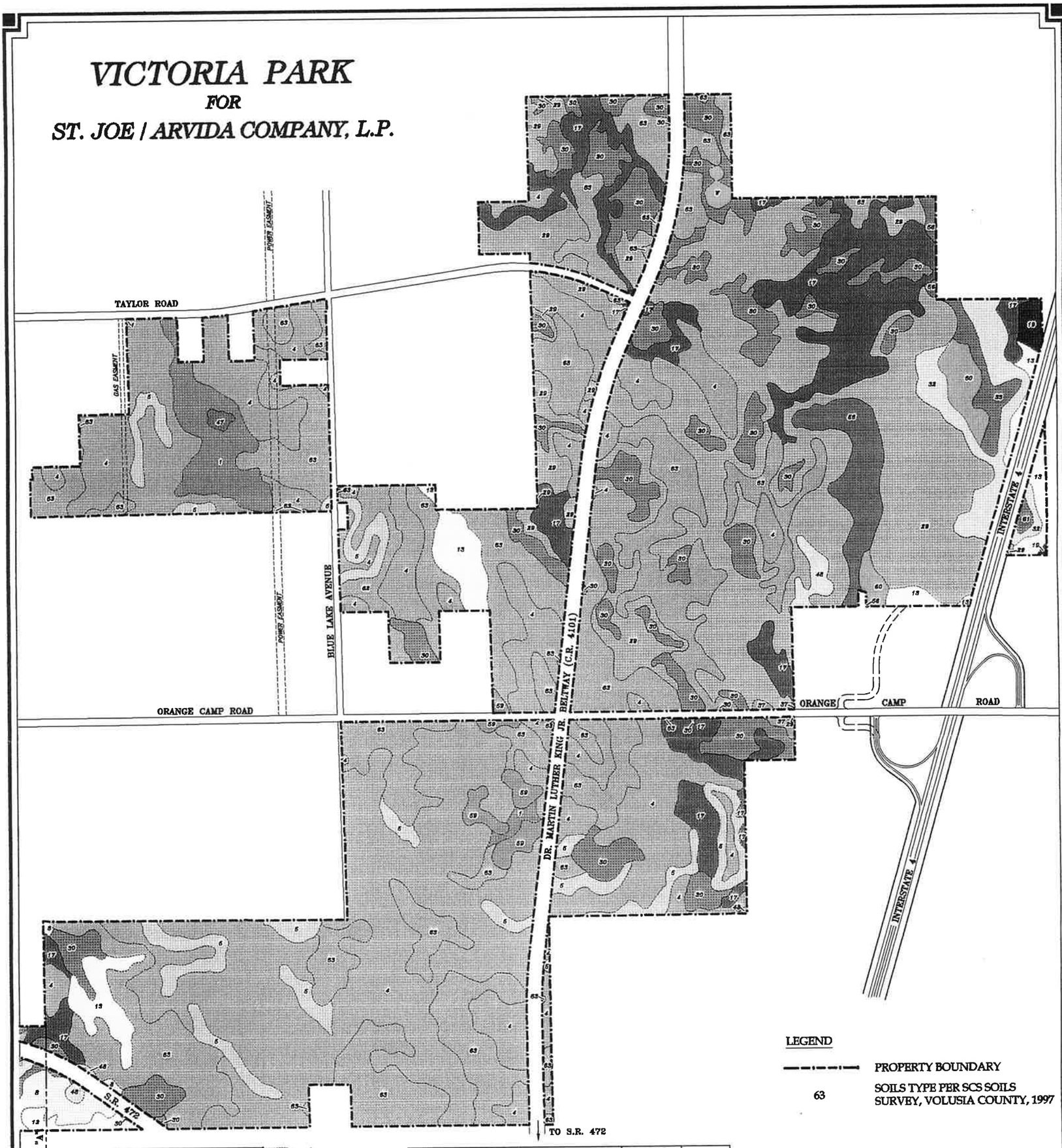
Sept. 30, 1998 \97034\WA\MAPOP\MAP3F.DWG
REVISED: NOV. 20, 1998

VICTORIA PARK
FOR
ST. JOE / ARVIDA COMPANY, L.P.



LEGEND

PROPERTY BOUNDARY

63 SOILS TYPE PER SCS SOILS SURVEY, VOLUSIA COUNTY, 1997

SOIL NO.	NAME	SCS SOILS HYD. GROUP	ACREAGE
1	APOPKA FINE SAND, 0 TO 5% SLOPES	A	34.33
4	ASTATULA FINE SAND, 0 TO 8% SLOPES	A	533.98
5	ASTATULA FINE SAND, 8 TO 17% SLOPES	A	67.04
8	BASINGER FINE SAND, DEPRESSIONAL	A/D	14.88
13	CASSIA FINE SAND	C	48.08
17	DAYTONA SAND, 0 TO 5% SLOPES	B	150.17
19	DELAND FINE SAND, 0 TO 5% SLOPES	A	4.46
29	IMMOKALEE SAND	A/D	350.24
30	IMMOKALEE SAND DEPRESSIONAL	A/D	166.41
32	MYAKKA FINE SAND	A/D	32.03
33	MYAKKA FINE SAND, DEPRESSIONAL	A/D	10.47
37	ORSINO FINE SAND, 0 TO 5% SLOPES	A	2.02
43	PAOLA FINE SAND, 8 TO 17% SLOPES	A	0.16
47	PITS	–	1.58
48	PLACID FINE SAND, DEPRESSIONAL	A/D	10.86
54	QUARTZIPSAMMENTS, GENTLY SLOPING	B/D	1.06
56	SAMSULA MUCK	A/D	29.83
59	SCOGGIN SAND	D	14.21
60	SMYRNA FINE SAND	A/D	14.27
61	ST. JOHN'S FINE SAND	B/D	1.47
63	TAVARES FINE SAND, 0 TO 5% SLOPES	A	418.69
W	WATER	–	2.90
	TOTAL		1909.14

10 AC.

400' 0 400' 800' N

SCALE IN FEET

MAP 4

SOILS MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Conklin, Porter & Holmes Engineers, Inc. • Modica & Associates, Inc.
Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG) • Parker & Associates

CANIN ASSOCIATES
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November 25,1997 O:\9703\MAPC\MAPC.DWG
REVISED: March 27,1998

