MILLER LEGG

July 27, 2006

Steve Lau
Florida Fish and Wildlife Conservation Commission
Environmental Services Field Office
255 154th Avenue
Vero Beach, FL 32968-9041
(772)778-5094 x106

RE: Victoria Park Sandhill Crane Monitoring Report 2006
MLA Project No. 04-00225

Dear Mr. Lau:

Please find enclosed the 2006 Sandhill Crane Monitoring Report for the Victoria Park Property. The ±1,859-acre property primarily consists of residential communities, golf courses, commercial tracts and numerous preservation areas. Victoria Park is divided into four quadrants by County Road 4101 (Martin Luther King, Jr. Beltway) and Orange Camp Road located near Deland, Volusia County, Florida. This project includes approximately 215 acres of uplands and approximately 161 acres of wetlands, enhancement of 22-acres of wetlands and the creation of 6.8-acres of wetlands that was required for preservation and management for the Florida Sandhill Crane. This report documents the status of the habitat and the nesting success of the Florida Sandhill Crane within the project boundaries.

If you have any questions, please contact me by email at mroberts@millerlegg.com or by phone at (407) 629-8880.

Sincerely,
MILLER LEGG

Carolyn Malphurs
Environmental Technician

Michael Roberts
Senior Biologist

Cc: Lee Kissick, SJRWMD
Brad Walker, St. Joe Towns and Resort
Jim Nugent, P.E., DWMA

MR/cm/lp
Enclosures

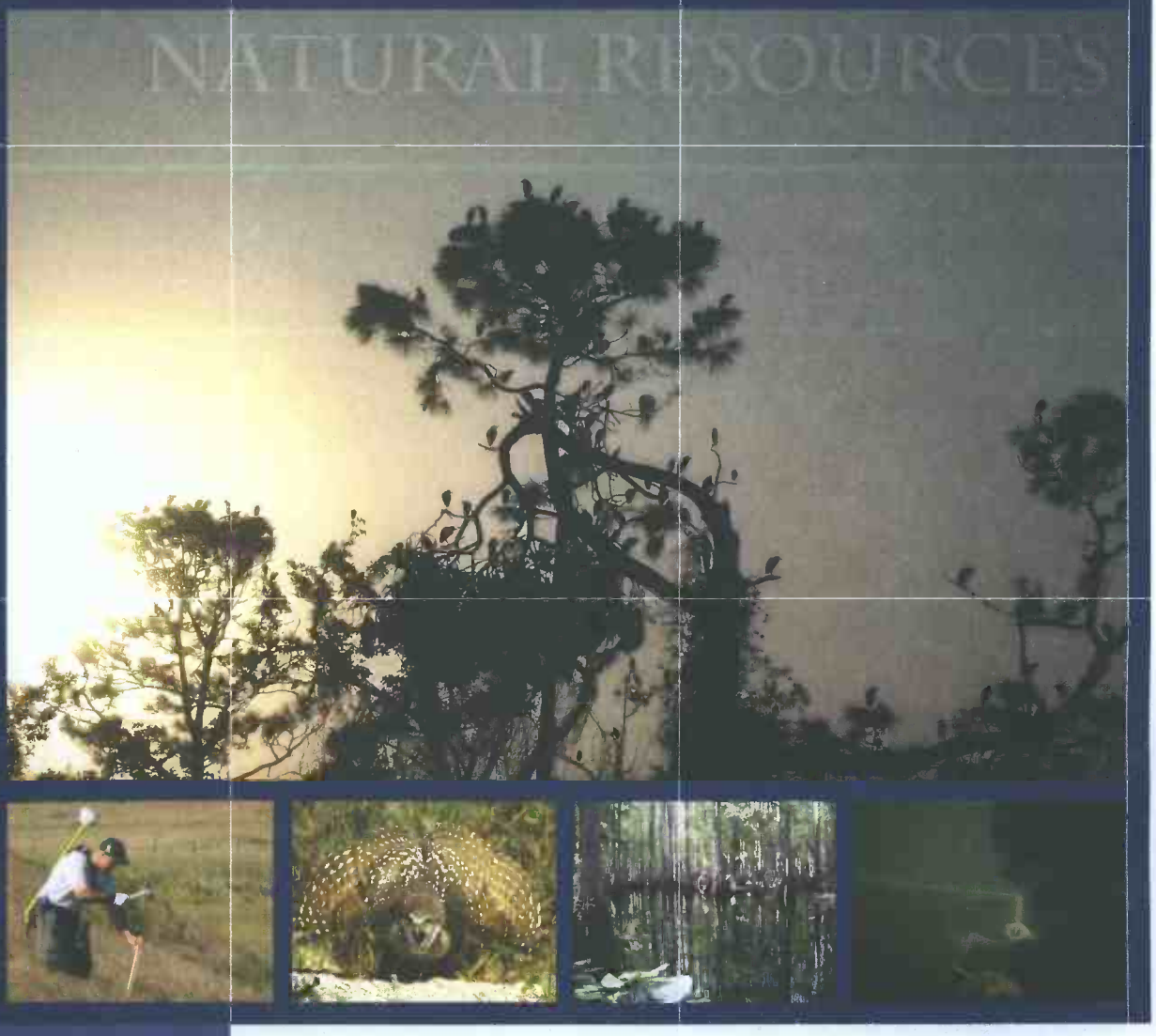
4-127-62770-7

V:\Projects\2004\04-00225 Victoria Park Env_Svcs\04 - Sandhill Crane Monitoring\2006 Report\cov_letter.doc

Central Florida Office: 631 S Orlando Avenue · Suite 200 · Winter Park, Florida · 32789-7122
(407) 629-8880 · Fax: (407) 629-7883
www.millerlegg.com

MILLER LEGG

Annual Sandhill Crane Monitoring Report 2006



"Improving Communities ... ... Creating Environments"

SJRWMD Permit No. 4-127-0369C-ERP
MLA Project No. 04-00225

Prepared for:
St. Joe Towns and Resorts

VICTORIA PARK MITIGATION AREA
Annual Sandhill Crane Monitoring Report – 2006

TABLE OF CONTENTS

Victoria Park Mitigation Area
Sandhill Crane Annual Monitoring Report – 2006

I. INTRODUCTION

Victoria Park is a 1,859-acre multi-use Development of Regional Impact (DRI #698-06) located in southern Volusia County, Florida. The project includes residential communities, golf courses, commercial tracts and numerous preservation areas. This project includes approximately 215 acres of uplands and approximately 161 acres of wetlands, enhancement of 22-acres of wetlands and the creation of 6.8-acres of wetlands. The St. John's River Water Management District (SJRWMD) required the preservation and management of seven potential nest sites for the Florida Sandhill Crane (*Grus canadensis pratensis*), which consists of primary wetland, primary upland, secondary and ancillary foraging areas. The development plan for Victoria Park is implemented in a phased manner to give the cranes adequate time for adaptation to the preserved versus developed areas and in turn increase nesting success. This is the 2006 Annual Report to monitor the Sandhill Crane nesting success.

