Natural Resource Issues

- Wetlands
- Fish, Wildlife, and Listed Species
- Elimination and Reduction of Wetland Impacts
- Mitigation
- Secondary Impacts
- Cumulative Impacts

Wetlands

- Florida wetlands are regulated by Chapter 373 of the Florida Statutes
- Florida Unified Wetland Delineation Methodology (Chapter 62-340, F.A.C.)

10.2.2.3 (Environmental Resource Permit Manual)

Impacts to Wetland Function are Evaluated Using Five Factors

- Condition
- Hydrologic Connection
- Uniqueness
- Location
- Fish and Wildlife Utilization

10.2.1 (Environmental Resource Permit Manual)

Elimination or Reduction of Impacts District Approval Factors

- Degree of impact to wetland functions caused by a proposed project
- Whether the impact to these functions can be mitigated
- Practicability of design modifications for the site, as well as alignment alternatives for a proposed linear system

10.2.1.1 Design Modifications

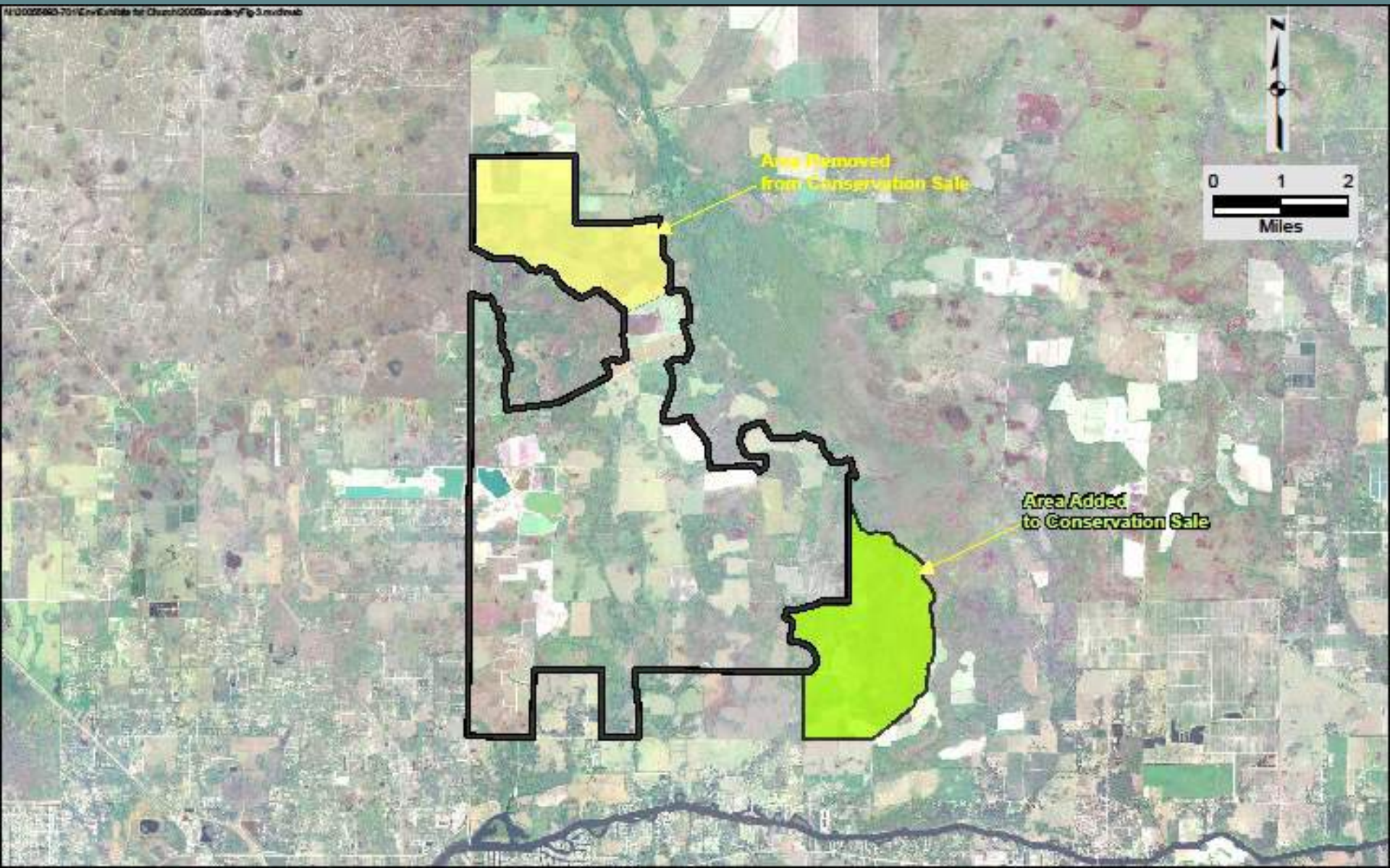
- Modification does ***not*** mean:
  - Not implementing the project in some form
  - A project that is significantly different in type or function
  - Something that is not technically feasible
  - Something that is not economically viable
  - Adversely affects public safety or welfare