VICTORIA PARK
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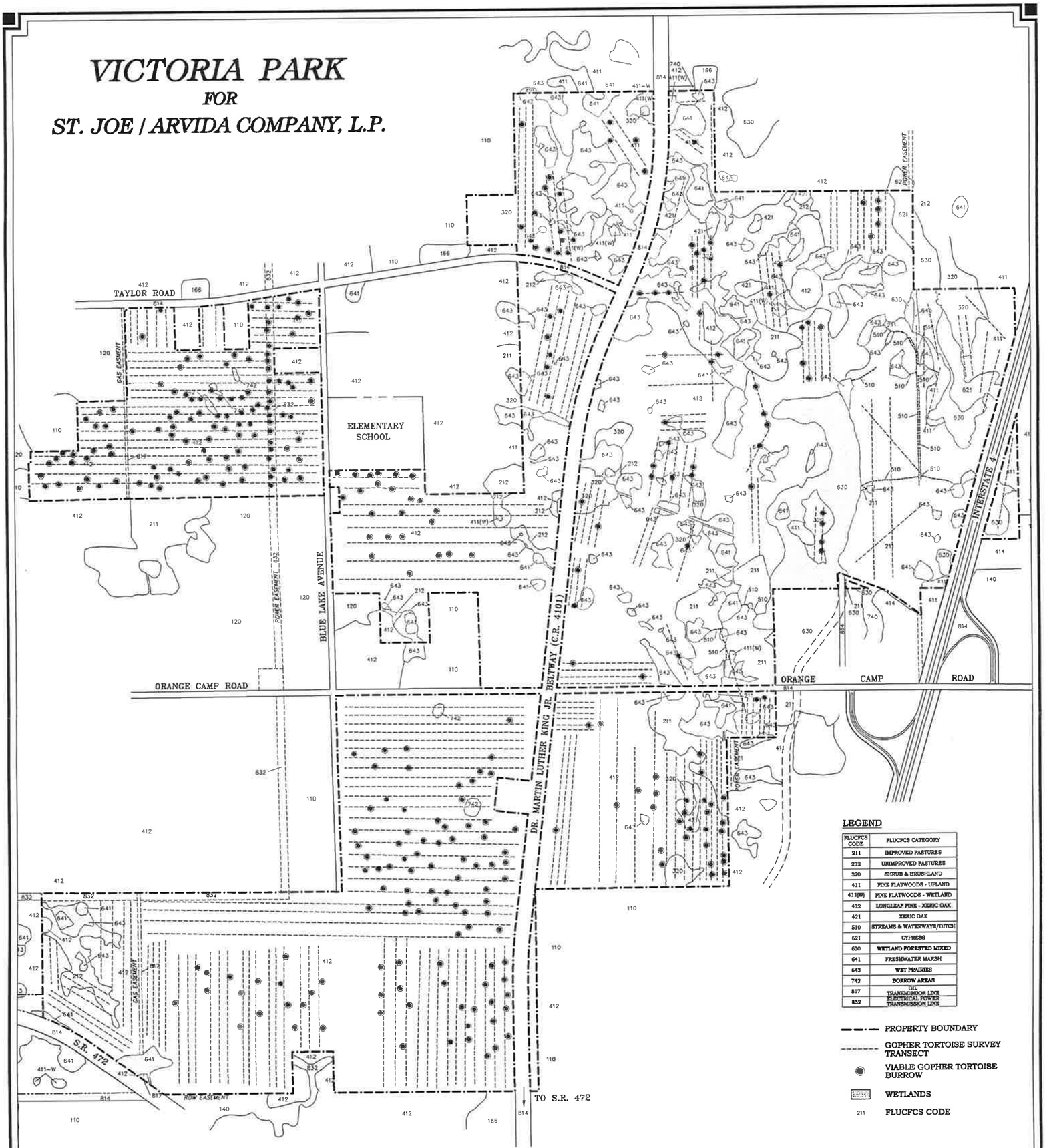

LEGEND

FLUCFCS CODE	FLUCFCS CATEGORY
211	IMPROVED PASTURES
212	UNIMPROVED PASTURES
320	SHRUB & BRUSHLAND
411	PINE FLATWOODS - UPLAND
413(W)	PINE FLATWOODS - WETLAND
412	LONGLEAF PINE - XERIC OAK
421	XERIC OAK
510	STREAMS & WATERWAYS/DITCH
621	CYPRESS
630	WETLAND FORESTED MIXED
641	FRESHWATER MARSH
643	WET PRAIRIES
742	BORROW AREAS
817	OIL TRANSMISSION LINE
832	ELECTRICAL POWER TRANSMISSION LINE

PROPERTY BOUNDARY

GOPHER TORTOISE SURVEY TRANSECT

VIABLE GOPHER TORTOISE BURROW

WETLANDS

211 FLUCFCS CODE

MAP 5
SURVEY TRANSECT MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, Phd., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

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Sept. 30, 1998 \97034\RAI\MAPS\TORTOISE_SU \MAPS.DWG
REVISED FEB 18, 2000

VICTORIA PARK

FOR

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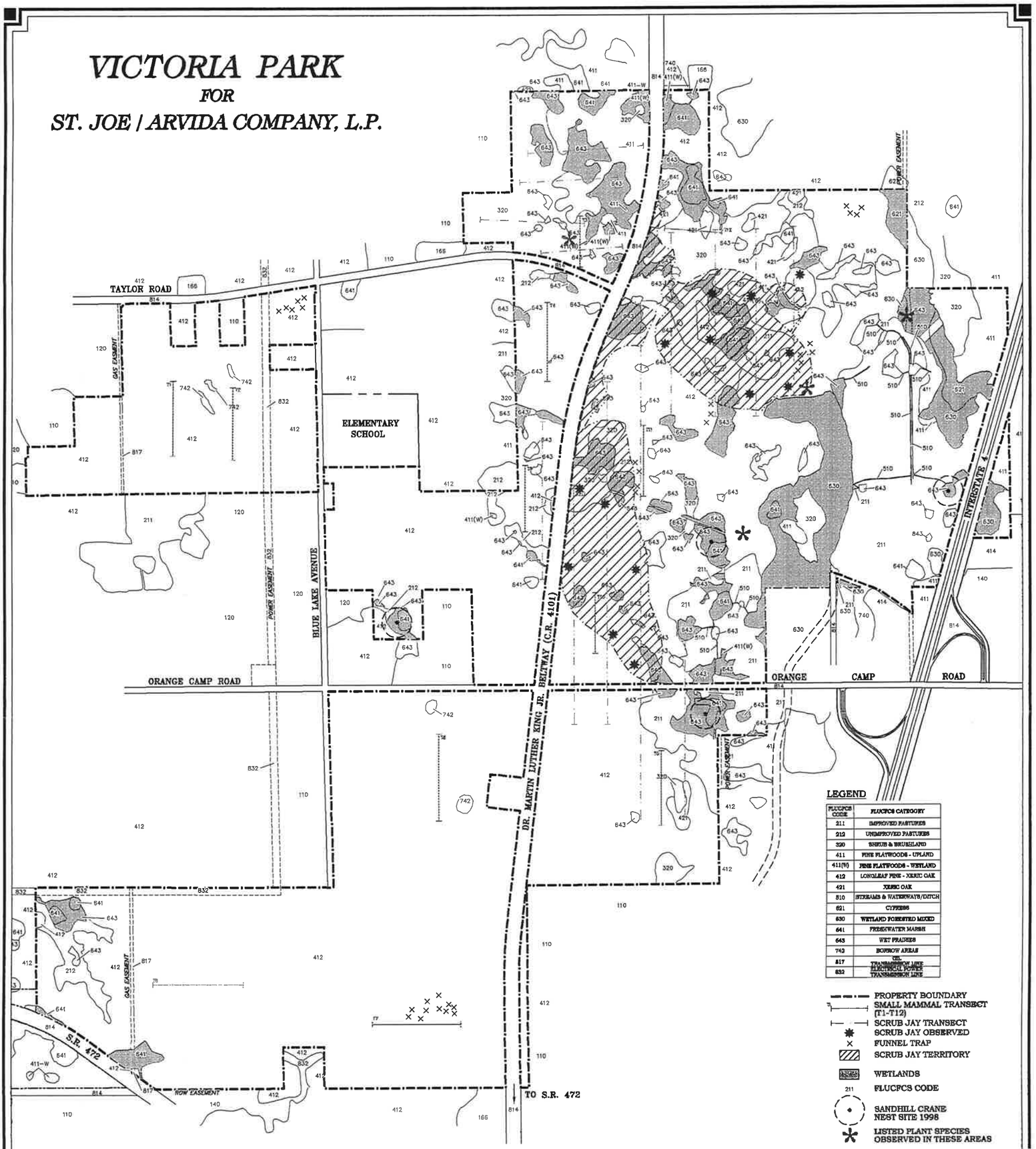
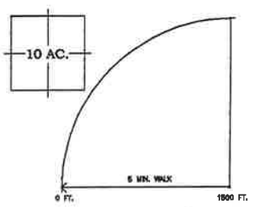