II. PROJECT LOCATION

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 within Sections 22-27, 34, 35, and 36; Township 17 South and Range 30 East, near Deland in Volusia County, Florida. (See the Location Map)

III. LICENSE/PERMIT INFORMATION

A. The SJRWMD Permit No. 4-127-0369C-ERP was issued to St. Joe Residential Acquisitions, Inc. on October 12, 1999. 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. All monitoring of cranes and their habitat will be conducted by a qualified biologist during the crane-nesting season. The Sandhill Crane site mitigation and management plan (SMMP) is centered on the preservation and management of seven potential nest sites which includes primary wetland, primary upland, secondary and ancillary foraging areas.

IV. NEST SITE ANALYSIS

The seven potential nest sites are found within the four following respective quadrants. The NW Quadrant is found north of Orange Camp Road, west of Dr. Martin Luther King Jr. Beltway, and east of Blue Lake Avenue and consists of two potential nest sites (Sites A and B). The NE Quadrant is located north of Orange Camp Road, east of Dr. Martin Luther King Jr. Beltway, and west of Interstate 4 and consists of three potential nest sites (Sites C, D, and E). The SW Quadrant is located south of Orange Camp Road and west of Dr. Martin Luther King Jr. Beltway and

consists of one potential nest site (Site F). The SE Quadrant is located south of Orange Camp Road and east of Dr. Martin Luther King Jr. Beltway and consists of one potential nest site (Site G). (See the Sandhill Crane Map)

Each potential nest site includes at least one wetland that is comprised of good nesting and foraging habitat for Sandhill Cranes. The primary upland habitat for the cranes consists of those upland areas that are comprised of suitable foraging habitat and are contiguous to the primary wetlands. Secondary/ancillary habitats consist of natural wetland and upland areas, golf course, retention pond banks, and parks. This project consists of approximately 186 acres of primary habitat and 384 acres of secondary and ancillary habitat.

Florida Sandhill Cranes nest in freshwater herbaceous wetlands with maidencane (*Panicum hemitomon*), pickerelweed (*Pontedaria cordata*), smartweeds (*Polygonum* sp.), and rushes (*Scirpus* sp.). The nests are usually one to five feet in diameter and approximately four to six inches above the water surface. The average water depth at each nest site varies from 5.3 to 12.8 inches, but is highly variable depending on the weather conditions. The distance between two active nest sites ranges from 236 feet to several miles. If a same-season renesting occurs, the average distance between the nesting sites is approximately 600 feet.[1]

A. Methods

Crane monitoring included a ground level inspection of suitable nesting habitat approximately once every two weeks during the crane nesting season (December through June, 31 weeks). The ground level inspection consisted of a visual survey of each freshwater herbaceous wetland in search of nests or nesting behavior by cranes. The SMMP requires at least one aerial review of the crane habitat during the nesting season. This was performed via helicopter on May 19, 2006.

B. Results

Photographs documenting the on-site Sandhill Cranes and their nesting activity can be found in Exhibit 4.

Potential Nest Site A (±41.4 acres)

Potential nesting site A is comprised of 18.5 acres of primary wetland habitat and 19.4 acres of primary upland foraging habitat. The primary wetland habitat at this nesting site includes Wetlands 106, 107, 112, 113, 114, 115, and 116. The secondary habitat for this site is comprised of 0.6 acres of secondary uplands and 3.0 acres of secondary wetlands.

- No nests were observed at this site, although cranes were seen foraging and preening in Wetlands 104, 107, and 113.

[1] Stys, B. 1997. Ecology of the Florida sandhill crane. Florida Game and Fresh Water Fish Commission, Nongame Wildlife Program Technical Report No. 15. Tallahassee, FL. 20pp.

Potential Nest Site B (±10.0 acres)

Potential nesting site B is comprised of 2.4 acres of primary wetland habitat which includes Wetlands 87, 88, and 89. The secondary habitat for this site is comprised of 4.9 acres of secondary wetlands and 2.7 acres of secondary upland habitat.

- Three nests were observed in Wetland 87. However, these nests were all located off the Victoria Park property. On June 8th two adult cranes were observed near the nests, with one crane sitting on a nest. No eggs or chicks were ever observed in these nests. On June 21st these cranes, assuming they were the same birds, were observed across Orange Camp Road from this nest site on Hole 11 of the golf course. They were observed performing mating behavior, however no new nests were observed in later surveys.

Potential Nest Site C (±79.9 acres)

Potential nest site C is comprised of 25.4 acres of primary wetland habitat and 6.4 acres of primary upland foraging habitat. The primary wetland habitat at this nesting site includes Wetlands 1, 2, 3, 4, 5, 6, 16, 17, 18, and 20. There are approximately 48.1 acres of secondary and ancillary upland habitat within this potential nest site. This habitat coincides with the Scrub Jay/Gopher Tortoise Preserve.

- No nests were observed at this site, although cranes were seen foraging and vocalizing near Wetland 5.

Potential Nest Site D (±129.9 acres)

Potential nest site D is comprised of 13.6 acres of primary wetlands and 17.6 acres of primary upland foraging areas. The primary wetland habitat at this nesting site includes Wetlands 33, 34, 36, 38, 39, 40, 47, 48, and 49. The secondary habitat for this site is comprised of 21.4 acres secondary wetlands and 77.3 secondary/ancillary uplands. The secondary wetland habitat includes Wetlands 21, 23, 24, 26, 27, 30, 31, 32, 35, 43, 44, 45, 46, 51, and 53. The secondary/ancillary upland foraging areas for this nest site consists of approximately 69.9 acres of managed (via controlled burns, chopping, and mowing) uplands within the Scrub Jay/Gopher Tortoise Preserve and 7.4 acres of park and retention pond banks.

- A nest with two eggs in Wetland 40 was first observed in January, the seventh week of nesting season. Two chicks were first observed in February, the 12th week of nesting season. These chicks were observed throughout the nesting season. Later in the monitoring season two more nests were found in Wetland 40 and one more nest nearby in Wetland 38. These nests appeared to be viable nests for cranes to lay eggs on, but cranes were never observed utilizing them.

- A single pair of cranes (referred to as the "scraped-neck pair" because one crane has an abrasion on its neck) was observed throughout this site on several occasions. The scraped-neck pair was observed building a nest in Wetland 44 and was most likely responsible for building many other nests. This pair of cranes either never laid eggs or laid eggs that were predated quickly.

• Two adults and one chick were first observed in Wetland 27 in April, the 20th week of monitoring. It is uncertain as to where the cranes nested, because two viable nests were found close by, one in Wetland 27 and the other in Wetland 26. Judging by the age of the chick the cranes most likely laid the egg/eggs during the 15th week of monitoring. This family was observed for four weeks, but then disappeared. This family was very mobile in walking throughout the area and it is assumed that they walked off-site, because the chick was large enough not to be easily predated.

Potential Nest Site E (±30.8 acres)

Potential nest site E is comprised of 1.1 acres of primary wetlands and 8.6 acres of primary upland foraging areas. The primary wetland habitat at this nesting site is Wetland 64. The secondary habitat for this site is comprised of 13.3 acres of secondary wetlands and 7.8 acres of secondary uplands which include retention pond banks and managed upland buffers.

