SEMINOLE TRIBE OF FLORIDA

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VACANT, Vice Chairman

LARRY HOWARD, Brighton Councilman

CHRISTOPHER OSCEOLA, Hollywood Councilman

MARIANN BILLIE, Big Cypress Councilwoman

LAVONNE ROSE, Secretary

PETER A. HAHN, Treasurer

MEMORANDUM

TO: **Ranthus Fouch, Sr. Civil Engineer – Public Works**

FROM: **Megan Mills, Permitting Manager - ERMD**

RE: **Environmental Compliance Review (ECR): Immokalee Raw Water Well 4 (Phase II-Wellhead and FM) (ERMD-05-2023-023520)**

DATE: **August 18, 2023**

In accordance with applicable policies, procedures, ordinances and regulations, ERMD has completed an environmental review of this project. The proposed action is the approval for the following activity associated with the Immokalee Raw Water Well 4:

- Work on existing underground utilities and above grade well surface facilities, including wellhead, concrete slab, and above grade well piping, and appurtenances;
- Installation of a new raw water main, fittings, valves in connection to the existing raw water main;
- Re-grading of the site;
- Removal of portions of the existing fence;
- Installation of new security fencing;
- Replacement of the curb, gutter and concrete sidewalk;
- Roadway reconstruction; and
- Depositing gravel around well slab.

Previous clearances exist under ERMD-15-045 - Immokalee WWTP, ERMD-01-2018-010937 - IM Raw Water Well No. 4, and ERMD-06-2020-015802 - Public Works WTP on Eustis Ave. **As soon as work is complete, excavated areas must be back filled and the site returned to its previous conditions.** The proposed project is located at 435 Eustis Ave East within the Immokalee Reservation, Collier County (Township 47 South, Range 29 East, Section 10).

Based on details submitted, ERMD has prepared the following Environmental Compliance Review (ECR) package to include the necessary reviews and backup documentation. This concludes the environmental review. Work may proceed in accordance with the conditions and mitigation measures listed below, and as referenced in the attached clearance documents. This document must be available at the work site for reference. **7 days prior to the commencement**

Environmental Compliance Review (ECR) Checklist Conditions:
See ECR Checklist for THPO, Wildlife, & Wetlands Conditions.
ERMD must be notified with a project schedule and details 30 days prior to project "kick off".
Forward schedule and project details to ERMDRequest@semtribe.com before commencing construction.

of any construction or clearing, ERMD must be notified with a project schedule and details forwarded to ERMDCompliance@semtribe.com (954-965-4380 Ext. 10631). Any spills or releases of hazardous materials must be reported immediately to ERMD. STOF-Public Works Department must also be notified at digpublicworks@semtribe.com to ensure all existing utilities are located and cleared before any ground disturbance occurs. If changes in the project, scope of work or location should occur, please contact ERMD by email at ERMDRequest@semtribe.com or by phone at 954-965-4380 Ext. 10631.

MM: tm: ch

Cc: Whitney Sapienza, Director; file

Attachments:
☒Environmental Compliance Review Checklist
☒THPO Clearance Letter
☒Threatened and Endangered Species Review
☒ERMD Wetland Memorandum
☐HUD Categorical Exclusion
☐Wells Fargo Record
☐BIA Categorical Exclusion Checklist
☐BIA Categorical Exclusion: Routine Activities

Brochure:
☐How do I apply for a NPDES Permit?
☐Audubon's Crested Caracara
☐Eastern Indigo Snake
☐Florida Bonneted Bat
☐Florida Panther
☐Bald Eagle
☐Bluetail Mole Skink
☐Florida Grasshopper Sparrow
☐Florida Scrub Jay
☐Gopher Tortoise
☐Red Cockaded Woodpecker
☐Sand Skink
☐Snail Kite
☐Wood Stork

ENVIRONMENTAL COMPLIANCE REVIEW CHECKLIST

Required Documentation

A. National Environmental Policy Act (NEPA) ☑ Required ☐ Not Required

☐ Categorical Exclusion
☐ Environmental Assessment
☒ Environmental Compliance Review

B. Historical Preservation Act – Section 106 (THPO) ☑ Required ☐ Not Required

THPO Project #: 2023-174

☒ Cleared – No historic properties affected in the Area of Potential Effect (APE) as described. No cultural resources affected.
☐ Not Cleared – Archeological Site found within the Area of Potential Effect.

Conditions:

If an inadvertent discovery of archeological materials or human remains is made, all work should stop and the discovery must be reported to THPO. In the case of human remains please notify the Seminole Police Department immediately, then call the Office of the THPO.

C. Endangered Species Act – Section 7 ☑ Required ☐ Not Required

☐ Cleared – No listed species and/or designated critical habitat is present in APE
☒ Cleared – Listed species and/or designated habitat is present in the APE but appropriate mitigation measures have been obtained.
☐ Not Cleared – Listed species and/or designated habitat is present in the APE and the project cannot proceed without additional work.

Conditions:

- **ERMD requires any personnel involved in the project watch a Best Management Practices video for wildlife and have wildlife brochures on hand during construction. The video and brochures are available from ERMD upon request. Please feel free to contact me with any questions or concerns at (863)763-4128 x 15415.**

D. Wetlands ☑ Required ☐ Not Required

☐ Cleared with Conditions- Jurisdictional wetlands are not located within the identified project boundary. Conditions required for approval. See below.
☒ Cleared – Wetlands identified with project APE but appropriate mitigation or avoidance has been conducted.
☐ Not Cleared – Wetlands have been identified within the APE and the project cannot proceed without additional work.

Conditions:

Required Best Management Practices Surrounding Bodies of Water

Silt fence is required as per the attached specifications to prohibit sediment runoff into surrounding Waters of the U.S. from associated construction activities. Construction activities require a 15 foot minimum to 25 foot average set back from wetlands. Implementation of best management practices is required to minimize the adverse impacts of soil erosion and sedimentation to the downstream water bodies. Construction sites are to establish maintenance areas for activities, which are capable of causing migration of pollutants, away from water bodies. Such activities are fuel and maintenance staging areas, mixing areas for pesticides, herbicides and fertilizers. Effective minimization and control of erosion surrounding water bodies are ensured by scheduling grading and construction activities to minimize soil exposure, retaining existing vegetation when applicable, stabilization immediately following final grading (mulching, vegetating, and sodding), controlling runoff and erosion, installation of sediment traps (silt fences, turbidity curtains, perimeter dikes, and inlet protections), and regular inspections of the implemented control measures.

E. National Pollutant Discharge Elimination System ☐ Required ☑ Not Required

☐ Notice of Intent (NOI) under Construction General Permit
☐ Individual NPDES permit

Conditions:
Construction contractor is required to file a NOI for the NPDES Permit to the EPA (see attached brochure for more information). The ERMD requires a copy of the NOI and receipt from the EPA for construction to proceed. The contractor is responsible for providing the appropriate 14 day notice of construction as required by permit.

F. Seminole Water Commission ☐ Required ☑ Not Required

☐ Well Construction\Abandonment Permit Required [*Permit #:*_____]
☐ Storm Water Management Permit Required
☐ Seminole Water Commission [Permit # _____ *Approval Date:*]

G. Spill Prevention Control & Countermeasure (SPCC) ☐ Required ☑ Not Required

☐ Self-Certified SPCC Plan (< 10,000 gallons)
☐ PE sealed SPCC Plan (> 10,000 gallons)

H. Historical Review/ Contamination Assessment ☐ Required ☑ Not Required

Historical Review
☒ Not Completed – Historical review has not been completed for this APE
☐ Completed – Historical review indicates that no additional review is required within this APE

☐ Completed – Historical review indicates that site inspection and contamination assessment be conducted

Contamination Assessment

☒ Not Completed – Contamination assessment has not been completed for this APE

☐ Completed –Assessment indicates no contaminants present or contaminant levels are within allowable EPA limits and no remediation activities are required

☐ Completed – Assessment indicates that contaminant levels are above allowable EPA limits and remediation activities are required for the project to proceed.

Conditions:

During any activity, if soil or groundwater contamination is encountered or a spill of a hazardous material or oil/gasoline occurs, stop work in the area and contact ERMD at 954-965-4380 or 863-763-4128 immediately.

THPO File #/Application#: [2023]-[174]
Energov #: 05-2023 -023521

Project Description:	Immokalee Raw Water Well 4 (Phase II-Wellhead and FM) - 435 Eustis Avenue, Immokalee, FL 34142
Authorized Activities:	This base plan application is for clearance of the above grade well surface facilities, including wellhead, concrete slab, and above grade well piping, and appurtenances. This project scope also includes work on underground utilities, such as the installation of new raw water main, fittings, valves and connection to existing raw water main. Additional Civil work includes, re-grading site, removing portions of existing fence, installing new security fencing, replacing curb & gutter, roadway reconstruction, concrete sidewalk replacement, and gravel around well slab.
Project Location:	Immokalee Reservation
Date of Issuance:	June 2, 2023
Clearance Duration:	1 Year from Date of Clearance

This Clearance is issued pursuant to THPO File No: 2023-174 dated June 2, 2023. This Clearance is issued under the provisions of Seminole Tribe of Florida Ordinance C-01-16, Cultural Resource Ordinance ("CRO"), and, to the extent they are relevant, the agreements with the United States National Park Service and the Advisory Council on Historic Preservation.

A review **Immokalee Raw Water Well 4 (Phase II-Wellhead and FM) - 435 Eustis Avenue, Immokalee, FL 34142** area of potential effect (APE) was previously surveyed under THPO project 2011-001. It is our opinion that there will be no historic properties or no cultural resources affected [36 CFR 800.4(d) (1), STOF Cultural Resource Ordinance (C-01-16)] by this project. This clearance applies to the area of potential effects (APE) as described. Should that change a new survey may be required.

All activities authorized by this Clearance must be implemented as set forth, in compliance with the CRO, and in a manner respectful of the Seminole Tribe of Florida's culture. All information related to this Clearance is by this reference incorporated herein, regardless of attachment hereto.

All terms contained in this Clearance have the meanings given to them in the CRO except that references to "cultural resources" shall, herein refer collectively to "cultural resources" and "historic properties." Where a term is not defined in the CRO, the term will have its ordinary meaning. This Clearance shall be subject to the General and Special Conditions below.

Unanticipated Discoveries

Should future activities in this APE uncover any archaeological remains, activity in the immediate area must be stopped until a professional archaeologist from the TAS can evaluate the discovery. In the event that human remains are found during construction or maintenance activities, the STOF maintains compliance with provisions of the Native American Graves and Repatriation Act (NAGPRA). If human remains, funerary objects, or sacred objects are discovered inadvertently, the Tribal Historic Preservation Officer (THPO), Tribal Bioarchaeologist, and the Seminole Police Department must be notified

immediately by telephone and all further activity ceased. Additionally, a reasonable effort must be made to leave the discovery in place.

NOTICE OF RIGHTS

Unless otherwise provided for 7by Seminole Tribe of Florida Ordinance C-01-16, Cultural Resource Ordinance ("CRO"), any person whose interests are substantially affected by any decision, determination, action (including the issuance of permits), or enforcement action (including the imposition of administrative remedies) under the CRO may request an administrative hearing with thirty (30) days after the receipt of said decision, determination, action or enforcement action or receipt of a Notice of Violation, Cease and Desist Order, or Citation under the CRO. All requests for an administrative hearing must be timely filed by certified mail within the Seminole Tribe of Florida Tribal Historic Preservation Office ("THPO") and the Seminole Tribe of Florida Office of the General Counsel ("General Counsel").

Tribal Historic Preservation Office
30290 Josie Billie Highway
PMB 1004
Clewiston, Florida 33440

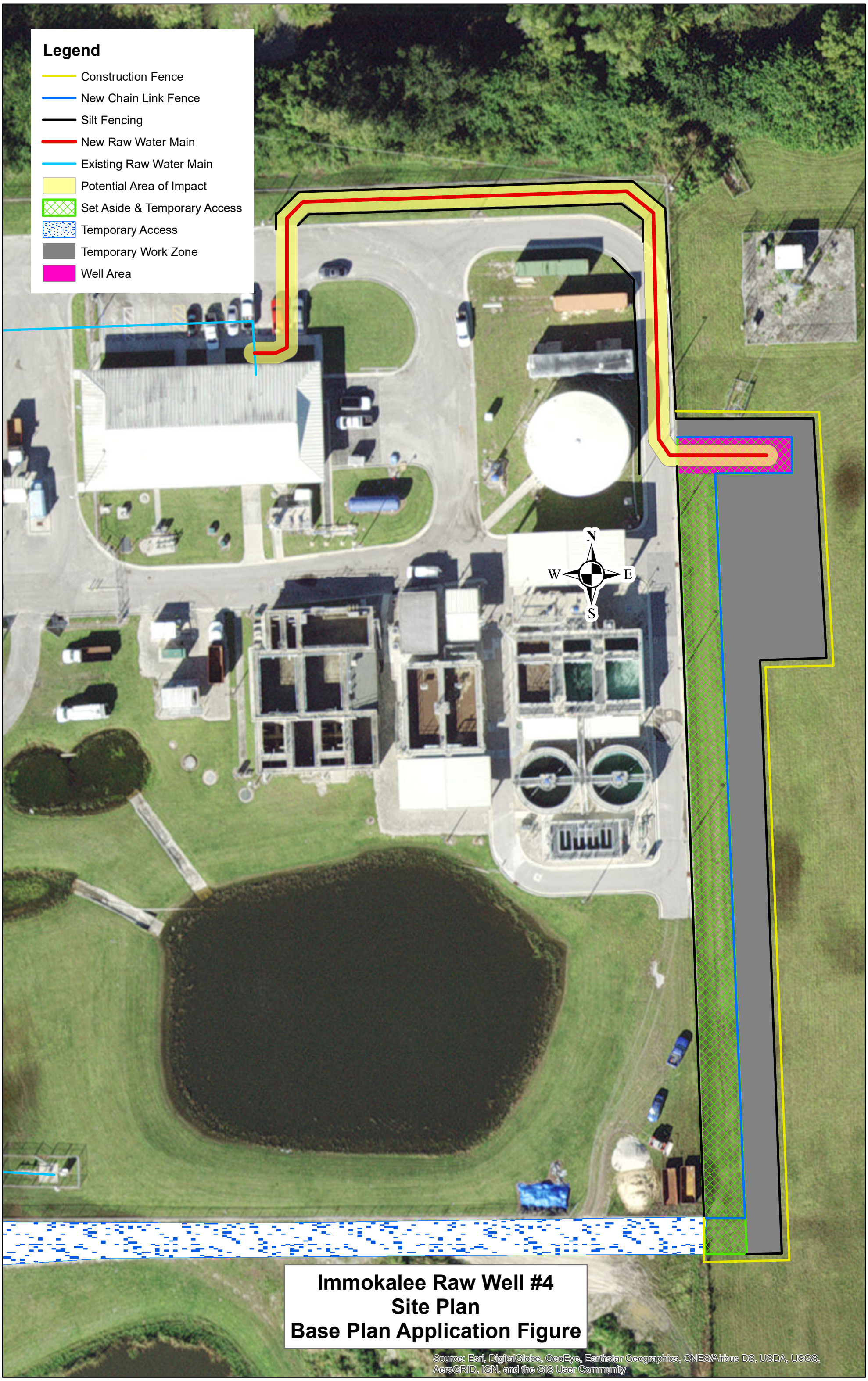
Seminole Tribe of Florida
Office of the General Counsel Office
6300 Stirling Road
Hollywood, Florida 33024

All requests for an administrative hearing must comply with the requirements of the CRO and implementing Administrative Procedures, which are available by request from the THPO or the General Counsel. For purposes of computing time, the day of the triggering act shall not be included. Further, the last day of the prescribed period (30 days) shall be included unless it is a Saturday or Sunday, or a designated Seminole Tribe of Florida holiday or other official closure of the Seminole Tribe of Florida government offices, in which event the period shall be extended to the next business day. Tribal holidays are those designated by the Seminole Tribe for closure of the Seminole Tribe's government offices and as published on the Tribal Historic Preservation Office website, www. stofthpo.com.

All persons waive the right to a hearing or any other legal remedy for failure to timely request an administrative hearing under the CRO. All administrative review and hearings must be exhausted before any person subject to the Seminole Tribe of Florida's jurisdiction can file a legal action in a civil court of competent jurisdiction. Failure to initiate an administrative review under the CRO will act as a waiver of any rights to file an action in any court of competent jurisdiction.

Any enrolled member of the Seminole Tribe of Florida whose interests are substantially affected may, in lieu of an administrative hearing under the CRO, request that the matter in question be decided by a traditional community-based decision-making process consistent with the Seminole Tribe's traditions. Such requests will be honored at the discretion of the Tribal Council of the Seminole Tribe of Florida. Decisions from a traditional community-based decision-making process are final and cannot be appealed nor can an administrative hearing be initiated. Any person requesting a traditional community-based decision-making process waives all rights to file an action in or appeal to any court of competent

jurisdiction and agrees to be bound by the decision resulting from the traditional community-based decision making process.


Legend
Construction Fence
New Chain Link Fence
Silt Fencing
New Raw Water Main
Existing Raw Water Main
Potential Area of Impact
Set Aside & Temporary Access
Temporary Access
Temporary Work Zone
Well Area
N
W
E
S
Immokalee Raw Well #4
Site Plan
Base Plan Application Figure
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SEMINOLE TRIBE OF FLORIDA

Cherise Maples
Environmental Resource Management Department Director

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Chairman

MITCHELL CYPRESS
Vice Chairman

LAVONNE ROSE
Secretary

PETER HAHN
Treasurer

MEMORANDUM

TO: **Stacy Myers, Assistant Director ERMD**

FROM: **Pauline Campi, Wildlife Biologist**

RE: **Wildlife Findings and Recommendations for the Immokalee Reservation**

DATE: **July 27, 2016**

CC: **FILE, Whitney Sapienza, Environmental Protection Specialist III**

The Endangered Species Act of 1973 (ESA) requires that all federal actions conduct Section 7 Consultation to assess potential impacts to any federally listed species and/or critical habitat as defined in 50 CFR §402.02. The Environmental Resource Management Department's (ERMD) wildlife staff has reviewed the proposed project and the determinations are discussed below.

The proposed federal action involves the authorization of the approval of construction within the Immokalee Master Plan (IM MP) foot print. The IM MP was permitted by the Army Corps of Engineers (ACOE) for wetland impacts under a Clean Water Act 404 Permit in 2008 (Permit# SAJ-2007-2175SP-JSC). Section 7 formal consultations with U.S. Fish and Wildlife Service (Service) was conducted in coordination with the 404 permit and a biological opinion for impacts to the Florida panther (*Puma concolor coryi*) was produced (Consultation Code 41420-2007-F-1144). The following projects were included in the IM MP (Figure 1): 4 housing clusters (about 258 unit), pre-school, retail building, church, administration building expansion, road infrastructure, and storm water treatment area. Provided the Permitted impacted area does not change, no further consultation with the Service is required.

The IM MP will result in the direct loss of approximately 505.5 acres of suitable foraging and dispersal habitat within the Florida Panther Primary, Secondary, and Other Zones. In order to compensate for the loss of habitat, the Tribe has provided 8,600 Panther Habitat Units (PHUs). The PHUs are provided by long term maintenance through hydrological restoration, exotic vegetation removal, and replanting of the mitigation lands. A total of 1,000.24 acres of Primary Zone habitat within the Big Cypress Advanced Mitigation Program (BCAMP) (Service Consultation Code: 41420-2007-F-1035) and approximately 14.6 acres of Primary Zone habitat associated with the purchase of 10.82 credits from the Big Cypress Mitigation Bank (BCMB) were provided as compensation.

Additionally, two areas of the Immokalee Reservation which are currently developed have been reviewed to allow the occurrence of specific activities. The first location is south of Stockade Road on Lena Frank Drive and the second location is north of Stockade Road, east of Mary Watts Billie Drive, south of Ah-Tah-Thi-Ki Road and the lake, and west of Dorothy Billie Jimmie Way within the Immokalee Seminole Indian Reservation, Hendry County, (Township 47 South, Range 29 East, Section 10&15) (Figure 2). These activities listed below are to only occur within the APE and will not result in the modification of land use or loss of a federally listed species habitat.

- Operation, maintenance, and replacement of existing facilities;
- Transfer of existing federal facilities to other entities;
- Human resources programs;
- Administrative action and other activities relating to trust sources;
- Self-determination and self-governance;
- Right-of-ways (ROW) ;
    - ROW inside another ROW
    - Service line agreement to an individual residence, Building, or well from an existing facility where installation will involve no clearance of vegetation from the right-of-way other than for placement of poles, signs (including highway signs), or buried power/cable lines
    - Renewals, assignments and conversions of existing rights-of-way where there would be essentially no change in use and continuation would not lead to environmental degradation
- Land conveyance and other transfers;
- Waste management;
- Roads and transportation;
    - Approval of utility installations along or across a transportation facility located in whole within the limits of the roadway right-of-way.
    - Construction of bicycle and pedestrian lanes and paths adjacent to existing highways and within the existing rights-of-way.
    - Installation of fencing, signs, pavement markings, small passenger shelters, traffic signals, and railroad warning devices where no substantial land acquisition or traffic disruption will occur.
    - Emergency repairs under 23 U.S.C. 125.
    - Acquisition of scenic easements.
    - Alterations to facilities to make them accessible for the elderly or handicapped.
    - Resurfacing a highway without adding to the existing width
    - Rehabilitation, reconstruction or replacement of an existing bridge structure on essentially the same alignment or location.

ERMD requires any personnel involved in the project watch a Best Management Practices video for wildlife and have wildlife brochures on hand during construction. The video and brochures are available from ERMD upon request. Please feel free to contact me with any questions or concerns at (863)902-3200 x13411.

