Florida Sandhill Crane 2020 Annual Monitoring Report

SJRWMD Permit No. 4-127-0369C-ERP
MLA Project No. 09-00268

Prepared for:
Victoria Park Community Council

MILLER LEGG
IMPROVING COMMUNITIES. CREATING ENVIRONMENTS.

VICTORIA PARK MITIGATION AREA
Florida Sandhill Crane Annual Monitoring Report – 2020

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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 wetland and upland preservation areas. This project includes the preservation of approximately 215 acres of uplands and approximately 161 acres of wetlands, including the 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 has been 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 annual report documents the Florida sandhill crane nesting success during the 2020 monitoring season and includes data collection on survivorship, productivity, and habitat use.

II. PROJECT LOCATION

The project is adjacent to County Road 4101 (Martin Luther King, Jr. Beltway (MLK 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 as depicted on Exhibit 1.

III. LICENSE/PERMIT INFORMATION

SJRWMD Permit No. 4-127-0369C-ERP was originally 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. In accordance with the permit, 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 that includes primary wetland, primary upland, secondary and ancillary foraging areas. Victoria Park Community Council umbrella association is the responsible entity for this monitoring, environmental preserve area maintenance, and all the shared amenities and infrastructure within the Victoria Park community.

IV. NEST SITE ANALYSIS

Seven potential nest sites throughout the development are divided into four 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). These potential nesting sites and associated wetlands along with secondary habitats are all labeled on the sandhill crane maps enclosed in Exhibit 2.

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. The project acreages of areas preserved and constructed for planning purposes established this project consists of approximately 188 acres of primary habitat, 317 acres of secondary habitat, and 110 acres ancillary/tertiary habitat. The total acreage of sandhill crane habitat is approximately 615 acres, which is in excess of the 570 acres required in the SMMP. The excess acreage is primarily based upon the construction of additional storm water treatment areas associated with permitted development activities and the documented use of the shorelines typically associated with those areas. The Sandhill Crane Maps attached as Exhibit 2 were updated in 2018 to illustrate the constructed areas with the most recent aerial photography available to provide a clear depiction of development and preservation activities. The aerial photography will be updated when newer data becomes available.

The Florida sandhill cranes were observed nesting in freshwater herbaceous wetlands with nests made of plant material naturally found in the adjacent wetlands such as maidencane (*Panicum hemitomon*), spikerush (*Eleocharis* spp.), smartweed (*Polygonum* sp.), and rushes (*Scirpus* sp.). The male and female work together to build the nest. The nests observed this monitoring period were typically three to four feet in diameter and approximately one to two feet above the water surface and were similar in size to nests previously observed. Based on our observations during the long term monitoring of this project, water levels within the wetlands are the key component for Florida sandhill cranes to nest in a particular wetland and areas within a wetland. The overall water levels noted at each nest site remained constant from the 2019 monitoring and corresponded to the wetland extents delineated during the original permitting. The wetlands have returned to normal from the drought of 2016-17. However, this year the water levels dropped significantly during the monitoring period.

A. Methods

Monitoring included a ground level inspection of potentially suitable nesting habitat on a regular basis during the Florida sandhill crane nesting season (January through June, approximate 26 weeks) totaling 10 visits. The ground level inspection consisted of a visual survey of each freshwater herbaceous wetland in search of nests or nesting behavior by cranes. Water levels and nest locations within the marshes during the nesting season limited access for direct nest observations of most of the nests without disturbing and/or frightening cranes off the nest. During the reviews, the number of eggs in the majority of nests could not be determined. The SMMP requires at least one aerial review of the crane habitat during the nesting season. This was performed via helicopter on March 24, 2020 and photographs taken are enclosed within Exhibit 3. This was conducted earlier this monitoring period to help identify potentially active nests. During the aerial review, additional active nests were observed that were hidden from view on the ground.

Miller Legg yet again thank the residents and Victoria Park staff that aided with observations and photographs in between field reviews. Their support is extremely valuable in determining the day-to-day activities of the cranes between visits. The Florida sandhill cranes were observed using a diversity of native habitats during the monitoring period. Shallow marshes were used for nesting, and shorelines of wetland habitats for foraging. In addition the cranes are present in urban areas of Victoria Park including golf courses and suburban subdivisions.

B. Results

This section provides detailed information on the individual nesting sites including a summary discussion of the observations, incidental wildlife observations, and recent maintenance efforts. Photographs documenting the on-site sandhill cranes and their nesting activity can be found in Exhibit 3.

Potential Nest Site A (±46.4 acres)

Potential nesting site A is comprised of ±18.6 acres of primary wetland habitat and ±24.9 acres of primary upland foraging habitat. The primary wetland habitat at this nesting site includes Wetlands 104, 106, 107, 112, 113, 114, 115, and 116. The secondary habitat for this site is comprised of ±2.9 acres of secondary wetlands.

Sandhill cranes were observed nesting in Site A during the 2020 monitoring period in multiple locations. Shallow water was observed throughout the primary nesting wetlands within this site for the third year in a row as illustrated in the photographs included within Exhibit 3.

A pair of nesting cranes was observed in Wetland 107 during the March 24th aerial monitoring. The nesting pair was observed from the ground after the flight and again on April 7th. Based on the timing of hatching this pair successfully fledged two colts that were observed several times and are assumed to have survived to the end of the monitoring period.

Another pair of cranes was observed during the entire monitoring period adjacent to Site A in a stormwater area just west of the firehouse and existing Victoria Park development. Nest building was observed during the Jan 22nd monitoring review. Two colts were observed the first time in early April and during subsequent monitoring events. This pair was observed with two juveniles during the June 23rd visit. This pair nested in the same location as last year (2019)

As with previous reports, fence repairs along Dr. Martin Luther King Jr. Beltway are ongoing and continue to limit unauthorized access, but historically a small number of off road vehicles are entering the site from the adjacent property to the north and trespassing on the site. This activity has been further limited this monitoring period by cutting additional trees to block the trail from the adjacent property. The Victoria Park Community Council is constantly working on ways to prevent unauthorized off road vehicle access with posted signage, fence installation/repair, and utilizing physical barriers to maintain compliance. This has been a continuous problem as signs are removed and fences are repaired and vandalized in an unending cycle. Based on ground and aerial observations this trespassing has been reduced and with ongoing efforts we intend to eliminate unauthorized access.

Potential Nest Site B (±30.5 acres)

Potential nesting Site B is comprised of ±2.4 acres of primary wetland habitat that includes Wetlands 87, 88, and 89. The secondary habitat for this site is comprised of ±4.9 acres of secondary wetlands including Wetland 99 and ±23.2 acres of secondary upland habitat.

An active nest with two eggs was observed in Wetland 89 on March 5th. A pair of sandhill cranes with one colt was observed in Wetland 87 during the April 6th review. Two nests in Wetland 87 were observed during the aerial review in March. In addition, nesting was observed for the first time in Wetland 99 this monitoring period. The nest was located on the far side of the wetland and access was limited. This pair hatched one colt and it was observed several times by Miller Legg staff and residents of Victoria Park. This colt survived to a juvenile and was last seen during the final monitoring review at the end of June. The nests and colts observed in Site B are shown in the photographs included in Exhibit 3

Incidental observations included a single sandhill crane foraging and loafing under trees on several occasions during the monitoring period at an adjacent stormwater pond east of Wetland 87 in site B. This is believed to be the 2019 surviving colt from the Wetland 89 nesting pair.

Potential Nest Site C (±81.3 acres)

Potential Nest Site C is comprised of 33.6 acres of primary wetland and 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 47.7 acres of secondary and ancillary upland habitat within this potential nest site. This habitat coincides with the Scrub Jay/Gopher Tortoise Preserve.