• No nests or cranes were observed at this site. Cows were often in and around Wetland 64 potentially disturbing crane utilization.

Potential Nest Site F (±242.5 acres)

Potential nest site F is comprised of 8.0 acres of primary wetland habitat and 43.9 acres of primary upland foraging habitat. The primary wetland habitat at this nesting site includes Wetlands 82, 83, and 86. The primary upland foraging habitat for this site includes 35.0 acres of managed uplands and 8.9 acres of easements (grass-dominated). Approximately 190.6 acres of this site is secondary upland foraging habitat, which is comprised of 116.9 acres of golf course, 5.3 acres of retention pond banks, and 68.5 acres of natural areas.

• Many cranes were observed throughout this site foraging on the golf course fairways and nearby sites. During the first week of monitoring, 32 cranes were observed throughout this potential nest site. As monitoring continued, fewer cranes were observed as they began to pair off for breeding.

• A nest in Wetland 82 was first observed in February, the 11th week of nesting season. The newly hatched chick was observed on March 17, the 14th week of monitoring, with both adults. This chick was not observed again and is presumed to have not survived.

• Approximately four weeks after the hatch date of the previously mentioned nest in Wetland 82, a new nest was observed in the same wetland in April, the 20th week of monitoring. This new nest was assumed to be a renest by the same two cranes who built the first nest in Wetland 82. Two adults were seen foraging in nearby fairways between the first nest hatch date and the observation of the new nest. No chicks, as a result of this renest, were observed by a Miller Legg employee. It is assumed this chick was subject to predation as well.

• Two nests were first observed in Wetland 86 in May, the 24th week of monitoring. Two cranes were also observed in this wetland, but were never observed utilizing these nests.

• Four adults and two chicks were observed near Hole 13 on the golf course in May, the 24th week of monitoring. It is possible this group of cranes is the combination of Wetland 74 family and Wetland 27 family, but there no way to be certain.

Potential Nest Site G (±35.1 acres)

Potential nest site G is comprised of 15.8 acres of primary wetland habitat and 4.8 acres of primary upland foraging habitat. The primary wetland habitat at this nesting site includes Wetlands 73, 74, 75, 76, and a 6.8-acre created wetland. The primary upland habitat includes of 4.1 acres of pastureland and 0.7 acres of managed uplands. There are approximately 14.5 acres of secondary upland foraging habitat within this potential nest site.

• Two adults and one chick were first observed in Wetland 74 in March, the 14th week of nesting season. Judging by the age of the chick the cranes most likely laid the eggs during the 10th week of monitoring. Three nests were observed in Wetland 74 all within 10 yards of each other. These nests appeared to be viable nests for cranes to lay eggs on, but it is assumed only one nest was utilized to lay eggs. The chick was observed throughout the monitoring period and is expected to survive to adulthood.

V. INCIDENTAL WILDLIFE OBSERVATIONS

The following faunal species were observed, or evidence there-of, within or near the Sandhill Crane potential nesting areas:

AMPHIBIANS AND REPTILES

SPECIES	COMMON NAME
Acris gryllus	Southern Cricket Frog
Agkistrodon piscivorus piscivorus	Eastern Cottonmouth
Alligator mississipiensis	American Alligator
Bufo quercicus	Oak Toad
Cnemidophorus sexlineatus	Six-lined Racerunner
Gopherus polyphemus	Gopher Tortoise
Hyla cinerea	Green Tree Frog
Pseudemys nelsoni	Florida Red-bellied Turtle
Rana grylio	Pig Frog
Rana sphenocephala	Leopard Frog

FISH

Gambusia holbrooki	Mosquitofish

MAMMALS

Lynx rufus	Bobcat
Odocoileus virginianus	White-tailed Deer
Procyon lotor	Raccoon
Sciurus niger shermani	Sherman's Fox Squirrel

BIRDS

Agelaius phoeniceus	Red-winged Blackbird
Aix sponsa	Wood Duck
Anhinga anhinga	Anhinga
Aphelocoma coerulescens coerulescens	Florida Scrub Jay
Ardea alba	Great Egret
Ardea herodias	Great Blue Heron
Buteo jamaicensis	Red-tailed Hawk
Buteo lineatus	Red-shouldered Hawk
Butorides virescens	Green Heron
Cathartes aura	Turkey Vulture
Charadrius vociferus	Killdeer
Ceryle alcyon	Belted Kingfisher
Colinus virginianus	Northern Bobwhite
Coragyps atratus	Black Vulture
Corvus brachyrhynchos	American Crow
Dumetella carolinensis	Grey Catbird
Egretta caerulea	Little Blue Heron
Egretta thula	Snowy Egret
Elanoides forficatus	Swallow-tailed Kite
Eudocimus albus	White Ibis
Fulica americana	American Coot
Gallinula chloropus	Common Moorhen
Grus Canadensis	Sandhill Crane
Haliaeetus leucocephalus	Bald Eagle
Lophodytes cucullatus	Hooded Merganser
Meleagris gallopavo	Wild Turkey
Melanerpes carolinus	Red-bellied Woodpecker
Melanerpes erythrocephalus	Red-headed Woodpecker
Mimus polyglottos	Northern Mockingbird
Mycteria americana	Wood Stork
Phalacrocorax auritus	Double-crested Cormorant
Picoides pubescens	Downy Woodpecker
Pipilo erythrophthalmus	Eastern Towhee
Podilymbus podiceps	Pied-billed Grebe
Plegadis falcinellus	Glossy Ibis
Podilymbus podiceps	Pied-billed Grebe
Poecile carolinensis	Carolina Chickadee
Quiscalus quiscula	Common Grackle
Quiscalus major	Boat-Tailed Grackle
Tachycineta bicolor	Tree Swallow
Turdus migratorius	American Robin
Zenaida macroura	Mourning Dove

VI. MAINTENANCE

The upland habitats for the Sandhill Crane are maintained to eliminate the presence of exotic/invasive plant species using the following techniques: mowing, timbering, mechanical chopping, and/or controlled burns. Potential nest sites C and D overlap upland habitats with the Scrub Jay/Gopher Tortoise Preserve, in the NE Quadrant. The preserve is primarily managed for the gopher tortoise and Florida Scrub Jay, but the management techniques are also beneficial as crane foraging habitat. The upland habitats within the preserve are maintained, according to the

Site Mitigation and Management Plan, by using similar techniques. Controlled burns will, however, be the primary tool utilized for habitat management. The preserve was last burned on November 24, 30 and December 1, 8, 9, and 18, 2001, which was the initial burn of 48 acres (See Prescribed Fire Burn Units Map, page 14).

Site A:
The Crane Management plan includes clearing these areas via mechanical chopping, timbering, and conducting controlled burns as planned in the Scrub Jay preserve. The upland areas will be periodically mowed and managed with respect to crane habitat needs.