Sincerely,

Pauline Campi, Wildlife Biologist
Seminole Tribe of Florida
Environmental Resource Management Department

Figure 1

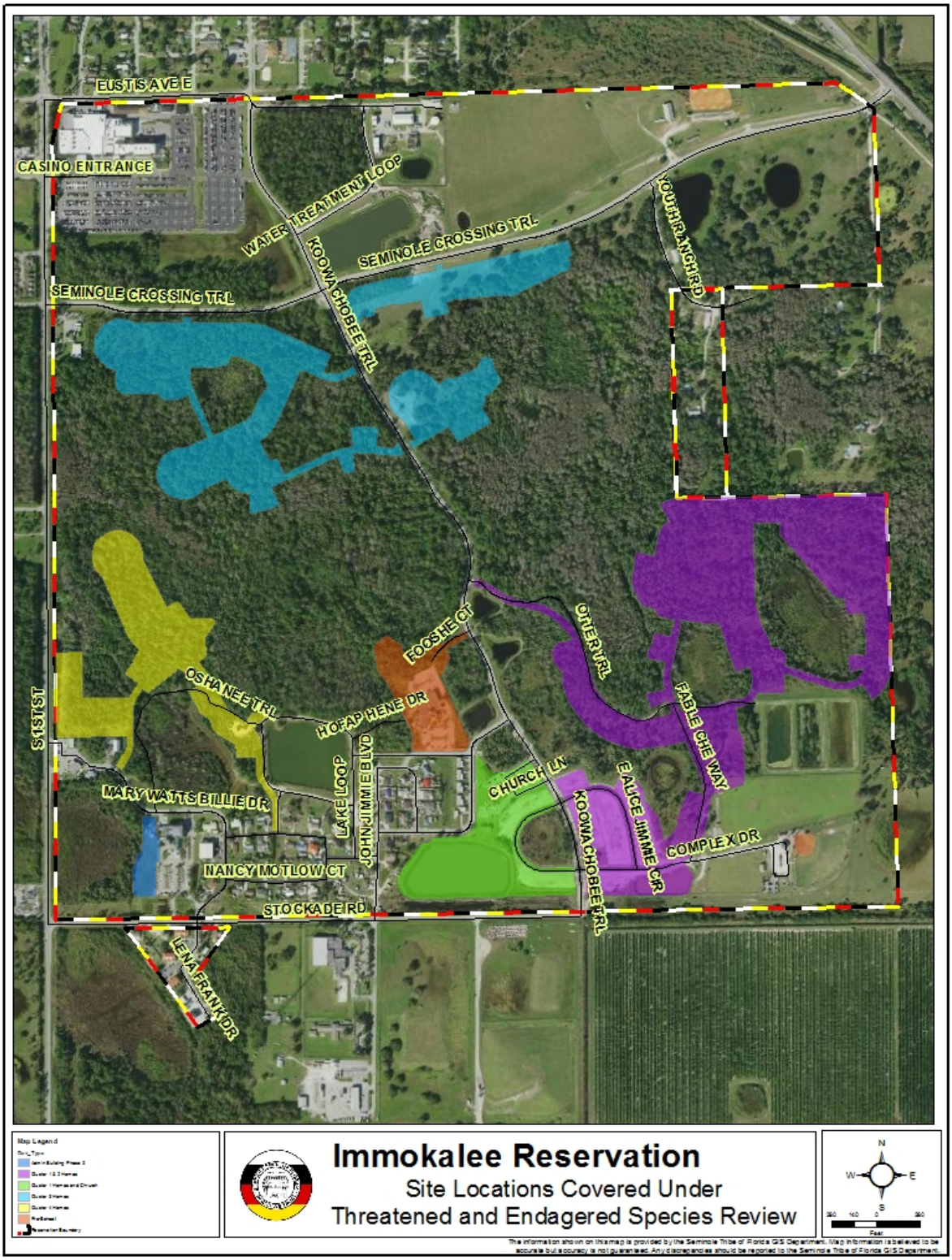
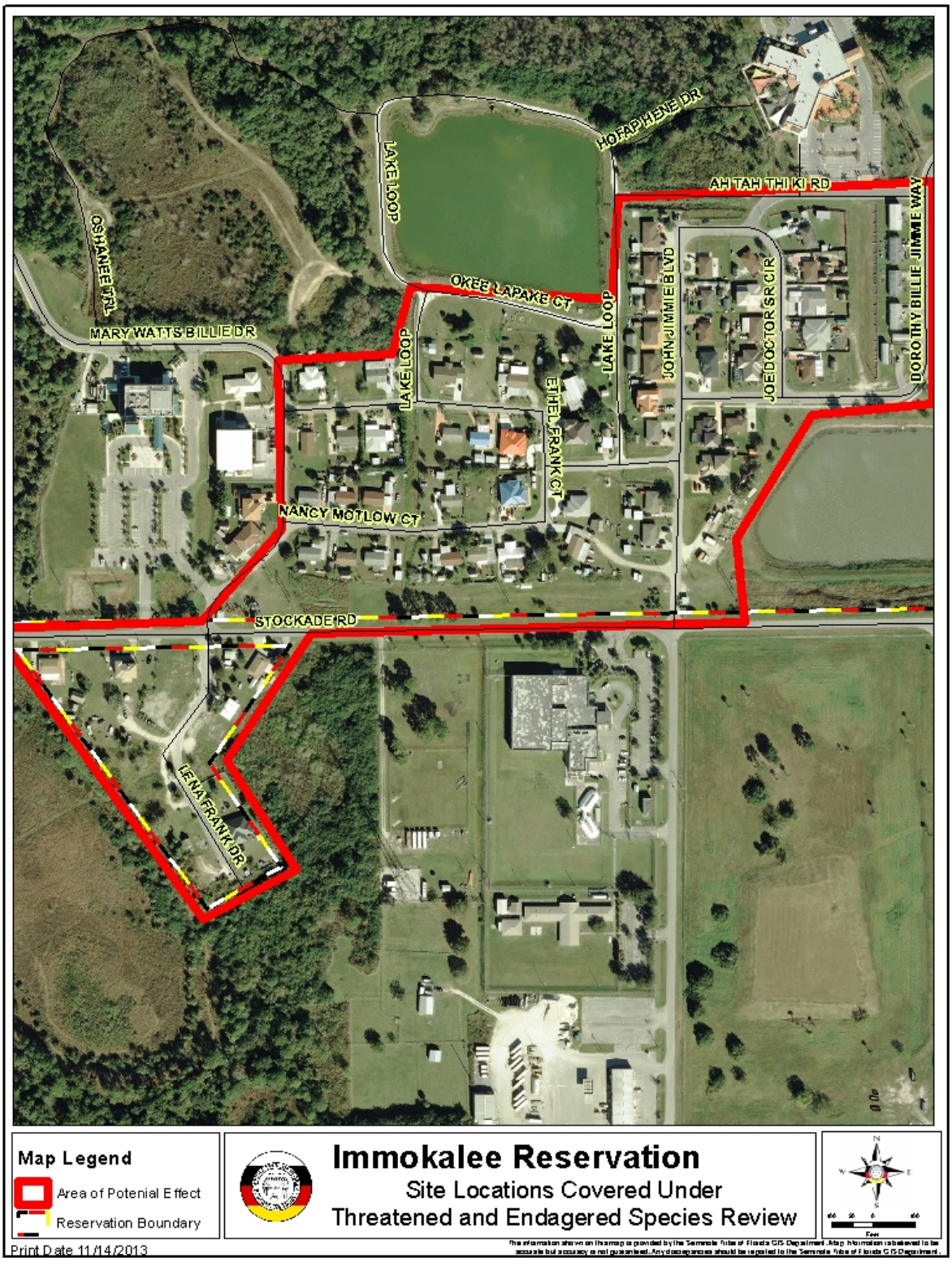


Figure 2


HOFAPHENE DR
AH TAH THI KI RD
LAKE LOOP
OSHANEE TRL
OKEE LAPAKE CT
MARY WATTS BILLIE DR
LAKE LOOP
LAKE LOOP
JOHNNIMMIE BLVD
JOE DOCTOR SR CIR
DOROTHY BILLIE JIMMIE WAY
ETHEL FRANK CT
NANCY MOTLOW CT
STOCKADE RD
LENA FRANK DR
Map Legend
Area of Potenial Effect
Reservation Boundary
Immokalee Reservation
Site Locations Covered Under
Threatened and Endagered Species Review
Feet
Print Date 11/14/2013

SEMINOLE TRIBE OF FLORIDA

CHERISE MAPLES
Environmental Resource Management Department Director

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MITCHELL CYPRESS.
Vice Chairman

LAVONNE ROSE
Secretary

PETER HAHN
Treasurer

MEMORANDUM

Date: **July 28th, 2016**

To: **Stacy Myers, Assistant Director**

From: **Whitney Sapienza, Environmental Protection Specialist III**

Subject: **Wetland Clearance Master Plan, Immokalee Reservation**

The above referenced site/project has been reviewed in accordance with Tribal development policies, procedures, ordinances and regulations as they apply to the Environmental Resource Management Department. Should you have any questions or concerns, please contact me at (954)965-4380 extension 10627.

☐ **Wetland Impacts** ☒ **No Wetland impacts**

COMMENTS:

In 2005, a Master Plan was developed to prioritize, mitigate, and develop infrastructure within the Immokalee Indian Reservation. Tribal Council authorized and directed the Utilities Department in coordination with other departments under the Tribal Council to implement and utilize the 2005 Master Plan (Resolution No. C-194-05). The 2005 Master Plan concentrates on optimizing the possible land uses while minimizing the impact on the existing wetlands and determining the most efficient and cost effective infrastructure for each system. During this analysis it was determined that jurisdictional wetlands are present within the boundary of the reservation. Wetland and Florida Panther Habitat impacts associated with the Immokalee Master Plan were permitted by the South Florida Water Management District (Third Amendment to the Nineteenth Annual Work Plan) and the United States Army Corps of Engineers (USACE) (SAJ-2007-2175(SP-JSC)). Mitigation credits for the associated impacts have been utilized to offset the impacts of the Master Plan. Therefore, projects which occur within the permitted boundary of the approved 2005 Master Plan are cleared for wetland impacts, please refer to attached plan. Projects proposed outside of the Master Plan boundaries are not cleared for wetland impacts and require additional review by ERMD's Wetland Section. Best Management practices detailed below must be implemented prior to construction activities occurring adjacent to wetlands or water bodies.

Mitigated impacts or no impacts to jurisdictional waters of the United States or Water Rights Compact jurisdictional wetlands are anticipated within the identified boundaries of the 2005 Master Plan. This blanket clearance applies to areas within the Immokalee Reservation 2005 Master Plan boundaries, which satisfy the stated conditions.

CONDITIONS:

Required Best Management Practices Surrounding Bodies of Water and Wetlands

Wet detention ponds, designed to hold permanent pools of water and storage for urban runoff, are located in the southern and northern sections of the Immokalee reservation. This area is designed to remove soluble pollutants such as nutrients, sediments, heavy metals, decaying organic matter, petroleum hydrocarbons, pathogens, and toxins associated with surrounding development runoff. Wetland habitats are also located throughout the reservation, water body and wetland locations are identified on the attached aerial. Construction activities require a 200 foot set back from wet detention ponds and a 15 foot minimum to 25 foot average set back from wetlands. Implementation of best management practices are required to ensure soil erosion and sedimentation minimize the adverse impacts to the downstream water bodies. Construction sites are to establish maintenance areas for activities, which are capable of causing migration of pollutants, away from water bodies. Such activities are fuel and maintenance staging areas, mixing areas for pesticides, herbicides and fertilizers. Effective minimization and control of erosion surrounding water bodies are ensured by scheduling grading and construction activities to minimize soil exposure, retaining existing vegetation when applicable, stabilization immediately following final grading (mulching, vegetating, and sodding), controlling runoff and erosion, installation of sediment traps (silt fences, turbidity curtains, perimeter dikes, and inlet protections), and regular inspections of the implemented control measures.

Required Best Management Practices Permitted impacts to Jurisdictional Wetlands

Within 60 days of completion of the authorized work or at the expiration of the construction widow of this permit (**July 11, 2033)**, whichever occurs first, the project manager shall submit as-built drawings of the authorized work and completed As-Built Certification Form (attached) to ERMD. The drawings shall be signed and sealed by a registered professional engineer and include the following:

A. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings (8 1/2-inch by 11-inch). The drawing should show all "earth disturbance" including wetland impacts, water management structures, and any on-site mitigation areas.
B. List any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the As-Built Certification Form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations and/or description of any deviations on the drawings and/or As-Built Certification Form does not constitute approval of any deviation by the U.S. army Corps of Engineers.
C. The Department of the Army Permit number.
D. Include pre- and post-construction aerial photographs of the project site, if available.

Only clean fill material must be utilized for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

Seminole Water Commission

Projects impacting or potentially impacting surface or ground water require additional approval through the Seminole Water Commission (SWC). Project plans and drainage calculations are presented to SWC for review and approval. Upon SWCs approval, a resolution and narrative of plans are presented to Tribal Council. Upon Tribal Council approval, plans are submitted as a work plan item to the South Florida Water Management District (SFWMD) Governing Board for approval. Additional information may be requested from the SFWMD. Once concurrence and conditions are received from the SFWMD, project work can commence onsite.

☐ **Cleared** ☒ **Conditions Required for Approval** ☐ **Not Cleared**

SEMINOLE TRIBE OF FLORIDA

CHERISE MAPLES
Environmental Resource Management Department Director

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Tribal Officers:

JAMES E. BILLIE
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MITCHELL CYPRESS.
Vice Chairman

LAVONNE ROSE
Secretary

PETER HAHN
Treasurer

MEMORANDUM

Attachments:

Immokalee Reservation Wetland Review Aerial

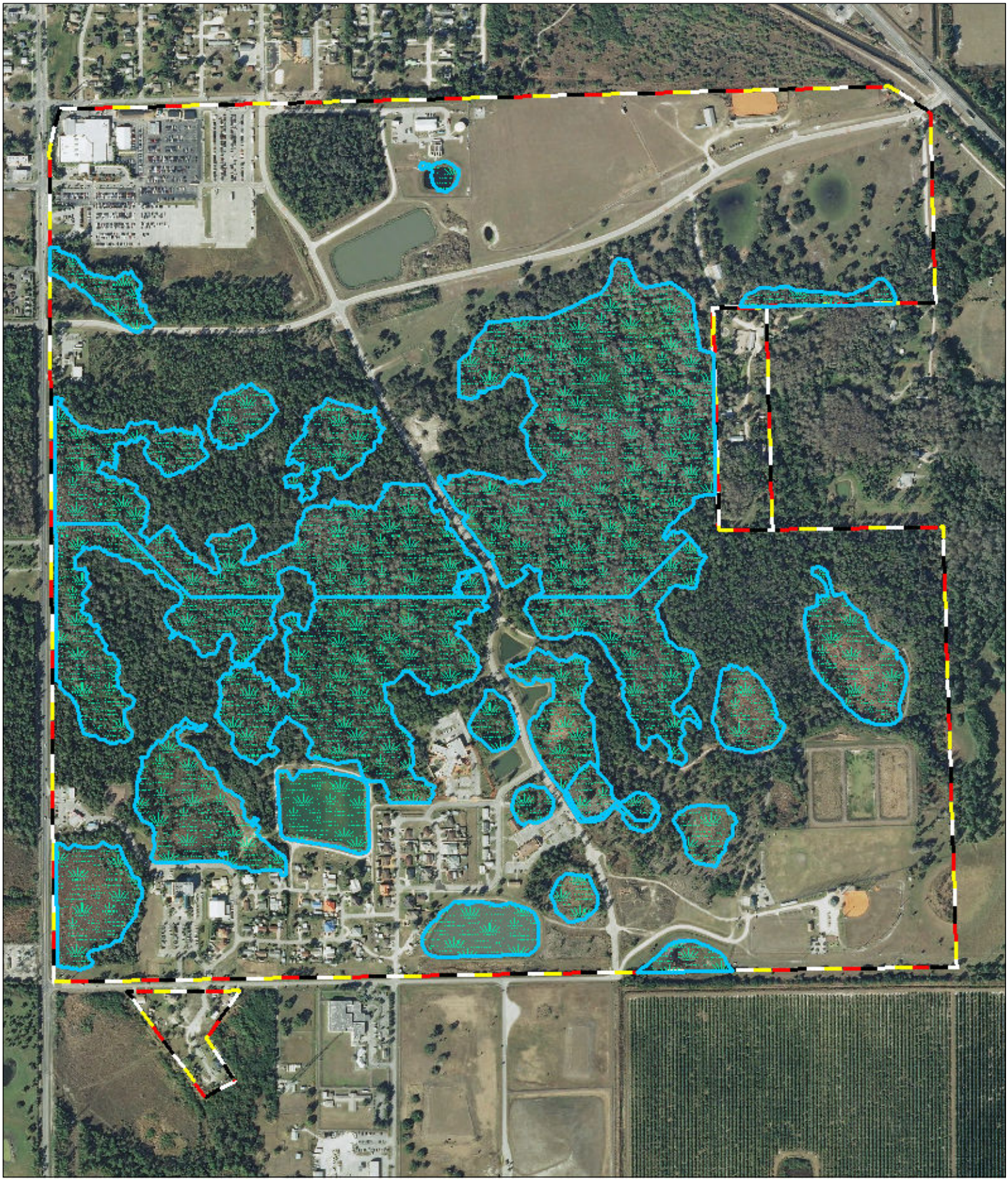
Immokalee Reservation Master Plan Blanket Clearance Boundary

Silt Fence Design Drawing

Immokalee Master Plan USACE Permit ((SAJ-2007-2175(SP-JSC))

SFWMD Approval

Cc: File



Legend

- Wetlands
- Reservation Boundary

Immokalee Reservation

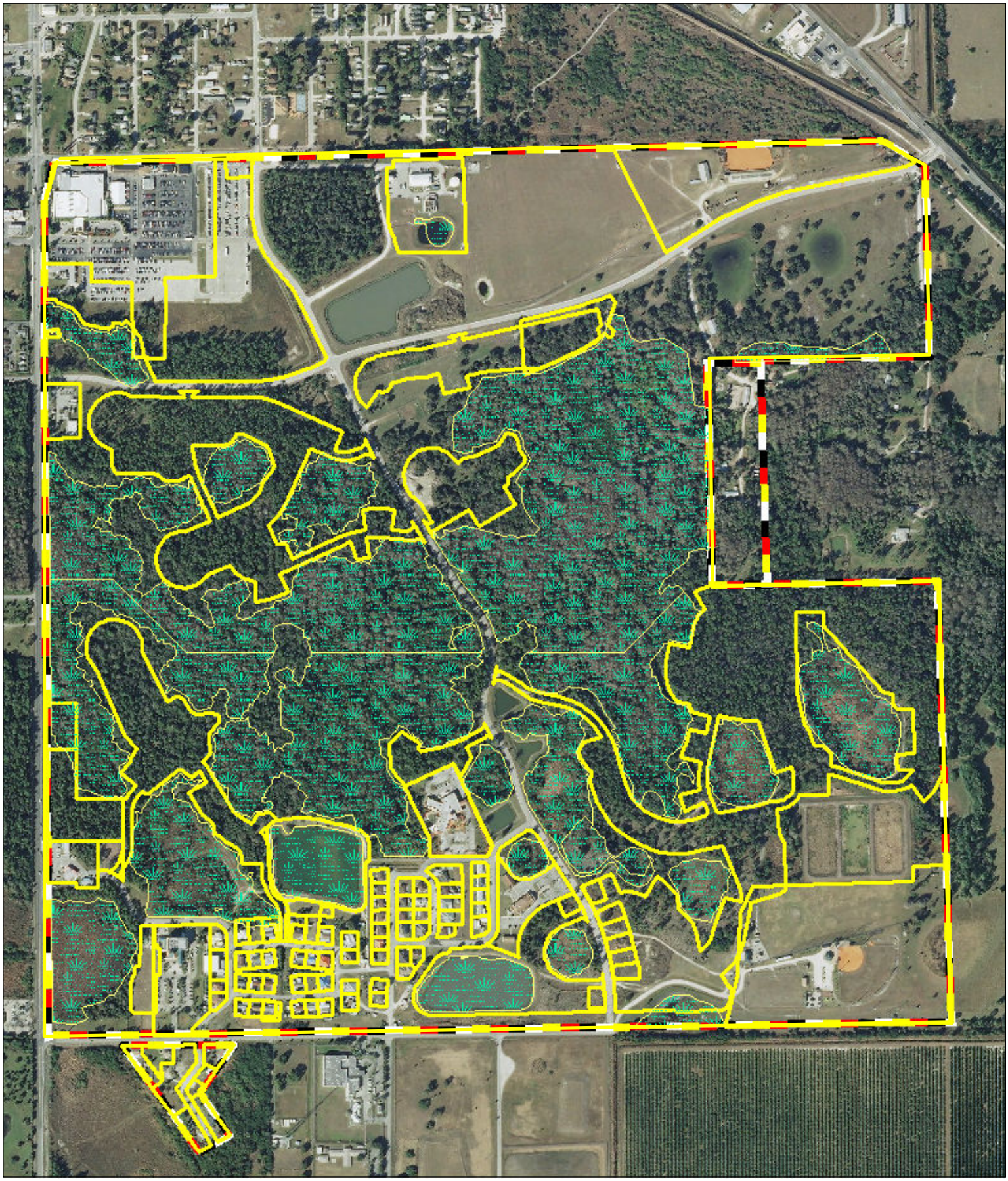
Immokalee Master Plan Boundaries
Wetland Review Aerial

N
W E
S

0 215 430 860
Feet

9/5/2014

The information shown on this map is provided by the Seminole Tribe of Florida GIS Department. Map Information is believed to be accurate but accuracy is not guaranteed. Any discrepancies should be reported to the Seminole Tribe of Florida GIS Department.