LEGEND

FLUCFCS CODE	FLUCFCS CATEGORY
211	IMPROVED PASTURES
212	UNIMPROVED PASTURES
320	SHRUB & BRUSHLAND
411	PINE FLATWOODS - UPLAND
411(W)	PINE FLATWOODS - WETLAND
412	LONGLEAF PINE - XERIC OAK
421	XERIC OAK
510	STREAMS & WATERWAYS/DITCH
621	CYPRESS
630	WETLAND FORESTED MIXED
641	FRESHWATER MARSH
643	WET PRAIRIES
742	BORROW AREAS
817	OIL TRANSMISSION LINE
832	ELECTRIC POWER TRANSMISSION LINE

- PROPERTY BOUNDARY
- SMALL MAMMAL TRANSECT (T1-T12)
- SCRUB JAY TRANSECT
- SCRUB JAY OBSERVED
- FUNNEL TRAP
- SCRUB JAY TERRITORY
- WETLANDS
- 211 FLUCFCS CODE
- SANDHILL CRANE NEST SITE 1998
- LISTED PLANT SPECIES OBSERVED IN THESE AREAS



MAP 6
SURVEY TRANSECT MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

canin associates
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Sept. 30, 1998
REVISED: FEB. 18, 2000
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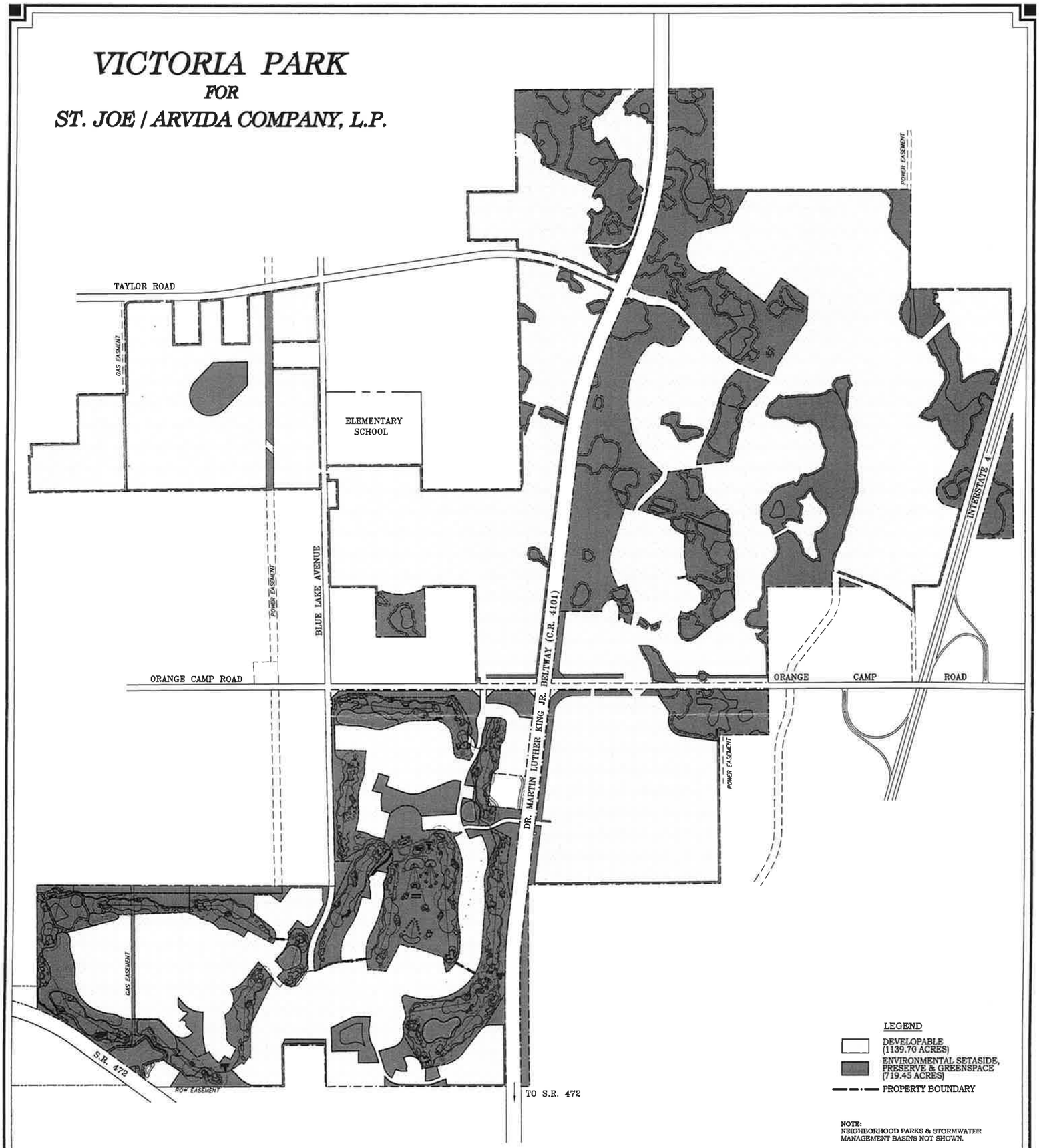
VICTORIA PARK

FOR

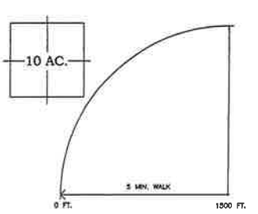
ST. JOE / ARVIDA COMPANY, L.P.

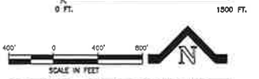


LEGEND

- DEVELOPABLE (1139.70 ACRES)
- ENVIRONMENTAL SETASIDE, PRESERVE & GREENSPACE (719.45 ACRES)
- PROPERTY BOUNDARY

NOTE:
NEIGHBORHOOD PARKS & STORMWATER MANAGEMENT BASINS NOT SHOWN.





MAP 7

ENVIRONMENTAL SETASIDE, PRESERVES & GREENSPACE MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

The **ENVIRONMENTAL SETASIDE, PRESERVES & GREENSPACE** exhibit represents a work in progress and shall not be a part of the Victoria Park Development Order. This plan is provided for information purposes only, to reflect the site planning approach. This plan will change evolve to reflect the permitting and final engineering studies currently in progress.