Site B:
No maintenance is required for this nest site, because the suitable upland forage habitat is south and off-site of the primary wetland.

Site C:
The upland habitat occurring in this site is predominantly secondary/ancillary foraging uplands locate in the north preserve. Even though the area is already managed primarily for the gopher tortoise and Florida Scrub Jay, Sandhill Cranes were observed foraging within this area. The planned management will be identical to the management methods outlined in the Scrub Jay Site Mitigation and Management Plan.

Site D:
The primary foraging upland habitat at this potential nest site consists of pastureland and scrubby uplands. The pastureland will be regularly mowed. The scrubby upland is comprised of dense vegetation and will be converted into foraging habitat via mechanical clearing and controlled burns. The secondary/ancillary foraging uplands of this site are located in the south preserve. This area will primarily be managed for the gopher tortoise and Florida Scrub Jay, identical to the management methods outlined in the Scrub Jay Site Mitigation and Management Plan.

Site E:
The uplands for this site will primarily consist of pastureland which provides valuable foraging habitat for flightless cranes. Even though cattle actively forage in the pastureland, periodic mowing is still the only required maintenance technique for this nest site.

Site F:
The upland habitat occurring at Site F is primarily comprised of golf course fairways, a secondary upland foraging habitat. 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. The primary upland habitat will be subject to mowing and removal of undesirable vegetation to ensure ideal ground cover for foraging cranes.

Site G:
Maintenance of the upland habitat for this site will consist of periodic mowing and controlling undesirable plants to ensure ideal vegetation height for cranes.

VII. NEXT MONITORING REPORT

The next monitoring report will be prepared for review in 2007.

VIII. SUMMARY

Twenty two viable nests were observed during the 2006 monitoring event in Potential Nest Sites B, D, F, and G. However, only six of these nests were designated as active nests with observations of eggs and/or incubation. The 16 remaining nests were also viable, but were not active because no cranes were observed utilizing these nests. Three of the six active nests, successfully hatched and produced a total of four chicks that survived through the end of nesting season. The scraped-neck pair of cranes was observed utilizing (built, sat on, or foraged near) only one nest, but it was assumed that they built some of the other observed, non-utilized nests.

2006 Overall Nest Status					
Wetland #	**# of Nests**	**# of Nests with Incubating Cranes**	**Chicks Observed**	**# of Chicks Survived**	**Nesting Pair Number**
17	1	1 (of the possible 4)	Yes (1)	1	4
26	1				
27	2				
30	3	0	No	0	0
38	1	0	No	0	0
40	3	1	Yes (2)	2	1
51	1	0	No	0	0
74	3	1	Yes (1)	1	2
82a	1	1	Yes (1)	0	3
82b	1	1	No	0	3
86	2	0	No	0	?
87	3	1	No	0	5
TOTAL	22	6	5 chicks	4	5

Florida Sandhill Cranes have been documented renesting up to three times per year, with an average of 19.5 days between loss of clutch and laying of new eggs with an average distance of 600 feet between same-season renestings. This situation was probable in Wetland 82 during this monitoring period. It was assumed that the nest in Wetland 82 failed and the cranes renested in the same wetland five weeks later. This assumption was made because the young chick was observed right after the hatch date and during the next monitoring visit two adults and no chick were observed. At the time of the second observation, the chick would have been only one or two weeks old and it is not likely the chick would have traveled any great distance from the original nest site at that age and size. Approximately four weeks after the first nest, another nest in Wetland 82 was observed approximately 600 feet from the first nest. In addition, two adults were seen foraging in Wetland 82 and nearby fairways in between the two nesting events. Due to this renesting assumption, there is an estimated population of three pairs of cranes successfully utilizing the property for nesting activity and three pairs utilizing the property unsuccessfully.

Nest failure, or unsuccessful nests, can result from many factors. Predators such as raccoons, Red-tailed Hawks, Great Horned Owls, and American Alligator can eat the eggs or young chicks and obviously ruin the chance for hatching and survival. Other reasons for nest failure include abandonment, egg infertility and addling, and flooding. High rainfall amount in the early spring could reduce success by flooding the nest sites or a drought lowers water levels which could also reduce success by increased predation rates. (In contrast, high winter rainfall should increase productivity by creating more suitable depth for nesting and improving feeding conditions.) In general, the success rate of eggs hatching ranges from 39% to 88% and the probability of survival from hatching to fledging is approximately 65%.[1] Of the six nests onsite that produced eggs, five eggs hatched out of the six laid (83%), and four out of the five observed chicks (80%) survived throughout the monitoring season and are expected to survive to fledge. These numbers are all based on the observations made by Miller Legg. More eggs could have been laid then observed and more chicks could have hatched that did not survive.