***A modification need not provide the highest and best use of the property to be "practicable"**

Elimination and Reduction

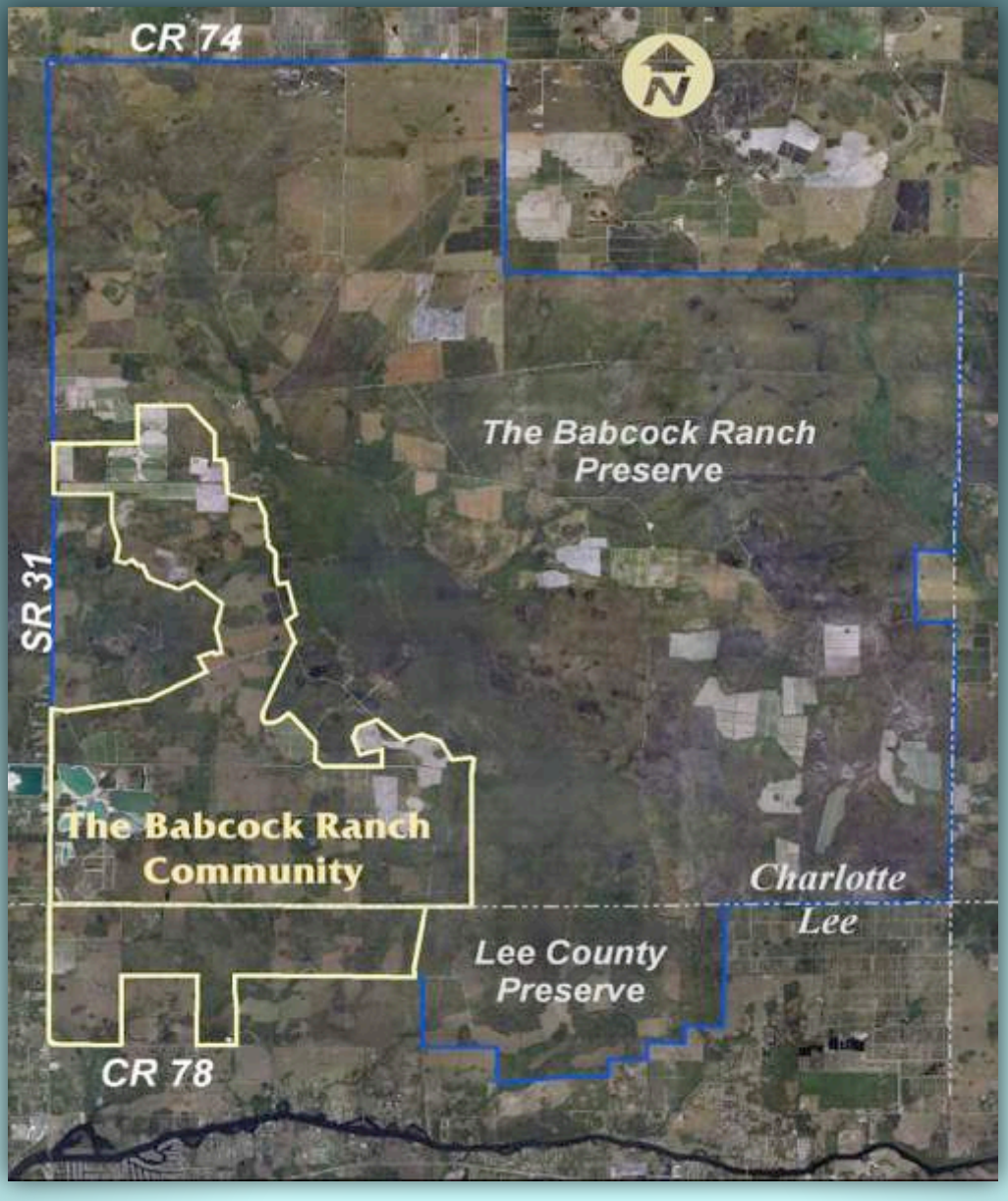
2000 Babcock Ranch Plan

Elimination and Reduction



Elimination and Reduction

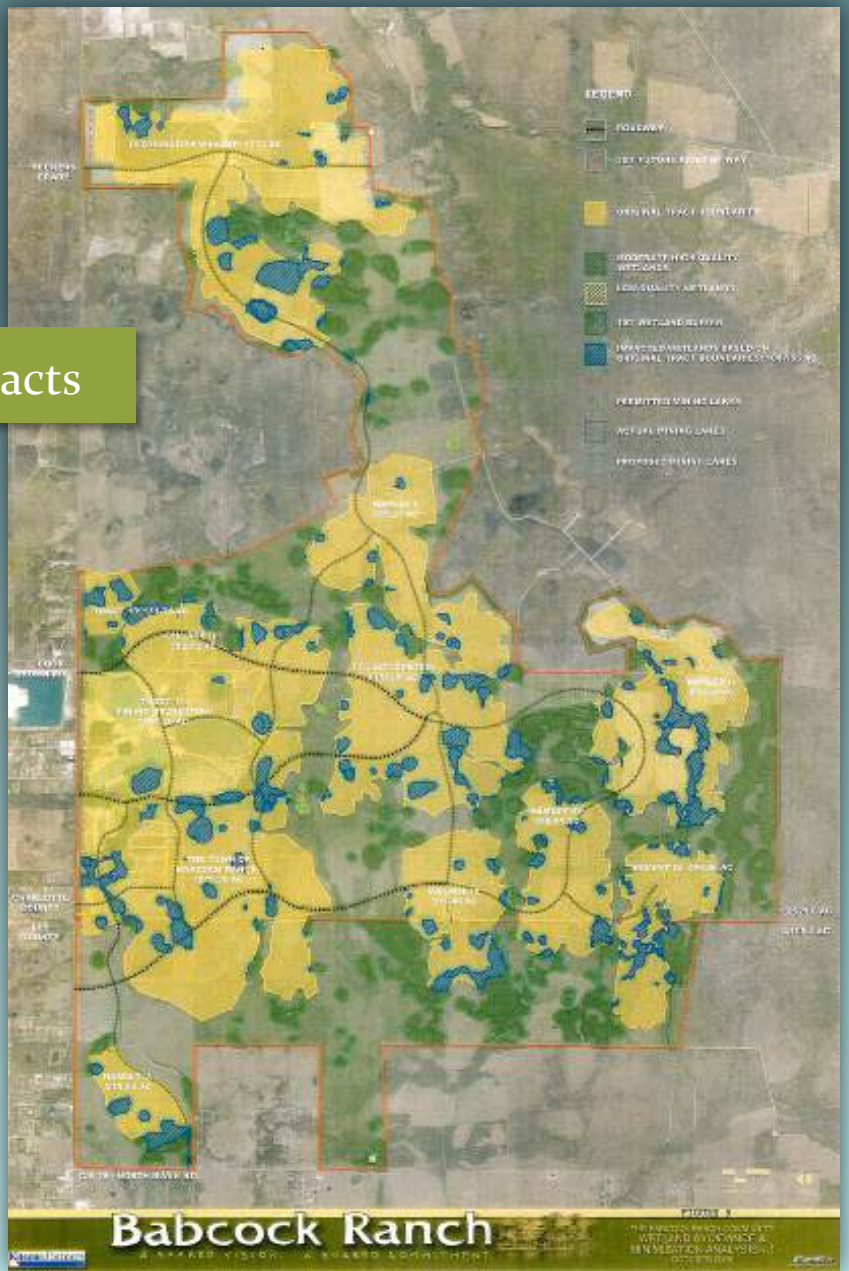
2006 Boundary



Elimination and Reduction

2006 Site Plan

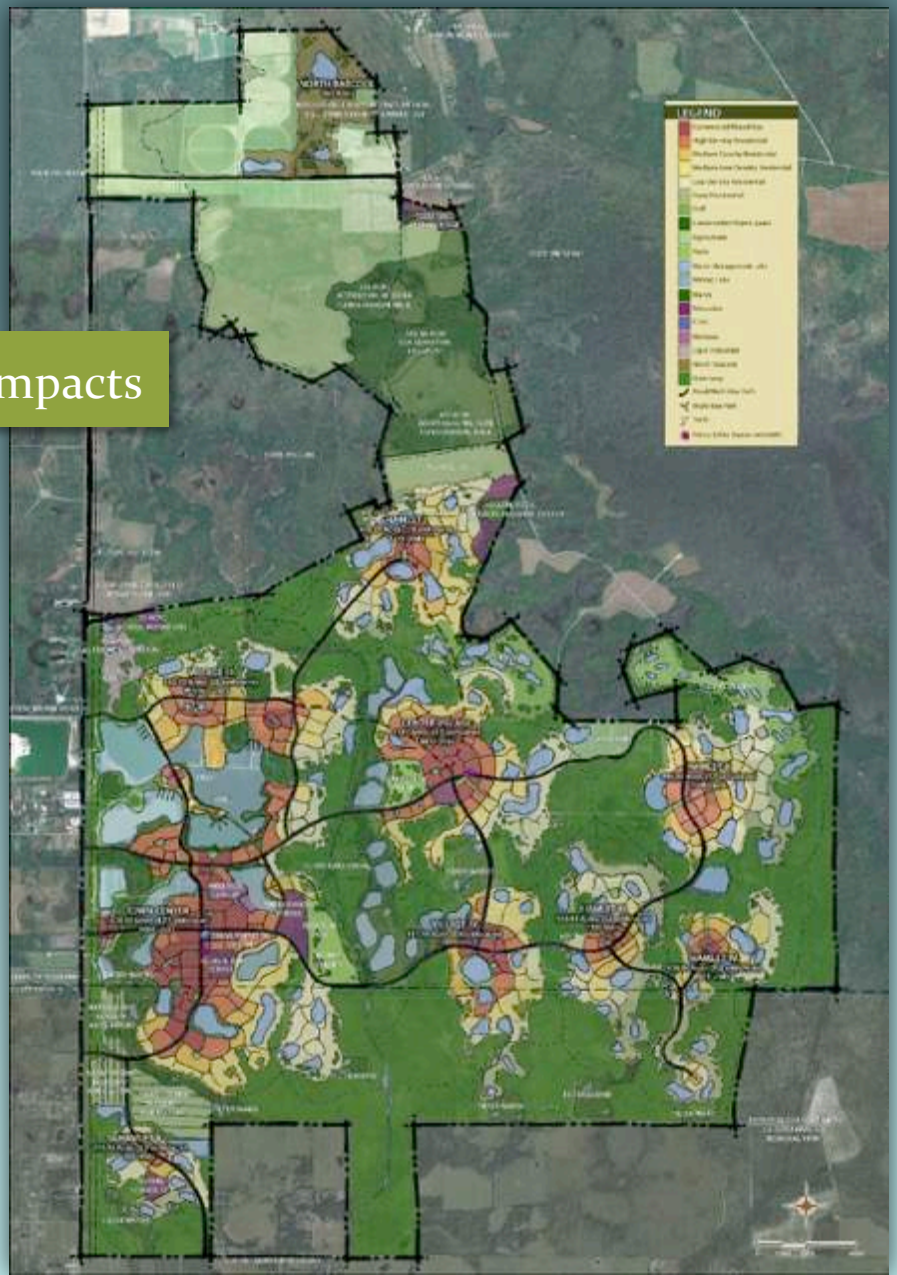
1047.55 Wetland Impacts



Elimination and Reduction

Final Site Plan

424 acres wetland impacts

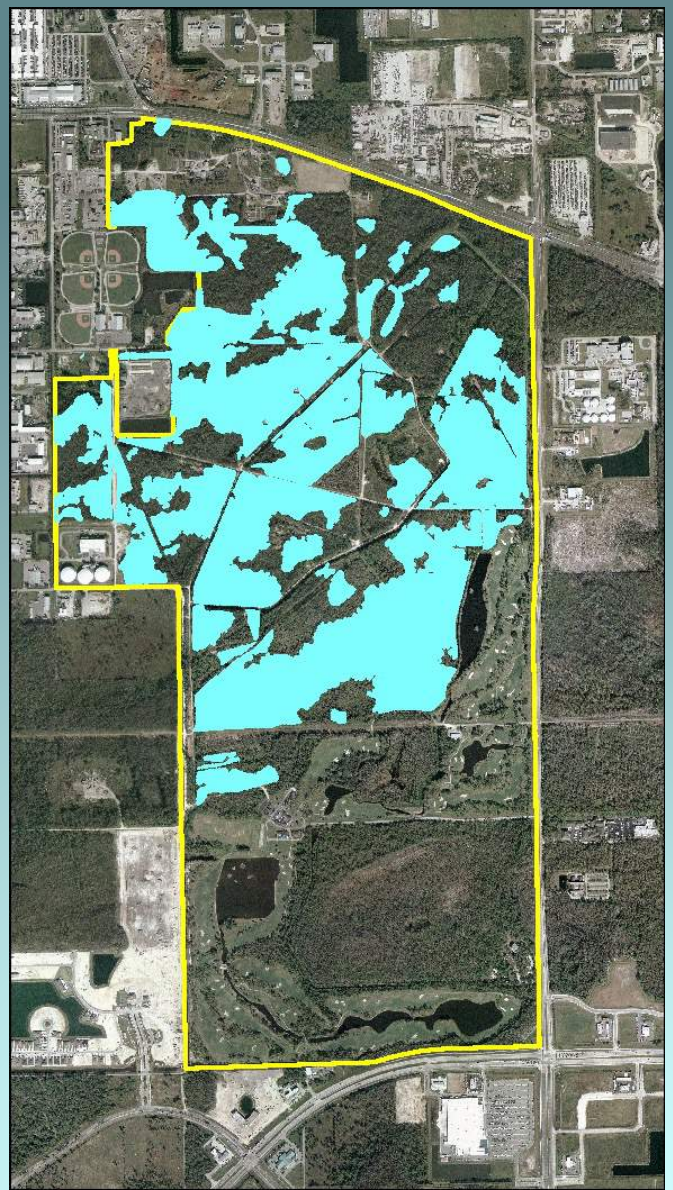


10.2.1.2 (Environmental Resource Permit Manual)