All wetlands within Site C contained standing water during the 2020 monitoring period. Site C had one nest constructed in Wetland 17 this season and no cranes were observed nesting in this wetland.

In addition a pair of sandhill cranes was observed attempting to nest in Wetland 5 on multiple occasions during the season. However no nest construction was completed. This pair was believed to be a juvenile pair from last year's offspring.

It is believed that the pair nesting in Site A Wetland 107 was the pair that typically nests in the north portions of Wetland 5.

Incidental sandhill crane observations were noted in Wetlands 3, 4, and 6, along MLK Beltway adjacent to the north preserve, and in the neighborhoods. Cranes were also observed on several occasions around the perimeter of the stormwater ponds in this area.

Potential Nest Site D (±131.2 acres)

Potential Nest Site D is comprised of 13.6 acres of primary wetlands and 20.6 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 19.2 acres secondary wetlands and 77.8 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 68.7 acres of managed uplands within the Scrub Jay/Gopher Tortoise Preserve and 9.1 acres of park and retention pond banks.

Nesting activity was observed in Wetlands 21, 27, 34, 40, and 44 during the 2020 nesting season. Overall, Site D had seven confirmed nesting attempts, with four hatchlings, and four confirmed surviving juveniles.

Two unsuccessful nesting attempts were documented in Wetland 21 during this monitoring period. No determination on why the attempts were unsuccessful could be made.

A nest was first observed in Wetland 27 on February 7th and again on March 5th. This pair and two colts were noted in the adjacent Wetland 26 behind the recreation center on the April review. The pair was observed by a stormwater pond in the adjacent neighborhood with two healthy juveniles on June 23rd.

Two unsuccessful nesting attempts were documented in Wetland 34 in March during the aerial review. No reason why the attempts were unsuccessful could be determined.

A pair of cranes was observed nesting in Wetland 40 on February 8th. This pair was seen with two colts on the March 5th review. The pair was again observed in the adjacent neighborhood with two healthy juveniles on June 23rd.

A nest with cranes was observed for the first time in Wetland 44 during the aerial monitoring. This nest was confirmed in March, but when reviewed in April the water level had dropped significantly leaving the nest exposed and abandoned.

Incidental observations of adult sandhill cranes foraging and resting were made within the vicinity of nest site D in and around the contiguous Victoria Park community throughout the 2020 nesting season as reported by the residents aiding with the observations.

Potential Nest Site E (±30.1 acres)

Potential nest Site E is comprised of 1.1 acres of primary wetlands and 7.0 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 13.8 acres of secondary wetlands and 8.2 acres of secondary uplands, which include retention pond banks and managed upland buffers.

The Wetland 9 is at the northeast portion of Site E in the secondary habitat associated with the FPL Easement. During the 2020 season a single inactive nest was noted during the March flight. Water levels in this wetland dropped quickly and it remained dry until June.

There were no other nesting attempts observed in Site E.

Potential Nest Site F (±257 acres)

Potential nest Site F is comprised of 8.0 acres of primary wetland habitat and 42.8 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 42.8 acres of managed uplands. Approximately 206.2 acres of this site is secondary upland foraging habitat, which is comprised of 112.1 acres of golf course, 16.3 acres of retention pond banks, and 77.8 acres of managed upland natural areas.

Site F wetlands contained standing water for the duration of the nesting season. A nesting pair was observed in Wetland 86 in February and March. Water levels and location in the marsh limited access for nest observations from the ground. One nest was observed in Wetland 86 during the flyover in March. This nest was empty in April and no colts were observed. No determination on why the attempt was unsuccessful could be made.

A pair of adult cranes with two juveniles were continuously observed from April through June. It is believed this was the unsuccessful pair and last year's young.

Incidental observations of foraging and resting sandhill cranes were noted all over the golf course throughout the 2020 nesting season.

Potential Nest Site G (±39.4 acres)

Potential nest Site G is comprised of 15.8 acres of primary wetland habitat and 4.2 acres of primary upland foraging pastureland habitat. The primary wetland habitat at this nesting site includes Wetlands 73, 74, 75, 76, and a created wetland. Site G includes approximately 19.3 acres of secondary upland foraging habitat distributed throughout this potential nest site.

There was no Florida sandhill crane nesting activity observed in Site G during any visits this season. The aerial flyover did not reveal any new crane nests. Water levels were dropping during this period and the nesting was never started.

As typically noted, observations of adult sandhill cranes foraging and resting within Site G in and around the contiguous Victoria Park community adjacent to this wetland complex were made throughout the 2020 nesting season.

C. Discussion

The 2020 nesting season had a high level of success with ten colts hatched surviving with ten confirmed juveniles on the June 23rd visit. The steady number of nesting sandhill cranes could be attributed to a wet and mild January that provided suitable wetland conditions for nesting early in the season. Based on observations there was a large amount of movement between wetlands to find the ideal nesting location this monitoring season.

The number of active nests dropped slightly in 2020 (Figure 1). The water levels in the project wetlands overall started normal and dropped rapidly. As with earlier years success of the nesting efforts appear to correlate to the amount and timing of rainfall within the project area during the nesting season. The number of viable sandhill crane nests typically drops in years that experience drought conditions.

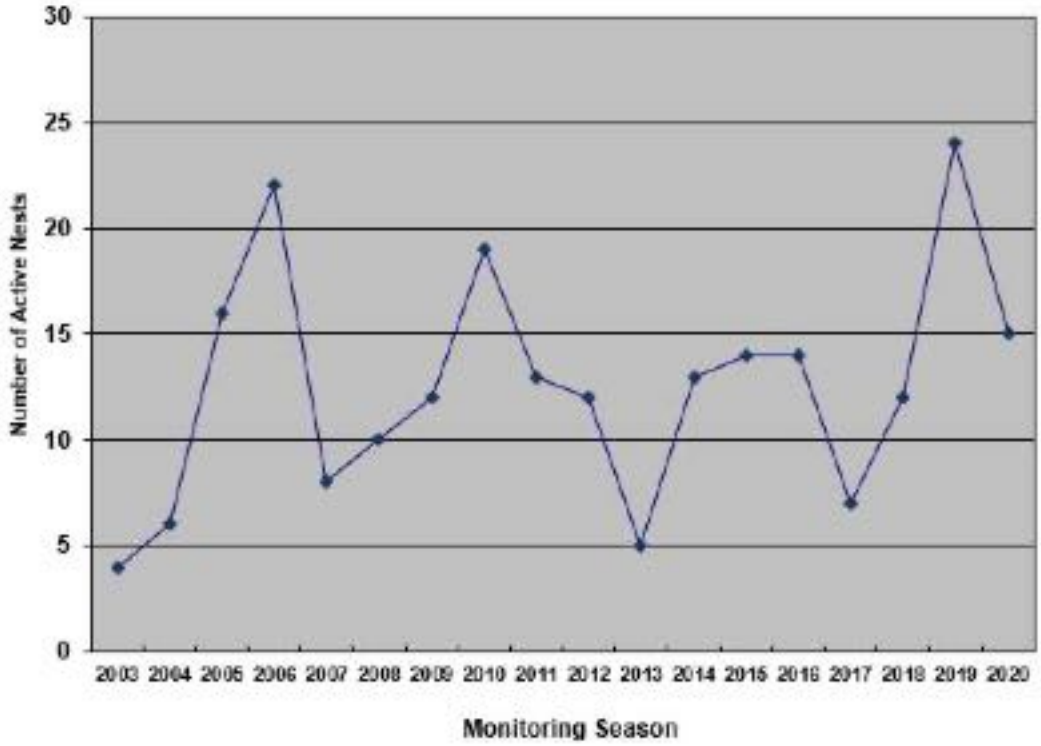


Figure 1. Active sandhill crane nests observed at Victoria Park, Deland, Florida.