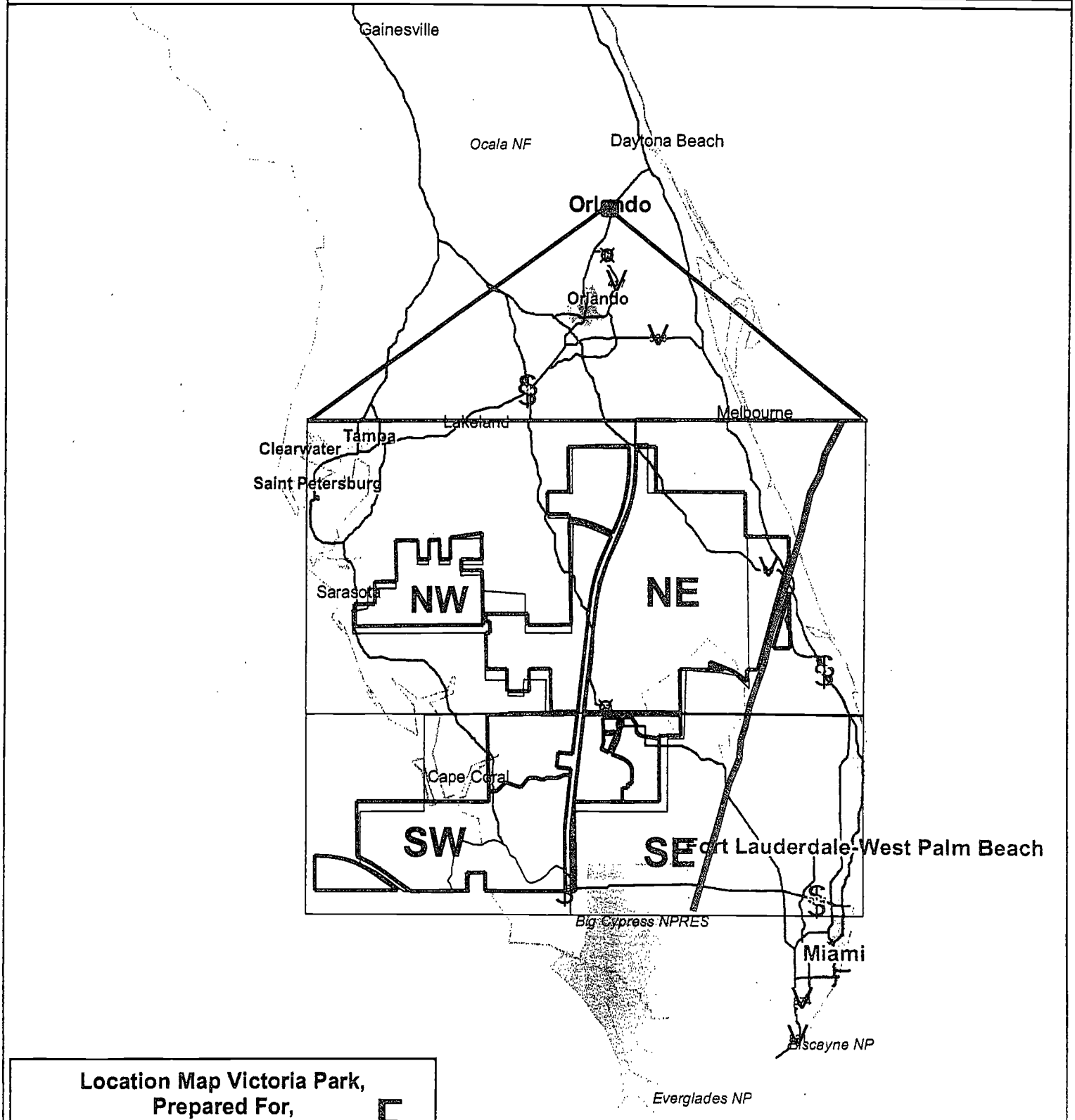
There was no nesting activity in three of the seven potential nesting sites, most likely due to the lack in quality of habitat. It appears that Wetland 64 from nest site E has decreased in potential nesting quality since it was initially recognized as a primary wetland. Site E has been highly disturbed by the grazing cattle. During the last monitoring event the wetlands located in Site B appeared too deep for nesting. This year, most of the wetland was still too deep for nesting. However the southern portion of Wetland 87, just off Victoria Park property, was suitable nesting habitat. Due to the drought that persisted throughout the 2006 monitoring period, the wetlands' water level radically decreased to the point that a portion of the wetland became suitable habitat for nesting. Both Site A and B are still low in quality as foraging uplands. The primary foraging uplands, surrounding the primary wetlands of Site A, have become overgrown with thick shrub coverage making it an unlikely habitat for Sandhill Cranes to utilize. The necessary foraging uplands for Site B are off-site and have also become overgrown. It is uncertain why there wasn't nesting activity observed in Site C. One plausible reason includes low water levels.

The 2006 Sandhill Crane nesting activity was similar to the 2005 monitoring event. Six active nests were observed during both monitoring periods, but the nests were observed in five of the seven potential nest sites (Sites A, C, D, F, and G) during the 2005 season while nests were only observed in four sites during the 2006 season (Sites B, D, F, and G). During the 2005 monitoring event, there was evidence of only one out of six nests that was successful in producing a total of two young. This year, there is evidence that three successful nests produced a total of four young.

The 2003 monitoring report, by Modica & Associates, indicated there were only four nests observed. The number of viable nests observed each year has increased since 2003 to six nests in 2004, 16 nests in 2005, and 22 nests in 2006. If the quality of the wetlands stays at an optimal level, then it is expected that the nesting activity will continue to be successful for the next monitoring event, as the cranes become even more adjusted to the surrounding development activity.

LOCATION MAP

Location Map Victoria Park
City of Deland, Florida



Location Map Victoria Park,
Prepared For,
St. Joe Company,
by
Miller Legg & Associates, Inc.

January 21st, 2005

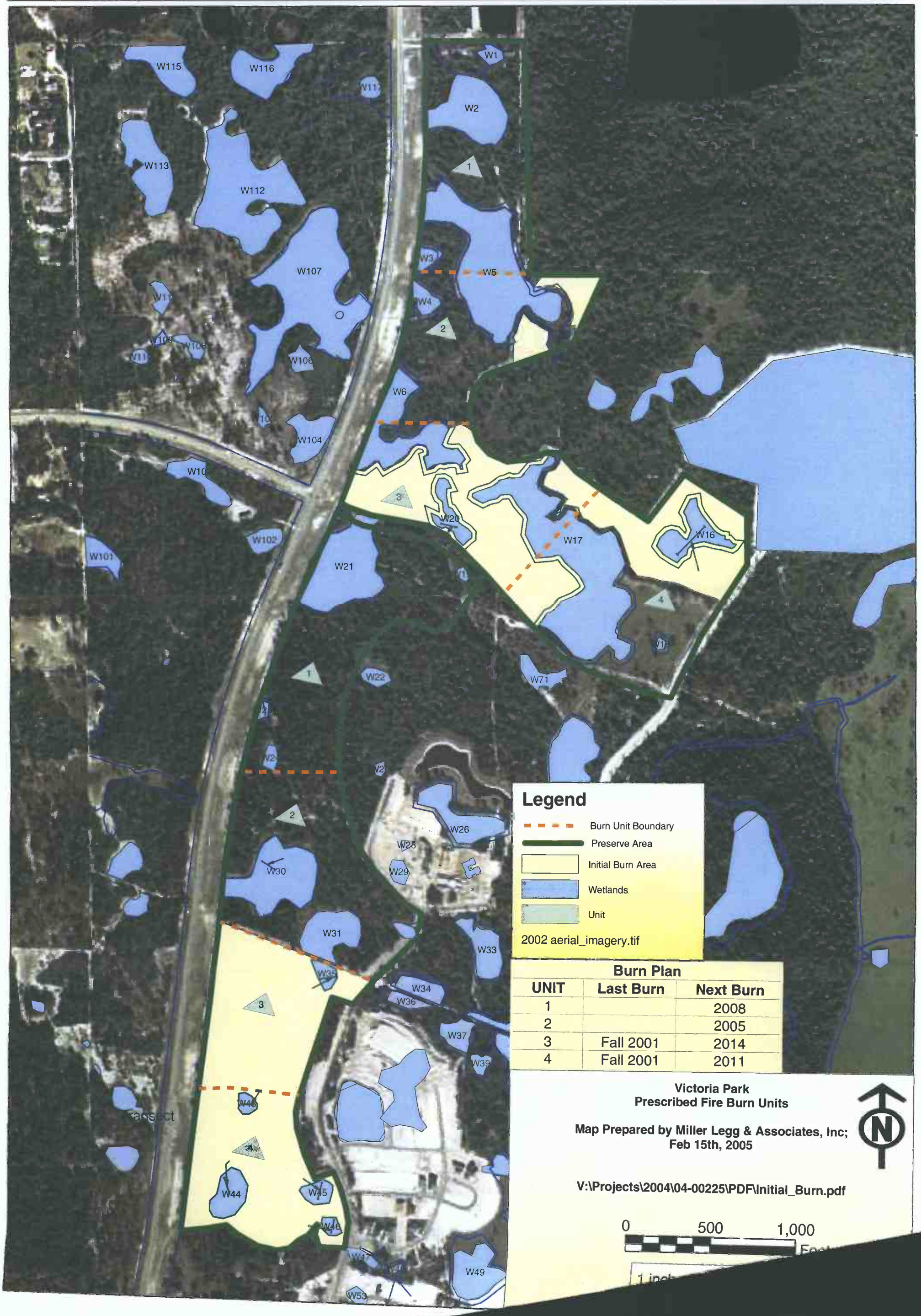
F

Legend
- Map Key
- SW3
- Victoria_Boundary_SP83
- I4

PRESCRIBED FIRE
BURN UNITS

MILLER LEGG
IMPROVING COMMUNITIES. CREATING ENVIRONMENTS.
631 South Orlando Avenue, Suite 200, Winter Park, Florida 32789-7122
Tel.: 407-629-8880 Fax: 407-629-7883
www.millerlegg.com