District will not require reduction and elimination of wetland impacts when:

- The ecological value of the wetland is low
- The applicant proposes mitigation that provides regional and greater long term ecological value

City of Fort Myers
Wellfield Re-Development



Wetland Impacts:

The applicant proposes to directly impact 307.66 acres of jurisdictional wetlands which includes 295.21 acres associated with the City of Fort Myers owned portion of the property and 12.45 acres of impacts associated with Bonita Bay Group owned portion of the property. Approximately 250 acres of the 307.66 acres of wetlands proposed to be impacted contain 75-100% melaleuca coverage. The remaining impacts are to wetlands with 75-100% coverage by Brazilian pepper and 25-50% coverage of Brazilian pepper and melaleuca along with other nuisance and exotic vegetation. A wetland impact map is attached as Exhibit No. 3.1.

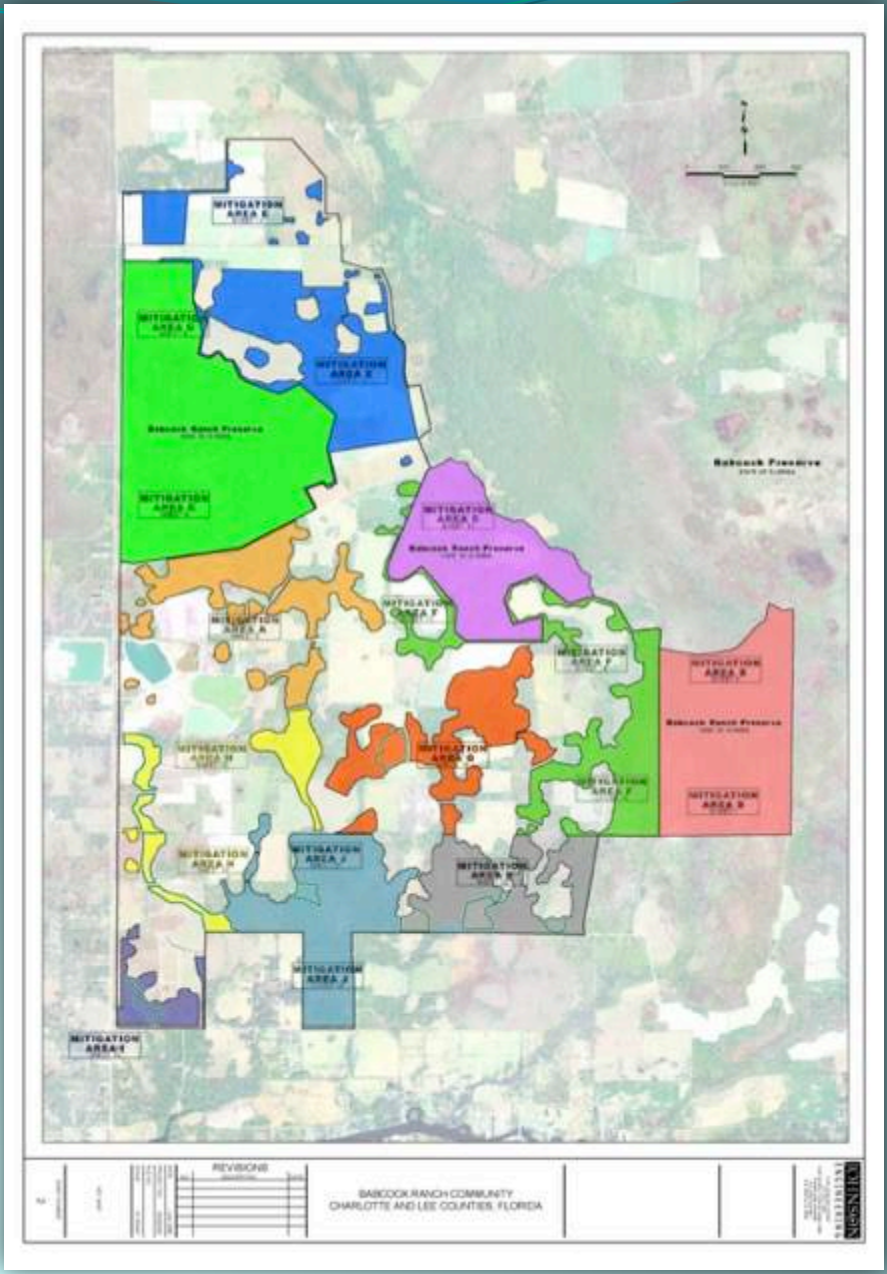
The wetlands to be impacted are located within the City of Fort Myers Wellfield. A large portion of the site was historically used as and currently operates as a wellfield for the City of Fort Myers. Enhancement/preservation of wetlands on the wellfield site is not considered ecologically feasible in the long-term due to the site's altered hydrologic condition. In the late 1960's, raw water from the Caloosahatchee River was utilized to recharge the surficial aquifer wellfield to meet increased water demands. In 1999, the use of the surficial aquifer wellfield was decreased and the water use permits were modified to utilize a deeper aquifer and promote the utilization of reclaimed water. Although the use of the surficial aquifer has been eliminated, it is not anticipated that the surficial aquifer groundwater levels will be restored to historical levels since the wellfield is no longer artificially recharged. The majority of the well pads are located on the outer boundaries of the site and will continue to be operational in accordance with Water Use Permit No. 36-00035-W Application No. 070822-3 after Eastwood Village is constructed. Eastwood Village has been designed around the wells to maintain their current locations and all required setbacks have been incorporated into the site plan. The applicant is not required to implement design modifications to reduce wetland impacts pursuant to Section 4.2.1.2 (A) of the Basis of Review. The ecological value of the on-site wetlands is low and the proposed mitigation will provide greater long-term ecological value than the areas to be impacted.

The applicant is not required to implement design modification to reduce wetland impacts pursuant to Section 10.2.1.2 (A) of the Environmental Resource Permit Manual. The ecological value of the on-site wetlands is low and the proposed mitigation will provide greater long-term ecological value than the areas impacted.

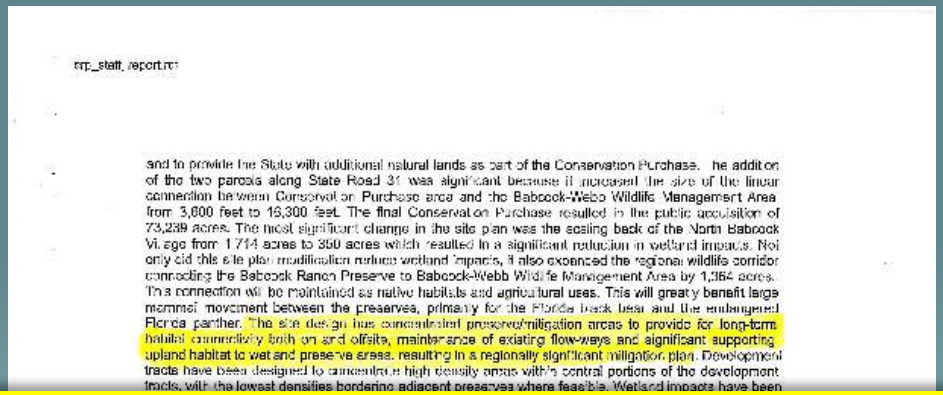
mitigation, monitoring and maintenance activities within these management units. Please refer to the

Mitigation - Babcock

- Mitigation area is approximately 12,907 acres
- 6,864 acres onsite mitigation
- 5,840 acres offsite mitigation



Elimination and Reduction



srp_staff_report.rtf

and to provide the State with additional natural lands as part of the Conservation Purchase. The addition of the two parcels along State Road 31 was significant because it increased the size of the linear connection between Conservation Purchase area and the Babcock-Webb Wildlife Management Area from 3,600 feet to 16,300 feet. The final Conservation Purchase resulted in the public acquisition of 73,239 acres. The most significant change in the site plan was the scaling back of the North Babcock Village from 1,714 acres to 350 acres which resulted in a significant reduction in wetland impacts. Not only did this site plan modification reduce wetland impacts, it also expanded the regional wildlife corridor connecting the Babcock Ranch Preserve to Babcock-Webb Wildlife Management Area by 1,364 acres. This connection will be maintained as native habitats and agricultural uses. This will greatly benefit large mammal movement between the preserves, primarily for the Florida black bear and the endangered Florida panther. The site design has concentrated preserve/mitigation areas to provide for long-term habitat connectivity both on and offsite, maintenance of existing flow-ways and significant supporting upland habitat to wetland preserve areas, resulting in a regionally significant mitigation plan. Development tracts have been designed to concentrate high density areas within central portions of the development tracts, with the lowest densities bordering adjacent preserves where feasible. Wetland impacts have been

The site design has concentrated preserve/mitigation areas to provide for long-term habitat connectivity both on and offsite, maintenance of existing flow-ways and significant supporting upland habitat to wetland preserve areas, resulting in a regionally significant mitigation plan.

proposed for mitigation have been divided into Mitigation Areas A through K.