Table 1- Overall Nest Status

* Based on estimates of surviving juveniles observed at end of monitoring June 23rd, 2020.

Nest Location Wetland #	# of Nests	# of Active Nests with Incubating Cranes	Colts Observed	Colts Survived	Nesting Pair Numbers
A107	1	1	2	2	1
Stormwater A	1	1	2	2	1
B87	2				
B88	1	1	1	1	1
B99	1	1	1	1	1
C17	1				
D21	2	2			1
D27	1	1	2	2	1
D34	1				
D40	2	1	2	2	1
D44	1	1			1
F86	1	1			1
TOTALS	**15**	**10**	**10**	**10**	**9**

During the 2020 Florida sandhill crane nesting season, approximately 15 nests were observed (Table 1). Ten of these nests were designated as active nests with observations of incubation. Based on observations ten colts successfully hatched and ten survived through the end of nesting season. The exact number hatchings may have been slightly higher but there is no way of determining if all eggs hatched or not. The number of colts surviving this season matched 2019 which was the highest recorded and we hope to continue this positive trend.

Nest failure, or unsuccessful nests, can result from many factors. Predators such as bobcats, coyotes, raccoons, red-tailed hawks, bald eagles, various owls, and American alligator can eat the eggs or young colts. Relating to the Victoria Park Community sandhill crane habitat, low and changing water levels and raccoon predation appear to have the greatest effect on nesting success. Additional reasons for nest failure include abandonment, egg infertility, and sudden flooding. Based on long term observations and physical location of the nests within the wetlands human disturbance is minimal as it relates to nesting of cranes associated within the project area.

Based on a review of data the National Oceanic and Atmospheric Administration (NOAA), the precipitation levels were slightly below average overall (-2.42 inches) from June 2019 to June 2020 (Figure 2).

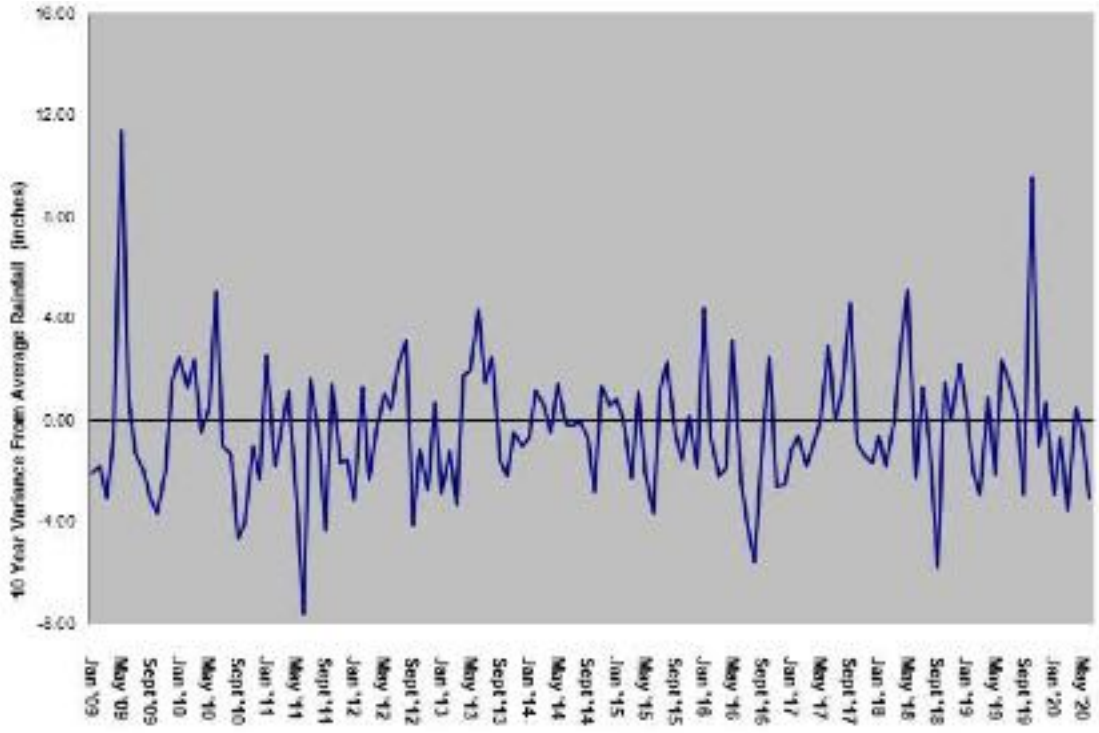


Figure 2. 10 Year difference between actual and average precipitation in Deland, FL (NOAA).

Drought conditions lower the water levels, which reduces success due to increased predator access to nests. In contrast, normal to high rainfall should increase productivity by creating more suitable water depths for nesting and improving feeding conditions. Several sandhill crane pairs in the Victoria Park community nested multiple times this year based on changing water levels based on the evaluation of the photographs taken during the aerial review. Several nests appeared underwater or high and dry with a second or third nest constructed in the same proximity.

V. INCIDENTAL WILDLIFE OBSERVATIONS

The following faunal species were observed directly or indirectly by Miller Legg, within or near the areas monitored since 2010. **Bold = Observed During This Reporting Period**

MAMMALS

Species	Common name
Canis latrans	**Coyote**
Odocoileus virginianus	**White-tailed deer**
Lynx rufus	**Bobcat**
Procyon lotor	**Raccoon**
Scalopus aquaticus	Eastern mole
Sciurus carolinensis	**Grey squirrel**
Sciurus niger shermani	Sherman's fox squirrel
Sigmodon hispidus	**Cotton rat**
Sylvilagus palustris	**Marsh rabbit**
Ursus major	**Black bear***

*only scat observed

AMPHIBIANS & REPTILES

Acris gryllus dorsalis	Florida cricket frog
Alligator mississipiensis	**American alligator**
Anolis sagrei	**Brown anole**
Apalone ferox	**Florida softshell turtle**
Bufo quercicus	**Oak toad**
Bufo terrestris	**Southern toad**
Coluber constrictor	**Black racer**
Crotalus adamanteus	Eastern diamondback rattlesnake
Gopherus polyphemus	**Gopher tortoise**
Hyla femoralis	Pinewoods treefrog
Lithobates capito	Gopher frog
Micrurus fulvius	**Coral snake**
Pantherophis guttatus	**Corn snake**

BIRDS

Accipiter cooperii	Cooper's hawk
Aix sponsa	**Wood duck**
Anhinga anhinga	**Anhinga**
Aphelocoma coerulescens	Florida scrub jay
Aramus guarauna	Limpkin
Ardea alba	**Great egret**
Ardea herodias	**Great blue heron**
Aytha affinis	Lesser scaup
Aytha collaris	**Ring-necked duck**
Baeolophus bicolor	**Tufted titmouse**
Bubulcus ibis	**Cattle egret**