Victoria Park
Prescribed Fire Burn Units



Burn Plan

UNIT	Last Burn	Next Burn
1		2008
2		2005
3	Fall 2001	2014
4	Fall 2001	2011

Victoria Park
Prescribed Fire Burn Units

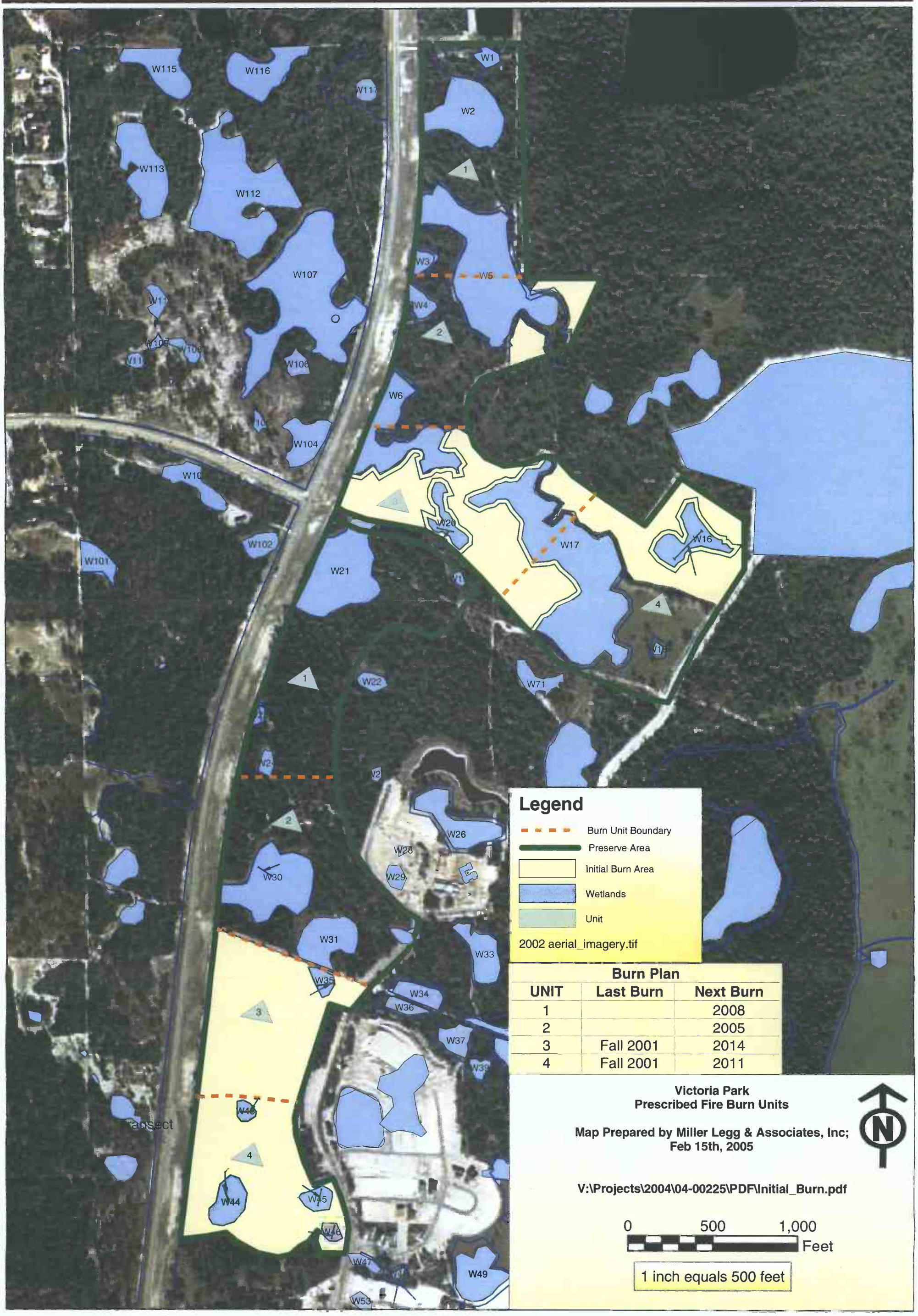
Map Prepared by Miller Legg & Associates, Inc;
Feb 15th, 2005

V:\Projects\2004\04-00225\PDF\Initial_Burn.pdf

0 500 1,000

MILLER LEGG
IMPROVING COMMUNITIES. CREATING ENVIRONMENTS.
631 South Orlando Avenue, Suite 200, Winter Park, Florida 32789-7122
Tel.: 407-629-8880 Fax: 407-629-7883
www.millerlegg.com

Victoria Park
Prescribed Fire Burn Units



Burn Plan

UNIT	Last Burn	Next Burn
1		2008
2		2005
3	Fall 2001	2014
4	Fall 2001	2011

Victoria Park
Prescribed Fire Burn Units

Map Prepared by Miller Legg & Associates, Inc;
Feb 15th, 2005

V:\Projects\2004\04-00225\PDF\Initial_Burn.pdf

0 500 1,000 Feet

1 inch equals 500 feet

SANDHILL CRANE MAP

V:\Projects\2004\04-00225 Victoria Park Env_Svcs\04 - Sandhill Crane Monitoring\SHC_MAP2.dwg Thu 07/13/2006 4:20p By cmalphin

GRAPHIC SCALE

750 0 375 750 1500

(IN FEET)
1 INCH = 750 FEET

NOTE:
MINOR MODIFICATIONS TO THE SITE PLAN MAY OCCUR DURING FINAL DESIGN AND ENGINEERING, HOWEVER, SANDHILL CRANE PRIMARY AND SECONDARY ACREAGE REQUIREMENTS WILL BE MAINTAINED.