The offsite mitigation occurs on a portion of the Babcock Ranch Preserve (BRP) purchased by the State. Mitigation Areas B, C, and D form the 5,640 acre offsite mitigation areas and are referred to as Telegraph Swamp Preserve, Curry Lake Preserve, and Telegraph Trail Preserve, respectively. These offsite mitigation areas were established in order to provide mitigation for impacts to Florida panther habitat and

App. no.: 070339-5 Page 18 of 44

Fish, Wildlife, Listed Species and their Habitats

- Pursuant to paragraph 10.1.1(a), an applicant must provide reasonable assurances that a regulated activity will not impact the values of wetlands and other surface water functions so as to cause adverse impacts to:

(a) the abundance and diversity of fish; and

(b) the habitat of fish, wildlife and listed species.

TABLE 10.2.7-1
LISTED WILDLIFE SPECIES THAT ARE AQUATIC OR WETLAND DEPENDENT & THAT USE UPLAND HABITATS FOR NESTING OR DENNING

Invertebrates:

Common Name	Scientific Name	Status
Panama City crayfish	Procambarus econfinae	SSC

Fish:

Common Name	Scientific Name	Status
Rivulus	Rivulus marmoratus	SSC

Amphibians:

Common Name	Scientific Name	Status
Florida bog frog	Lithobates okaloosae	SSC
Frosted flatwoods salamander	Ambystoma cingulatum	FT
Gopher frog	Lithobates capito	SSC
Pine Barrens treefrog	Hyla andersonii	SSC
Reticulated flatwoods salamander	Ambystoma bishopi	FE

Reptiles:

Common Name	Scientific Name	Status
Alligator snapping turtle	Macrochelys temminckii	SSC
American alligator	Alligator mississippiensis	FT(S/A)
American crocodile	Crocodylus acutus	FT
Atlantic salt marsh snake	Nerodia clarkii taeniata	FT
Barbour's map turtle	Graptemys barbouri	SSC
Green sea (marine) turtle	Chelonia mydas	FE
Hawksbill sea (marine) turtle	Eretmochelys imbricata	FE
Kemp's ridley sea (marine) turtle	Lepidochelys kempii	FE
Leatherback sea (marine) turtle	Dermochelys coriacea	FE
Loggerhead sea (marine) turtle	Caretta caretta	FT
Peninsula ribbon snake	Thamnophis sauritus sackenii	ST
Striped mud turtle	Kinosternon baurii	ST
Suwannee cooter	Pseudemys suwanniensis	SSC

Mammals:

Common Name	Scientific Name	Status
Big Cypress fox squirrel	Sciurus niger avicennia	ST
Everglades mink	Neovison vison evergladensis	ST
Florida bonneted (mastiff) bat	Eumops glaucinus floridanus	ST
Florida panther	Puma concolor coryi	FE
Florida salt marsh vole	M. pennsylvanicus dukecampbelli	FE
Gray bat	Myotis grisescens	FE
Homosassa shrew	Sorex longirostris eonis	SSC
Indiana bat	Myotis sodalis	FE
Key deer	Odocoileus virginianus clavium	FE
Lower Keys rabbit	Sylvilagus palustris hefneri	FE
Rice rat	Oryzomys palustris natator	FE
Sanibel Island rice rat	Oryzomys palustris sanibeli	SSC
Sherman's short-tailed shrew	Blarina carolinensis shermani	SSC

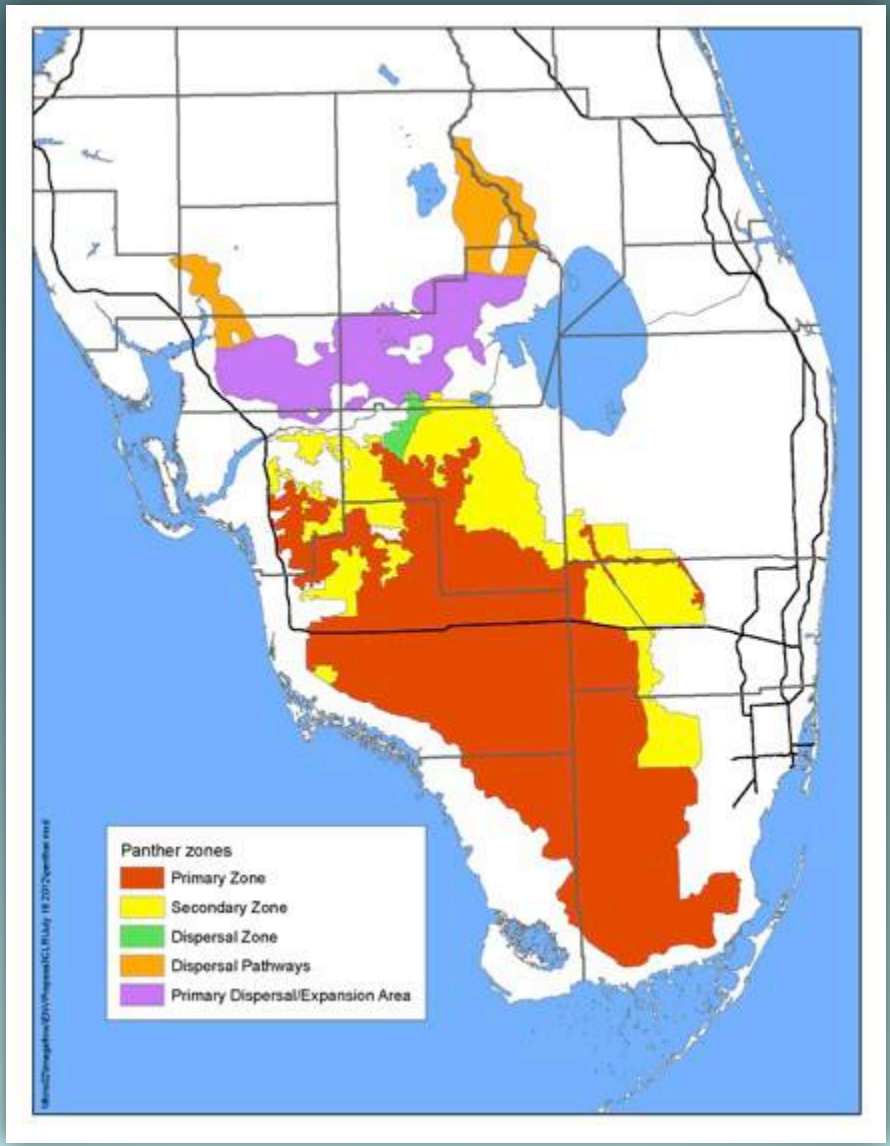
Birds:

Common Name	Scientific Name	Status
American oystercatcher	Haematopus palliatus	SSC
Audubon's crested caracara	Polyborus plancus audubonii	FT
Black skimmer	Rynchops niger	SSC
Brown pelican	Pelecanus occidentalis	SSC
Cape Sable seaside sparrow	Ammodramus maritimus mirabilis	FE
Everglade snail kite	Rostrhamus sociabilis plumbeus	FE
Florida sandhill crane	Grus canadensis pratensis	ST
Least tern	Sterna antillarum	ST
Limpkin	Aramus guarauna	SSC
Little blue heron	Egretta caerulea	SSC
Marian's marsh wren	Cistothorus palustris marianae	SSC
Osprey	Pandion haliaetus	SSC
Red-cockaded woodpecker	Picoides borealis	FE
Reddish egret	Egretta rufescens	SSC
Roseate spoonbill	Platalea ajaja	SSC
Roseate tern	Sterna dougallii dougallii	FT
Scott's seaside sparrow	Ammodramus maritimus peninsulae	SSC
Snowy egret	Egretta thula	SSC
Snowy plover	Charadrius nivosus	ST
Tricolored heron	Egretta tricolor	SSC
Wakulla seaside sparrow	Ammodramus maritimus juncicola	SSC
White-crowned pigeon	Patagioenas leucocephala	ST
Whooping crane	Grus americana	FXN
White ibis	Eudocimus albus	SSC
Worthington's marsh wren	Cistothorus palustris griseus	SSC
Wood stork	Mycteria americana	FE