BIRDS – cont.	
Buteo jamaicensis	Red-tailed hawk
Buteo lineatus	**Red-shouldered hawk**
Cardinalis cardinalis	**Northern cardinal**
Cathartes aura	**Turkey vulture**
Ceryle alcyon	**Belted kingfisher**
Charadrius vociferus	**Killdeer**
Chordeiles minor	Common nighthawk
Colinus virginianus	**Bobwhite quail**
Coragyps atratus	**Black vulture**
Corvus brachyrhynchos	**American crow**
Cyanocitta cristata	**Blue jay**
Dendroica coronata	**Yellow-rumped warbler**
Dendroica pinus	**Pine warbler**
Dryocopus pileatus	**Pileated woodpecker**
Dumetella carolinensis	**Grey catbird**
Egretta caerulea	**Little blue heron**
Egretta thula	**Snowy egret**
Egretta tricolor	Tricolored heron
Eudocimus albus	**White ibis**
Falco sparverius	American kestrel
Gallinago gallinago	**Common snipe**
Gallinula chloropus	Common moorhen
Haliaeetus leucocephalus	**Bald eagle**
Lanius ludovicianus	Loggerhead shrike
Lophodytes cucullatus	**Hooded merganser**
Melanerpes carolinus	Red-bellied woodpecker
Melanerpes erythrocephalus	**Red-headed woodpecker**
Meleagris gallopavo	**Wild turkey**
Mimus polyglottos	**Northern mockingbird**
Mycteria americana	**Wood stork**
Myiarchus crinitus	Great-crested flycatcher
Palacrocorax auritush	**Double-crested cormorant**
Pandion haliaetus	Osprey
Parula americana	Northern parula
Picoides pubescens	**Downy woodpecker**
Plegadis falcinellus	Glossy ibis
Podilymbus podiceps	Pied-billed grebe
Poecile carolinensis	Carolina chickadee
Quiscalus quiscula	**Common grackle**
Sialia sialis	Eastern bluebird
Tachycineta bicolor	Tree swallow
Thryothorus ludovicianus	**Carolina wren**
Toxostoma rufum	Brown thrasher
Tringa flavipes	Lesser yellow-legs
Turdus migratorius	**American robin**

VI. MAINTENANCE

The habitat for the sandhill cranes is maintained to eliminate the presence of exotic/invasive plant species using the following techniques: mowing, timbering, and mechanical chopping. 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 for crane foraging habitat. The upland habitats within the preserve are maintained, according to the SMMP, by using similar techniques. Controlled burns were to be the primary tool utilized for habitat management but has proven difficult. The overall goal is to mechanically reduce the vegetation to heights that can safely lead to potentially utilizing a prescribed burn in the future.

Maintenance for 2020 occurred in North Preserve Management Unit 4 and South Preserve Management Unit 3 and 4 consisted of mechanically mowing and exotic plant (cogon grass) treatments to enhance the habitat and wildfire risk reduction reducing the height and density of flammable shrubs adjacent to homes abutting the preserve. These areas coincide with previous observations of sandhill cranes and were managed in a manner that benefits the cranes by reducing vegetation around the wetlands that could conceal predators. This generally follows habitat management guidelines intended to mimic some of the effects of fire. These management treatments were applied in ways that minimize soil disturbance and reduced the possibility of introducing or expanding coverage of invasive or exotic species. The management is potentially setting the stage for potential prescribed fire treatment in the future. Previous thinning activities along with resumption of normal hydroperiod after the prolonged drought continues to reduce the number of pine seedlings of various species from encroaching in the wetlands.

The Council is committed to continued monitoring efforts to determine if these treatments are having the desired effect and adjust if necessary. Areas are being evaluated and identified in North Preserve Management Unit 1 and South Preserve Management Unit 2 and 3 for maintenance in 2021.

Site A

The SMMP includes clearing within Site A via mechanical chopping, timbering, and herbicide treatments as planned in the scrub jay preserve. The upland areas are periodically mowed and managed with respect to crane habitat needs. In 2020, unauthorized access has been further limited this monitoring period by cutting additional trees to block the trail from the adjacent property to the north. The resumption of normal hydroperiods after the prolonged drought continues to reduce the number of pine seedlings encroaching in the wetlands.

As previously reported, during the 2007 monitoring season (March - June), the upland areas were cleared of thick shrubs, opening up the habitat to increase crane utilization. The area was then replanted with native herbaceous vegetation to enhance the area. Wetlands 104 and 107 were

mowed at the conclusion of the 2008-nesting season. Maintenance in June 2016 and consisted of thinning the pine saplings encroaching in Wetlands 107, 112, and herbicide spot treatment of exotic species.

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. Maintenance for 2020 occurred in North Preserve Management Unit 4 around Wetlands 16, 17, and 18.

As described in earlier reports, maintenance for exotic/invasive plants in the north and south preserve area occurred in December 2014, August 2016, and consistied of mowing palmettos in the uplands and thinning pine seedlings encroaching in Wetland 16. Pine sapling thinning in Wetlands 2 and 5 occurred in this area in 2018.

Site D

The primary foraging upland habitat at this potential nest site consists of pastureland and scrubby uplands. Maintenance for 2020 in South Preserve Management Unit 3 and 4 consisted of mechanically mowing and exotic plant (cogon grass) treatments to enhance the habitat adjacent to Wetlands 43, 44, 45, and 46. The secondary/ancillary foraging uplands of this site are located in the south preserve. This area is primarily managed for the gopher tortoise and Florida Scrub Jay, identical to the management methods outlined in the Scrub Jay Site Mitigation and Management Plan. This management consists of mowing that greatly enhances the foraging value to Florida sandhill cranes.

As previously reported, a large portion of Site D in south preserve was mowed in July 2016 and consisted of mowing pines and palmettos encroaching on Wetlands 43, 44, 45, and 46. Wetlands 19, 21, 23, 24, 26, 30, 31, 32, 33, 34, 35, 36, 38, 40, 43, 44, 47, 48, 49, and 51 were mowed at the conclusion of the 2008-nesting season. The understory of a portion of the South Preserve (Management Units 1 and 2) was cleared in March through April of 2007. The scrubby upland is comprised of dense vegetation and will be converted into more appropriate foraging habitat via mechanical clearing. Maintenance occurred for 2019 in the South Preserve Management Unit 1around Wetlands 21, 23, and 24 consisting of vegetation mowing.

Site E

The uplands for this site 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. As with previous years, mowing has not been necessary.

Site F

The upland habitat occurring at Site F is primarily comprised of golf course fairways, a secondary upland foraging habitat. An ecologically sensitive pesticide management plan is in place for the golf course, which is also beneficial for foraging cranes. The primary upland habitat is subject to mowing and removal of undesirable vegetation to ensure ideal ground cover for foraging cranes. Maintenance of exotic vegetation within Site F was ongoing throughout 2020. The last time Wetlands 82 and 86 needed to be mowed was at the conclusion of the 2008-nesting season.

Site G

Maintenance of the upland habitat for this site consists of periodic mowing and controlling undesirable plants to ensure ideal vegetation height for cranes. This area was treated for cogon grass in 2019, 2020, and will be retreated in 2021 with the intent to eliminate this species.

As reported in earlier reports, Wetlands 73 and 74, the Wetland Creation Area and the surrounding pasture areas were mowed at the conclusion of the 2008-nesting season. Maintenance of exotic vegetation within Site G was completed in August 2015 and consisted of treatment of cogon grass and thinning of pine saplings in Wetland 73.

VII. NEXT MONITORING REPORT

The next annual monitoring report will be prepared for review in August 2021.

VIII. SUMMARY

During the 2020 Florida sandhill crane nesting season, approximately 15 nests were observed (Table 1). Ten of these nests were designated as active nests with observations of incubation. Based on observations ten colts successfully hatched and ten survived through the end of nesting season. The exact number hatchings may have been slightly higher but there is no way of determining if all eggs hatched or not. The number of colts surviving this season matched 2019 which was the highest recorded and we hope to continue this positive trend.