Legend

- MP boundary
- Master Plan Boundaries
- Wetlands

Immokalee Reservation

Immokalee Master Plan Boundaries
Wetland Review Aerial

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0 215 430 860
Feet

9/5/2014

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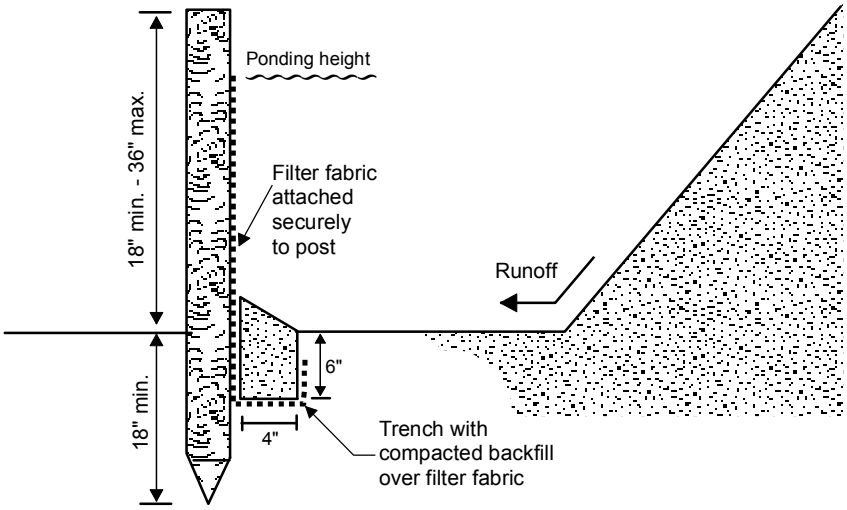
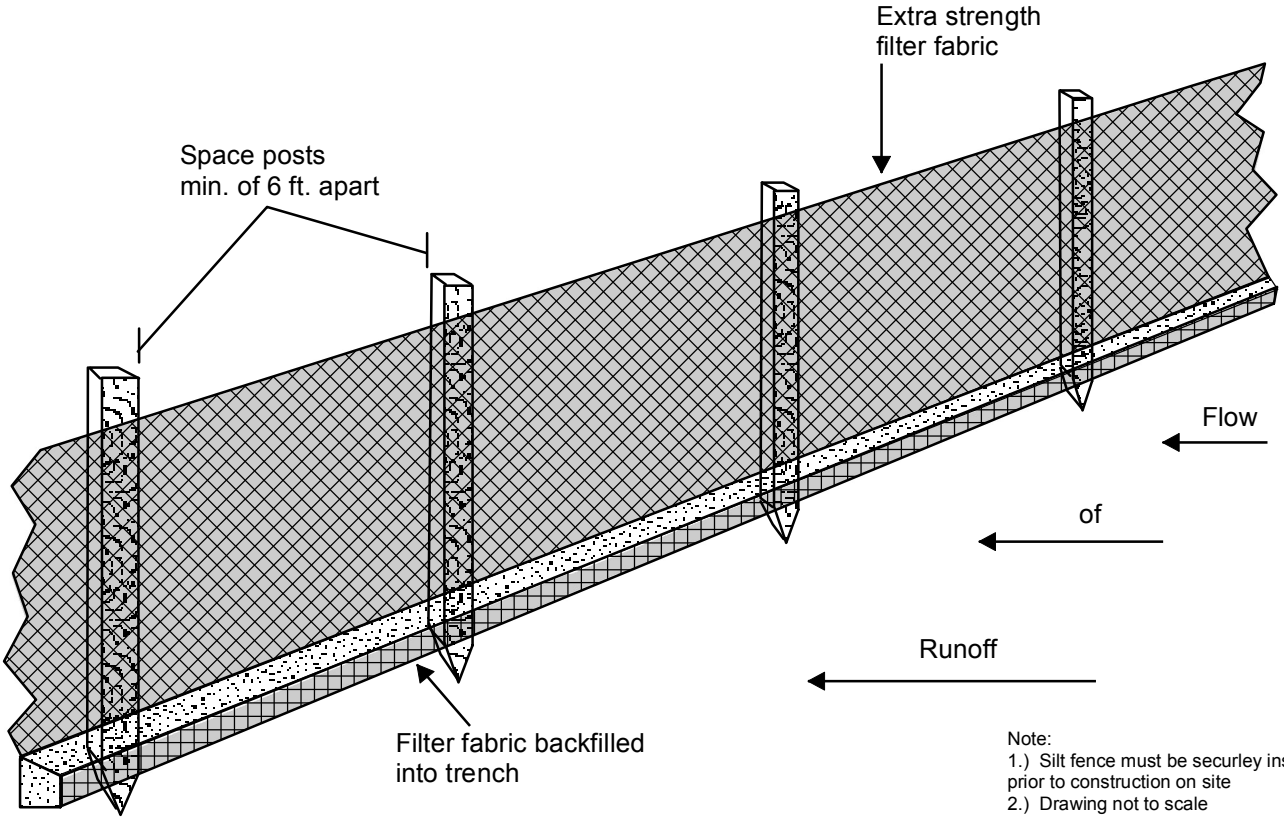
Silt Fence Design





Note:
1.) Silt fence must be securley installed prior to construction on site
2.) Drawing not to scale

Seminole Tribe of Florida Immokalee Reservation

Wetland BMP Condition
Silt Fence
Design Cross Section

Map & cross section designs created by Elizabeth Letts, Environmental Resource Management Department
1/13/2012

Cross Sections

*Silt Fence Installation Design

*Post Placement & Spacing

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
COCOA REGULATORY OFFICE
400 HIGH POINT DRIVE, SUITE 600
COCOA, FLORIDA 32926

REPLY TO
ATTENTION OF

July 11, 2008

Regulatory Division
SAJ-2007-2175(SP-JSC)

Mr. Craig Tepper
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, Florida 33024

Dear Mr. Tepper:

The U.S. Army Corps of Engineers has completed the review and evaluation of your permit application number SAJ-2007-2175(SP-JSC) for the Immokalee Master Plan.

Please find attached the federal permit authorizing work proposed by the Seminole Tribe of Florida. Please note, the permit must be signed by the Chairman in the space provided on the signature page of the permit, then returned to the letterhead address. The permit will be signed by the District Engineer and returned to you.

Should you or your staff have any questions, please contact Jeffrey S. Collins at the letterhead address, via electronic mail at *Jeffrey.s.collins@usace.army.mil*, or by telephone at 321-504-3771.

Sincerely,

Donald W. Kinard
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY PERMIT

Permittee: The Seminole Tribe of Florida

Permit No: SAJ-2007-02175(SP-JSC)

U.S. Army Engineer District, Jacksonville

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

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

Project Description: The project includes construction of 258 single-family dwelling units, Seminole Tribe of Florida Administration/Health Services Facilities, pre-school, neighborhood retail, church, and stormwater treatment facilities. The permittee is authorized to fill 1.04-acres of waters of the United States (wetlands). The work described above is to be completed in accordance with the 106 pages of drawings and supporting information affixed at the end of this permit instrument.

Project Location: The ±600-acre *Immokalee Master Plan* project is located in Collier County (Section 10, Township 47 South, Range 10 East), Florida.

Directions to site: If traveling south on SR 29 toward downtown Immokalee, turn east on Main Street, then turn south on CR 846 (S 1st Street). The project site is on the east side of CR 846 between Eustis Ave. and Stockade Road.

Latitude & Longitude:

Latitude..... 26.4068 North
Longitude.... 81.4103 West

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **July 11, 2033**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

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

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

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

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

Special Conditions:

1. **Reporting Address:** All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following address: U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232. The Permittee shall reference this permit number, SAJ-2007-2175(SP-JSC), on all submittals.

2. **Erosion Control:** Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas adjacent to wetlands shall be stabilized using sod, degradable mats, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work has been completed and the site has been stabilized.

3. **Mitigation Credit Purchase:** Within 30 days from the date of initiating the authorized work or 12 months from the effective date of this permit, whichever first occurs, the Permittee shall provide verification to the Corps that 0.93 federal mitigation bank credits have been purchased from the Big Cypress Mitigation Bank (SAJ-1997-6400). The required verification shall reference this project's permit number (SAJ-2007-2175).

4. **Biological Opinion:** This Corps permit does not authorize you to take an endangered species, in particular the Florida panther. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a BO under ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed US Fish and Wildlife Service Biological Opinion (BO) (Attachment 1) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The US Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

5. Within 6 months from the date of this permit, provide a credit/debit ledger for the Big Cypress Seminole Indian Reservation Native Area. The ledger shall reflect the debiting of 8,503 Panther Habitat Units for this project.

6. **As-Builts:** Within 60 days of completion of the authorized work or at the expiration of the construction window of this permit, whichever occurs first, the Permittee shall submit as-built drawings of the authorized work and a completed As-Built Certification Form (Attachment 2) to the Corps. The drawings shall be signed and sealed by a registered professional engineer and include the following:

a. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings (8½-inch by 11-inch). The drawing should show all "earth

disturbance," including wetland impacts, water management structures, and any on-site mitigation areas.

b. List any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, describe on the As-Built Certification Form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or As-Built Certification Form does not constitute approval of any deviations by the U.S. Army Corps of Engineers.

c. The Department of the Army Permit number.

d. Include pre- and post-construction aerial photographs of the project site, if available.

7. **Fill Material**: The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

8. **Wetland Avoidance/Minimization Areas**: The Permittee shall avoid the remaining ±300 acres of onsite wetlands, (as detailed on Drawings 2 through 4 of 4). These natural wetland areas were avoided as part of the permit application review process and therefore will not be disturbed by any dredging, filling, mechanized land clearing, agricultural activities, or other construction work whatsoever. The Corps reserves the right to deny review of any requests for future impacts to these natural wetland areas.

Further Information:

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

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

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

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

2. Limits of this authorization.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

6. Extensions: General Condition No. 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Permittee: IMMOKALEE MASTER PLAN
Permit No: SAJ-2007-2175(SP-JSC)
Page 7

Your signatures below, as co-permittees, indicates that you accept and agree to comply with the terms and conditions of this permit.

One index page, two Attachments and 4 Drawings, totaling 106 pages, are affixed behind this signature page.

Craig Hoppe for Mitchell Cypress July 13, 2008
(PERMITTEE) (DATE)

(PERMITTEE) (DATE)

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

7/15/2008
(DISTRICT ENGINEER) (DATE)
for PAUL L. GROSSKRUGER
Colonel, Corps of Engineers
Commanding

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

(TRANSFEREE-SIGNATURE) (DATE)

(NAME-PRINTED)

(ADDRESS)

(CITY, STATE, AND ZIP CODE)

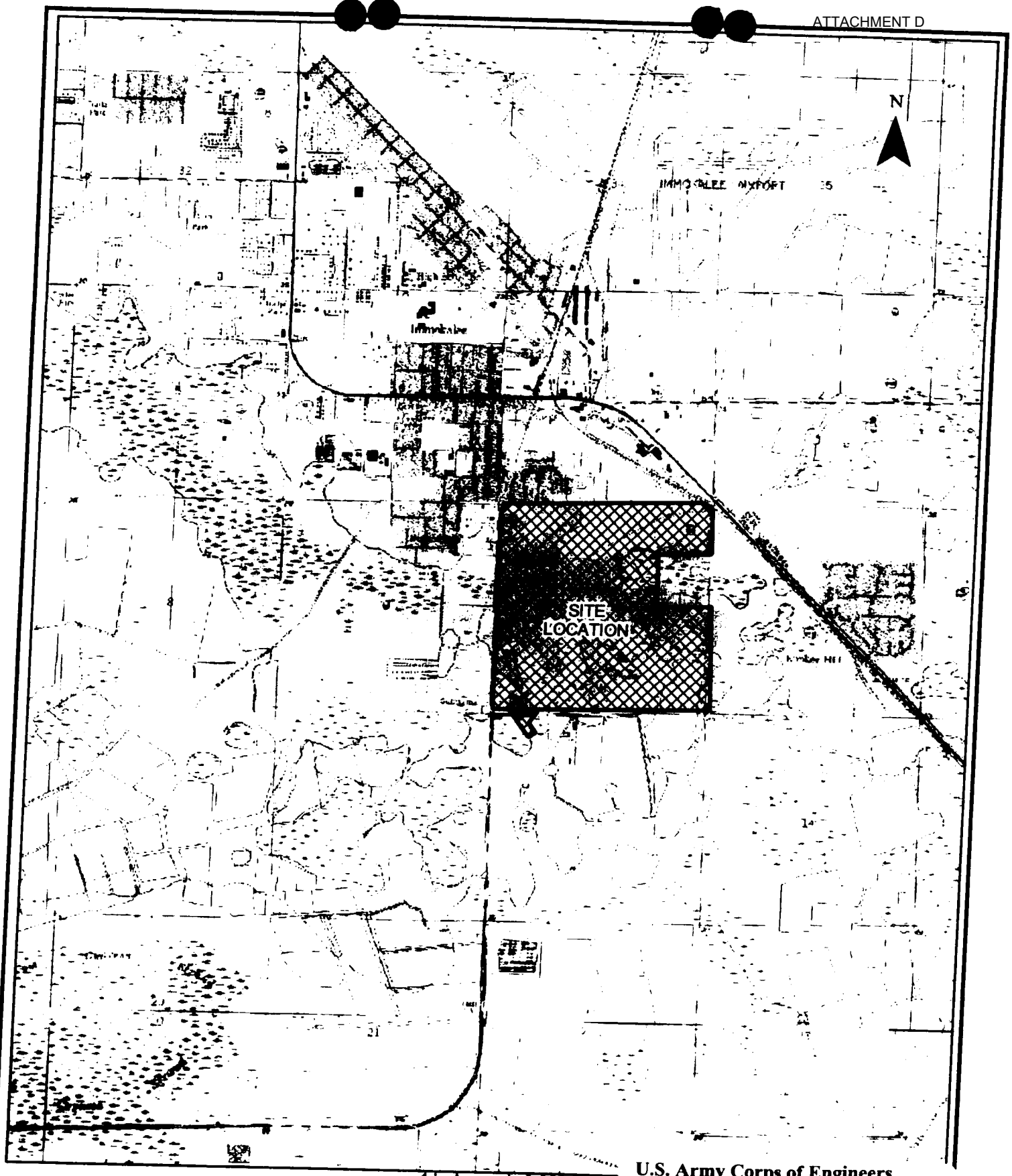
Attachments to Department of the Army Permit Number SAJ-2007-2175 (SP-JSC)

1. PERMIT DRAWINGS: 4 pages.

2. BIOLOGICAL OPINION: For Florida Panther "may affect" determination. 101 pages, (Attachment 1).

3. AS-BUILT CERTIFICATION FORM: For submittal by a professional engineer. 1 page, (Attachment 2).

ATTACHMENT D

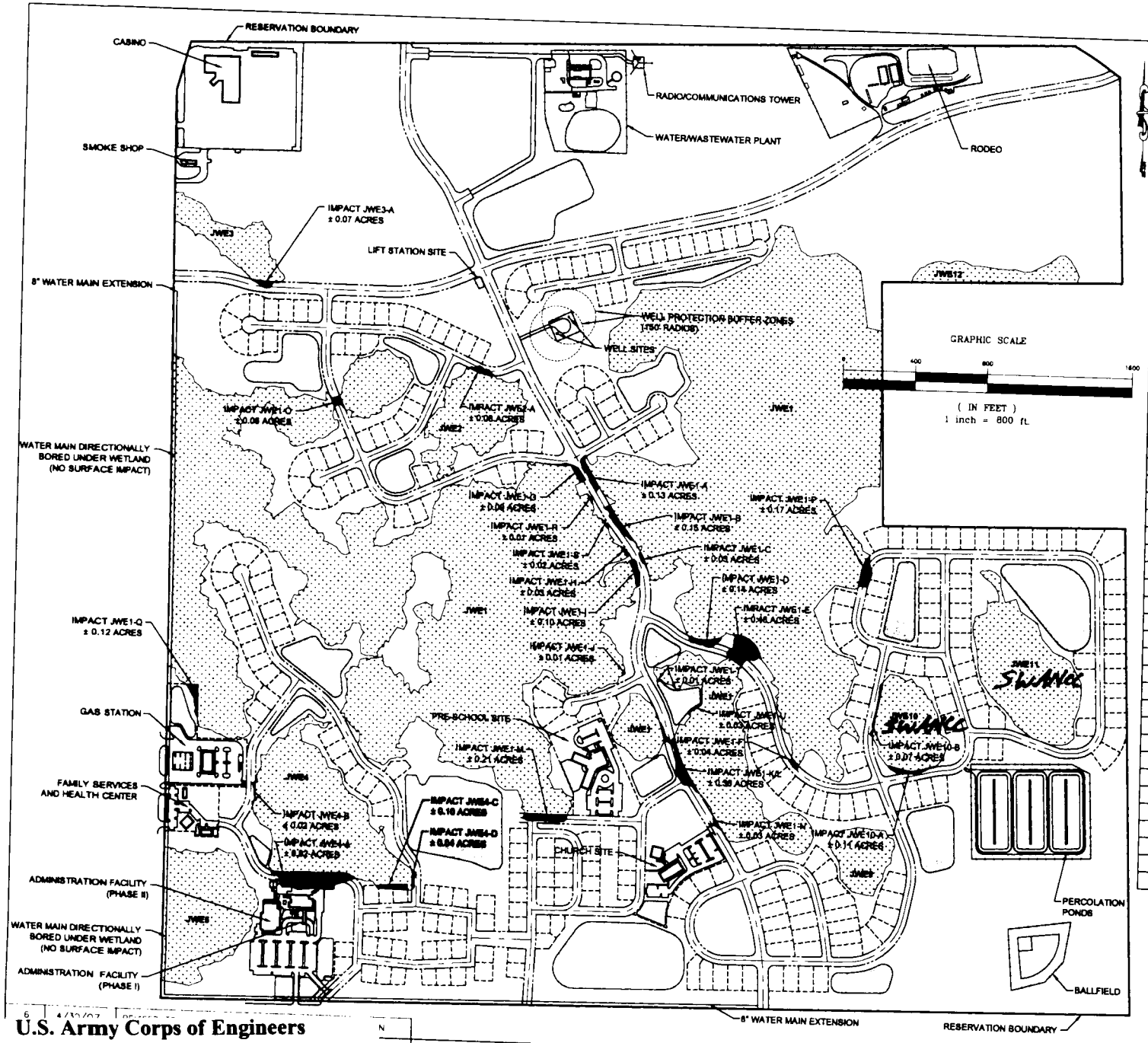


1 inch equals 3,000 feet

The Phoenix Environmental Group, Inc.
2916 East Park Avenue Tallahassee, FL 32301

Drawn By:RAS Checked By: TM
Wednesday, December 13, 2008 3:57:57 PM
C:\2004 Projects\Immokalee Master Permit\Site.mxd

U.S. Army Corps of Engineers
Permit # SAJ-2007-2175
Date: 7/10/2008
Drawing 1 of 4



LEGEND

- ROAD/STREET R/W (80' FOR MAIN ACCESS ROADS - N/S & E/W) (50' FOR RESIDENTIAL SUBDIVISION STREETS)
- RESIDENTIAL LOT
- STORMWATER TREATMENT AREA
- WETLAND AREA
- PREVIOUSLY PERMITTED WETLAND IMPACT AREA
- ADDITIONAL WETLAND IMPACT AREA

WETLAND IMPACT SUMMARY

IMPACT AREA DESIGNATION	TOTAL IMPACTS (ACRES)	PREVIOUSLY PERMITTED IMPACTS (ACRES)	ADDITIONAL FILL IMPACTS (ACRES)
JWE1 - A	0.13	0.12	0.01
JWE1 - B	0.15	0.15	-
JWE1 - C	0.03	0.03	-
JWE1 - D	0.14	0.14	-
JWE1 - E	0.46	0.22	0.24
JWE1 - F	0.04	0.04	-
JWE1 - G	0.09	0.04	0.05
JWE1 - H	0.03	0.01	0.02
JWE1 - I	0.10	0.04	0.06
JWE1 - J	0.01	0.01	-
JWE1 - K/L	0.36	0.36	-
JWE1 - M	0.21	0.21	-
JWE1 - N	0.03	0.03	-
JWE1 - O	0.06	-	0.06
JWE1 - P	0.17	-	0.17
JWE1 - Q	0.12	-	0.12
JWE1 - R	0.01	-	0.01
JWE1 - S	0.02	-	0.02
JWE1 - T	0.01	-	0.01
JWE1 - U	0.03	-	0.03
JWE2 - A	0.08	-	0.08
JWE3 - A	0.07	0.07	-
JWE4 - A	0.82	0.82	-
JWE4 - B	0.02	-	0.02
JWE4 - C	0.10	-	0.10
JWE4 - D	0.04	-	0.04
JWE10 - A	0.11	0.11	-
~~JWE10 - B~~	0.07	-	~~0.07~~
TOTALS	3.61	2.40	~~1.11~~ 1.04

ATTACHMENT D

Wetland impacts-rev5.dwg
04.30.07

U.S. Army Corps of Engineers
Permit # SAJ-2007-2175
Date: 7/10/2008
Drawing 2 of 4

6	4/30/07		
-		DESCRIPTION OF REVISION	

JORDAN JONES & GOULDING

SEMINOLE TRIBE OF FLORIDA
IMMOKALEE, FLORIDA

IMMOKALEE RESERVATION
MASTER DEVELOPMENT PLAN

WETLAND IMPACT SUMMARY

DESIGNED: RSS	CHECKED: JRC	DATE: FEB 2006	1 of 1	6
DRAWN: RSS	JOB NO. 3038.028	SCALE: 1" = 800'	SHEET	REV

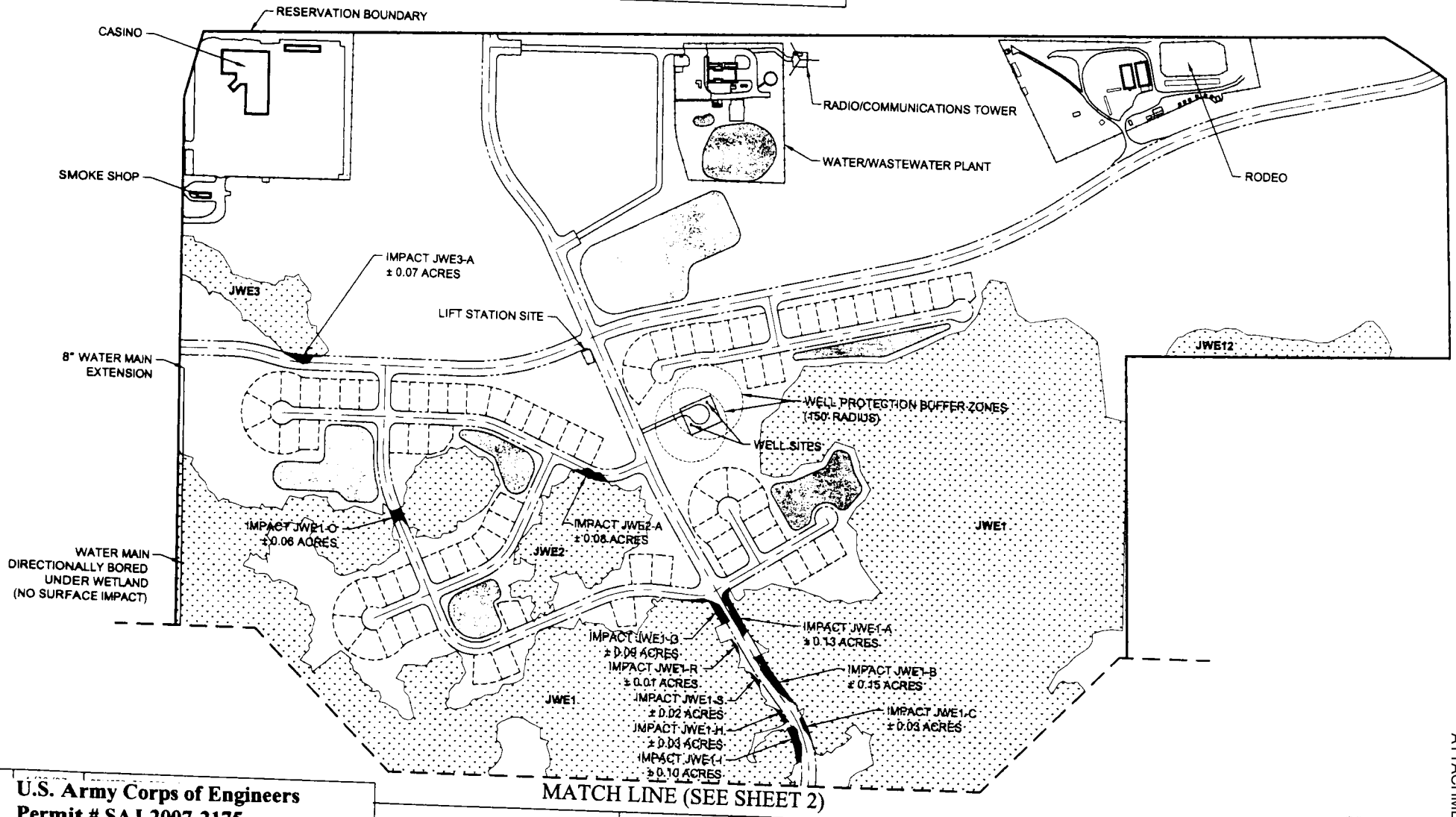
LEGEND

- ROAD/STREET R/W (60' FOR MAIN ACCESS ROADS - N/S & E/W) (50' FOR RESIDENTIAL SUBDIVISION STREETS)
- RESIDENTIAL LOT
- STORMWATER TREATMENT AREA
- WETLAND AREA
- PREVIOUSLY PERMITTED WETLAND IMPACT AREA
- ADDITIONAL WETLAND IMPACT AREA

GRAPHIC SCALE

0 300 600 1200

(IN FEET)
1 inch = 600 ft.