LEGEND

- Improved Pasture
- Retention Pond (Dry/Wet Bank)
- Managed Upland
- Open Forested Wetland
- Golf Course
- Cleared & Seeded Upland
- Herbaceous Wetland
- Created Herbaceous Wetland
- Park
- Primary Habitat
- Secondary Habitat
- Ancillary (Tertiary) Habitat
- W86 Wetland Number
- A Potential Nest Site (A-G)

SANDHILL CRANE MAP

10/21/05 | 04-00225 | E8/319 186690 LCD 37 | C.NM

MILLER LEGG
Central Florida Office: 631 S. Orlando Avenue - Suite 200
Winter Park, Florida - 32789-7122
407 629-8880 - Fax: 407 629-7883
www.millerlegg.com

VICTORIA PARK
VOLUSIA COUNTY, FLORIDA
ST. JOE TOWNS & RESORTS

REVISIONS

V:\Projects\2004\04-00225 Victoria Park Env_Svcs\04 - Sandhill Crane Monitoring\SHC_MAP2.dwg Thu 07/13/2006 4:24p By cmalphur

0 550 1100

GRAPHIC SCALE
1 INCH = 1100 FEET

NOTE:
MINOR MODIFICATIONS TO THE SITE PLAN MAY OCCUR DURING FINAL DESIGN AND ENGINEERING, HOWEVER, SANDHILL CRANE PRIMARY AND SECONDARY ACREAGE REQUIREMENTS WILL BE MAINTAINED.

LEGEND

- Improved Pasture
- Retention Pond (Dry/Wet Both)
- Managed Upland
- Open Forested Wetland
- Golf Course
- Cleared & Seeded Upland
- Herbaceous Wetland
- Created Herbaceous Wetland
- Primary Habitat
- Secondary Habitat
- Ancillary (Tertiary) Habitat
- W85 Wetland Number
- A Potential Nest Site (A–G)

Coordinate System:

Project/File No.: 04-00225
Twp/Rng/Sec: 17-30-27
Date Drawn: 10/21/05

MILLER LEGG
Central Florida Office 631 S. Orlando Avenue - Suite 200
Winter Park, Florida - 32789-7122
407-629 8880 - Fax: 407 629 7663
www.millerlegg.com

VICTORIA PARK

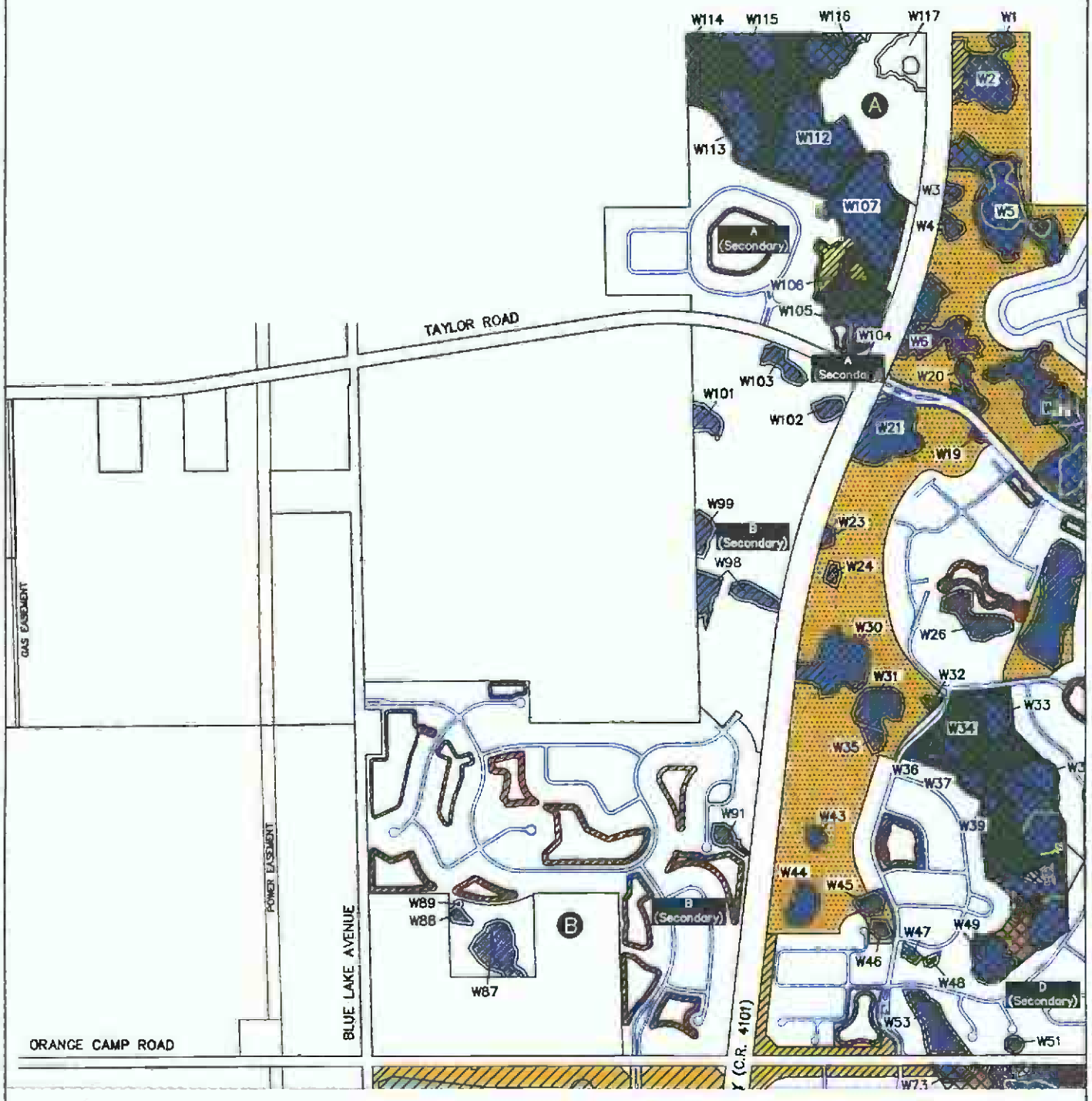
DELAND, FLORIDA

FOR: ST. JOE TOWNS & RESORTS

SANDHILL CRANE MAP

Northeast Quadrant

V:\Projects\2004\04-00225 Victoria Park Env_Svcs\04 - Sandhill Crane Monitoring\SHC_MAP2.dwg Thu 07/13/2006 4:28p By cmalphur



0 550 1100

GRAPHIC SCALE
1 INCH = 1100 FEET

NOTE:
MINOR MODIFICATIONS TO THE SITE PLAN MAY OCCUR DURING FINAL DESIGN AND ENGINEERING, HOWEVER, SANDHILL CRANE PRIMARY AND SECONDARY ACREAGE REQUIREMENTS WILL BE MAINTAINED.