Successful nesting results are anticipated if the positive rainfall and hydrologic trends continue. Based on observations and physical location of nests within the wetlands human disturbance is minimal to crane nesting connected with this project. Miller Legg will continue its long-term

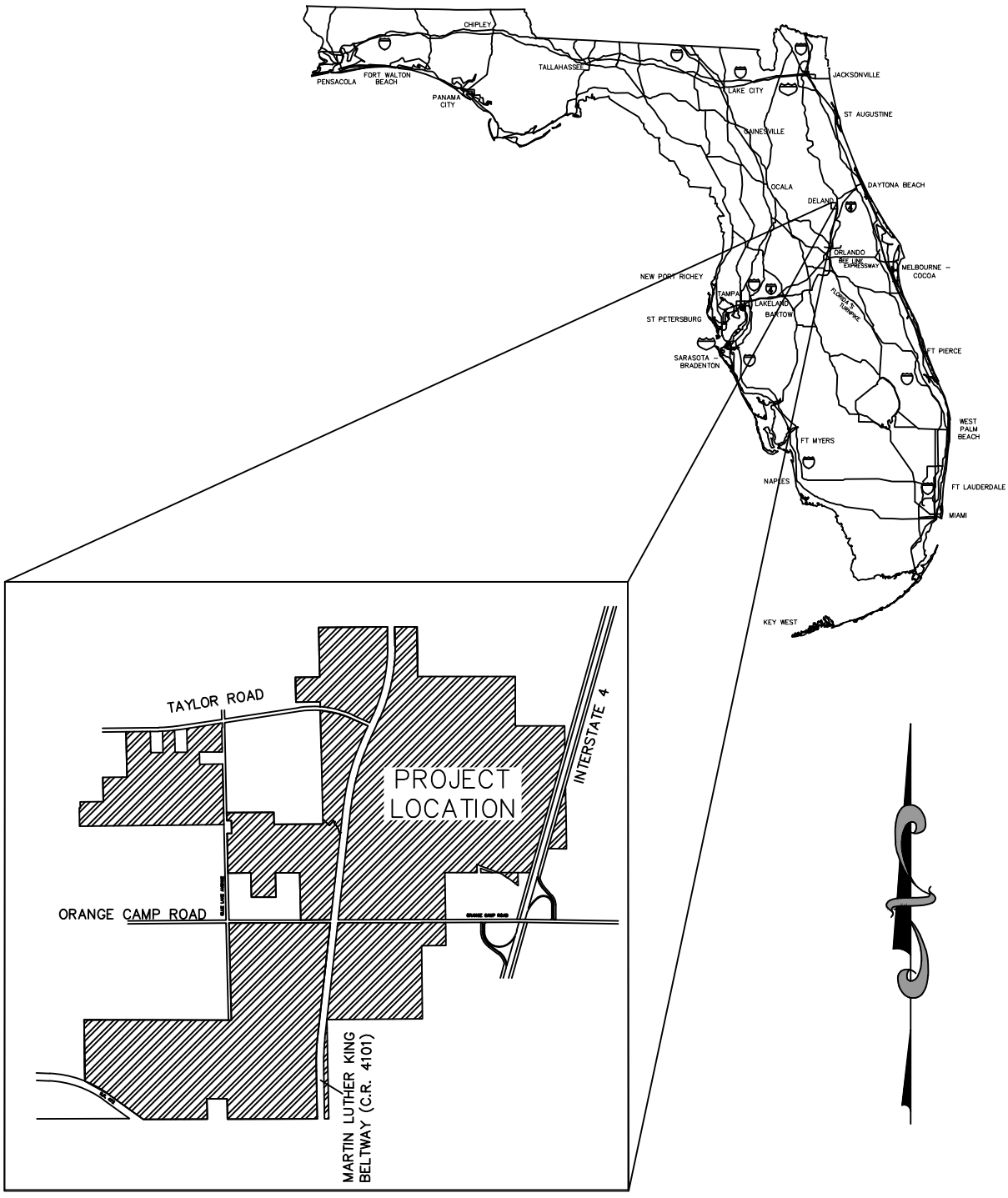
monitoring of the Victoria Park Community in relation to rainfall and water levels and evaluate the maintenance needs based on site conditions.

The wetlands of the Victoria Park Community continue to provide feeding and nesting habitat for Florida sandhill cranes and several additional state and/or federally listed wetland dependent of bird species. We look forward to reporting on the success of the cranes within the Victoria Park Community in the future.

Victoria Park Florida Sandhill Crane Monitoring Report 2020

Exhibit 1

Location Map



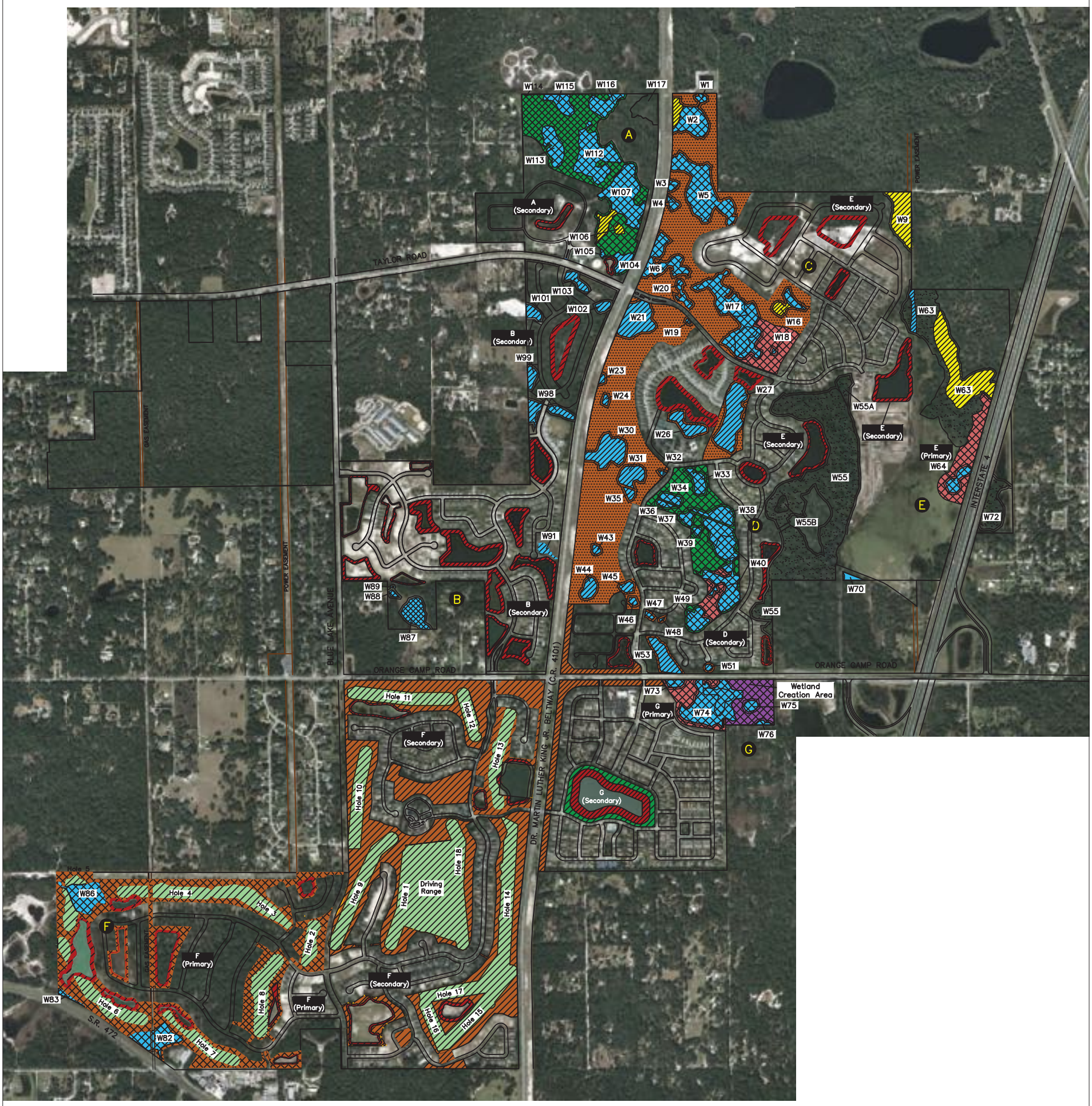
Project/File No.: 09-00268 Twp/Rng/Sec: 17/30/22-27,34-36 Date Drawn: 10/13/2015	MILLER LEGG Central Florida Office: 631 S. Orlando Avenue · Suite 200 Winter Park, Florida · 32789-7122 407-629-8880 · Fax: 407-629-7883 www.millerlegg.com	**VICTORIA PARK** **DELAND, FLORIDA** **FOR: Victoria Park Community Council**	*LOCATION MAP*