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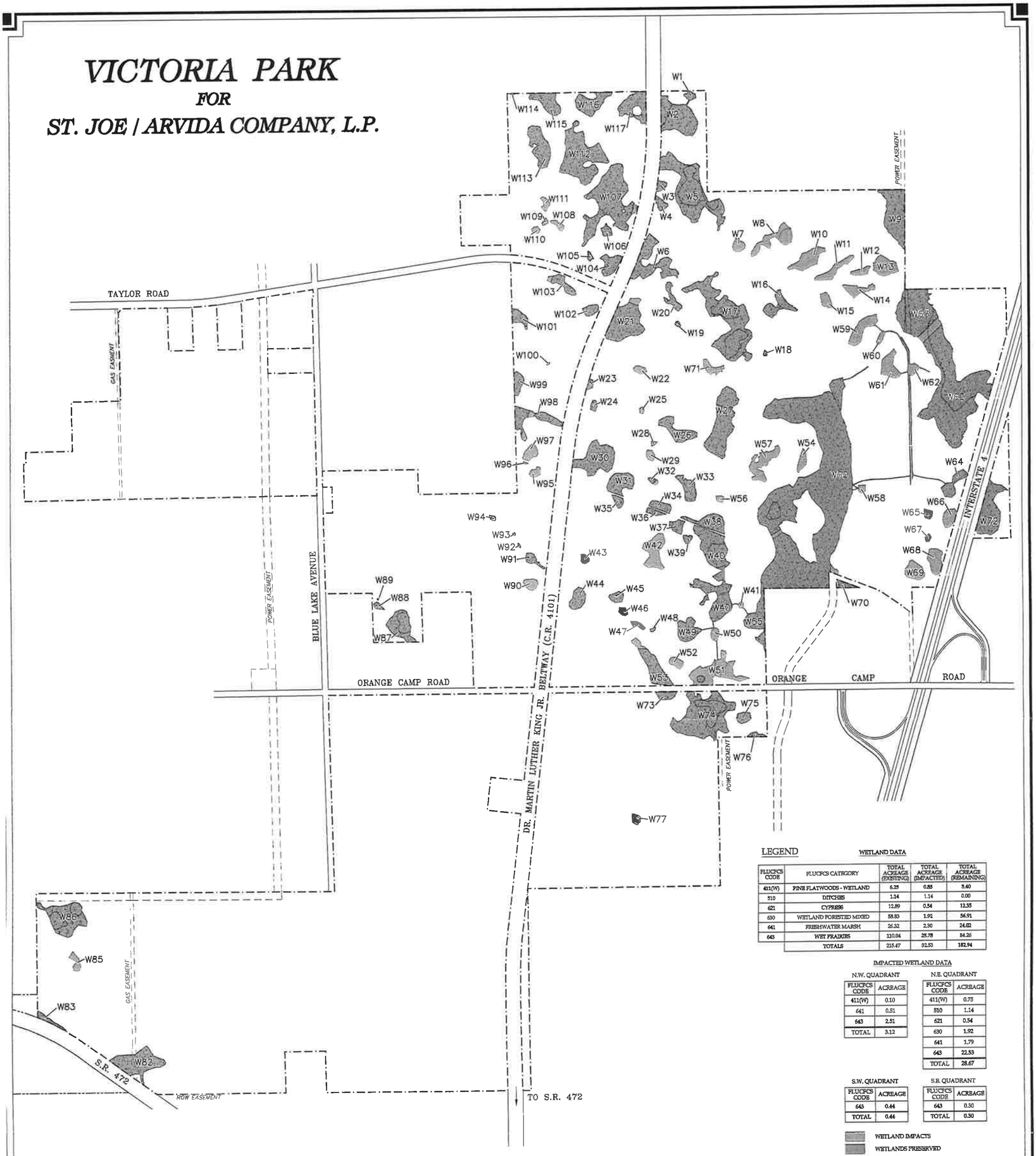
MAR. 18,1930
REVISED: APR. 20, 2000

VICTORIA PARK

FOR

ST. JOE / ARVIDA COMPANY, L.P.



LEGEND

WETLAND DATA

FLUCFCS CODE	FLUCFCS CATEGORY	TOTAL ACREAGE (EXISTING)	TOTAL ACREAGE (IMPACTED)	TOTAL ACREAGE (REMAINING)
411(W)	PINE FLATWOODS - WETLAND	6.25	0.85	5.40
510	DITCHES	1.14	1.14	0.00
621	CYPRESS	12.89	0.54	12.35
630	WETLAND FORESTED MIXED	58.83	1.92	56.91
641	FRESHWATER MARSH	26.32	2.30	24.02
643	WET PRAIRIES	110.04	25.78	84.26
	TOTALS	215.47	32.53	182.94

IMPACTED WETLAND DATA

N.W. QUADRANT

FLUCFCS CODE	ACREAGE
411(W)	0.10
641	0.81
643	2.81
TOTAL	3.12

N.E. QUADRANT

FLUCFCS CODE	ACREAGE
411(W)	0.75
510	1.14
621	0.54
630	1.92
641	1.79
643	22.53
TOTAL	28.67

S.W. QUADRANT

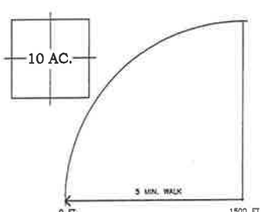
FLUCFCS CODE	ACREAGE
643	0.44
TOTAL	0.44

S.E. QUADRANT

FLUCFCS CODE	ACREAGE
643	0.30
TOTAL	0.30

WETLAND IMPACTS

WETLANDS PRESERVED



MAP 8

WETLAND IMPACTS

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

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SCALE IN FEET

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canin associates

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May 05, 1999 \97034\WETLAND\WPACTS4\WP4.DWG

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FOR
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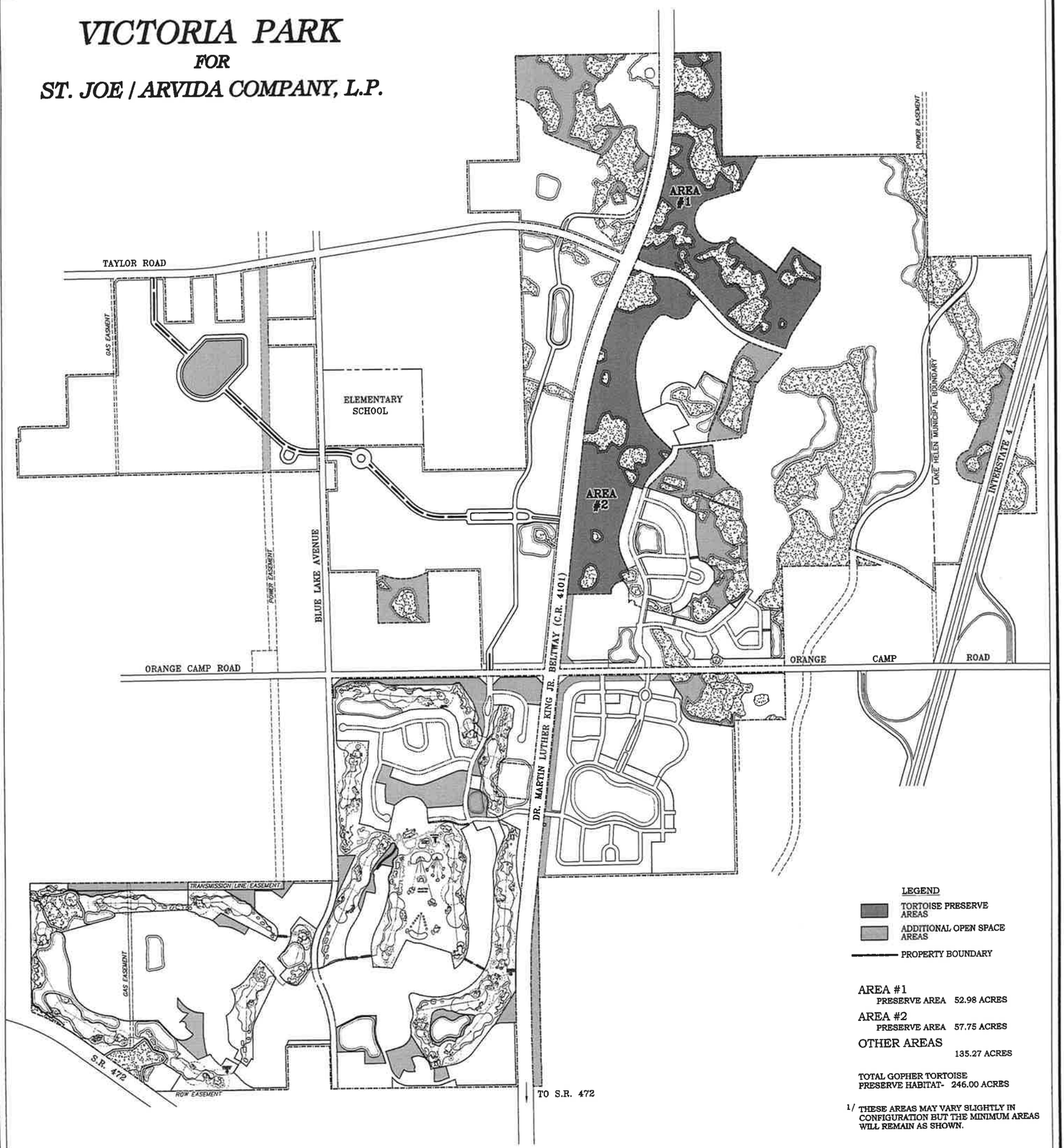