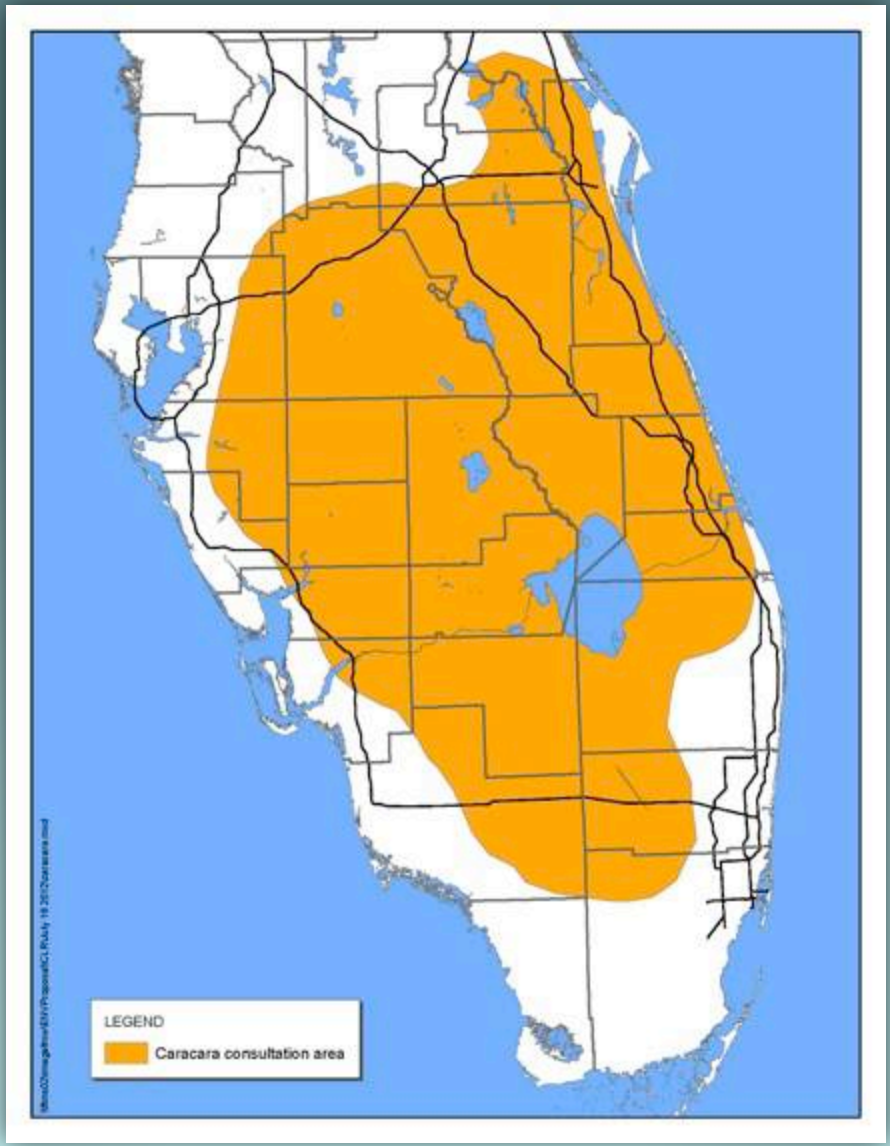
Fish, Wildlife, Listed Species and their Habitats

- Conduct listed species/wildlife surveys to determine if any listed wetland dependant species will be impacted by the project
- Coordinate with FWC/FWS to develop listed species management plans and appropriate mitigation if needed