Victoria Park Florida Sandhill Crane Monitoring Report 2020

Exhibit 2

Florida Sandhill Crane Maps

V:\Projects\2009\09-00268 Victoria Park Monitoring - Kolter\Drawings\SHC Habitat Acreage\Drawings\SHC_MAP2.dwg



GRAPHIC SCALE

1500 0 750 1500 3000

(IN FEET)
1 INCH = 1500 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 HABITAT MAP

APPROVED :
FLA. REGISTRATION NO.
DATE :

DATE DRAWN: 2/14/17
DRAWING NO. SHC-1
SH. 1 OF 1
PROJECT / FILE NO. 09-00268
DES. PM
DWN. PM
CHK. DL
CERTIFICATES OF AUTHORIZATION: EB7318 LB6680 LC0337

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954-436-7000 · Fax: 954-436-8664

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NO. | DATE | REVISIONS | DES. | DWN.

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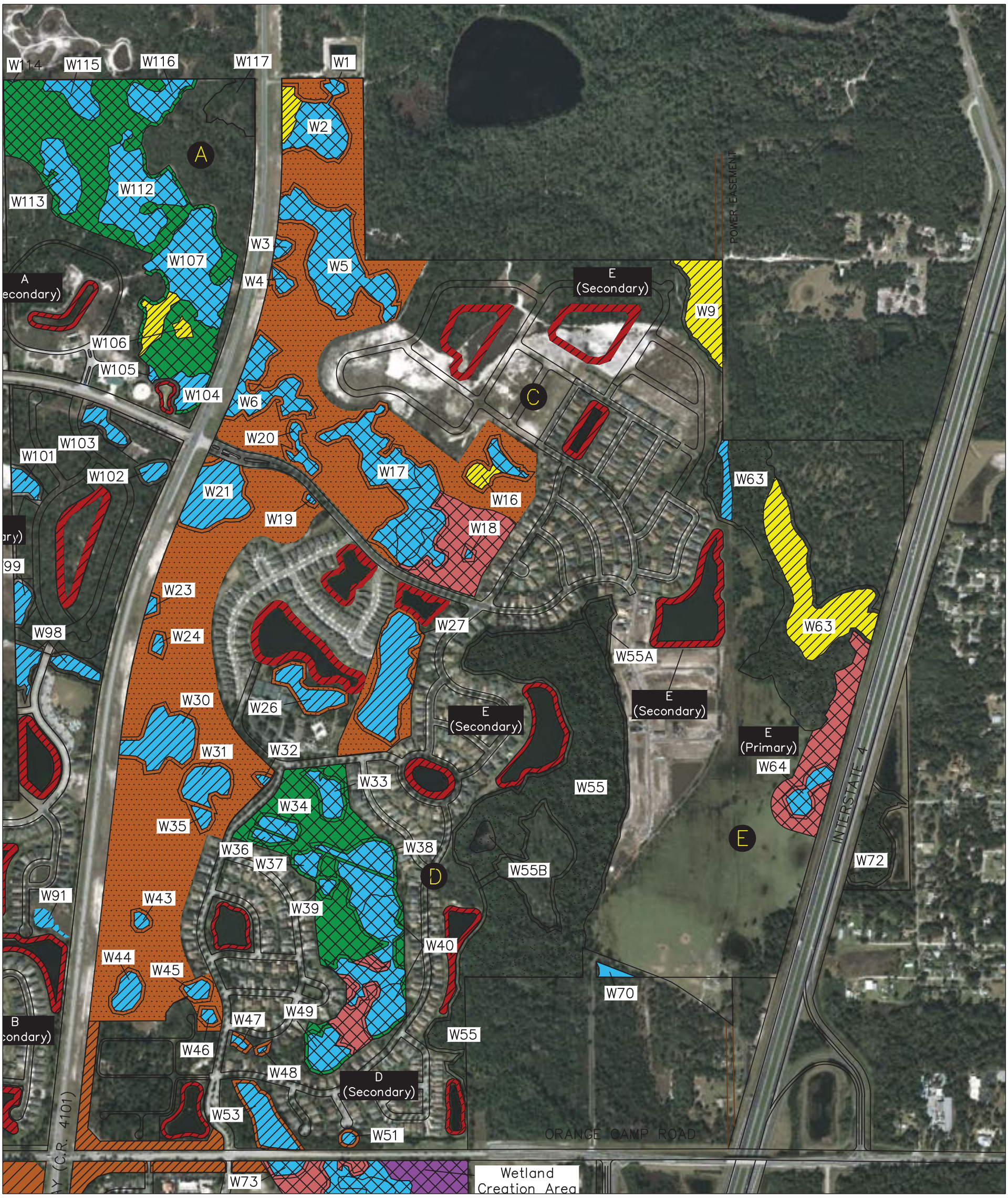

GRAPHIC SCALE

750 0 375 750 1500

(IN FEET)
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- (A) Potential Nest Site (A-G)

APPROVED :
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DATE :

SANDHILL CRANE HABITAT MAP - NORTHEAST QUADRANT

DATE DRAWN: 8/10/16
SH. 1 OF 1
DRAWING NO. SHC-1
PROJECT / FILE NO. 09-00268
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NO.	DATE	REVISIONS	DES.	DWN.