LEGEND

- TORTOISE PRESERVE AREAS
- ADDITIONAL OPEN SPACE AREAS
- PROPERTY BOUNDARY

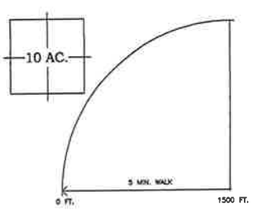
AREA #1
PRESERVE AREA 52.98 ACRES

AREA #2
PRESERVE AREA 57.75 ACRES

OTHER AREAS
135.27 ACRES

TOTAL GOPHER TORTOISE PRESERVE HABITAT- 246.00 ACRES

1/ THESE AREAS MAY VARY SLIGHTLY IN CONFIGURATION BUT THE MINIMUM AREAS WILL REMAIN AS SHOWN.



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...\PLAN\#7034\MAP\DWG\TORTOISE\MAP9.DWG
REVISED: FEB. 18, 2000

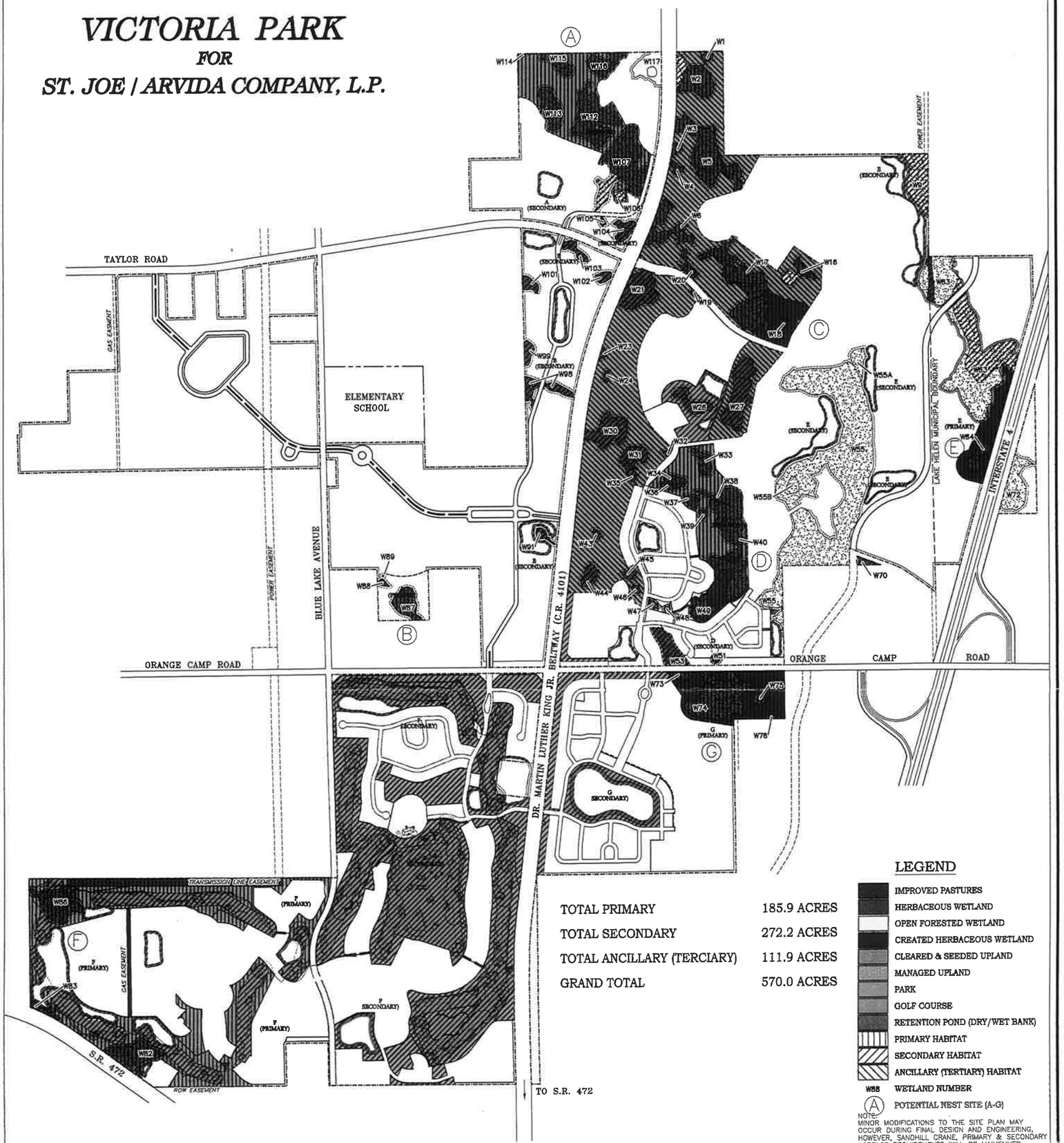
MAP 9
TORTOISE MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

The **GOPHER TORTOISE MANAGEMENT PLAN** represents a work in progress and shall not be a part of the Victoria Park Development Order. The plan is provided for information purposes only, to reflect the site planning approach. This plan will change evolve to reflect the permitting and final engineering studies currently in progress.

VICTORIA PARK
FOR
ST. JOE / ARVIDA COMPANY, L.P.