U.S. Army Corps of Engineers
Permit # SAJ-2007-2175
Date: 7/10/2008
Drawing 3 of 4

NO	DATE	DESCRIPTION OF REVISION
6		
5		
4		
3		
2		
1		
0		

JORDAN JONES & GOULDING

SEMINOLE TRIBE OF FLORIDA
IMMOKALEE, FLORIDA

Wetland Impacts - rev6.1 dwg
04.30.07

IMMOKALEE RESERVATION
MASTER DEVELOPMENT PLAN

WETLAND IMPACT SUMMARY

DESIGNED: RSS	CHECKED: JRC	DATE: FEB 2006	1 of 3	6
DRAWN: RSS	JOB NO 3038.028	SCALE: 1" = 600'	SHEET	REV

ATTACHMENT D

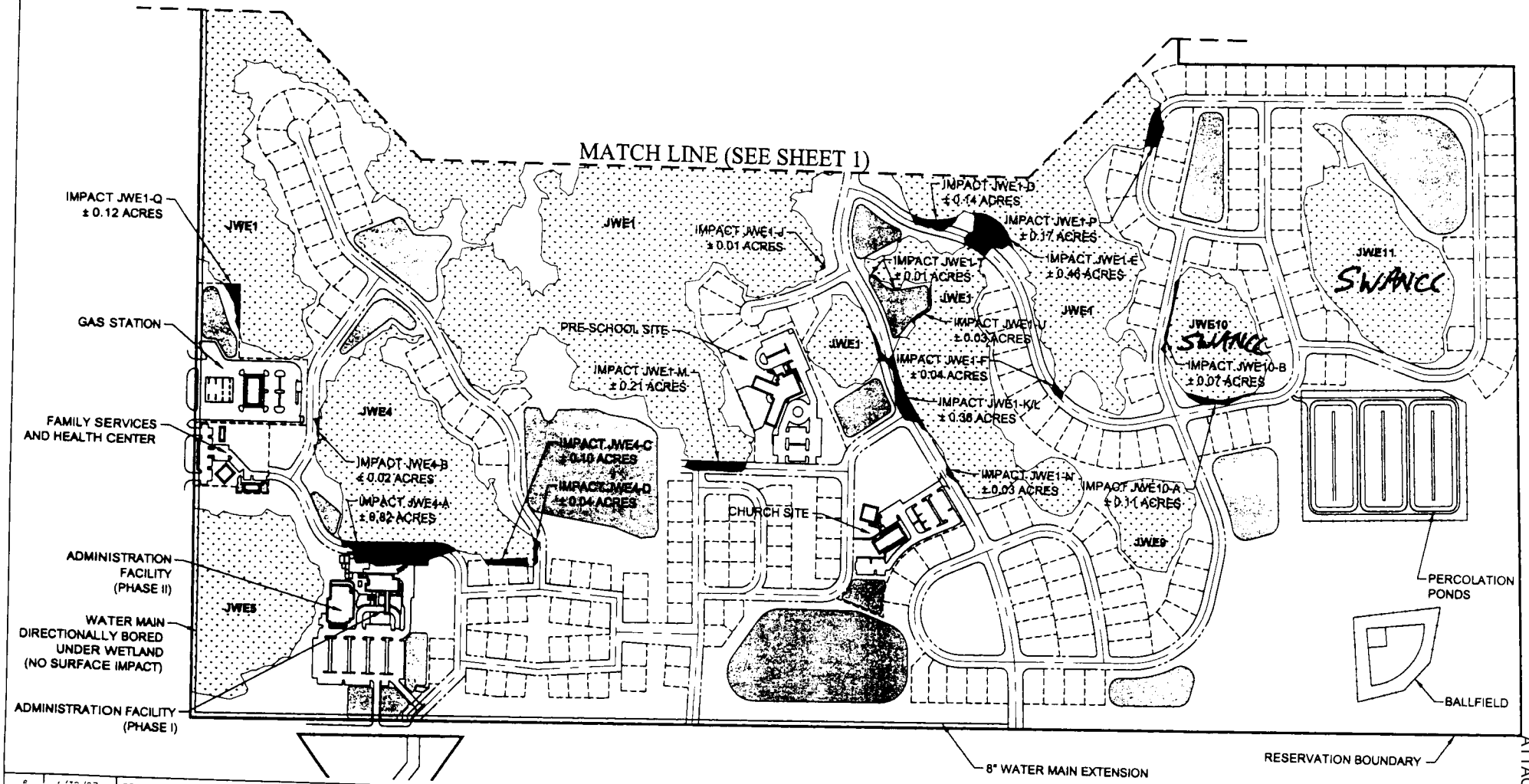
LEGEND

- ROAD/STREET R/W (60' FOR MAIN ACCESS ROADS - N/S & E/W) (50' FOR RESIDENTIAL SUBDIVISION STREETS)
- RESIDENTIAL LOT
- STORMWATER TREATMENT AREA
- WETLAND AREA
- PREVIOUSLY PERMITTED WETLAND IMPACT AREA
- ADDITIONAL WETLAND IMPACT AREA

GRAPHIC SCALE

0 300 600 1200

(IN FEET)
1 inch = 600 ft.



U.S. Army Corps of Engineers
Permit # SAJ-2007-2175
Date: 7/10/2008
Drawing 4 of 4

NO	DATE	DESCRIPTION OF REVISION

JORDAN JONES & GOULDING

SEMINOLE TRIBE OF FLORIDA
IMMOKALEE, FLORIDA

Wetland Impacts-rev6 1 dwg
04.30.07

IMMOKALEE RESERVATION
MASTER DEVELOPMENT PLAN

WETLAND IMPACT SUMMARY

DESIGNED: RSS	CHECKED: JRC	DATE: FEB 2006	2 of 3	6
DRAWN: RSS	JOB NO. 3038.028	SCALE: 1" = 600'	SHEET	REV

ATTACHMENT D

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

June 26, 2008

RECEIVED
JUL 0 2008
JACKSONVILLE DISTRICT
USACE

Colonel Paul L. Grosskruger
District Commander
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service Activity Code:	41420-2007-FA-1150
Service Consultation Code:	41420-2007-F-1144
Original Service Log No.:	4-1-04-F-5260
Corps Application No.:	SAJ-2007-2175 (IP-JSC)
Date:	June 25, 2007
Applicant:	The Seminole Tribe of Florida
Project:	Immokalee Master Plan
County:	Collier

Dear Colonel Grosskruger:

This document transmits the Fish and Wildlife Service's (Service) biological opinion (BO) based on our review of the letter dated June 25, 2007, and other information submitted by the U.S. Army Corps of Engineers (Corps) and the Seminole Tribe of Florida (Tribe) for the application referenced above. Based on the "Florida Panther Effect Determination Key", the Corps determined this project "may affect" the Florida panther (*Puma concolor coryi*). This BO is provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act)(87 Stat. 884; 16 U.S.C. 1531 *et seq.*) and the provisions of the Fish and Wildlife Coordination Act of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq*). The Service concurs with the Corps' "may affect" determination. A complete administrative record of this consultation is on file in the South Florida Ecological Services Office, Vero Beach, Florida.

The Use of Best Scientific and Commercial Information by the Service

The Service uses the most current and up-to-date scientific and commercial information available. The nature of the scientific process dictates that information is constantly changing and improving as new studies are completed. The scientific method is an iterative process that builds on previous information. As the Service becomes aware of new information, we will ensure it is fully considered in our decisions, evaluations, reviews, and analyses as it relates to the base of scientific knowledge and any publications cited in our documents.

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On April 8, 2008, the Tribe provided the Service with all but one of the additional information items requested in the March 7, 2008, letter.

On May 22, 2008, the Tribe provided the last additional information items to the Service via email.

As of May 22, 2008, we received all the information necessary for initiation of formal consultation on the Florida panther for this project as required in the regulations governing interagency consultations (50 CFR § 402.14). The Service is providing this biological opinion in conclusion of formal consultation.

INCIDENTAL TAKE STATEMENT _____ *57*
AMOUNT OR EXTENT OF TAKE _____ *57*
EFFECT OF THE TAKE _____ *58*
REASONABLE AND PRUDENT MEASURES _____ *58*
TERMS AND CONDITIONS _____ *58*
CONSERVATION RECOMMENDATIONS _____ *59*
REINITIATION NOTICE _____ *59*
LITERATURE CITED _____ *61*

protection and restoration of approximately 1,015 acres post-restoration panther habitat in the panther Primary Zone (Kautz et al. 2006). All mitigation lands are proposed for perpetual preservation, as well as enhancement through exotic plant removal, hydrological restoration, habitat management, and planting of native vegetation.

The proposed compensation plan provides habitat preservation and restoration and benefits the survival and recovery of the Florida panther as referenced in the draft Panther Recovery Plan (Service 2006) goal 1.1.1.2.3. This goal recommends that habitat preservation and restoration within the Primary Zone be provided in situations where land use intensification can not be avoided. The applicant has proposed equivalent habitat protection and restoration, to compensate for both the quantity and functional value of the lost habitat.

Project Acreage Summary

	Wetlands	Surface Waters	Uplands	Urban	Total
Total Project Site	329.94	5.19	202.57	77.29	614.99
Impacts					
On-site Impacts	329.94	5.05	170.47	0	505.46
Mitigation					
BCSIR Native Area					1,000.24
BCMB					14.61

Panther Summary:
Florida panther Adverse Effects: 505.5 acres on-site.
Florida panther Compensation: 1,014.9 acres within the BCSIR Native Area.

Total Project Effects to the panther: 505.5 acres
Total Preserve Proposal: 1,014.9 acres
Total Preserve evaluated for panthers: 1,014.9 acres

Action Area

The Service's Panther Focus Area for the Florida panther includes lands in Charlotte, Glades, Hendry, Lee, Collier, Palm Beach, Broward, Miami-Dade, and Monroe Counties, as well as the southern portion of Highlands County (Figure 2). Developed urban coastal areas in eastern Palm Beach, Broward, and Miami-Dade Counties, and in western Charlotte, Lee, and Collier Counties were excluded because they contain little or no panther habitat and it is unlikely that panthers would use such areas.

Movements of Florida panthers are much larger than the project site and, therefore, the Service's action area is larger than the proposed action area identified by the Corps' public notice. The action area, which is a subset of the current panther range, includes those lands where the Service believes panthers may experience direct and indirect effects from the proposed development. Maehr et al. (1990a) monitored five solitary panthers continuously for 130-hour periods seasonally from 1986 to 1989, rarely observing measurable shifts in location during the day, but nocturnal

JACKSONVILLE DISTRICT

Florida State law, made killing a panther a felony. The Florida panther is listed as endangered by the States of Florida, Georgia, Louisiana, and Mississippi.

Since the panther was designated as an endangered species prior to enactment of the Act, there was no formal listing package identifying threats to the species as required by section 4(a)(1) of the Act. However, the technical/agency draft of the Florida Panther Recovery Plan, third revision, addressed the five factor threats analysis (Service 2006). No critical habitat has been designated for the panther.

Taxonomy

The Florida panther was first described by Charles B. Cory in 1896 as *Felis concolor floridana* (Cory 1896). The type specimen was collected in Sebastian, Florida. Bangs (1899), however, believed that the Florida panther was restricted to peninsular Florida and could not intergrade with other *Felis* spp. Therefore, he assigned it full specific status and named it *Felis coryi* since *Felis floridana* had been used previously for a bobcat (*Lynx rufus*). The taxonomic classification of the *Felis concolor* group was revised and described by Nelson and Goldman (1929) and Young and Goldman (1946). These authors differentiated 30 subspecies using geographic and morphometric (measurement of forms) criteria and reassigned the Florida panther to subspecific status as *Felis concolor coryi*. This designation also incorporated *F. arundivaga*, which had been classified by Hollister (1911) from specimens collected in Louisiana, into *F. c. coryi*. Nowell and Jackson (1996) reviewed the genus *Felis* and placed mountain lions, including the Florida panther, in the genus *Puma*.

Culver et al. (2000) examined genetic diversity within and among the described subspecies of *Puma concolor* using three groups of genetic markers and proposed a revision of the genus to include only six subspecies, one of which encompassed all puma in North America including the Florida panther. However, Culver et al. (2000) determined that the Florida panther was one of several smaller populations that had unique features. Specifically, the number of polymorphic microsatellite loci and amount of variation were lower, and it was highly inbred (eight fixed loci). The degree to which the scientific community has accepted the results of Culver et al. (2000) and the proposed change in taxonomy is not resolved at this time. The Florida panther remains listed as a subspecies and continues to receive protection pursuant to the Act.

Species Description

An adult Florida panther is unspotted and typically rusty reddish-brown on the back, tawny on the sides, and pale gray underneath. There has never been a melanistic (black) puma documented in North America (Tinsley 1970, 1987). Adult males can reach a length of 7 feet (ft) (2.1 meters [m]) from their nose to the tip of their tail and may exceed 161 pounds (lbs) (73 kilograms [kg]) in weight; but, typically adult males average around 116 lbs (52.6 kg) and stand about 24-28 inches (in) (60-70 centimeters [cm]) at the shoulder (Roelke 1990). Female panthers are smaller with an average weight of 75 lbs (34 kg) and length of 6 ft (1.8 m) (Roelke 1990). The skull of the Florida panther is unique in that it has a broad, flat, frontal region, and broad, high-arched or upward-expanded nasal bones (Young and Goldman 1946).

mortalities, four radio-collared animals, two captured animals (one of which was radiocollared), and one skeleton. From 1972 through 2004, panthers have been confirmed in 11 counties (Flagler, Glades, Highlands, Hillsborough, Indian River, Okeechobee, Orange, Osceola, Polk, Sarasota, and Volusia) north of the river (Belden et al. 1991, Belden and McBride 2005). However, no evidence of a female or reproduction has been documented north of the Caloosahatchee River since 1973 (Nowak and McBride 1974, Belden et al. 1991, Land and Taylor 1998, Land et al. 1999, Shindle et al. 2000, McBride 2002, Belden and McBride 2005).

Puma are wide ranging, secretive, and occur at low densities. However, their tracks, urine markers, and scats are readily found by trained observers, and resident populations are easily located. Van Dyke (1986a) determined that all resident puma, 78 percent of transient puma, and 57 percent of kittens could be detected by track searches in Utah. In south Florida, the Florida panther's limited range and low densities may make the population count derived from track searches more accurate than in Utah. During two month-long investigations – one late in 1972 and early 1973 and another in 1974 – funded by the World Wildlife Fund to determine if panthers still existed in Florida, McBride searched for signs of panthers in portions of south Florida. In 1972, McBride authenticated a road-killed male panther in Glades County and a female captured and released from a bobcat trap in Collier County (R. McBride, Livestock Protection Company, pers. comm. 2005). In 1973, McBride captured one female in Glades County (Nowak and McBride 1974). Based on this preliminary evidence, Nowak and McBride (1974) estimated the "population from the Lake Okeechobee area southward to be about 20 or 30 individuals." In 1974, McBride found evidence of only two additional panthers in the Fakahatchee Strand and suggested "there could be as few as ten individuals panthers in the area around Lake Okeechobee and southward in the state" (Nowak and McBride 1975). This initial survey, while brief in nature, proved that panthers still existed in Florida and delineated areas where a more exhaustive search was warranted. After this initial investigation, more comprehensive surveys on both public and private lands were completed (Reeves 1978; Belden and McBride 1983a, b; Belden et al. 1991). Thirty individual panthers were identified during a wide-ranging survey in 1985 in south Florida (McBride 1985).

Maehr et al. (1991) provides the only published estimate of population density based on a substantial body of field data (Beier et al. 2003). Maehr et al. (1991) estimated a density of 1 panther/27,520 acres [11,137 hectares (ha)] based on 17 concurrently radio-collared and four uncollared panthers. They extrapolated this density to the area occupied (1,245,435 acres [504,012 ha]) by radio-collared panthers during the period 1985-1990 to achieve a population estimate of 46 adult panthers for southwest Florida (excluding Everglades National Park [ENP], eastern Big Cypress National Preserve [BCNP], and Glades and Highlands Counties). Beier et al. (2003), however, argued that this estimate of density, although "reasonably rigorous," could not be extrapolated to other areas because it was not known whether densities were comparable in those areas.

More recently, McBride (2000, 2001, 2002, 2003) reported minimum population counts (*i.e.*, number known alive) based on panthers treed with hounds, physical evidence (*e.g.*, tracks where radio-collared panthers were not known to occur), documentation by trail-camera photos, and sightings of uncollared panthers by a biologist or pilot from a monitoring plane or via ground telemetry. He counted adults and subadult panthers but not kittens at the den. The population

between male panthers; but, aggressive encounters between males and females have occurred, resulting in the death of the female. Defense of kittens and\or a kill is suspected in half (5 of 10) of the known instances through 2003 (Shindle et al. 2003).

Unknown causes and collisions with vehicles accounted for 24 and 19 percent of radio-collared panther mortalities, respectively. From February 13, 1972, through June 30, 2007, Florida panther vehicular trauma (n = 112) averaged 3.1 per year for radio-collared and uncollared panthers (FWC 2007). Eight of the collisions were not fatal. Since the publication of the 2006-2007 report (FWC 2007), one additional panther was killed by a vehicle in September 2007 (FWC, unpublished data), bringing the total to 113 panthers killed or injured by vehicles.

Female panthers are considered adult residents if they are older than 18 months, have established home ranges and bred (Maehr et al. 1991). Land et al. (2004) reported that 23 of 24 female panthers first captured as kittens survived to become residents and 18 (78.3 percent) produced litters; one female was too young to determine residency. Male panthers are considered adult residents if they are older than three years and have established a home range that overlaps with females. Thirty-one male panthers were captured as kittens and 12 (38.7 percent) of these cats survived to become residents (Jansen et al. 2005, Lotz et al. 2005). "Successful male recruitment appears to depend on the death or home-range shift of a resident adult male" (Maehr et al. 1991). Turnover in the breeding population is low with documented mortality in radio-collared panthers being greatest in subadults and non-resident males (Maehr et al. 1991, Shindle et al. 2003).

Den sites of female panthers have been visited since 1992 and the number of kittens that survived to 6 months for 38 of these litters has been documented. Florida and introgressed panther kitten survival to 6 months were estimated to be 52 and 72 percent, respectively, but were not significantly different (P = 0.2776) (Lotz et al. 2005). Survival of kittens greater than 6 months old was determined by following the fates of 55 radio-collared dependent-aged kittens, including 17 introgressed panthers, from 1985 through 2004. Only one of these 55 kittens died before reaching independence, resulting in a 98.2 percent survival rate (Lotz et al. 2005). The FWC and NPS are continuing to compile and analyze existing reproductive and kitten data.

Dispersal: Panther dispersal begins after a juvenile becomes independent from its mother and continues until it establishes a home range. Dispersal distances are greater for males (n = 18) than females (n = 9) (42.5 mi [68.4 km] vs. 12.6 mi [20.3 km], respectively) and the maximum dispersal distance recorded for a young male was 139.2 mi (224.1 km) over a seven-month period followed by a secondary dispersal of 145 mi (233 km) (Maehr et al. 2002a). Males disperse an average distance of 25 mi (40 km); females typically remain in or disperse short distances from their natal ranges (Comiskey et al. 2002). Female dispersers are considered philopatric because they usually establish home ranges less than one average home range width from their natal range (Maehr et al. 2002a). Maehr et al. (2002a) reported that all female dispersers (n = 9) were successful at establishing a home range whereas only 63 percent of males (n = 18) were successful. Young panthers become independent at 14 months on average for both sexes, but male dispersals are longer in duration than female dispersals (9.6 months and 7.0 months, respectively) (Maehr et al. 2002a). Dispersing males usually go through a period as

Telemetry data indicate panthers typically do not return to the same resting site day after day, with the exception of females with dens or panthers remaining near kill sites for several days. The presence of physical evidence such as tracks, scats, and urine markers confirm that panthers move extensively within home ranges, visiting all parts of the range regularly in the course of hunting, breeding, and other activities (Maehr 1997, Comiskey et al. 2002). Males travel widely throughout their home ranges to maintain exclusive breeding rights to females. Females without kittens also move extensively within their ranges (Maehr 1997). Panthers are capable of moving large distances in short periods of time. Nightly panther movements of 12 mi (20 km) are not uncommon (Maehr et al. 1990a).