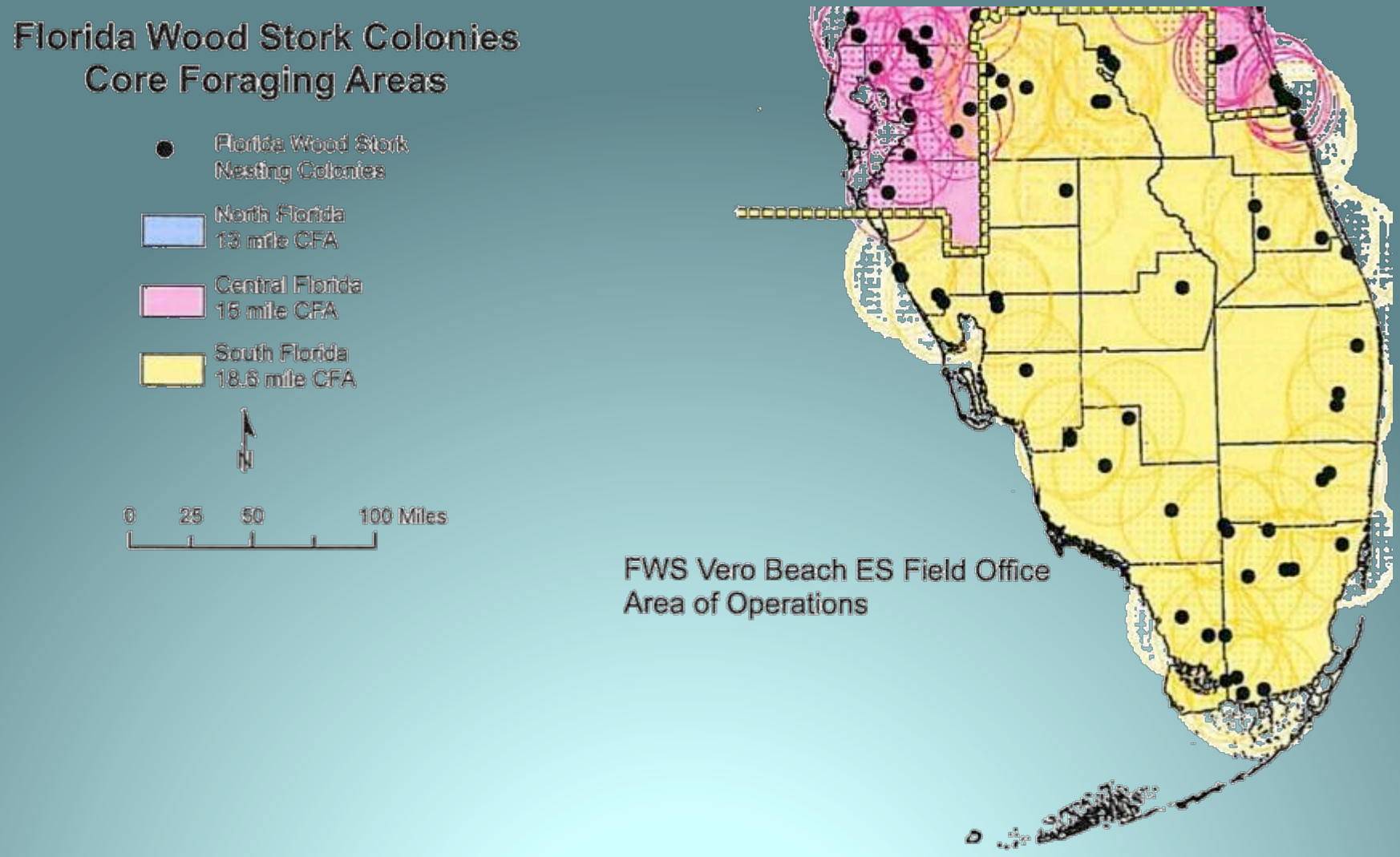
Panther Focus Area



Crested Caracara Focus Area

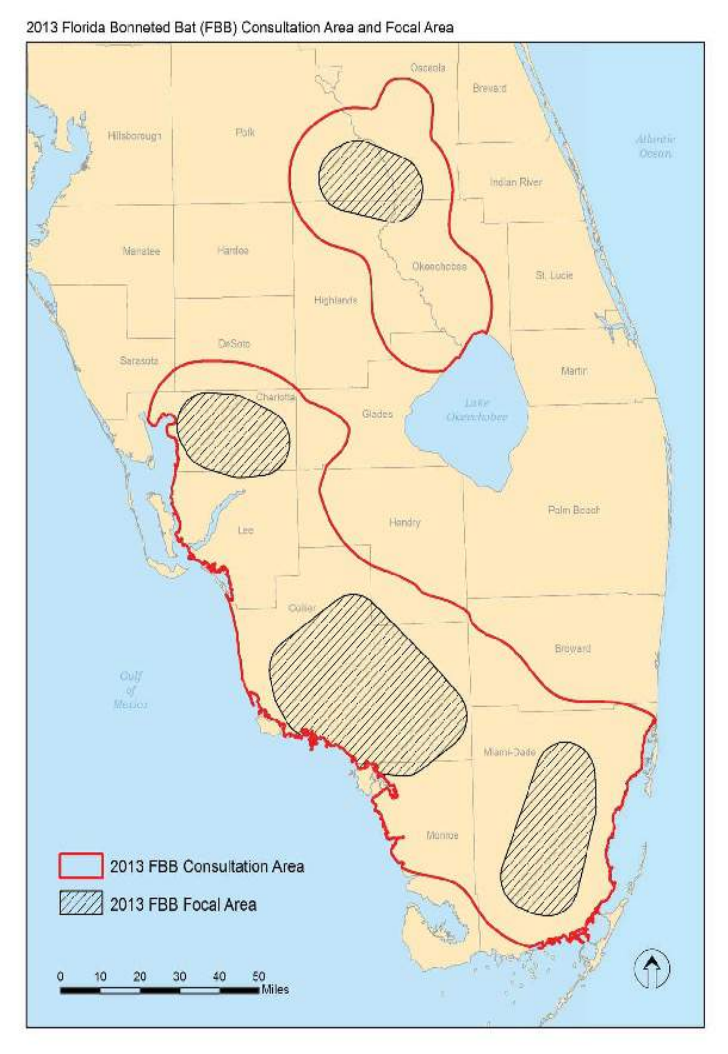


Wood Stork Core Foraging Areas



Non-Wetland Dependent Species

Florida Bonneted Bat



Gopher Tortoise

PROTECTED SPECIES CONTRACTOR TRAINING

GOPHER TORTOISE
A LEGALLY PROTECTED SPECIES UNDER FLORIDA LAW (CHAPTER 68A-27 F.A.C.)

Description
The gopher tortoise is a medium-sized land turtle with stumpy hind feet and flattened, shovel-like forelimbs designed for digging in sandy soil. Gopher tortoises average 9 to 11 inches in length, although juveniles can be as small as 2 or 3 inches. Their shells are medium to dark brown in color, although juveniles may be yellowish brown.

Where They Are Found
Within the construction area, the gopher tortoise inhabits dry upland areas with a sparse tree canopy and abundant low growing vegetation, such as vacant lots and roadsides. It spends much of its time in long burrows that offer refuge from cold, heat, drought and predators. Gopher tortoise burrows can often be spotted because of the sand mound or "apron" created during excavation at the burrow entrance. Gopher tortoise burrow openings are half-moon shaped with the curve at the top. Burrows average 15 feet long and 7 feet deep.

If You See a Gopher Tortoise or Burrow
1. Cease work and maintain a minimum 25 feet protective buffer from the burrow or tortoise.
2. Immediately contact the project ecologist (JE) for guidance at **(239) 872-4095**.
3. Do not disturb or touch the gopher tortoise or its burrow in any manner. Only the project biologist may come into contact with a gopher tortoise or its burrow.
4. The project engineer will determine whether it may be possible to continue construction activities while maintaining a minimum 25' protective buffer from the burrow. The project biologist will assess the status of the burrow to determine if it is potentially occupied.
5. It is the contractor's responsibility to inspect the project area, as well as any proposed staging areas not identified in the construction plans, at a frequency needed to ensure that no work occurs within 25' of a gopher tortoise burrow.

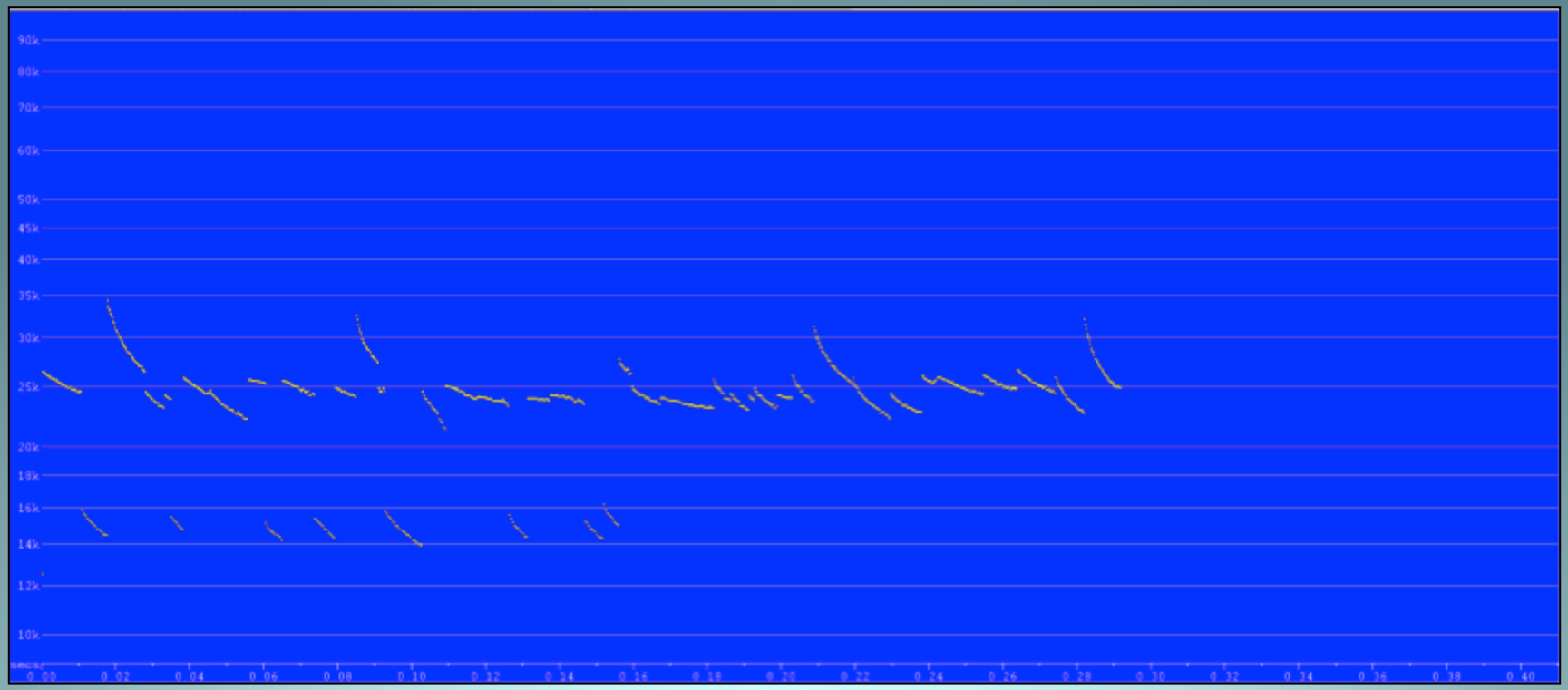
JOHNSON ENGINEERING

2122 Johnson Street
Fort Myers, FL 33901
(239) 334-0046
Environmental Department

Violations of state and federal law are punishable by fines and/or imprisonment.

SM3 BAT Ultrasonic Bat Call Recorder

Bonneted bat, *Eumops floridanus* (14-16 kHZ) on bottom with Brazilian free-tailed bat, *Tadarida brasiliensis* (22-34 kHZ) on top



Mitigation Options

- Onsite
- Offsite
- Mitigation/Conservation Bank
- Regional Offsite Mitigation Area

On-site Mitigation

- Required to be placed under a conservation easement
- Applicant must provide proof of financial responsibility for mitigation >$25k
- Monitoring (typically 5 years)
- Management required in perpetuity