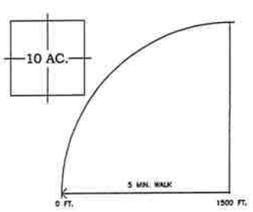


TOTAL PRIMARY	185.9 ACRES
TOTAL SECONDARY	272.2 ACRES
TOTAL ANCILLARY (TERCIARY)	111.9 ACRES
GRAND TOTAL	570.0 ACRES

LEGEND

- IMPROVED PASTURES
- HERBACEOUS WETLAND
- OPEN FORESTED WETLAND
- CREATED HERBACEOUS WETLAND
- CLEARED & SEEDED UPLAND
- MANAGED UPLAND
- PARK
- GOLF COURSE
- RETENTION POND (DRY/WET BANK)
- PRIMARY HABITAT
- SECONDARY HABITAT
- ANCILLARY (TERTIARY) HABITAT
- W88 WETLAND NUMBER
- (A) POTENTIAL NEST SITE (A-G)

NOTE:
MINOR MODIFICATIONS TO THE SITE PLAN MAY OCCUR DURING FINAL DESIGN AND ENGINEERING. HOWEVER, SANDHILL CRANE, PRIMARY & SECONDARY ACREAGE REQUIREMENTS WILL BE MAINTAINED.



MAP 10
SANDHILL CRANE MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

The **SANDHILL CRANE MANAGEMENT PLAN** represents a work in progress and shall not be a part of the Victoria Park Development Order. The plan is provided for information purposes only, to reflect the site planning approach. This plan will change evolve to reflect the permitting and final engineering studies currently in progress.

SCALE IN FEET

canin associates
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REVISED APR 20, 2000

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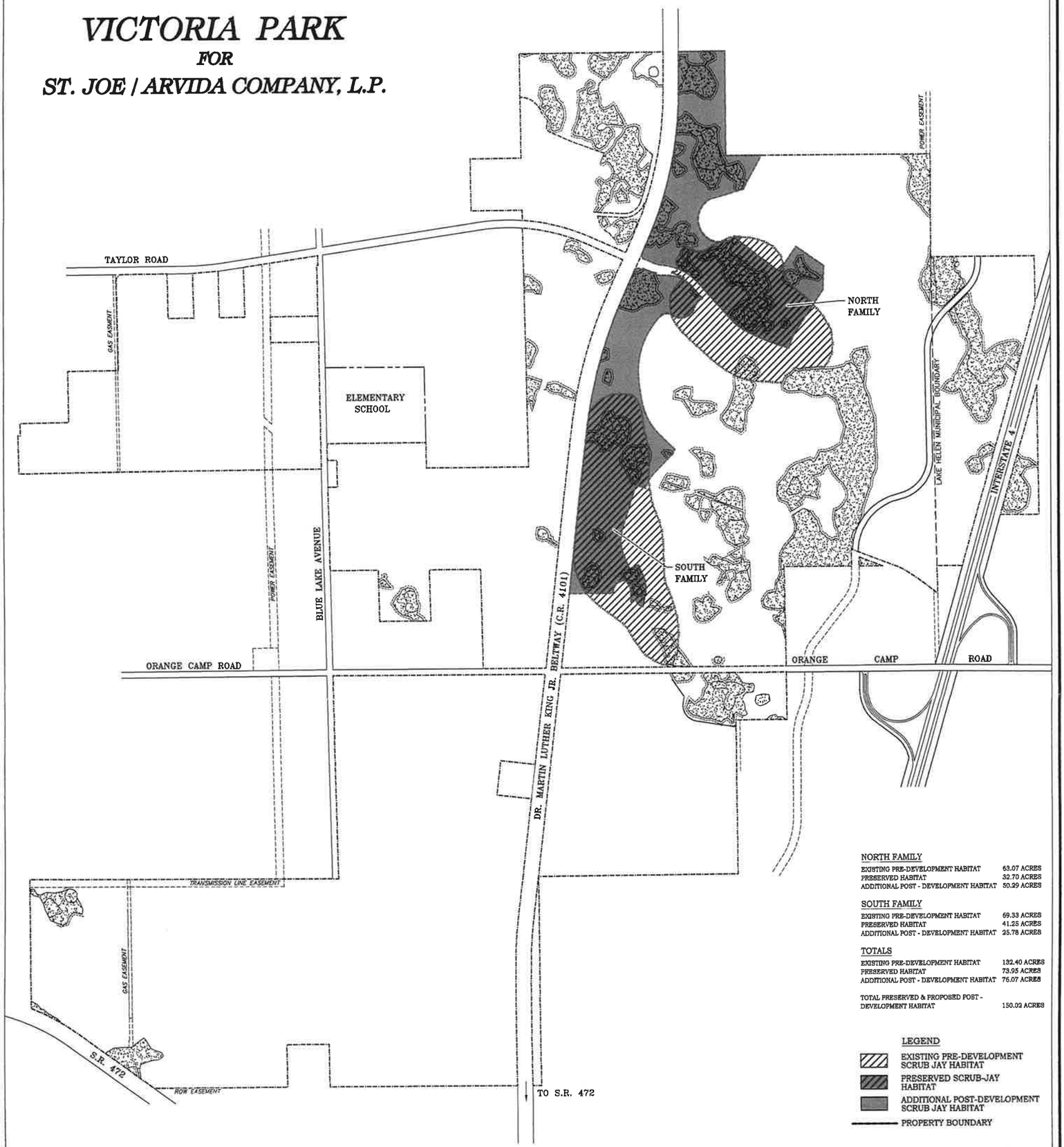
ST. JOE / ARVIDA COMPANY, L.P.



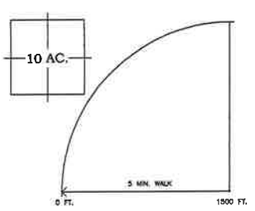
NORTH FAMILY	
EXISTING PRE-DEVELOPMENT HABITAT	63.07 ACRES
PRESERVED HABITAT	32.70 ACRES
ADDITIONAL POST - DEVELOPMENT HABITAT	50.29 ACRES

SOUTH FAMILY	
EXISTING PRE-DEVELOPMENT HABITAT	69.33 ACRES
PRESERVED HABITAT	41.25 ACRES
ADDITIONAL POST - DEVELOPMENT HABITAT	25.78 ACRES

TOTALS	
EXISTING PRE-DEVELOPMENT HABITAT	132.40 ACRES
PRESERVED HABITAT	73.95 ACRES
ADDITIONAL POST - DEVELOPMENT HABITAT	76.07 ACRES
TOTAL PRESERVED & PROPOSED POST - DEVELOPMENT HABITAT	150.02 ACRES

LEGEND

- EXISTING PRE-DEVELOPMENT SCRUB JAY HABITAT
- PRESERVED SCRUB-JAY HABITAT
- ADDITIONAL POST-DEVELOPMENT SCRUB JAY HABITAT
- PROPERTY BOUNDARY



MAP 11
SCRUB JAY MAP

Consultant / Subconsultant List

Akerman, Senterfitt & Eidson, P.A. • Canin Associates, Planning & Environmental Science • Donald W. McIntosh Associates,Inc., Civil Engineers • Hilburn O. Hillestad, PhD., Environmental Consultant • Modica & Associates, Inc. • Parker & Associates • Ron Garl, Golf Course Architect • Tinklepaugh Surveying Service, Inc. • Transportation Consulting Group, Inc. (TCG)

The GOPHER TORTOISE MANAGEMENT PLAN represents a work in progress and shall not be a part of the Victoria Park Development Order. The plan is provided for information purposes only, to reflect the site planning approach. This plan will change evolve to reflect the permitting and final engineering studies currently in progress.