Intraspecific Interactions: Interactions between panthers occur indirectly through urine markers or directly through contact. Urine markers are made by piling ground litter using a backwards-pushing motion with the hind feet. This pile is then scent-marked with urine and occasionally feces. Both sexes make urine markers. Apparently males use them as a way to mark their territory and announce presence while females advertise their reproductive condition.

Adult females and their kittens interact more frequently than any other group of panthers. Interactions between adult male and female panthers last from one to seven days and usually result in pregnancy (Maehr et al. 1991). Aggressive interactions between males often result in serious injury or death. Independent subadult males have been known to associate with each other for several days and these interactions do not appear to be aggressive in nature. Aggression between males is the most common cause of male mortality and an important determinant of male spatial and recruitment patterns based on radio-collared panthers (Maehr et al. 1991, Shindle et al. 2003). Aggressive encounters between radio-collared males and females also have been documented (Shindle et al. 2003, Jansen et al. 2005).

Food Habits: Primary panther preys are white-tailed deer (*Odocoileus virginianus*) and feral hog (*Sus scrofa*) (Maehr et al. 1990b, Dalrymple and Bass 1996). Generally, feral hogs constitute the greatest biomass consumed by panthers north of the Alligator Alley section of I-75, while white-tailed deer are the greatest biomass consumed to the south (Maehr et al. 1990b). Secondary prey includes raccoons (*Procyon lotor*), nine-banded armadillos (*Dasypus novemcinctus*), marsh rabbits (*Sylvilagus palustris*) (Maehr et al. 1990b) and alligators (*Alligator mississippiensis*) (Dalrymple and Bass 1996). No seasonal variation in diet has been detected. A resident adult male puma generally consumes one deer-sized prey every 8-11 days; this frequency would be 14-17 days for a resident female; and 3.3 days for a female with three 13-month-old kittens (Ackerman et al. 1986). Maehr et al. (1990b) documented domestic livestock infrequently in scats or kills, although cattle were readily available on their study area.

Infectious Diseases, Parasites, and Environmental Contaminants:
Viral Diseases - Feline leukemia virus (FeLV) is common in domestic cats (*Felis catus*), but is quite rare in non-domestic felids. Routine testing for FeLV antigen (indicating active infection) in captured and necropsied panthers was negative from 1978 (when testing began) to the fall of 2002. Between November 2002 and February 2003, however, two panthers tested FeLV antigen positive (Cunningham 2005). The following year, three more cases were diagnosed. All infected panthers had overlapping home ranges in the Okaloacoochee Slough ecosystem. Three panthers

eight arthropod species, eight nematode species, three cestode species, two trematode species, and three protozoa species (Forrester et al. 1985, Forrester 1992, Wehinger et al. 1995, Rotstein et al. 1999, Land et al. 2002). Of these, only an arthropod, *Notoedres felis*, caused significant morbidity in at least one panther (Maehr et al. 1995).

Environmental Contaminants - Overall, mercury in south Florida biota has decreased over the last several years (Frederick et al. 2002). However, high mercury concentrations are still found in some panthers. At least one panther is thought to have died of mercury toxicosis and mercury has been implicated in the death of two other panthers in ENP (Roelke 1991). One individual panther had mercury concentrations of 150 parts per million (ppm) in its hair (Land et al. 2004). Elevated levels of p, p'– DDE were also detected in fat from that panther. The role of mercury and/or p, p'– DDE in this panther's death is unknown and no cause of death was determined despite extensive diagnostic testing. Elevated mercury concentrations have also been found in panthers from Florida Panther National Wildlife Refuge (FPNWR). Two sibling neonatal kittens from this area had hair mercury concentrations of 35 and 40 ppm. Although other factors were believed to have been responsible, these kittens did not survive to leave their natal den. Consistently high hair mercury values in ENP and FPNWR and the finding of elevated values in some portions of BCNP warrant continued monitoring (Land et al. 2004). Other environmental contaminants found in panthers include polychlorinated biphenyls (Arochlor 1260) and organochlorines (p, p'–DDE) (Dunbar 1995, Land et al. 2004).

Habitat Characteristics/Ecosystem

Landscape Composition: Noss and Cooperrider (1994) considered the landscape implications of maintaining viable panther populations. Assuming a male home range size of 137,599 acres (55,685 ha) (Maehr 1990), an adult sex ratio of 50:50 (Anderson 1983), and some margin of safety, they determined that a reserve network as large as 15,625 - 23,438 mi^2 (40,469 - 60,703 km^2) would be needed to support an effective population size of 50 individuals (equating to an actual adult population of 100 - 200 panthers [Ballou et al. 1989]). However, to provide for long-term persistence based on an effective population size of 500 individuals (equating to 1,000 - 2,000 adult panthers [Ballou et al. 1989]), could require as much as 156,251 - 234,376 mi^2 (404,687-607,031 km^2). This latter acreage corresponds to roughly 60 - 70 percent of the Florida panther's historical range. Although it is uncertain whether this much land is needed for panther recovery, it does provide some qualitative insight into the importance of habitat conservation across large landscapes for achieving a viable panther population (Noss and Cooperrider 1994).

Between 1981 and 2003, more than 55,000 locations were collected from more than 100 radio-collared panthers. Belden et al. (1988), Maehr et al. (1991), Maehr (1997), Kerkoff et al. (2000), and Comiskey et al. (2002) provide information on habitat use based on various subsets of these data. Since almost all data from radio-collars have been collected during daytime hours (generally 0700 - 1100), and because panthers are most active at night (Maehr et al. 1990a), daytime radio locations are insufficient to describe the full range of panther habitat use (Beyer and Haufler 1994, Comiskey et al. 2002, Beier et al. 2003, Dickson et al. 2005, Beier et al. 2006).

Zone is estimated at 32 percent of the available Secondary Zone lands); and the Dispersal Zone could support 0 panthers. Taken together, the three zones in their current condition apparently have the capacity to support about 79 to 94 Florida panthers.

Kautz et al.'s (2006) assessment of available habitat south of the Caloosahatchee River determined that non-urban lands in the Primary, Secondary, and Dispersal Zones were not sufficient to sustain a population of 240 individuals south of the Caloosahatchee River. However, Kautz et al. (2006) determined sufficient lands were available south of the Caloosahatchee River to support a population of 79 to 94 individuals (although not all lands are managed and protected).

Even though some suitable panther habitat remains in south-central Florida, it is widely scattered and fragmented (Belden and McBride 2005). Thatcher et al. (2006) used a statistical model in combination with a geographic information system to develop a multivariate landscape-scale habitat model based on the Mahalanobis distance statistic (D^2) to evaluate habitats in south central Florida for potential expansion of the Florida panther population. They identified 4 potential habitat patches: the Avon Park Bombing Range area, Fisheating Creek/Babcock-Webb Wildlife Management Area, eastern Fisheating Creek, and the Duette Park/Manatee County area. These habitat patches are smaller and more isolated compared with the current Florida panther range, and the landscape matrix where these habitat patches exist provides relatively poor habitat connectivity among the patches (Thatcher et al. 2006). Major highways and urban or agricultural development isolate these habitat patches, and they are rapidly being lost to the same development that threatens southern Florida (Belden and McBride 2005).

Diurnal Habitat Use: Diurnal panther locations appear to be within or closer to forested cover types, particularly cypress swamp, pinelands, hardwood swamp, and upland hardwood forests (Belden 1986, Belden et al. 1988, Maehr 1990, Maehr et al. 1991, Maehr 1992, Smith and Bass 1994, Kerkhoff et al. 2000, Comiskey et al. 2002). Dense understory vegetation comprised of saw palmetto provides some of the most important resting and denning cover for panthers (Maehr 1990). Shindle et al. (2003) show that 73 percent of panther dens were in palmetto thickets.

Radio-collar data and ground tracking indicate that panthers use the mosaic of habitats available to them as resting and denning sites, hunting grounds, and travel routes. These habitats include cypress swamps, hardwood hammocks, pine flatwoods, seasonally flooded prairies, freshwater marshes, and some agricultural lands. Although radio-collar monitoring indicates that forest is a preferred cover type, panthers also utilize non-forest cover types (Belden et al. 1988, Maehr et al. 1991, Comiskey et al. 2002). Compositional analyses by Kautz et al. (2006) confirmed previous findings that forest patches comprise an important component of panther habitat in south Florida, but that other natural and disturbed cover types are also present in the large landscapes that support panthers (Belden et al. 1988, Maehr et al. 1991, Comiskey et al. 2002). Kautz et al. (2006) found that the smallest class of forest patches (i.e., 9 - 26 acres [3.6 - 10.4 ha]) were the highest ranked forest patch sizes within panther home ranges. This indicates that forest patches of all sizes appear to be important components of the landscapes inhabited by panthers, not just the larger forest patches.

of an adult. For Florida panthers, this would translate to a corridor width of 5.5 mi (8.8 km). Without supporting empirical evidence, Noss (1992) suggests that regional corridors connecting larger hubs of habitat should be at least 1.0 mi (1.6 km) wide. Beier (1995) makes specific recommendations for very narrow corridor widths based on short corridor lengths in a California setting of wild lands completely surrounded by urban areas; he recommended that corridors with a length less than 0.5 mi (0.8 km) should be more than 328 ft (100 m) wide, and corridors extending 0.6 - 4 mi (1 - 7 km) should be more than 1,312 ft (400 m) wide. The Dispersal Zone encompasses 44 mi^2 (113 km^2) with a mean width of 3.4 mi (5.4 km). Although it is not adequate to support even one panther, the Dispersal Zone is strategically located and expected to function as a critical landscape linkage to south-central Florida (Kautz et al. 2006). Transient male panthers currently utilize this Zone as they disperse northward into south-central Florida.

Panther Recovery Objectives

The recovery objectives identified in the draft third revision of the Florida Panther Recovery Plan (Service 2006) are to: (1) maintain, restore, and expand the Florida panther population and its habitat in south Florida and, if feasible, expand the known occurrence of Florida panthers north of the Caloosahatchee River to maximize the probability of the long-term persistence of this metapopulation; (2) identify, secure, maintain, and restore habitat in potential reintroduction areas within the panther's historic range, and to establish viable populations of the panther outside south and south-central Florida; and (3) facilitate panther conservation and recovery through public awareness and education.

Panther Management and Conservation

Habitat Conservation and Protection

Panthers, because of their wide-ranging movements and extensive spatial requirements, are particularly sensitive to habitat fragmentation (Harris 1984). Mac et al. (1998) defines habitat fragmentation as: "The breaking up of a habitat into unconnected patches interspersed with other habitat which may not be inhabitable by species occupying the habitat that was broken up. The breaking up is usually by human action, as, for example, the clearing of forest or grassland for agriculture, residential development, or overland electrical lines." The reference to "unconnected patches" is a central underpinning of the definition. For panther conservation, this definition underscores the need to maintain contiguous habitat and protected habitat corridors in key locations in south Florida and throughout the panther's historic range. Habitat fragmentation can result from road construction, urban development, and agricultural land conversions.

Habitat protection has been identified as being one of the most important elements to achieving panther recovery. While efforts have been made to secure habitat (Figure 6 and Table 1), continued action is needed to obtain additions to and inholdings for public lands, assure linkages are maintained, restore degraded and fragmented habitat, and obtain the support of private landowners for maintaining property in a manner that is compatible with panther use. Conservation lands used by panthers are held and managed by a variety of entities including FWS, NPS, Seminole Tribes of Florida, Miccosukee Tribe of Indians of Florida, FWC, Florida

affiliate Babcock Ranch family company. The purchase agreement for the Babcock Ranch Preserve expressly reserved the ability to utilize portions of the property acquired by the State for mitigation of impacts from the Babcock Ranch Community's proposed residential development. These reserved lands are referred to as the Babcock Ranch Mitigation Park and encompass about 16,925 acres

Tribal Lands: Lands of the Seminole Tribes of Florida and Miccosukee Tribe of Indians of Florida encompass over 350,079 acres (141,673 ha) in south Florida. Of these, 115,840 acres (46,879 ha) are used by panthers, and comprise 5 percent of the Primary Zone (R. Kautz, pers. comm. 2005). In general, these lands are not specifically managed for the panther and are largely in cultivation. However, in 2007, the Seminole Tribes of Florida reserved about 4,144 acres within the Big Cypress Seminole Indian Reservation Native Area, an area encompassing about 14,724 acres, specifically for the benefit of the Florida panther. The remaining native area, about 10,580 acres, although not specifically managed for the Florida panther, provides high quality value habitat for the Florida panther and panther prey species.

Private Lands: A variety of Federal, State, and private incentive programs are available to assist private landowners and other individuals with the protection and management of wildlife habitat. Voluntary agreements, estate planning, conservation easements, land exchanges, and mitigation banks are all methods that hold untapped potential for conserving private lands. In 1954, the National Audubon Society established the nearly 10,880-acre (4,403-ha) Corkscrew Swamp Sanctuary. However, little additional private land has been protected south of the Caloosahatchee River for panther conservation. A number of properties identified by the State Acquisition and Restoration Council (ARC) for purchase by the Florida Forever Program are used by panthers (*e.g.*, Devil's Garden, Half Circle F Ranch, Pal Mal, and Panther Glades). North of the Caloosahatchee River, the Fisheating Creek Conservation Easement consists of 41,600 acres (16,835 ha) in Glades County and is a private holding used by dispersing male panthers.

Habitat and Prey Management

Land management agencies in south Florida are implementing fire programs that mimic a natural fire regime through the suppression of human-caused wildfires and the application of prescribed natural fires. No studies have been conducted to determine the effects of invasive plant management on panthers. However invasive vegetation may reduce the panther's prey base by disrupting natural processes, such as water flow and fire, and by significantly reducing available forage for prey (Fleming et al. 1994). All public lands in south Florida have active invasive plant treatment programs. Management for panther prey consists of a variety of approaches such as habitat management and regulation of hunting and off-road vehicle (ORV) use.

Response to Management Activities

Few studies have examined the response of panthers to various land/habitat management activities. Dees et al. (2001) investigated panther habitat use in response to prescribed fire and found panther use of pine habitats was greatest for the first year after the area had been burned

More recent studies have been conducted to identify locations where wildlife crossings are needed in Collier County to benefit the Florida panther and other wildlife. Swanson et al. (2005) used a least cost path (LCP) modeling approach to identify the most likely travel routes for panthers among six major use areas in southwest Florida. LCP modeling considers elements in the landscape that permit or impede panther movement when traveling. Swanson et al. (2005) identified 20 key highway segments where LCPs intersected improved roadways. Within Collier County LCPs intersected the following major highways: SR 29, CR 846 (Immokalee Road) and CR 858 (Oil Well Road). Smith et al. (2006) studied the movements of the Florida panther, the Florida black bear, and other wildlife species along SR 29, CR 846 and CR 858 in Collier County. Data analyzed in the study were obtained from roadkill and track surveys, infra-red camera monitoring stations, existing data provided by the FWC (Florida panther radio telemetry and vehicle mortality reports), and other studies. Smith et al. (2006) recommended new wildlife crossings be considered at various sites along these roadways to reduce road-related mortality of panthers and other wildlife species, and increase connectivity among wildlife populations.

In an effort to help reduce the potential for roadway-related panther and wildlife mortality, Collier County has committed to construct additional wildlife crossings and associated fencing on Oil Well Road (CR 858) in the Camp Keais Strand. The locations of these crossings have been identified as travel corridors for panthers and other wildlife.

Agriculture, Development, and Mining

The Service developed a Panther Habitat Assessment methodology and refugia design in 2003 to help guide the agency in evaluating permit applications for projects that could affect panther habitat (see discussion below). This methodology was a way to assess the level of impacts to panthers expected from a given project, and to evaluate the effect of any proposed compensation offered by the project applicant. Prior to the development of this methodology, the Service, from March 1984 through July 2003, concluded consultation on 42 projects involving the panther and habitat preservation (Table 2). The minimum expected result of these projects is impacts to 76,919 acres and the preservation on of 15,479 acres of panther habitat. Of the 76,919 acres of impacts, 38,932 acres are due to agricultural conversion and 37,982 acres to development and mining. Portions (10,370 acres) of the largest agricultural conversion project, 28,700 acres by U.S. Sugar Corporation, were re-acquired by the Federal Government as a component of the Talisman Land Acquisition (Section 390 of the Federal Agricultural Improvement and Reform Act of 1996 [Public Law 104-127] Farm Bill Cooperative Agreement, FB4) for use in the Comprehensive Everglades Restoration Project. The non-agriculture impacts are permanent land losses, whereas the agricultural conversions may continue to provide some habitat functional value to panthers, depending on the type of conversion.

From August 2003 to June 2008, the Service concluded consultations on 75 projects affecting 20,869 acres with preservation of 24,114 acres (Table 2). Following our refugia design assessment approach, the projects affected 9,967 acres in the Primary Zone, 6,437 acres in the Secondary Zone, and 4,432 acres in the Other Zone. Compensation provided included 21,303 acres in the Primary Zone, 652 acres in the Dispersal Zone, 2 acres in the Secondary

Root (2004) developed an updated set of PVA models for the Florida panther based on RAMAS GIS software. These models were used to perform a set of spatially explicit PVAs. Three general single-sex (i.e., females only) models were constructed using demographic variables from Maehr et al. (2002b) and other sources. A conservative model was based on Seal and Lacy (1989), a moderate model was based on Seal and Lacy (1992), and an optimistic model was based on the 1999 consensus model of Maehr et al. (2002b). In each model, first-year kitten survival was set at 62 percent based on recent information from routine panther population monitoring (Shindle et al. 2001). All of the models assumed a 1:1 sex ratio, a stable age distribution, 50 percent of females breeding in any year, and an initial population of 41 females (82 individuals including males), which was the approximate population size in 2001-2002 (McBride 2001, 2002).

The use of 41 females in the model was based on the best available data when the model was developed. The total of 41 females represents the number of individual panthers documented in surveys by McBride (2001, 2002). While the total of 41 females includes subadults that do not yet breed, it is reasonable to use this total number in modeling to evaluate population trends for several reasons. First, it is not feasible to differentiate between subadults and adults through field observation. Second, although it is possible that some of the 41 females were not breeding in year one of the model, these females would mature to breeding age by year two of the model. Third, the Root (2004) model assumed females to have "a 50% chance of breeding in a given year," and therefore only half of the 41 females were modeled as breeding each year. The primary reason the model (Root 2004) assumed a 50% chance of breeding in a given year is that kittens stay with their mother from 15 to 24 months prior to dispersal; however, this assumption accounts for the likelihood that some of the 41 females would not breed in a given year, including subadult status of some individuals. Fourth, the Service recognizes the McBride data is not intended to provide a total population estimate. Although the Service believes population estimates derived through field surveys are close to the actual population number, it is likely some individuals in the current panther population have not been documented. Finally, the Service notes that population modeling is only one of several tools used by the Service to assess possible effects on the panther. As detailed elsewhere in this biological opinion, the Service's conclusions about possible effects on the panther are also supported by the Service's assessment of remaining habitat, as well as consideration of other factors such as the overall recovery objectives and other cumulative effects from actions in the action area. In light of these factors, the Service believes that it is reasonable to use the best available count of 41 subadult and adult females as the breeding population for modeling purposes.

Basic Versions: The basic versions of each model incorporated no catastrophes or epidemics, no change in habitat quality or amount, and a ceiling type of density dependence. The basic versions of the models incorporated a carrying capacity of 53 females (106 panthers - 50/50 sex ratio). Variants of the models were run with differing values for density dependence, various levels of habitat loss, and intermittent catastrophes or epidemics. Each simulation was run with 10,000 replications for a 100-year period. The minimum number of panthers needed to ensure a 95 percent probability of persistence for 100 years was estimated in a series of simulations in which initial abundance was increased until probability of extinction at 100 years was no greater

65Service views the guidelines in Kautz et al. (2006) as a continuum. Therefore, we consider populations of 50 to 60 individuals to be less than barely viable or not viable with declines in population and heterozygosity. Similarly, we consider populations of 70 to 80 to be more than barely viable or somewhat viable with some declines in population and heterozygosity. Like other population guidelines presented in Kautz et al. (2006), these assume no habitat loss or catastrophes.

PVA Summaries and Population Guidelines: Root's (2004) moderate model runs, which have a carrying capacity 53 females (106 individuals), show final populations of 42.3 females (84 total) and 31.2 females (62 total) with extinction rates of 5 percent and 6 percent, respectively, for the basic and 1 percent habitat loss scenarios. The predicted final populations in Root (2004) are 84 and 62 panthers for no loss of habitat and 1 percent loss of habitat, respectively, over a 100-year period.

Kautz et al.'s (2006) population guidelines, when applied to the populations predicted by Root's (2004) moderate models, describe the "with habitat loss" population (62 panthers) as barely viable and expected to decline by 25 percent over a 100-year period. The "without habitat loss" population (84 panthers) is likely stable but would still be subject to genetic problems.

As discussed in the section on "Population Trends and Distribution," the 3-year average verified panther population estimate has shown an increase in the number of panthers reported yearly, beginning in 2000. The Service believes that McBride's verified population of 97 panthers in 2006 and 117 panthers in 2007 is within Kautz et al.'s (2006) population guidelines representing a population that is likely stable but would still be subject to genetic problems.

The Service also believes the model runs show lands in the Primary Zone are important to the survival and recovery of the Florida panther and sufficient lands need to be managed and protected in south Florida to provide for a population of 80 to 100 panthers, the population range defined as likely stable over 100 years, but subject to genetic problems. As discussed in the following section, the Service has developed a south Florida panther conservation goal that, through regulatory reviews and coordinated conservation efforts with land owners and resource management partners, provides a mechanism to achieve this goal.

Model Violations: The actual likelihood of population declines and extinctions may be different than the guidelines and models suggest, depending upon the number of and severity of assumptions violated. The Service realizes habitat loss is occurring at an estimated 0.8 percent loss of habitat per year (R. Kautz, FWC, personal communication, 2003). The Service has accounted for some habitat loss and changes in habitat quality within its regulatory program, specifically through its habitat assessment methodology (discussed below). For example, we have increased the base ratio used within this methodology to account for unexpected increases in habitat loss. Similarly, we consider changes in habitat quality and encourage habitat restoration wherever possible.