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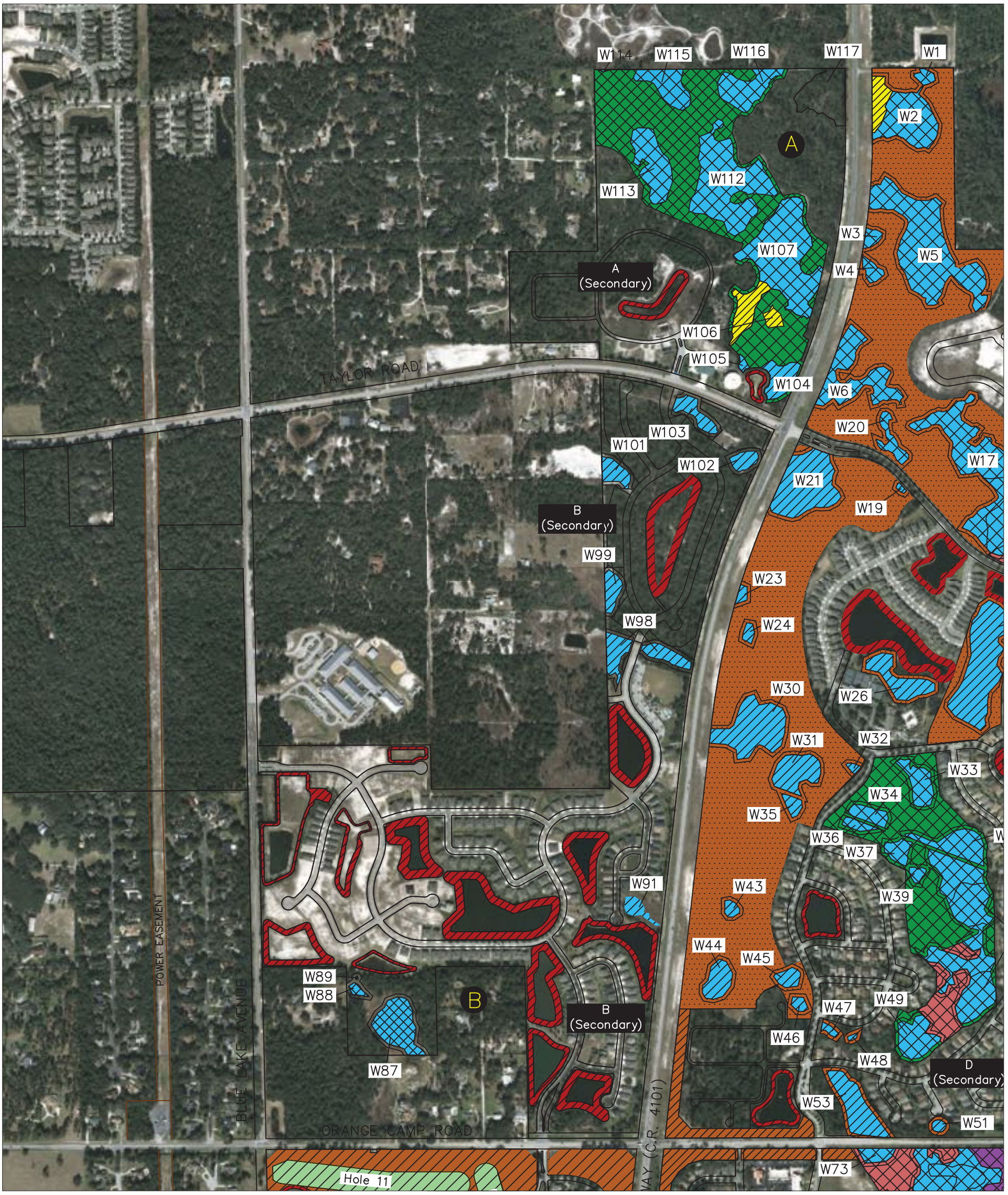

GRAPHIC SCALE

750 0 375 750 1500

(IN FEET)
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APPROVED :
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SANDHILL CRANE HABITAT MAP - NORTHWEST QUADRANT

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PROJECT / FILE NO. 09-00268

DRAWING NO. SHC-1

DATE DRAWN: 8/10/16

SH. 1 OF 1

VICTORIA PARK
DELAND, FLORIDA
FOR: KOLTER HOMES LLC

NO.	DATE	REVISIONS	DES.	DWN.

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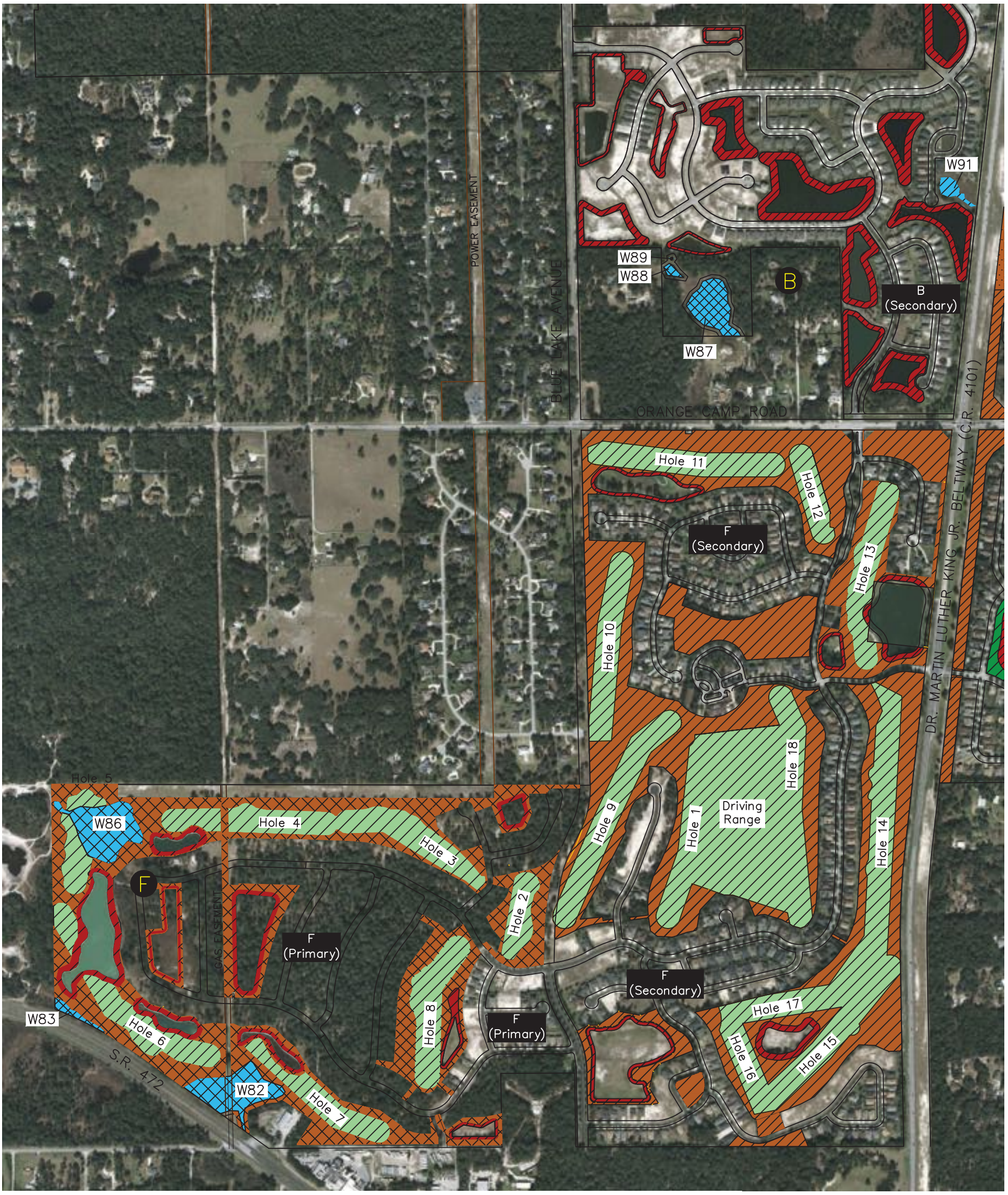

GRAPHIC SCALE

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(IN FEET)
1 INCH = 750 FEET

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SANDHILL CRANE HABITAT MAP - SOUTHWEST QUADRANT

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SH. 1 OF 1

DES. PM
DWN. PM
CHK. DL

VICTORIA PARK
DELAND, FLORIDA
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NO.	DATE	REVISIONS	DES.	DWN.