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REVISED: FEB. 18, 2000

APPENDIX 2

Photo 1. Photograph of a longleaf pine/xeric oak community in the SW quadrant (March, 1999). Much of this cover-type at the Victoria Park project site has been significantly altered due to the cattle operation and historical timbering. Longleaf pine, sand live oak, turkey oak, and scrub oak are common canopy species in these areas.

Photo 2. Photograph of a large improved pasture area in the NE quadrant, just west of Interstate-4 (April, 1999). This upland area, which is dominated by carpet grass and bahia grass, has been significantly altered.

Photo 3. Photograph of a forested wetland (Wetland 9) in the northeast quadrant (Nov., 1998). This wetland, Wetland 55 and Wetland 63 will be preserved. The canopy of these wetlands, which total 75 acres, is dominated by loblolly bay, pond pine, bald cypress and red maple.

Photo 4. Photograph of Wetland 17 (8.8 ac.), a herbaceous preservation area in the NE quadrant (Nov., 1998). Maidencane, St. Johns wort, swamp daisy and water lilys dominate this wetland.

Photo 5. Photograph of Wetland 3, a preservation area (April 1999). This 0.33-acre preservation area is dominated by native plant species including maidencane, spadderdock and St. Johns wort.

Photo 6. Photograph of Wetland 102, a herbaceous preservation area (April 1999). This wetland is located in the NW quadrant and dominated by maidencane, St. Johns wort and broomsedge.

Photo 7. Photograph of Wetland 50, an impact area (April 1999). This small wetland (0.5 acre) is disturbed due to the existing cattle operation.

Photo 8. Photograph of Wetland 66, a herbaceous impact area (April 1999). This small wetland (0.80 ac.), which is located in the NE quadrant, is low in value due to the cattle operation and proximity to Interstate-I.

Photo 9. Photograph of Wetland 40, a preservation area (March 1999). The groundcover and water quality of this wetland will be enhanced by removing cattle.

Photo 10. Photograph of Wetland 85, a herbaceous impact area (April 1999). This small wetland (0.44 ac.), which is located in the SW quadrant, is very low in value due to the cattle operation. Carpet grass and bahia grass dominate this wetland.

Photo 11. Photograph of a drainage ditch and culvert between W61 and W62 in the NE quadrant (April 1999). Wetland hydrology has been diminished in several wetlands due to drainage ditches.

Photo 12. Photograph of invasive upland pines in Wetland 16, a preservation area (April 1999). This wetland and several others will be enhanced by removal of invasive plants.

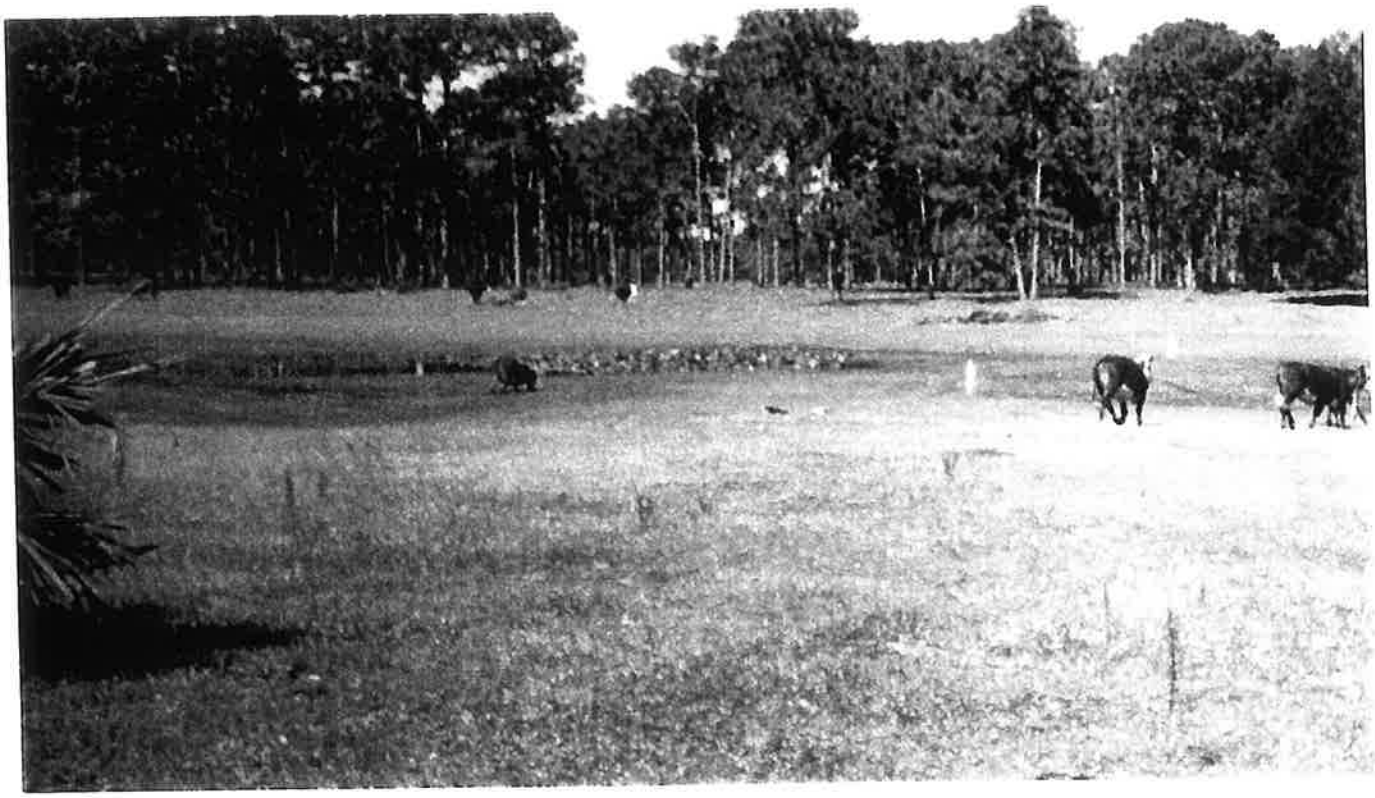

Photo 13. Photograph of Wetland 82 (3.5 ac.), an enhancement area in the SW quadrant (Nov. 1998). The overall quality and value of this disturbed wetland will be greatly improved by the activities associated with the SMMP (i.e. removal of cattle).

Photo 14. Photograph of invasive Carolina willow in Wetland 5, a preservation area (Nov. 1998). This wetland and several others will be enhanced by removal of invasive/exotic plants such as Carolina willow, carpet grass and upland pines.

Photo 15. Photograph of Wetland 5 (7.6 ac.), a preservation area in the NE quadrant (March 1999). This wetland is comprised of a large open water area and dominated by native plant species.

Photo 16. Photograph of a specimen live oak in the SW quadrant (March 1999). Many specimen hardwoods, conifers and other unique trees will be preserved in the upland forests. Several young oak stands will also be preserved.

Photo 17. Photograph of the gopher tortoise/Scrub Jay preservation area in the NE quadrant (Nov. 1998). This preservation area will be actively managed to ensure ideal habitat exist for wildlife and plant species endemic to xeric communities.

Photo 18. Photograph of the upland buffer preservation area adjacent to Wetland 33. Saw palmetto and scrub oaks dominate the cover in the buffer area. Over 53 acres of buffer will preserved at the Victoria Park project site.

Photo 19. Photograph of a upland preservation area in the SE quadrant (April 1999). This area is a important component of the Sandhill Crane Habitat management plan.