With regard to the assumption of no catastrophes, the Service has considered the recent outbreak of feline leukemia in the panther population at Okaloacoochee Slough as a potential catastrophe.

panther habitat conservation was based on an analysis of panther habitat use and forest patch size. This model was used in combination with radio-telemetry records, home range overlaps, land use/land cover data, and satellite imagery to delineate primary and secondary areas that would be most important and comprise a landscape mosaic of cover types important to help support the current panther breeding population south of the Caloosahatchee River.

Thatcher et al. (2006) developed a habitat model using Florida panther home ranges in south Florida to identify landscape conditions (land-cover types, habitat patch size and configuration, road density and other human development activities, and other similar metrics) north of the Caloosahatchee River that were similar to those associated with the current panther breeding population.

The Panther Focus Area MAP south of the Caloosahatchee River is divided into Primary, Secondary, and Dispersal Zones, and north of the Caloosahatchee River into the Primary Dispersal/Expansion Area.

Primary Zone is currently occupied and supports the only known breeding population of Florida panthers in the world. These lands are important to the long-term viability and persistence of the panther in the wild.

Secondary Zone lands are contiguous with the Primary Zone and although these lands are used to a lesser extent by panthers, they are important to the long-term viability and persistence of the panther in the wild. Panthers use these lands in a much lower density than in the Primary Zone.

Dispersal Zone is a known corridor between the Panther Focus Area south of the Caloosahatchee River and the Panther Focus Area north of the Caloosahatchee River. This Zone is necessary to facilitate the dispersal of panthers and future panther population expansion to areas north of the Caloosahatchee River. Marked panthers have been known to use this zone.

Primary Dispersal/Expansion Area is the Fisheating Creek/Babcock-Webb WMA region. These are lands identified by Thatcher et al. (2006) as potential panther habitat with the shortest habitat connection to the Panther Focus Area in south Florida. Several collared and uncollared male panthers have been documented in this area since 1973, and the last female documented north of the Caloosahatchee River was found in this area.

Landscape Preservation Need and Compensation Recommendations

Land Preservation Needs: To further refine the land preservation needs of the Florida panther and to specifically develop a landscape-level program for the conservation of the Florida panther population in south Florida, the Service appointed a Florida Panther Subteam in February 2000. The Subteam was charged with developing a landscape-level strategy for the conservation of the Florida panther population in south Florida. The results of this collaborative effort are partially presented in Kautz et al. (2006). One of the primary goals of this effort was to identify a

could support 0 panthers. Taken together, the three zones in their current condition apparently have the capacity to support about 79 to 94 Florida panthers.

Kautz et al.'s (2006) assessment of available habitat south of the Caloosahatchee River determined that non-urban lands in the Primary, Secondary, and Dispersal Zones were not sufficient to sustain a population of 240 individuals south of the Caloosahatchee River. However, Kautz et al. (2006) determined sufficient lands were available south of the Caloosahatchee River to support a population of 79 to 94 individuals (although not all lands are managed and protected).

Compensation Recommendations: To achieve our goal to locate, preserve, and restore sets of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of a population of Florida panthers south of the Caloosahatchee River, the Service chose the mid point (90 panthers) in Kautz et al.'s (2006) population guidelines that a population of 80 to 100 panthers is likely to be stable, although subject to genetic problems, through 100 years. In addition, a population of 90 individuals is eight individuals greater than a population of 82 individuals, which according to the best available PVA (Root 2004) is 95 percent likely to persist over 100 years (assuming a 50:50 male to female ratio). These eight individuals provide a buffer for some of the assumptions in Root's (2004) PVA. Our process to determine compensation recommendations for project affects that cannot be avoided in both our section 7 and section 10 consultations is based on the amount and quality of habitat that we believe is necessary to support a population of 90 panthers in south Florida.

The Service, based on Kautz et al.'s (2006) average panther population density of 31,923 acres per panther, determined 2,873,070 acres of Primary Zone "equivalent" lands need to be protected and managed. Since lands in the Secondary Zone are of less value to panthers than those in the Primary zone, this equivalency factor is needed to assure that additional acreage is acquired in the Secondary Zone to compensate for its lower quality panther habitat. In other words, more than 31,923 acres per panther would be needed, hypothetically, if this acreage were all in the Secondary Zone (see discussion of Primary Zone equivalent lands in the following section). The combined acreage of lands within the Primary, Dispersal, and Secondary Zones is 3,110,577 acres (1,258,833 ha) (Kautz et al. 2006). Currently, 2,073,865 acres of Primary Zone equivalent lands are preserved (Table 3), so 799,205 additional acres need to be preserved to support a population of 90 panthers in south Florida (2,873,070 minus 2,073,865 equals 799,205).

The Service also consults on lands outside of the Primary, Secondary, and Dispersal zones that may effect panthers, such as agricultural lands adjacent to the Panther Focus Area and proposals in urbanized areas that could generate traffic in or adjacent to the Panther Focus Area or have other identifiable impacts.

Primary Zone Equivalent Lands: Kautz et al. (2006), through their habitat evaluation of lands important to the Florida panther, identified three sets of lands, *i.e.,* Primary Zone, Secondary Zone, and Dispersal Zone, and documented the relative importance of these lands to the Florida panther. These lands, generally referred to as Kautz et al.'s panther core lands (Figure 5), include the majority of the home ranges of the current population of the Florida panther. The Service, in our

habitat value to the Florida panther and developed cost surface values for various habitat types, based on use by and presence in home ranges of panthers. The FWC (2006), using a similar concept, assigned likely use values of habitats to dispersing panthers. The FWC's habitats were assigned habitat suitability rank between 0 and 10, with higher values indicating higher likely use by dispersing panthers.

The Service chose to evaluate project effects to the Florida panther through a similar process. We incorporated many of the same habitat types referenced in Kautz et al. (2006) and FWC (2006) with several adjustments to the assigned habitat use values reflecting consolidation of similar types of habitats and the inclusion of Everglades Restoration water treatment and retention areas. We used these values as the basis for habitat evaluations and the recommended compensation values to minimize project effects to the Florida panther (Table 4), as discussed below.

Base Ratio: To develop a base ratio that will provide for the protection of sufficient acreage of Primary Zone equivalent lands for a population of 90 panthers from the acreage of Primary Zone equivalent non-urban lands at risk, we developed the following approach.

The available Primary Zone equivalent lands are estimated at 3,276,563 acres (actual acreage is 4,376,444 acres [the "actual acreage" value includes acres of lands in each category in the Secondary and Other Zones as well as the lands in the Primary Zone]) (see Table 3 and 5). Currently 2,073,865 acres of Primary Zone equivalent lands (actual acreage is 2,578,152 acres) of non-urban lands are preserved (Table 3). The remaining non-urban, at-risk, private lands are estimated at 1,202,698 acres of Primary Zone equivalent lands (actual acreage is 1,798,295 acres) (Table 5). To meet the protected and managed lands goal for a population of 90 panthers, an additional 799,205 acres of Primary Zone equivalent lands are needed. The base ratio is determined by dividing the primary equivalents of at-risk habitat to be secured (799,205 acres) by the result of the acres of at-risk habitat in the Primary Zone (610,935 acres) times the value of the Primary Zone (1); plus the at-risk acres in the Dispersal Zone (27,883 acres) times the value of the Dispersal Zone (1); plus the at-risk acres in the Secondary Zone (503,481 acres) times the value of the Secondary Zone (0.69); plus the at-risk acres in the Other Zone (655,996 acres) times the value of the Other Zone (0.33); minus the at-risk acres of habitat to be protected (799,205 acres). The results of this formula provide a base value of 1.98.

$$799{,}205 / ((610{,}935 \times 1.0) + (27{,}883 \times 1) + (503{,}481 \times 0.69) + (655{,}996 \times 0.33)) - 799{,}205 = 1.98$$

In evaluating habitat losses in the consultation area, we used an estimate of 0.8 percent loss of habitat per year (R. Kautz , FWC, personal communication, 2004) to predict the amount of habitat loss anticipated in south Florida during the next 5 years (*i.e.*, 6,000 ha/year; 14,820 acres/year). We conservatively assumed that we would be aware of half of these projects. We also assumed that half of the projects would occur in the Primary Zone and half would occur in the Secondary Zone. Based on these assumptions, we estimated that about 37,000 acres would be developed without Federal review over a 5-year period. As a result, we adjusted the base value from 1.98 to 2.23.

Exotic Species Assessment: Since many habitat types in south Florida are infested with exotic plant species, which affects the functional value a habitat type provides to foraging wildlife species (*i.e.,* primarily deer and hog), we believe the presence of these species and the value these species provide to foraging wildlife needs to be considered in the habitat assessment methodology. As shown in Table 4, we have a habitat type and functional value shown for exotic species. This category includes not only the total acres of pure exotic species habitats present but also the percent-value acreages of the exotic species present in other habitat types.

For example, a site with 100 acres of pine flatwoods with 10 percent exotics would be treated in our habitat assessment methodology as 90 acres of pine flatwoods and 10 acres of exotics. Adding another 100 acres of cypress swamp with 10 percent exotics would change our site from 90 acres of pine flatwoods and 10 acres of exotics to 90 acres of pine flatwoods, 90 acres of cypress swamp, and 20 acres of exotics.

Habitat Assessment Methodology Application – Example: To illustrate the use of our habitat assessment methodology, we provide the following example. A 100-acre project site is proposed for a residential development. Plans call for the entire site to be cleared. The project site contains 90 acres of pine flatwoods and 10 acres of exotic vegetation, and is located in the "Secondary Zone." The applicant has offered habitat compensation in the "Primary Zone" to minimize the impacts of the project to the Florida panther. To calculate the PHUs provided by the site, we multiply the habitat acreage by the "habitat suitability value" for each habitat type and add those values to obtain a value of 840 PHUs ((90 acres of pine flatwoods x 9 [the habitat suitability value for pine flatwoods] = 810 PHUs) + (10 acres of exotic vegetation x 3 [the habitat suitability value for exotics] = 30 PHUs) = 840 PHUs). The value of 840 PHUs is then multiplied by the 2.5 (the base ratio) and 0.69 (the landscape multiplier) resulting in a value of 1,149 PHUs for the project site. In this example, the acquisition of lands in the Primary Zone containing at least 1,149 PHUs is recommended to compensate for the loss of habitat to the Florida panther resulting from this project.

Analysis of the species likely to be affected

The Florida panther is an endangered animal restricted to two to three million acres of land (6 to 9 percent of the total land area of Florida) in south Florida. The panther is a wide-ranging species that requires a biotically diverse landscape to survive. Dispersing subadult males wander widely through unforested and disturbed habitat. Human population in south Florida has dramatically increased, from one million in 1950 to almost eight million in 2000, resulting in secondary disturbances such as increased human presence and noise, light, air, and water pollution. Increasing human population has resulted in increasing impacts on native habitat and flora and fauna. Resulting threats to panthers include road mortality, habitat loss, habitat fragmentation, and human disturbance.

ENVIRONMENTAL BASELINE

The environmental baseline includes the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7

to the site of a panther still alive as of this document was FP 65 (male) recorded about 1.0 mile to the east. More recently, this panther has remained about 6 or more miles east of the project site just northwest of the Big Cypress Seminole Indian Reservation. FP 52 (female) was documented 0.86 mile from the project site in September 1994; however, she died in a vehicle collision on CR 846 at Dupree Road in January 1995.

Historically, there have been a total of 25 radio-collared male and female panthers recorded within 5 miles of the project site on 665 occasions based on telemetry data from February 1981 through June 2007 (Figure 8; Table 7). All of the instances of recorded panther telemetry within 5 miles occurred between March 1986 and June 2007. This translates to an average of 31.7 occurrences per year or 2.6 occurrences per month. Five of those panthers were known to be alive as of this document (Table 7).

The status and activities of all non-collared Florida panthers within the action area are unknown. However, the Service believes the project site may also be used by non-collared panthers because it contains habitat types used by panthers and their prey. Seven non-collared panthers have been killed by motor vehicles within 5 miles of the project site since June 2000. Additionally, 8 confirmed depredations and 4 confirmed sightings of uncollared panthers have been documented within the 25-mile action area; two of those incidents occurred within 1 mile of the project site. One depredation was identified about 0.4 miles to the west of the project sight in December 2005. Another sighting (tracks) of an adult panther with young was identified about 1.0 mile to the east of the project and east of SR 29 in August 2007.

Past and ongoing Federal and State actions affecting panther habitat in the action area include the issuance of Corps permits and State of Florida Environmental Resource Permits authorizing the filling of wetlands for development projects and other purposes. Since 1982, the Corps and the State have had a joint wetland permit application process, where all permit applications submitted to the State are copied to the Corps and vice versa. Within the 25-mile action area, the Service, since January 14, 1992, has formally consulted on 41 projects and informally consulted on 21 projects regarding the panther that were a result of Federal actions (database entries for formal consultations prior to 1992 are incomplete for projects in the action area) (Table 2). These projects have impacted or are expected to impact about 30,940 acres of panther habitat. These projects have also incorporated a total of 26,952 acres of preservation and restoration of panther habitat. The impacted lands generally are: (1) on the western fringe of occupied panther habitat; (2) vegetated with dense stands of exotic species, which may adversely affect the density of the panther prey base; and/or (3) support agricultural enterprises, *i.e.*, row crops, citrus, etc., which generally provide a lower quality habitat value to the Florida panther. The preserved lands, which are generally proximate to larger tracts of Federal, State, and other preserves, provide a higher quality habitat value for the Florida panther. The Service determined in the biological opinions issued for these 62 Federal actions requiring formal consultation, that individually and cumulatively these projects do not jeopardize the survival and recovery of the Florida panther.

From July 2000 through September 2006, the Service also engaged in informal consultation for projects under 5 acres with the Corps for about 757 projects affecting about 764.1 acres in

Picayune Strand State Forest, Fakahatchee Strand State Preserve, Florida Panther NWR, ENP, and other conservation areas, is intended to improve habitat for panther prey species, which benefits panthers within these areas.

Factors Affecting Species Environment within the Action Area

Factors that affect the species environment (positively and negatively) within the action area include, but are not limited to, the presence and construction of highways and urban development, agriculture, resource extraction, public lands management (prescribed fire, public use, exotic eradication, etc.), hydrological restoration projects, public and private land protection efforts, effects of genetic inbreeding, and genetic restoration. Development activities may result in avoidance or limited use of remaining suitable habitat by panthers as well as habitat loss, habitat fragmentation, habitat degradation, and also an increase in risk of vehicular collision (*e.g.,* injury or death). Public and private land management practices can have a positive, neutral, or negative effect, depending on the management goals. Land protection efforts will help to stabilize the extant population. Hunting of the panther is no longer sanctioned, although there still may be instances of intentional or unintentional shooting of individuals for various reasons.

Wildlife Value and Habitat Quality

As discussed previously in the status of the species, the Service believes the existing habitat conditions present on a site and the foraging value that a site provides to the Florida panther and panther prey species are an important parameter in assessing the importance of the project site to the Florida panther and other wildlife species. In order to assess this importance, the Service requires wildlife surveys and plant species compositions as part of the applicant's biological assessment prepared for the project.

Wildlife Value – Three wildlife surveys were conducted by Turrell and Associates, Incorporated, in January and February 2007. The first two survey periods included daily track counts and camera trapping. The third survey period only included camera trapping. Feral cats, dogs, and several other animals were captured with camera traps, but not enough data was collected to give reasonable density estimates. White-tailed deer were surveyed using track counts only. Other potential panther prey observed during the survey period included wild hog, wild turkey (*Meleagris gallopavo Osceola*), otter (*Lutra Canadensis*), raccoon, bobcat, rabbit, opossum (*Didelphis virginiana*), and armadillo.

Based on track surveys, it was estimated that the area surveyed supports about 1 deer per 53 acres. Density estimates from deer tracks, however, should be viewed with caution. Track estimates are most appropriately used as long-term indicators (McCown 1991) and several factors can influence counts including weather, food abundance, population density, season, and availability of water (O'Connell et al. 1999). Similar white-tailed deer track surveys for exotic species-infested habitat types provided estimates of one deer per 591 acres (Turrell 2001) to one deer per 534 acres (Passarella 2004). In comparison, deer densities in wildlife management areas average

Zone, 111 PHUs generated by lands in the Secondary Zone, and 1,096 PHUs generated by lands in the Other Zone. These numbers are multiplied by the primary equivalent factor and the 2.5 base ratio, which results in a Primary Zone PHU compensation need of 8,600 PHUs (3,002 x 1 x 2.5 = 7,505) for the Primary Zone impacts, 191 PHUs (111 x 0.69 x 2.5 = 191) for the Secondary Zone impacts, and 362 PHUs (1,095 x 0.33 x 2.5 = 904) for the Other Zone impacts. Since the compensation is in the Primary Zone, the base ratio PHUs are unaffected by the landscape compensation multiplier of 1.0. The proposed compensation lands consist of about 1,015 acres that provide 8,600 PHUs (see Table 10 for calculations). A summary is presented in Table 11 below.

Summary of Table 11
Panther Compensation

Project Development			
Primary Zone	345.8 acres	Compensation PHUs Needed	7,505 PHUs
Secondary Zone	13.7 acres	Compensation PHUs Needed	191 PHUs
Other Zone	157.6 acres	Compensation PHUs Needed	904 PHUs
BCSIR Native Area Compensation Sites	1,000.2 acres	Compensation PHUs Provided	8,503 PHUs
BCMB credits	14.6 acres	Compensation PHUs Provided	97 PHUs
Total Compensation Needed	**8,600 PHUs**	**Total Compensation Provided**	**8,600 PHUs**

The lands proposed for development are predominately in the Primary Zone, with some Secondary and Other Zone lands. Primary Zone lands exist to the west and east and Secondary Zone lands exist to the south. The town of Immokalee borders the northern boundary of the project site. Lands proposed for preservation are in the Primary Zone, adjacent to other natural lands. Preservation of these lands is consistent with the Service's panther goal to strategically locate, preserve, and restore sets of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of the Florida panther population south of the Caloosahatchee River.

Conservation Measures

The beneficial effects of the project include preservation of approximately 1,015 acres of Primary Zone panther habitat. Though the project will result in a net loss in number of acres of habitat available to the panther, the habitat quality provided to the Florida panther through restoration and preservation will be of higher value compared to that of the areas to be impacted, and the habitat will be protected in perpetuity. The offsite panther habitat compensation sites and surrounding areas are presently providing a diverse mosaic of native plant species, which provide foraging value to resident deer populations. They are in areas of documented panther utilization, contain habitats valuable for breeding, foraging, and dispersal by panthers, and will be managed to maintain high quality habitat and prevent infestation by exotic vegetation in perpetuity.

either been developed or previously permitted for development and were not included in our analyses for effects of the action.

Compensation for the loss of 505.5 acres of panther habitat will be through the protection and restoration of about 1,000.24 acres of panther habitat in the Primary Zone within the BCSIR Native Area and about 14.6 acres of Primary Zone habitat associated with the purchase of 10.82 credits from the BCMB. Restoration and enhancement of mitigation areas within the Native Area will consist of the removal of exotic vegetation and restoration of a more natural hydrological regime. Big Cypress Mitigation Bank is about 5 miles west of the BCSIR Native Area and restoration consists of removal of citrus and exotics, restoration of natural hydrology, and planting of native vegetation. The restoration sites and the surrounding areas show significant panther usage (Figures 3 and 9), and contain habitats valuable for breeding, foraging, and dispersal by the Florida panther.

Direct Effects

Direct effects are those effects that are caused by the proposed action, at the time of construction, are primarily habitat based, are reasonably certain to occur and include: (1) the permanent loss and fragmentation of panther habitat; (2) the permanent loss and fragmentation of habitat that supports panther prey; (3) roadway improvements; (4) the loss of available habitat for foraging, breeding, and dispersing panthers; (5) a reduction in the geographic distribution of habitat for the species; (6) harassment by construction activities; and (7) habitat compensation. The direct effects this project will have on the Florida panther within the action area are discussed below.

Permanent Loss and Fragmentation of Panther Habitat: Prey surveys documented the use of the site by white-tailed deer, a primary panther prey species, and wild hog, a secondary prey species. The project will result in the loss of 345.75 acres of land in the Primary Zone, 13.67 acres of land in the Secondary zone, and 146.04 acres of land in the Other Zone. The land will be converted to support a multi-use development. The loss of habitat may adversely affect the panther by decreasing the spatial extent of lands available for use by panther.

Panthers, because of their wide-ranging movements and extensive spatial requirements, are particularly sensitive to habitat fragmentation (Harris 1984). Mac et al. (1998) defines habitat fragmentation as: "The breaking up of a habitat into unconnected patches interspersed with other habitat, which may not be inhabitable by species occupying the habitat that was broken up. The breaking up is usually by human action, as, for example, the clearing of forest or grassland for agriculture, residential development, or overland electrical lines." The reference to "unconnected patches" is a central underpinning of the definition. For panther conservation, this definition underscores the need to maintain contiguous habitat and protected habitat corridors in key locations in south Florida. Habitat fragmentation can result from road construction, urban development, and agricultural land conversions within migratory patterns of panther prey species and affect the ability of panthers to move freely throughout their home ranges. Construction of highways in wildlife habitat typically results in loss and fragmentation of habitat, traffic related mortality, and avoidance of associated human development. Roads can also result in habitat fragmentation, especially for females who are less likely to cross them (Maehr 1990).

commonly used core lands of the panther. However, two living radio-collared panthers, FP 143 (male) and FP 137 (male), had overlapping home ranges that extended within 5 miles of the project site in 2007. No collared panthers have ever been recorded on the project site. A male panthers tracks were identified about 0.4 miles west of the project site in 2005 and tracks of an adult female and young were identified about 1 mile east of the project site in August 2007. One panther, a young, uncollared, likely dispersing male, was killed by a vehicle on SR 29 within 3 miles of the project site in June 2007.

The project will result in the loss of 505.5 acres of habitat available for use by the panther. The lands proposed for development are primarily native communities, with about 27.6 percent (169.54 acres) improved pasture, agriculture, and disturbed or developed lands, in the northwest portion of the occupied range of the Florida panther south of the Caloosahatchee River. The project site is adjacent to the town of Immokalee to the north, existing development and agricultural lands to the south, natural areas and SR 29 to the east, and natural areas and Immokalee Road to the west. However, the property does provide a potential connecting link to natural lands adjacent to and surrounding Lake Trafford and Camp Keis Strand to the west and natural lands east of SR 29 (Figure 1). However, this potential corridor also includes areas of rural development and lands in mixed agricultural uses. The proposed development, although preserving the majority of the wetland systems within this corridor also proposes placement of residential units and internal access roads through this portion of the project (Figure 1a). This activity effectively reduces the likelihood of continual use of these lands by the Florida panther and panther prey and may result in fragmentation of a portion of panther Primary Zone habitat.