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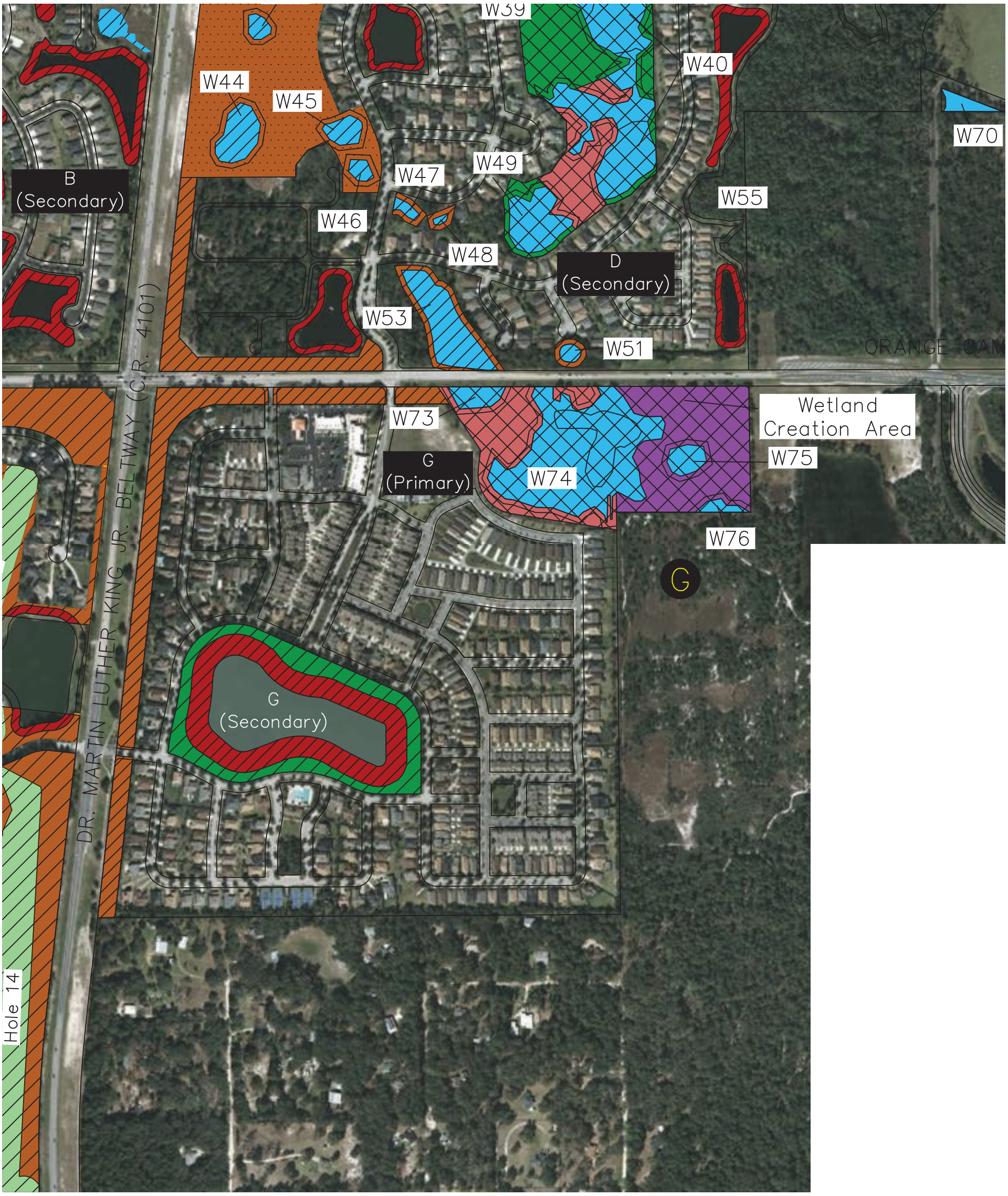

GRAPHIC SCALE

500 0 250 500 1000

(IN FEET)
1 INCH = 500 FEET

NOTE:
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SANDHILL CRANE HABITAT MAP - SOUTHEAST QUADRANT

DATE DRAWN: 8/10/16
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DRAWING NO. SHC-1
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Victoria Park Florida Sandhill Crane Monitoring Report 2020

Exhibit 3

Photographs

Color Key:

O = Observed active nests
O = Other viable nests with no observed SHC utilization
O = Observed chicks

Pre-Nesting Activities

Pair of Florida Sandhill Cranes Feeding Victoria Park Site D – 01/23/2020

Pair of Florida Sandhill Cranes Vocalizing Victoria Park Site B - 01/22/2020

Pre-Nesting Activities

Victoria Park Site F pair of Sandhill Cranes - 1/22/2020

Pair of Florida Sandhill Cranes Nest Construction Victoria Park Site A - 1/23/2020

Pre-Nesting Activities

Pair of Florida Sandhill Cranes Feeding Victoria Park Site D - 2/6/2020

Site C Florida Sandhill Crane - 2/7/2020

Active Nesting

Victoria Park Site D South End Wetland 40 Florida Sandhill Crane Nesting 2/8/2020

Victoria Park Site D Wetland 21 Florida Sandhill Crane Nesting 2/25/2020

Active Nesting

Site A Retention Area Florida Sandhill Cranes Nesting - 2/25/2020

Victoria Park Site F Wetland 86 Florida Sandhill Cranes Nesting - 2/25/2020

Active Nesting

Victoria Park Site B Wetland 89 Florida Sandhill Cranes Nesting/Tending Eggs - 3/5/2020

Victoria Park Site D Wetland 27 Florida Sandhill Cranes Nesting - 3/5/2020

Florida Sandhill Crane Colts

Victoria Park Site D Wetland 40 Two Adult Sandhill Cranes with Two Colts - 3/5/2020

Victoria Park Site D Wetland 26 Two Adult Sandhill Cranes with Two Colts - 4/6/2020

Florida Sandhill Crane Colts

Site B Wetland 87 Two Adult Sandhill Cranes with One Colt - 4/6/2020

Site B Wetland 99 Adult Sandhill Cranes with One Colt - 4/15/2020

Florida Sandhill Crane Colts

Site A Retention Area Adult Sandhill Crane with Two Colts - 4/15/2020

Site C Retention Area Adjacent Wetland 19 Adult Sandhill Crane with Two Colts - 4/15/2020

Juvenile Florida Sandhill Cranes

Victoria Park Site B Juvenile Feeding on Shoreline of Retention Pond – 6/24/2020

Victoria Park Site E Two Juveniles and Adult on Shoreline of Retention Pond– 6/24/2020

Juvenile Florida Sandhill Cranes

Victoria Park Site C Two Juveniles and Two Adults on Shoreline of Retention Pond– 6/24/2020

Victoria Park Site D Two Juveniles and Two Adults on Shoreline of Retention Pond– 6/24/2020

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat

Victoria Park Site A Wetland 107 Sandhill Crane Nest

Victoria Park Site D Wetland 27 Sandhill Crane Nest

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat

Victoria Park Site D Wetland 34 Sandhill Crane Nests

Victoria Park Site D Wetland 40 Sandhill Crane Nest

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat

Victoria Park Site B Wetland 87 Sandhill Crane Nests

Victoria Park Site F Wetland 86 Sandhill Crane Nest

Aerial Assessment of Sandhill Crane Nests and Nesting Habitat

Victoria Park Site C Wetland 5 No Observed Sandhill Crane Nests

Victoria Park Site G Wetland 74 No Observed Sandhill Crane Nests

Incidental Observations of Sandhill Cranes

Sandhill Crane Family on Golf Course with 2019 Sub-Adults

Group of Sandhill Cranes Along Retention Pond Shoreline

Incidental Observations of Additional Species

Great Egret in Wetland 40

Mottled Ducks Wetland 54

Incidental Observations of Additional Species

Little Blue Heron Retention Pond Shoreline

Osceola Turkey Adjacent South Preserve

Incidental Observations of Additional Species

Florida Pine Snake

Gopher Tortoise