LEGEND

- Improved Pasture
- Retention Pond (Dry/Wet Bank)
- Managed Upland
- Open Forested Wetland
- Golf Course
- Cleared & Seeded Upland
- Herbaceous Wetland
- Created Herbaceous Wetland
- Primary Habitat
- Secondary Habitat
- Ancillary (Tertiary) Habitat
- W88 Wetland Number
- A Potential Nest Site (A-G)

Coordinate System:

Project/Plan No.: 04-00225
Twp/Rng/Sec.: 17-30-27
Date Drawn: 10/21/05

MILLER LEGG
Central Florida Office: 631 S. Orlando Avenue · Suite 200
Winter Park, Florida · 32789-7122
407-629-8880 · Fax: 407-629-7863
www.millerlegg.com

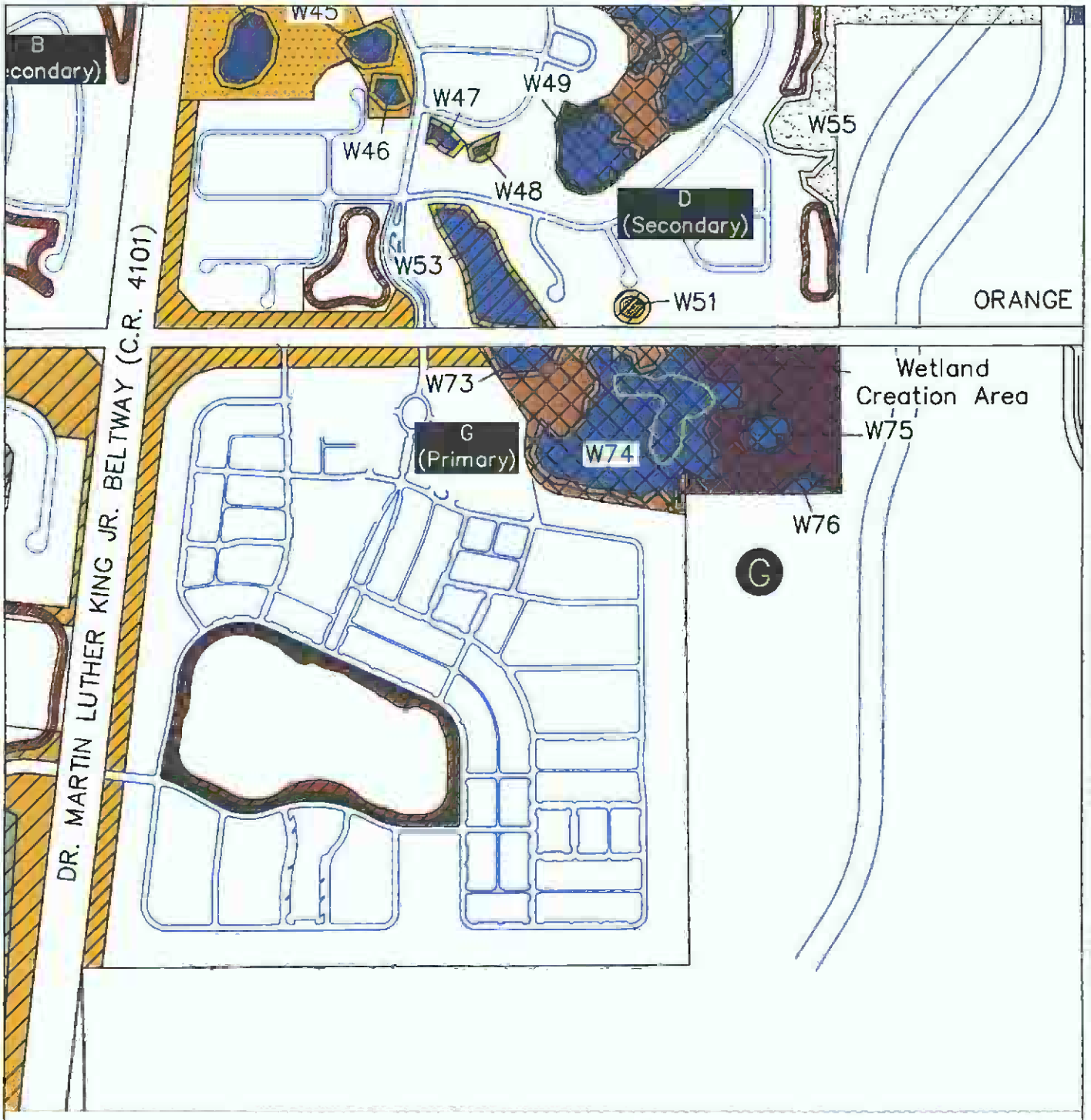
VICTORIA PARK

DELAND, FLORIDA

FOR: ST. JOE TOWNS & RESORTS

SANDHILL CRANE MAP

Northwest Quadrant



Coordinate System:

Project/File No.	Twp/Rng/Sec	Date Drawn
04-00225	17-30-27	10/21/05

MILLER LEGG
Central Florida Office: 631 S. Orlando Avenue · Suite 200
Winter Park, Florida · 32789-7122
407-629-8880 Fax: 407-629-7883
www.millerlegg.com

VICTORIA PARK

DELAND, FLORIDA

FOR: ST. JOE TOWNS & RESORTS

SANDHILL CRANE MAP

Southeast Quadrant

V:\Projects\2004\04-00225 Victoria Park Env_Svcs\04 - Sandhill Crane Monitoring\SHC_MAP2.dwg Thu 07/13/2006 4:29p By cmalphus

Coordinate System:

Project/File No.:	04-00225
Dsn/Dwg/Rev:	17-30-27
Date Drawn:	10/21/05

MILLER LEGG
Central Florida Office 631 S Orlando Avenue - Suite 200
Winter Park, Florida - 32789-7122
407-629-8880 - Fax: 407-629-7883
www.millerlegg.com

VICTORIA PARK

DELAND, FLORIDA

FOR: ST. JOE TOWNS & RESORTS

SANDHILL CRANE MAP

Southwest Quadrant

PHOTOGRAPHS

Color Key:

O = Observed active nests

O = Other viable nests with no observed SHC utilization

O = Observed cranes

Wetland 27 Nesting Photos

Wetland 26 – Aerial of 1 Nest

Wetland 27 – Aerial of 2 Nests

Nests Photographed 5/26/2006

Wetland 27 – 2 Adults & 1 Chick (1 week)

Wetland 27 – 2 Adults & 1 Chick (4 weeks)

Wetland 40 Nesting Photos

Aerial of 3 Nests

Nest and 2 Eggs

Nests Photographed 5/26/2006

Nest & 2 Chicks (3 weeks)

Nest & 2 Chicks (2 months)

Wetland 44 Photos

Aerial of 2 Nests

Nests Photographed 5/26/2006

SNP Building a Nest

Wetland 74 Nesting Photos

Aerial of 3 Nests

2 Adults and 1 Chick (few days)

Nests Photographed 5/26/2006

2 Adults and 1 Chick (2 months)

Wetland 82 Nesting Photos

Aerial of 1st Nest

Aerial of 2nd Nest

1 Adult and 1st Nest

1 Adult and 2nd Nest

2 Adults & 1 Chick (few days) from 1st Nest

Wetland 17 Nest

Aerial of 1 Nest

Nest Photographed 5/26/2006

Wetland 30 Nests

Aerial of 3 Nests

Nests Photographed 5/26/2006

Wetland 38 Nest

Wetland 38 – Aerial of 1 Nest

Nest Photographed 5/26/2006

Wetland 51 Nest

Nest Photographed 5/26/2006

Aerial of 1 Nest

Wetland 86 Nests

Aerial of 2 Nests

Nests Photographed 5/26/2006

Wetland 87 (off-site) Nests

Aerial of 2 Nests