According to the most current home range estimates of the Florida panther (Lotz et al. 2005), this 505.5-acre loss represents 1.7 percent of a female panther's average home range (29,059 acres) and 0.81 percent of a male panther's average home range (62,542 acres). This loss also represents 0.03 percent of the 1,962,294 acres of available non-urban private lands in the Service's panther core area. The loss of habitat may contribute to increases in intraspecific aggression through decreasing the spatial extent of lands available to panthers in the action area for foraging, breeding, and dispersing; however, we anticipate any resident panthers with home ranges overlapping or in the vicinity of the project area will adjust the size and location of their ranges to account for this loss and that adjustment is anticipated to occur in concert with project construction. This small loss of non-urban private lands will not adversely affect the Service's land conservation and preservation goals.

Reduction in the Geographic Distribution of Habitat for the Species: The project will result in the loss of about 505.5 acres of non-developed land along the northwestern edge of the panther's core use area. This loss represents only 0.03 percent of the 1,962,294 acres of available non-urban private lands in south Florida in the Service's panther core area of the Florida panther (Table 5). The Service believes the habitat values lost by the development will be minimized by the preservation and restoration actions proposed by the Tribe. The lands proposed for development are on the northwestern extent of the occupied range of the Florida panther and are adjacent to existing roads, urban areas, and recreation. The lands proposed for preservation are consistent with the Service's panther conservation strategy to locate, preserve,

panther and panther prey species, and if the site development would further restrict access to surrounding lands important to the Florida panther and panther prey species.

The project will result in increased vehicular traffic in the project vicinity during construction and operation. Vehicular mortality and injury data (see Table 8 and Figure 7) provided by the FWC indicate collisions with motor vehicles began increasing in 2000 in the 25-mile radius project action area. From 1979 to 1999, there was only 1 year (1985) were three panthers were killed in a single year within the 25-mile action area. Since 1999, there has been only 1 year (2005) where fewer than four panthers were killed within a single year within the 25-mile action area (data for 2008 are incomplete). Most recently, in 2007, nine panthers were killed within the 25-mile action area within a single year (Table 8), representing the most panthers killed by vehicles in a single year in the action area. Of the 76 documented collisions, 48 (63 percent) have occurred more than 10 miles away from the project site; 28 (36 percent) occurred between 2 and 10 miles from the project site; and, 1 (1.3 percent) occurred within 2 miles of the project site.

Access to the external roadway network is via SR 29 on the east and Immokalee Road (CR 846) on the west. CR 846 (Immokalee Road) runs south of Immokalee for several miles through rural natural and agricultural areas and then turns west, crossing Camp Keais Strand, and then leads into more urban areas. There have been two panther vehicular mortalities along the Camp Keais Strand segment of CR 846. CR 858 (Oil Well Road) crosses SR 29 about 7 miles south of Immokalee, running through natural and agricultural areas. There have been two vehicular mortalities along CR 858 to the west of SR 29. Collier County has committed to constructing a wildlife crossing and fencing where CR 858 crosses Camp Keais Strand. SR 29 runs north and south of Immokalee. North of Immokalee, SR 29 runs through agricultural areas for 4 miles, tying into SR 82, which runs northwest along the south edge of Lehigh Acres and into Fort Myers. There have been no mortalities along this northern section of SR 29. South of Immokalee, SR 29 runs south through natural and agricultural areas, crossing CR 858, eventually intersecting with I-75. There have been 6 vehicular mortalities on SR 29 north of CR 858. There have been 12 vehicular mortalities on SR 29 south of CR 858 to I-75. There are presently four wildlife crossings along this stretch, two constructed in 1995 and two constructed in 2007.

According to traffic studies provided by DKS Associates, it is estimated that the Master Plan project will generate approximately 3,113 new external daily trips at build-out. Access to the external roadway network is via SR 29 on the east and Immokalee Road (CR 846) on the west. The Master Plan's traffic distribution will be about 84 percent to the north and southwest, and about 16 percent to the east and southeast. The largest increase (22 percent) in traffic over the existing (2007) average daily traffic will be on Immokalee Road to the west of the project site and on Oil Well Road (13.9 percent increase) south of the project site. Increases over baseline average daily traffic along Immokalee Road traveling east and SR 29 traveling south of the project site into core panther use areas are estimated to be around 6.9 and 3 percent, respectively. The majority of collisions with motor vehicles resulting in death or injury of panthers within the 25-mile action area have occurred along these two roads.

site, the Master Plan development may result in an increase in panther/human interactions and prey disturbance.

Habitat Fragmentation: Considering our discussion of fragmentation under Direct Effects, the project site is adjacent to existing urban development to the north, agricultural lands and development to the south, and is at the northwest edge of the panther's core use area. Primary Zone panther habitat exists to the west and east of the project site. The property is not located within known dispersal or connection corridors (FWC 2006) to larger publicly owned managed lands. However, the property does provide a potential connecting link to natural lands adjacent to and surrounding Lake Trafford and Camp Keis Strand to the west and natural lands east of SR 29 (Figure 1). However, this potential corridor also includes areas of rural development and lands in mixed agricultural uses. The proposed development, although preserving the majority of the wetland systems within this corridor also proposes placement of residential units and internal access roads through this portion of the project (Figure 1a). This activity effectively reduces the likelihood of continual use of these lands by the Florida panther and panther prey and may result in fragmentation of a portion of panther Primary Zone habitat.

Intraspecific Aggression: Potential increases in intraspecific aggression and disturbance to the Florida panther were evaluated. As discussed previously in our assessment of fragmentation and habitat for panther and panther prey, we considered habitat quality related factors and occurrence data for the Florida panther and panther prey species as factors affecting intraspecific aggression.

In the past 5 years, there have been three confirmed panther deaths due to intraspecific aggression within 5 miles of the project site: 4.6 miles to the east in 2001 (male), 4.0 miles to the east in 2001 (female), 4.6 miles to the east in 1997 (female). There have not been any confirmed panther deaths due to intraspecific aggression within 10 miles of the project site since 2005. Of the 33 confirmed panther deaths due to intraspecific aggression within the 25-mile action area, 25 (76 percent) have occurred more than 10 miles from the project site, with most occurring southeast of the project site within core panther use areas. The project site, although adjacent to existing development and agriculture, is likely used by the panther for foraging and dispersing. The reduction in the geographic range of habitat for feeding or dispersal may contribute to a potential increased risk of harm and harassment of panthers in the action area due to intraspecific aggression.

Species Response to the Proposed Action

The proposed action will result in increased human activity and noise in the project area during construction of the project. However, activities associated with construction of the Master Plan project will occur during daylight hours when panthers would be least likely to roam in the vicinity. Panthers would be expected to avoid construction areas at night. Therefore, construction-related activities are not anticipated to significantly increase risk of disturbance to panthers.

The project will result in the loss of 505.5 acres of panther habitat. According to the most current home range estimates of the Florida panther (Lotz et al. 2005), this loss represents 1.7 percent of a female panther's average home range (29,059 acres) and 0.8 percent of a male panther's average

reviews by the Corps, we identified the percentage of the project site that was classified as wetland habitat, based on the FLUCCS mapping units. The mapping units relied on by the Service included the 600 series (wetland classifications) and the 411 and 419 pine flatwood classifications (hydric pine systems). For listing purposes, properties with less than 5 percent wetlands were considered by the Service to be generally exempt from regulatory review as these quantities of wetlands could be avoided by project design.

Within the action area, based on FLUCCS mapping, 76 projects affecting 7,007 acres could be expected to be subject to development without Federal permit involvement through the Clean Water Act section 404. Within this action area, 8 projects representing 707 acres are within the panther Primary Zone, 16 projects representing 1,632 acres are within the Secondary Zone, and 52 projects representing 4,668 acres are outside the Panther Focus Area. For our assessment purposes, only those projects within the Panther Focus Area are likely to have an adverse effect to the Florida panther as a result of the loss of panther habitat, and represent 2,339 acres. This level of development represents 8 percent of a female panther's average home range (29,059 acres) and 3.7 percent of a male panther's average home range (62,542 acres).

State and county land alteration permits in southwest Florida not part of those actions listed above, generally included single-family residential developments within Northern Golden Gate Estates and Lehigh Acres. Vacant lands within the area of Northern Golden Gate Estates (north of I-75), also within the action area, totaled about 34,028 acres as of September 2004 (Figure 11). To evaluate these effects, the Service overlaid the plat boundaries on 2004 aerials, queried the parcel data from Collier County's Property Appraisers Office, noted lots with developments, compared those to 2003 aerials, and noted the changes. Vacant lands within the area of Northern Golden Gate Estates (north of I-75) totaled about 35,768 acres as of August 2003. The breakdown of acres for August 2003 is: (1) wetlands, about 17,572 acres; (2) uplands, about 17,990 acres; and (3) water, about 210 acres. These changes were overlain on the National Wetlands Inventory (NWI) maps for presence of wetlands. This evaluation was used to estimate the acreage of properties that may be exempt from Federal Clean Water Act section 404 wetland regulatory reviews by the Corps. A comparison of the 2003 and 2004 data for Northern Golden Gate Estates indicates about 1,740 acres of land were converted from vacant to developed with the breakdown as: (1) wetlands, about 696 acres; and (2) uplands, about 1,740 acres.

The evaluation process provided an estimate of 417 lots totaling 1,740 acres for Northern Golden Gate Estates. Therefore, using NWI mapping for the Northern Golden Gate Estates, a total of about 1,740 acres could be expected to be subject to development in a year in these areas without Federal permit involvement. We expect that this level of annual development in Northern Golden Gate Estates has not significantly changed between 2004 and 2007. Based on historical records for wetland permits issued by the Corps for these areas, most of these projects will involve the construction of single-family residences in partially developed areas and will involve less than an acre of impact. This level of development represents 3.59 percent of a female panther's average home range (29,059 acres) and 1.67 percent of a male panther's average home range (62,542 acres).

project may potentially contribute to an increase in traffic-related mortality of panthers in the action area.

Habitat Loss: The Service, based on the habitat evaluations discussed previously, believes the project will result in the direct loss of about 505.5 acres of panther habitat within the Primary, Secondary, and Other Zones. The lands proposed for development are primarily native communities in the northwest portion of the occupied range of the Florida panther south of the Caloosahatchee River. The natural areas within the Immokalee reservation have few exotics and are of generally high quality to panther prey. The project site is adjacent to town of Immokalee to the north, existing development and agricultural lands to the south, natural areas and SR 29 to the east, and natural areas and Immokalee Road to the west. We believe panther use the site and the permanent loss is anticipated to adversely affect the panthers in the action area by decreasing the spatial extent of lands available for foraging, breeding, and dispersing. This loss of about 505.5 acres of panther habitat represents 0.03 percent of the 1,962,294 acres of available non-urban private lands in the Service's panther core area. This small loss of non-urban private lands will not adversely affect the Service's land conservation and preservation goals.

Compensation: The project will provide for the preservation of about 1,015 acres of Primary Zone habitat. The functional value of the habitats to the panther will be maintained long-term through hydrological restoration, the removal of exotic vegetation, and re-planting. The preservation of these lands in the Service's panther core area represents 0.13 percent of the 799,205 acres of private lands still needed for the population of 90 individuals. The preservation of about 1,015 acres of higher value panther habitat in the Primary Zone will minimize the impact of the loss of 505.5 acres of panther habitat and will further the Service's panther conservation goal.

The proposed compensation plan, which provides habitat preservation and restoration inside and outside the project action area, benefits the survival and recovery of the Florida panther as referenced in the draft Panther Recovery Plan (Service 2006) goal 1.1.1.2.3. This goal recommends that habitat preservation and restoration within the Primary Zone be provided in situations where land use intensification can not be avoided. The applicant has proposed equivalent habitat protection and restoration, to compensate for both the quantity and functional value of the lost habitat.

Fragmentation:
The project site occurs adjacent to an existing urban area to the north, but is connected to panther habitat to the west, east, and south. The project site is not located within known dispersal corridors to larger publicly owned and managed lands important to the panther. However, the property does provide a potential connecting link to natural lands adjacent to and surrounding Lake Trafford and Camp Keis Strand to the west and natural lands east of SR 29 (Figure 1). However, this potential corridor also includes areas of rural development and lands in mixed agricultural uses. The proposed development, although preserving the majority of the wetland systems within this corridor also proposes placement of residential units and internal access roads through this portion of the project (Figure 1a). This activity effectively reduces the likelihood of continual use of these lands by the Florida panther and panther prey and may result in fragmentation of a portion of panther Primary Zone habitat

intraspecific aggression within the 25-mile radius action area. This indirect take is difficult to quantify due to the wide-ranging nature of the species and the challenge of linking the death or injury of a single panther to increases in panther interactions (intraspecific aggression) or traffic generated as a result of the Master Plan project. The adverse effects of project-generated traffic and intraspecific aggression potential, however, are not anticipated to appreciably diminish or preclude the survival and recovery of the panther. According to the most current home range estimates of the Florida panther (Lotz et al. 2005), this loss of 505.5 acres represents 1.7 percent of a female panther's average home range (29,059 acres) and 0.8 percent of a male panther's average home range (62,542 acres). This loss represents 0.026 percent of the 1,962,294 acres of available non-urban private lands in the Service's panther core area.

As discussed previously, the habitat to be impacted constitutes only a fraction of the panther's occupied habitat. The loss of habitat from implementing the project will be minimized by the conservation and restoration of 1,015 acres of high quality panther habitat in the Primary Zone. Additionally, the status of the species, remaining habitat, and other factors considered in this biological opinion, such as the overall recovery objectives and other cumulative effects from actions in the action area, have been accounted for in our decision. Taking all of the above into consideration, the Service believes the proposed construction and operation of the Immokalee Master Plan development project is not likely to jeopardize the continued existence of the Florida panther. Critical habitat has not been designated for this species; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." "Harm" is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking, that is incidental to and not intended as part of the agency action, is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

AMOUNT OR EXTENT OF TAKE

The Service anticipates that incidental take of the Florida panther will be difficult to detect for the following reasons because the Florida panther is a wide-ranging species. The Service does not anticipate construction of the project will result in the direct mortality or injury of any Florida panthers. However, the Service anticipates indirect take of the panther in the form of

take of panthers by providing the Service a report on implementation and compliance with the conservation measures within 1 year of the issuance date of the permit;

3. Upon locating a dead, injured, or sick threatened or endangered species, initial notification must be made to the nearest Service Law Enforcement Office; Fish and Wildlife Service; 9549 Koger Boulevard, Suite 111; St. Petersburg, Florida 33702; 727-570-5398. Secondary notification should be made to the FWC; South Region; 3900 Drane Field Road; Lakeland, Florida; 33811-1299; 1-800-282-8002; and

4. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or in the handling of dead specimens to preserve biological material in the best possible state for later analysis as to the cause of death. In conjunction with the care of sick or injured panthers or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service is not proposing any conservation recommendations at this time.

REINITIATION NOTICE

This concludes formal consultation on the Immokalee Master Plan development project. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded (see below); (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; (3) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. The amount of incidental take authorized by this consultation may be exceeded should impacts from the proposed project increase or mitigation fail to provide habitat values proposed and analyzed within this biological opinion. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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Table 1. *Targeted and Acquired Acreage Totals of Conservation Lands in South Florida directly affecting the Panther within the Panther Focus Area.

Name	Targeted[1] Acreage	Acquired Acreage	Indian Reservation
Federal Conservation Lands			
Everglades National Park	1,508,537	1,508,537	--
Big Cypress National Preserve	720,000	720,000	--
Florida Panther National Wildlife Refuge	26,400	26,400	--
Subtotal	**2,254,937**	**2,254,937**	--
State of Florida: Florida Forever Program			
Belle Meade	28,505	19,107	--
Corkscrew Regional Ecosystem Watershed	69,500	24,028	--
Twelvemile Slough	15,653	7,530	--
Panther Glades	57,604	22,536	--
Devil's Garden	82,508	0	--
Caloosahatchee Ecoscape	18,497	2,994	--
Babcock Ranch	91,361	0	--
Fisheating Creek	176,760	59,910	--
Subtotal	**540,388**	**136,105**	--
State of Florida: Other State Acquisitions			
Water Conservation Area Number 3	491,506	491,506	--
Holey Land Wildlife Management Area	33,350	33,350	--
Rotenberger Wildlife Management Area	25,019	20,659	--
Fakahatchee Strand State Preserve	74,374	58,373	--
Picayune Strand State Forest	55,200	55,200	--
Okaloacoochee Slough State Forest and WMA	34,962	34,962	--
Babcock-Webb Wildlife Management Area	79,013	79,013	--
Subtotal	**793,424**	**773,063**	--
Indian Reservations[2]			
Miccosukee Indian Reservation	--	--	81,874
Big Cypress Seminole Indian Reservation	--	--	68,205
Brighton Seminole Indian Reservation	--	--	37,447
Subtotal	--	--	**187,526**
GRAND TOTALS	**3,588,749**	**3,164,105**	**187,526**

[1]Targeted acres not available for all lands. In Such cases, targeted equals acquired acreage.
[2] Indian lands are included due to their mention in the MSRP. Acreages taken from GIS data.
*Table 1 was excerpted from the Brief of Amicus (2003). However, the lands shown as acquired in this table may include some private in-holdings and may include lands currently under sales negotiations or condemnation actions.

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Rotenberger Wildlife Management Area	25,019	20,659	--
Fakahatchee Strand State Preserve	74,374	58,373	--
Picayune Strand State Forest	55,200	55,200	--
Okaloacoochee Slough State Forest and WMA	34,962	34,962	--
Babcock-Webb Wildlife Management Area	79,013	79,013	--
Subtotal	**793,424**	**773,063**	--
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Table 2. Continued

Date	Service Log No.	Corps Application No.	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
01/14/92	4-1-91-325	199101279 (IP-HH)	Dooner Gulf Coast Citrus (32 acre citrus grove)	Collier	40	40	0	40
09/25/92	4-1-92-340	unknown	BIA, STOF, BCSIR (1,995 acre citrus grove)	Hendry	1,995	0	0	0
06/18/93	4-1-93-217	199200393 (IP-SL)	Lee County DOT (Corkscrew Road)	Lee	107	0	0	0
02/25/94	4-1-94-209	199301131 (IP-KC)	Lee County DOT (Daniels Road extension)	Lee	65	0	0	0
05/09/94	4-1-93-251	199202019 (IP-KA)	Corkscrew Enterprises (The Habitat)	Lee	900	100	100	200
10/27/94	4-1-94-430	199302371 (IP-BB) 199400807 (IP-BB) 199400808 (IP-BB)	Timberland and Tiburon Florida Gulf Coast University Treeline Boulevard	Lee	1,088	526	0	526
05/24/95	4-1-95-230	199302130 (IP-TB)	FDOT, I-75 (Turner River access @ MM 70)	Collier	1,936	0	0	0
08/07/95	4-1-95-274	199405501 (IP-AW)	Bonita Bay Properties, Inc. (golf course)	Collier	509	491	0	491
08/15/95	4-1-94-214	199301495 (IP-MN)	SWFIA, Northeast Access Road	Lee	14	0	0	0

Table 2. Continued

Date	Service Log No.	Corps Application No.	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
04/17/01	4-1-00-F-584	200001436 (IP-MN)	WCI Communities, Inc. (Sun City - Ft. Myers)	Lee	1,183	0	408	408
07/30/01	4-1-94-357	199003460 (IP-TB)	Naples Golf Estates	Collier	439	175	0	175
08/31/01	4-1-00-F-183	199900411 (IP-SR)	Worthington Communities, Inc. (Colonial G&CC)	Lee	1,083	0	640	640
12/14/01	4-1-00-F-585	199301156 (IP-MN)	SWFIA, Mid-field Terminal Expansion	Lee	8,058	0	6,986	6,986
01/30/02	4-1-98-F-372	199402492 (IP-ML)	Florida Rock Industries, Inc. (Fort Myers Mine #2)	Lee	2,913	1,959	0	1,959
03/07/02	4-1-00-F-178	199901251 (IP-MH)	Benton, Charles (Southern Marsh GC)	Collier	121	75	80	155
04/24/02	4-1-01-F-148	199901378 (IP-SR)	Schulman, Robert, Trustee (Hawk's Haven)	Lee	1,531	267	0	267
09/24/02	4-1-01-F-135	200001574 (IP-DY)	State Road 80, LLC (Verandah)	Lee	1,456	0	320	320
10/08/02	4-1-02-F-014	199602945 (IP-DY)	Barron Collier Company (Winding Cypress)	Collier	1,088	840	1,030	1,870
05/19/03	4-1-02-I-1741	200200970 (IP-DEY)	Apex Center	Lee	95	10	18	28
06/10/03	4-1-01-F-1955	200003795 (IP-DY)	Walnut Lakes	Collier	157	21	145	166
06/18/03	4-1-01-F-136	199701947 (IP-SR)	Twin Eagles Phase II	Collier	593	57	98	155

Table 2. Continued

Date	Service Log No.	Corps Application No.	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
07/15/05	4-1-04-F-5786	199405829 (IP-CDC)	Land's End Preserve	Collier	231	0	61	61
09/26/05 10/26/05	4-1-04-F-9348	2004-1122 (IP-RMT)	Super Target/Brentwood Land Partners	Collier	34	0	20	20
11/23/05	4-1-04-F-6043	20039414	Waterways Join Venture IV	Collier	108	0	61	61
11/29/05	4-1-04-F-8847	20048995	Seminole Tribe of FL Administrative Complex	Collier	6	0	8	8
12/06/05	4-1-03-F-3483	200302409	Southwest Florida Investment Property, LLC	Lee	207	0	305	305
12/6/05	4-1-04-F-6691	200310689	Rattlesnake Hammock Road	Collier	47	0	23	23
01/04/06	4-1-04-F-8388	2004554	Immokalee Regional Airport - Phase I	Collier	163	0	43	43
01/04/06	4-1-04-F-9777	20048577	Logan Boulevard Extension	Collier	40	0	10	10
01/13/06	4-1-04-F-6707	20042404	Journey's End	Collier	66	0	34	34
01/26/06	4-1-04-F-8940	20047053	The Orchard	Lee	93	0	81	81
02/09/06	4-1-05-11724	2005384	Firano at Naples	Collier	24	0	19	19
02/22/06	4-1-04-F-6505	200101122	Corkscrew Road	Lee	63	0	47	47
02/23/06	4-1-04-F-5244	200312276	Summit Church	Lee	10	0	13	13
03/31/06	4-1-05-PL-11343	20051909	Coral Keys Homes	Dade	31	0	61	61