10.2.7 (Environmental Resource Permit Manual) Secondary Impacts

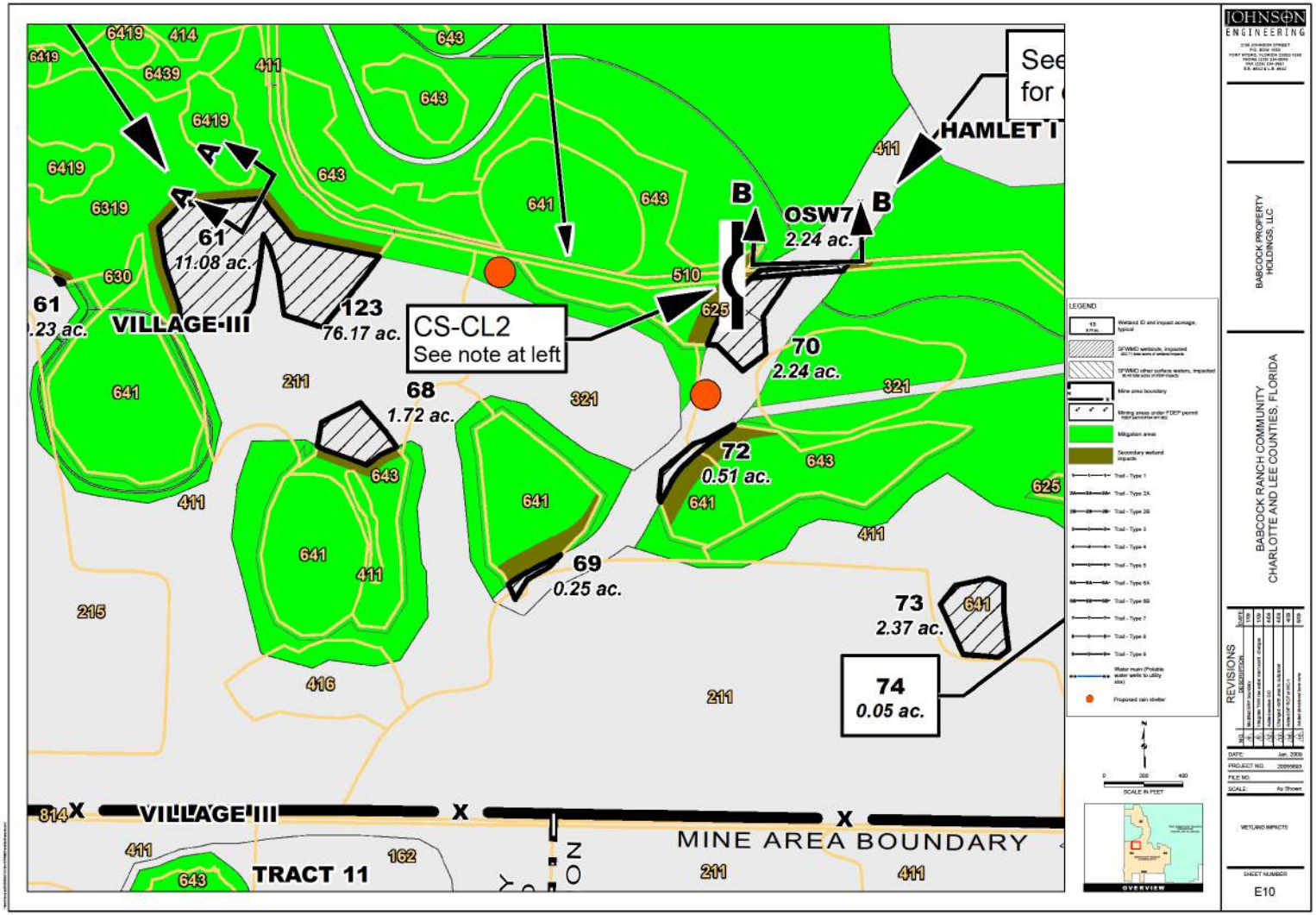
Pursuant to paragraph 10.1.1(f), an applicant must provide reasonable assurances that a regulated activity will not cause adverse secondary impacts to water resources…

Secondary Impact Criteria

- Proposed activity will not result in violations of water quality standards
- Secondary impacts to the habitat functions of wetlands associated with adjacent upload activities will not be considered adverse if buffers, with a minimum width of 15 ft. and an average width of 25 ft., are provided
- Impacts to uplands that support wetland dependant species
- Impacts to archeological and historic resources
- Future activities or phases for water quality impacts

Secondary Impacts

ERP Secondary Impact Map

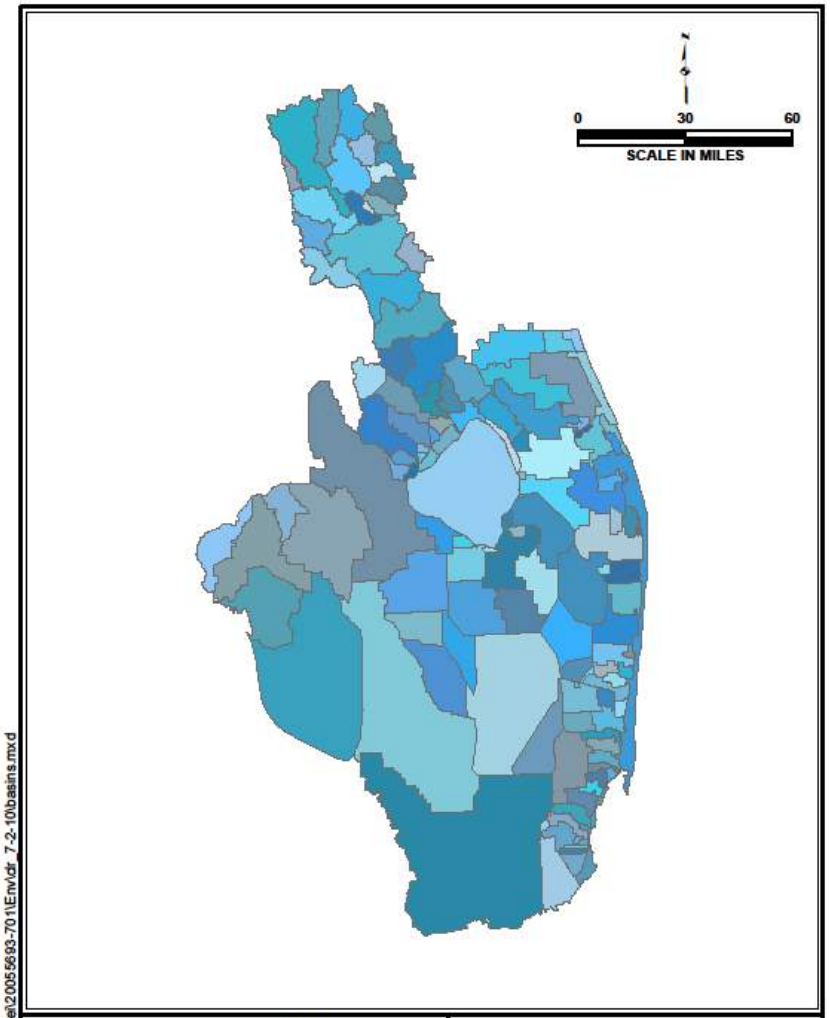


Cumulative Impacts

Section 10.2.8 *"..an applicant must provide reasonable assurances that a regulated activity will not cause unacceptable cumulative impacts upon wetlands and other surface waters within the same drainage basin."*

Cumulative Impacts

Cumulative Impact Basin Map



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JOHNSON ENGINEERING

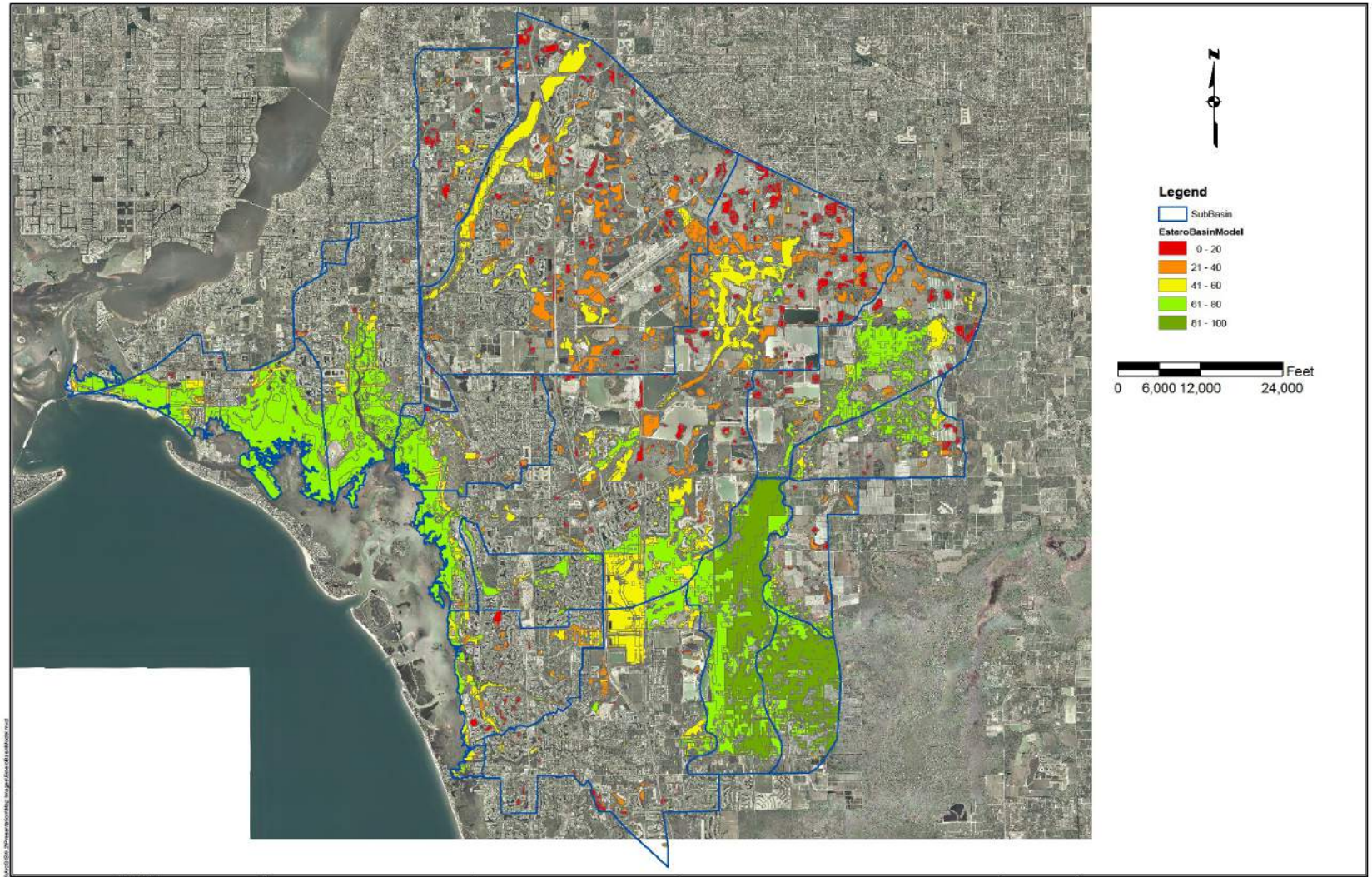
2122 JOHNSON STREET
P.O. BOX 1550
FORT MYERS, FLORIDA 33902-1550
PHONE (239) 334-0046
FAX (239) 334-3661
E.B. #642 & L.B. #642