Photo 20. Photograph of a upland preservation area (March 1999). Saw palmetto and scrub oaks dominate the cover in this area. Several additional upland preservation areas will exist at the Victoria Park project site.

Photo 21. Photograph of Wetland 40, a preservation area, in the NE quadrant (March 1999). This area is a important component of the Sandhill Crane Habitat management plan. The flagged stake illustrates the location of a crane nest in 1998.

Photo 22. Photograph of Wetland 74, a preservation area, in the SE quadrant (March 1999). This large wetland area (7.7 ac.) is an important component of the Sandhill Crane Habitat management plan.

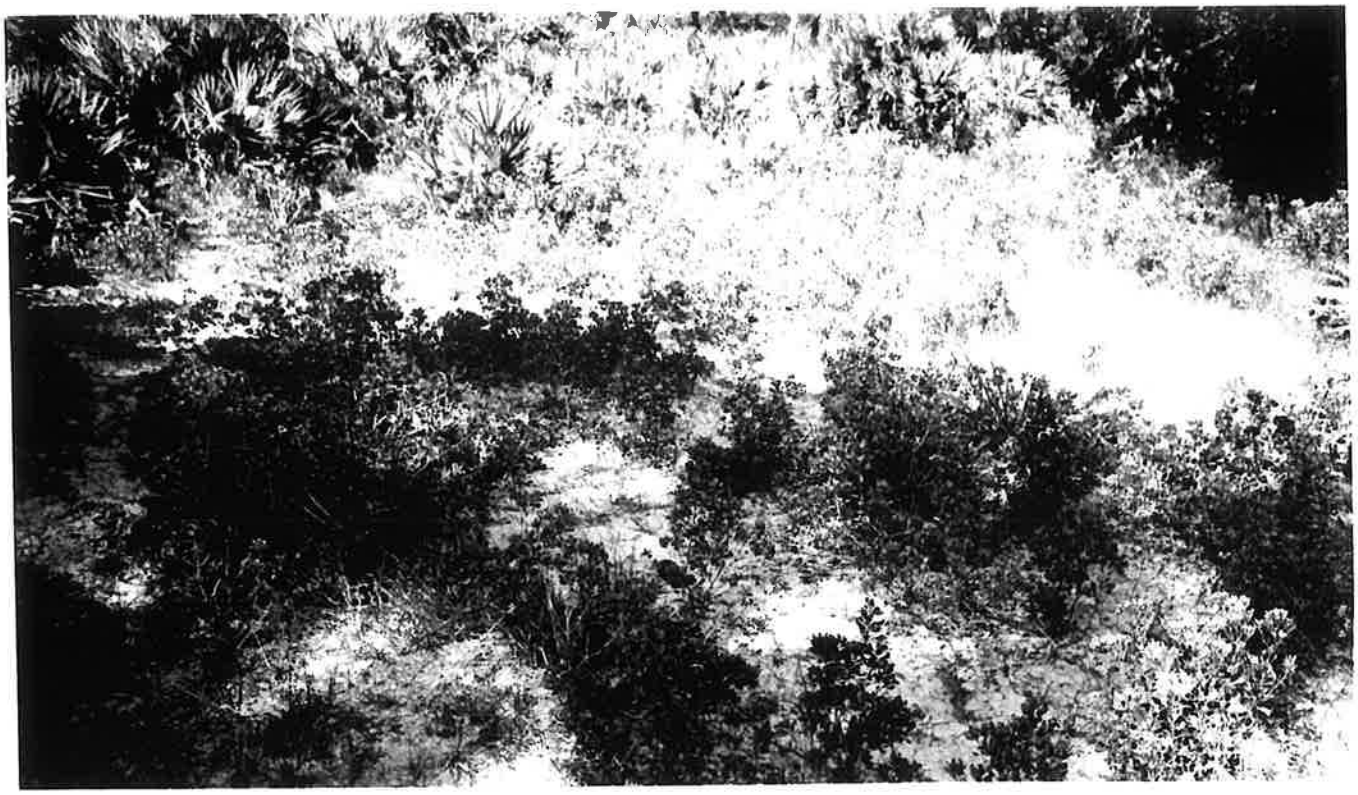

Photo 23. Photograph of Garberia, a listed plant species in the NE quadrant ((Nov. 1998). This small shrub, which grows in xeric areas, exist and will perpetuate in the upland preservation areas at the Victoria Park project site.

Photo 24. Photograph of hooded pitcher plant, a listed plant species in the NE quadrant (Nov. 1998). This small wetland plant was only observed in a few areas at the Victoria Park project which are planned as preservation areas that will be managed as part of the SMMP.

APPENDIX 3

APPENDIX 3

SJRWMD BINDING JURISDICTIONAL LETTER

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
TELEPHONE 904-329-4500 1-800-451-7106 SUNCOM 904-860-4500
TDD 904-329-4450 TDD SUNCOM 860-4450
FAX (Executive) 329-4125 (Legal) 329-4485 (Permitting) 329-4315 (Administration/Finance) 329-4508

SERVICE CENTERS

618 E. South Street
Orlando, Florida 32801
407-897-4300
1-877-228-1658
FAX 407-897-4354
TDD 407-897-5960

7775 Baymeadows Way
Suite 102
Jacksonville, Florida 32256
904-730-6270
1-800-852-1563
FAX 904-730-6267
TDD 904-448-7900

PERMITTING:
305 East Drive
Melbourne, Florida 32904
407-984-4940
1-800-295-3264
FAX 407-722-5357
TDD 407-722-5368

OPERATIONS:
2133 N. Wickham Road
Melbourne, Florida 32935-8109
407-752-3100
TDD 407-752-3102

FORMAL WETLAND DETERMINATION

CHAPTER 40C-4.042, F.A.C.

PETITION NO.: 16-127-0062 DATE ISSUED: February 25, 2000

DETERMINATION STATEMENT:

The landward boundary of wetlands as defined by the District and as depicted on the certified survey stamped approved by the District on October 11, 1999.

LOCATION: Sections 23, 24, 25, 26, 35 & 36, Township 17 South, Range 30 East , Volusia County

PROJECT NAME: Victoria Park

ISSUED TO (PETITIONERS):

St. Joe Residential Acquisitions, Inc., Tom B. Stewart, Jr., Betsy S. Osborne.
The Estate of Katherine S. Odham and The Estate of Mary S.H. Hewitt
C/O Ted R. Brown,
255 S. Orange Ave.
Orlando, FL 32801

OWNERS:

Tom B. Stewart, Jr., Betsy S. Osborne, The Estate of Katherine S. Odham
and the Estate of Mary S.H. Hewitt
C/O Ted R. Brown
255 S. Orange Ave.
Orlando, FL 32801

This document and the enclosed survey serve as the Chapter 40C-4.042, F.A.C., Formal Wetland Determination issued by the St. Johns River Water Management District. This determination is a legal document and should be kept with your other important records. The District may transfer this determination after the receipt of written notification of transfer of ownership or control of the real property.

This formal wetland determination is binding for a period of five (5) years from the date of this determination provided physical conditions on the property do not change so as to alter the wetland boundaries during that period. The District's Governing Board may revoke the Formal Wetland

Determination upon finding that the petitioner has submitted inaccurate information to the District. This determination is not a permit and does not authorize any construction.

AUTHORIZED BY: ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Hal Wilkening, Director
Department of Resource Management

Henry Dean
Executive Director