SFWMD Basins

DATE	PROJECT	FILE NO.	SCALE	SHEET
June 2010	20055693	--	As Shown	1

Cumulative Impacts

Estero Bay Cumulative Impact Map



REVISIONS

* Imagery provided by AerialsExpress Dated 2006

EarthMark Cumulative Impact Study
Lee County, Florida

JOHNSON ENGINEERING

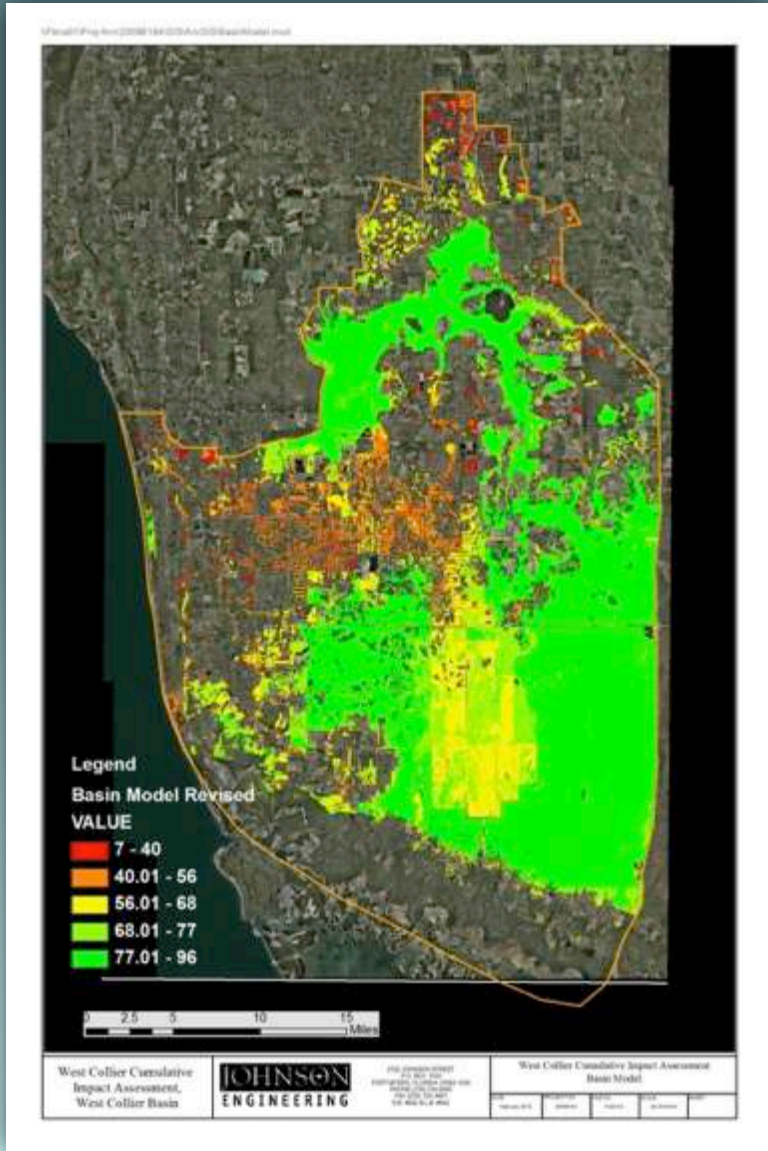
2122 JOHNSON STREET
P.O. BOX 1550
FORT MYERS, FLORIDA 33902-1550
PHONE (239) 334-0046
FAX (239) 334-3661
C.B. #642 & L.B. #642

Appendix C
Cumulative Impact Study Model Map

DATE	PROJECT	FILE NO.	SCALE	SHEET
01/14/08	20044835	00-00-00	As Shown	Exh. C-1

Cumulative Impacts

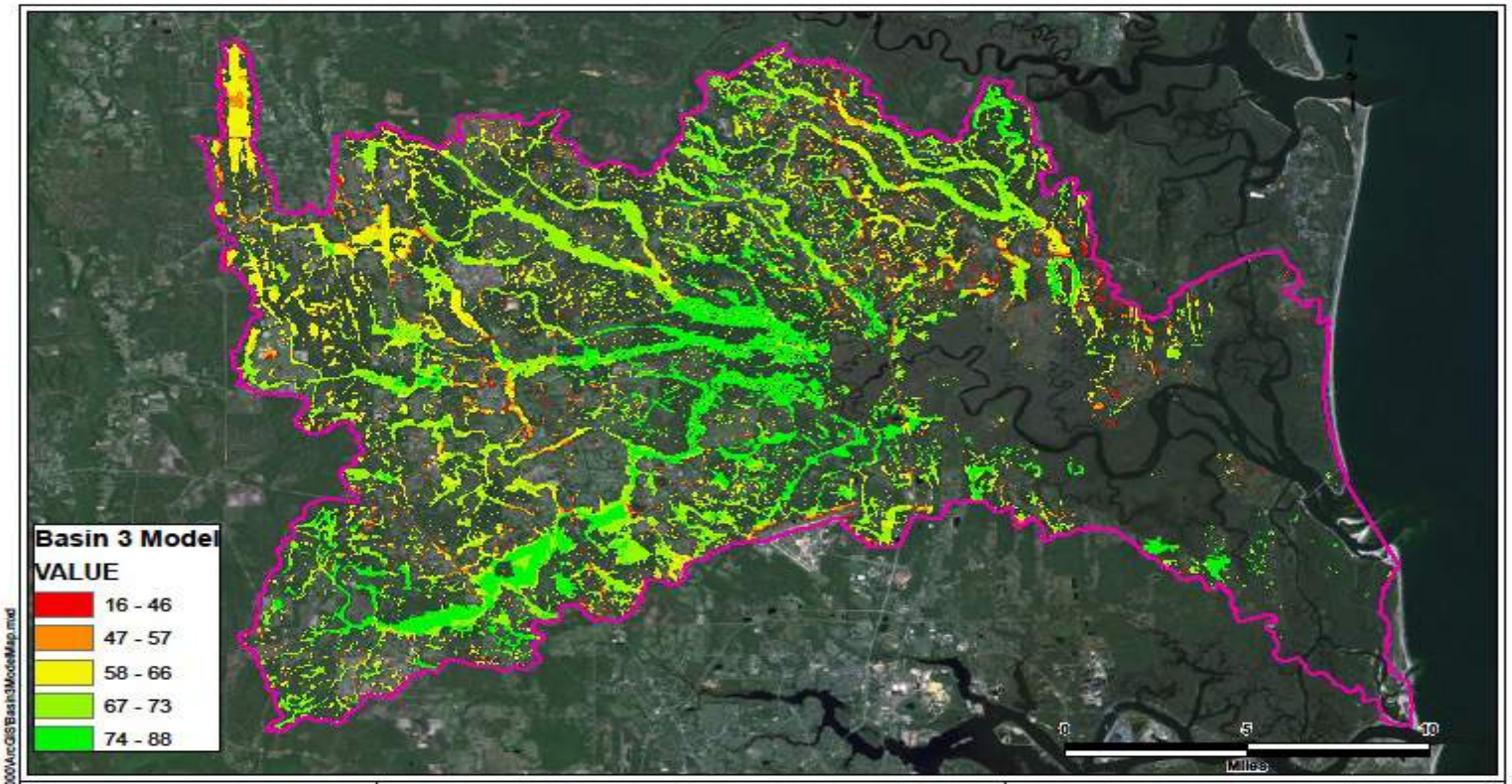
West Collier Cumulative Impact Map



Cumulative Impacts

SJRWMD Basin 3

Cumulative Impact Map



Basin 3
Cumulative Impact Assessment
Airport Rd.

JOHNSON ENGINEERING

2122 JOHNSON STREET
P.O. BOX 1550
FORT MYERS, FLORIDA 33902-1550
PHONE (239) 334-0046
FAX (239) 334-3661
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Basin 3 Model

DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
3/27/14	20139518	00-00-00	1" = 0000'	1