Table 2. Continued

Date	Service Log No.	Corps Application No.	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
08/15/06	41420-2006-I-0151	20031963	Naples Custom Homes	Collier	10	0	9	9
08/21/06	41420-2006-I-0540	20041813	ASGM Business Park	Dade	41	0	25	25
08/21/06	4-1-03-F-3127	19956797	Atlantic Civil Ag Permit Extension	Collier	981	0	1,553	1,553
09/12/06	41420-2006-F-0554	20057414	Miccosukee Government Complex	Dade	17	0	37	37
09/22/06	41420-2006-I-0355	20040047	Immokalee Seminole Reservation Road Improvements	Collier	17	0	35	35
10/05/06	41420-2006-I-0616	20065295	New Curve on Corkscrew Road	Lee	12	0	18	18
10/16/06	41420-2006-F-0667	199507483	Miromar Addition	Lee	366	0	390	390
10/18/06	41420-2007-F-0026	2004777	Treeline Preserve	Lee	97	0	95	95
10/25/06	41420-2006-F-0442	20047046	Koreshan Boulevard Extension	Lee	14	0	31	31
10/26/06	41420-2006-F-0787	200306755	Jetway Tradeport	Collier	38	0	52	52
10/26/06	41420-2006-I-0849	20055702	Marina Del Lago	Lee	49	0	36	36

Table 2. Continued

Date	Service Log No.	Corps Application No.	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
04/13/07	41420-2007-TA-0618	NA	Collier County School Site J - Everglades Blvd.	Collier	39	0	56	56
02/21/03 03/9/05 03/02/07 05/03/07	4-1-01-F-607	200001926 (IP-SB)	Mirasol	Collier	773	940	182	1,122
03/09/07	41420-2007-TA-0623	NA	Abercia North	Collier	25	0	31	31
03/09/07	41420-2007-I-0581	1999-4313	Savanna Lakes	Lee	124	0	140	140
05/01/07	41420-2006-I-0992	20045223	Seminole Motocross	Hendry	58	5	19	23
06/19/07	41420-2007-I-0997	2006-2583	Caloosa Reserve	Collier	111	0	139	139
07/03/07	41420-2007-TA-0818	NA	Woodcrest Development	Collier	11	0	15	15
07/17/07	41420-2007-I-0330	2006-6377	Faith Landing	Collier	35	0	18	18
07/30/07	41420-2007-I-0866	2006-7022	Collier county School Site L	Collier	32	0	21	21
09/05/07	41420-2006-I-0051	2005-4186	Gulf Coast Landfill Expansion	Lee	123	0	65	65

Table 2. Continued

Date	Service Log No.	Corps Application No.	Project Name	County	Habitat Impacts (Acres)	Habitat Preserved On-site (Acres)	Habitat Preserved Off-site (Acres)	Total Habitat Preserved (Acres)
6/26/2008	41420-2007-FA-1150 41420-2007-F-1144	2007-2175	Immokalee Master Plan	Collier	506	0	1015	1015
				Total:	**92,144**	**10,621**	**27,811**	**37,574**

Table 3. Land Held for Conservation within the Florida Panther Core Area.

Zone	Acres	Primary Equivalent Factor	Primary Equivalent Acres
Primary	1,659,657	1.00	1,659,657
Dispersal	0	1.00	0
Secondary	308,623	0.69	212,950
Other	609,872	0.33	201,258

Table 4. Habitat suitability values for use in assessing habitat value to the Florida panther.

Land Cover Type	Value	Land Cover Type	Value	Land Cover Type	Value
Water	0	STA	4.5	Cypress swamp	9
Urban	0	Shrub swamp	5	Sand pine scrub	9
Coastal strand	1	Shrub and brush	5	Sandhill	9
Reservoir	1.5	Dry prairie	6	Hardwood-Pine forest	9
Mangrove swamp	2	Grassland/pasture	7	Pine forest	9
Salt marsh	2	Freshwater marsh	9	Xeric oak scrub	10
Exotic plants	3	Bottomland hardwood	9	Hardwood forest	10
Cropland	4	Bay swamp	9		
Orchards/groves	4	Hardwood swamp	9		

Table 5. Undeveloped Privately Owned Land within Florida Panther Core Area.

Zone	Acres	Primary Equivalent Factor	Primary Equivalent Acres
Primary	610,935	1.00	610,935
Dispersal	27,883	1.00	27,883
Secondary	503,481	0.69	347,402
Other	655,996*	0.33	216,479

*About 819,995 acres are at risk in the other zone with about 80 percent with resource value.

Table 8. Panther-Vehicle Collisions within the Master Plan Action Area as of June 4, 2008.

Distance From Project	ID	Result	Sex	Roadway	Year
17.0 miles southeast	UCFP04	DEATH	F	SR 29 JUST N SR 84	1979
8.7 miles southeast	UCFP05	DEATH	M	SR 29 NEAR SUNNILAND	1980
16.9 miles south	FP01	DEATH	M	SR 84 18 MM	1983
16.9 miles south	UCFP12	DEATH	F	SR 84 16 MM	1984
16.9 miles south	UCFP13	DEATH	F	SR 84 MM16	1985
16.9 miles south	FP04	DEATH	M	SR 84 17 MM	1985
21.1 miles south	FP07	DEATH	M	SR 29 4 MI S SR 84	1985
16.9 miles south	UCFP15	DEATH	F	SR 84 16.5 MM	1986
8.3 miles southeast	FP20	INJURY	M	CR 858 .8 M E SR 29	1987
10.0 miles southeast	FP13	DEATH	M	SR 29 SUNNILAND	1987
24.3 miles northwest	FP28	INJURY	M	NEAR DANIELS RD. RSW	1988
9.4 miles northwest	UCFP18	DEATH	M	CR 850 1.5 M S SR 80	1989
24.2 miles east	UCFP19	DEATH	M	CR 835 (846) 1 M E CR 833	1990
16.4 miles south	FP37	DEATH	M	SR 29 .5 M N I-75	1990
10.9 miles south	UCFP20	DEATH	F	SR 29 PISTOL POND BRIDGE	1991
23.8 miles northwest	NONE	INJURY	M	ALICO RD. 1	1992
9.8 miles south	UCFP21	DEATH	F	SR 29 SUNNILAND	1992
24.4 miles northwest	UCFP22	DEATH	M	DANIELS RD 1 M E I-75	1993
5.1 miles east	FP50	DEATH	M	CR 846 5 M E OF IMMOKALEE	1993
8.67 miles east	UCFP23	DEATH	M	3 M N ON COUNTY LINE ROAD	1994
10.7 miles south	FP31	DEATH	F	SR 29 SUNNILAND	1994
3.4 miles east	FP52	DEATH	F	CR 846 NEAR DUPREE ROAD	1995
23.0 miles east	TX102	DEATH	F	CR 833 JUST N CR 835 (846)	1995
13.7 miles north	UCFP29	DEATH	M	5.5 M E SR 29 ON CR 832	1996
5.4 miles east	UCFP31	DEATH	U	CR 846 1.5 M W CR 858	1997
12.9 miles east	UCFP25	DEATH	F	CR 846 3 M E CR 858	1998
13.7 miles south	FP51	DEATH	M	SR 29 @ BEAR ISLAND GRADE	1998
15.7 miles southeast	UCFP27	DEATH	F	FARM ROAD E HENDRY PRISON	1999
23.8 miles east	UCFP33	DEATH	M	CR 833 2 MI N BCSIR	1999
22.2 miles southeast	FP80	DEATH	F	200 FT. W SWAMP SAFARI, BCSIR	2000
7.6 miles south	K76	DEATH	M	1 MI W SR 29, ON CR 858	2000
11.7 miles east	UCFP34	DEATH	M	CR846 2 MILES E COUNTY LINE	2000
1.7 miles east	UCFP35	DEATH	M	CR846 2 MILES E IMMOKALEE	2000
10.5 miles east	UCFP36	DEATH	F	CR 846 E IMMOK. NEAR POWERLINE	2000
4.2 miles east	UCFP37	DEATH	F	4.5 MI E SR29 ON CR846	2000
24.3 miles east	UCFP38	DEATH	F	CR 833 1 MI N BCSIR, HENDRY CO	2001
9.8 miles south	UCFP41	DEATH	M	SR 29 SUNNILAND, NEAR MINE RD	2001
12.2 miles east	UCFP42	DEATH	F	CR846, 1 MILE EAST POWERLINE	2001
12.4 miles east	UCFP43	DEATH	M	CR846 1 MILE EAST OF POWERLINE	2001
24.0 miles south	UCFP46	DEATH	M	1/2 MI N OF DEEP LAKE, COLLIER	2002

Table 9 County and State Acquisitions within the Action Area (Acres).

Year	County	State
2002	17.7	0
2003	0	2,715.95
2004	0	0
2005	253.65	
2006	0	0
2007	0	0
Totals	271.35	2,715.95

DISTRICT

Table 10. Panther Habitat Units – Immokalee Master Plan Development.

		Primary Zone Development 345.75 acres				Secondary Zone Development 13.67 acres				Other Zone Development 146.57			
		Current		With Project		Current		With Project		Current		With Project	
Land Cover Type	***Score***	**Acres**	**PHUs**	**Acres**	**PHUs**	**Acres**	**PHUs**	**Acres**	**PHUs**	**Acres**	**PHUs**	**Acres**	**PHUs**
Freshwater Marsh	9	34.83	313.47			9.54	85.86			5.4	48.6		
Cypress Swamp	9	277.04	2,493.36			1.17	10.53						
Pine Forest	9									20.39	183.51		
Hardwood-Pine Forest	9									8.92	80.28		
Hardwood Swamp	9									1.96	17.64		
Grassland Pasture	7	12.04	84.28							109.38	765.66		
Dry Prairie	6	17.29	103.74			2.16	12.96						
Orchards/Groves	4	0.15	0.6			0.15	0.60						
Reservoir	1.5	4.4	6.6			0.65	0.98						
Urban	0	0	0	345.75	0	0		13.67	0			147.04	0
	TOTAL	**345.75**	**3,002.05**	**345.75**	**0**	**13.67**	**110.93**	**13.67**	**0**	**146.04**	**1095.6**	**147.04**	**0**

Impact PHUs: **4,208.58** = 3,002.5 + 110.9 + 1,095.6

Primary Zone Compensation PHUs Needed: **8,600** = [(3,002 x 1) + (111 x 0.69) + (1,096 x 0.33] x 2.5

Primary Zone Restoration PHUs Proposed: **8,600** = 8.503 PHUs from BCSIR Native Area + 97 PHUs from BCMB

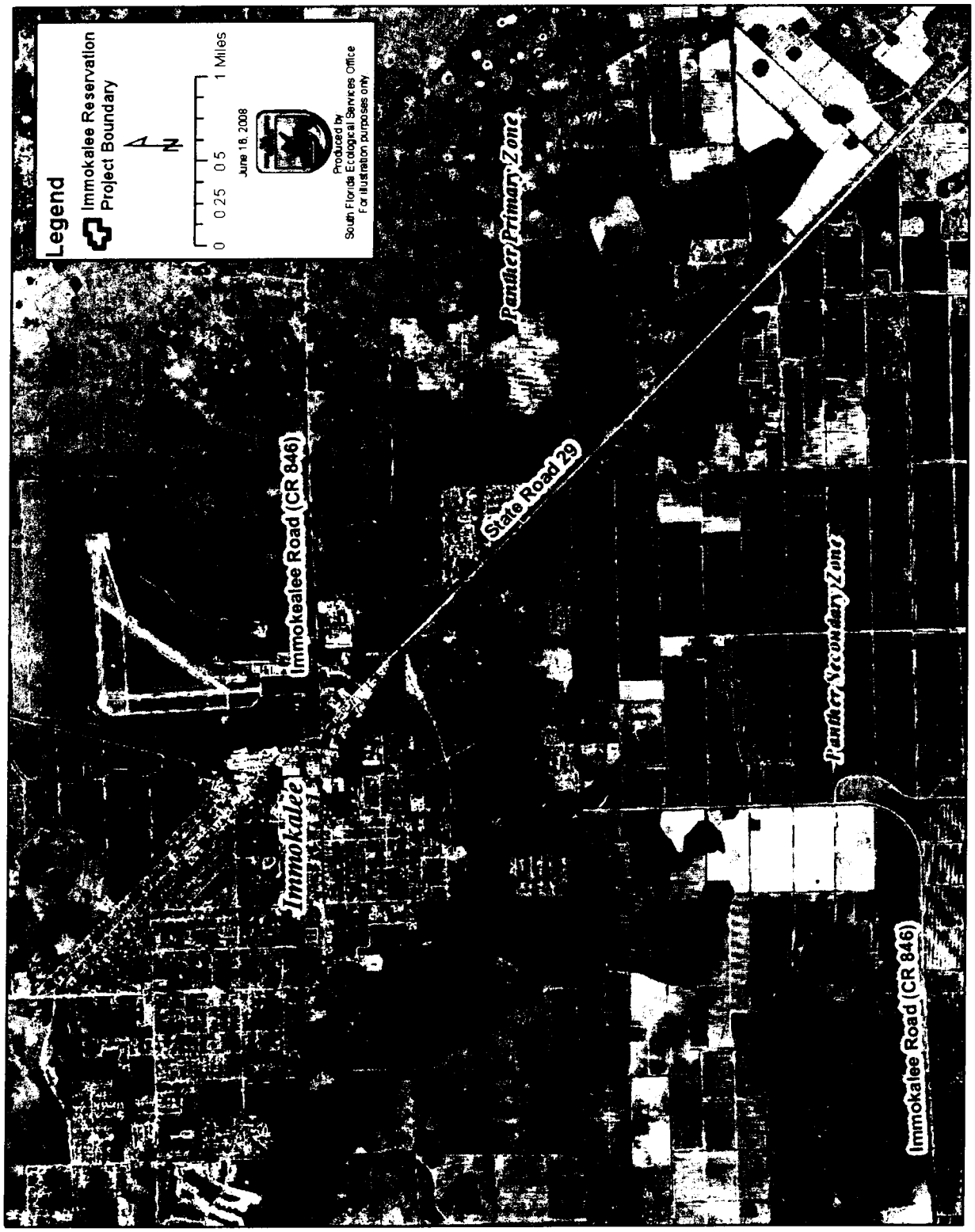


Figure 1. Location map of the Immokalee Master Plan development project site.

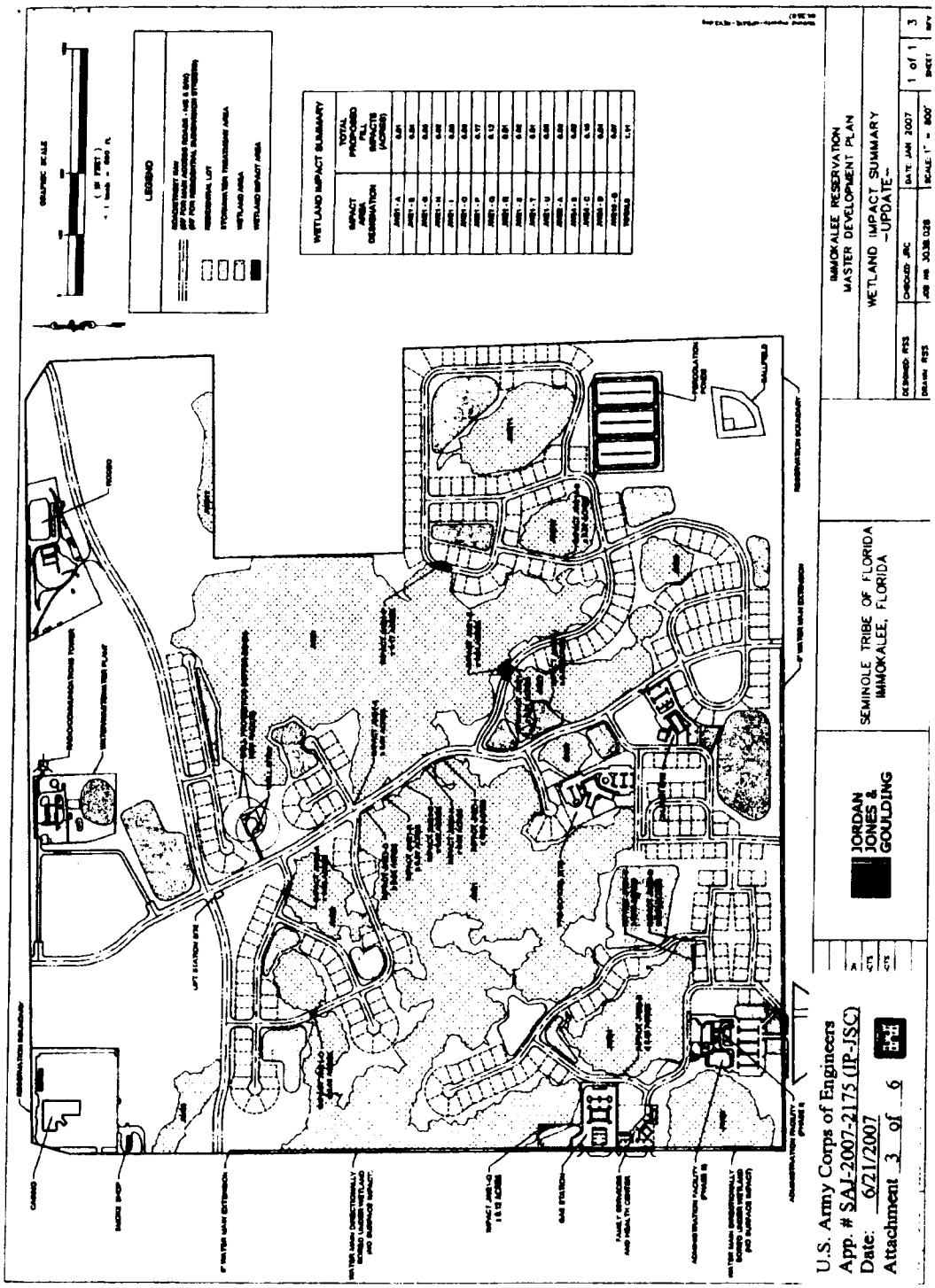


Figure 1a. Development Footprint

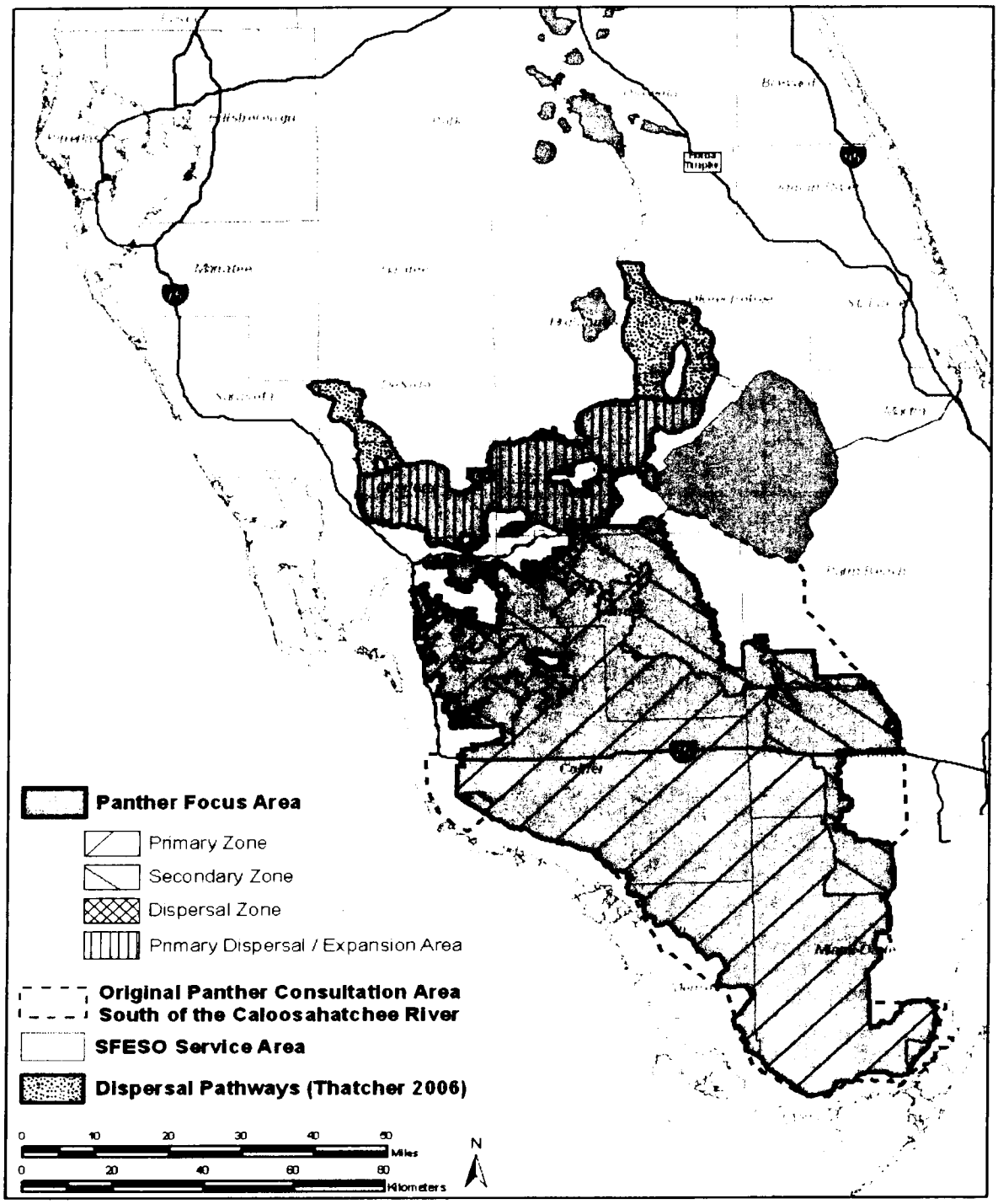


Figure 2. Florida Panther Focus Area and Original Panther Consultation Area.

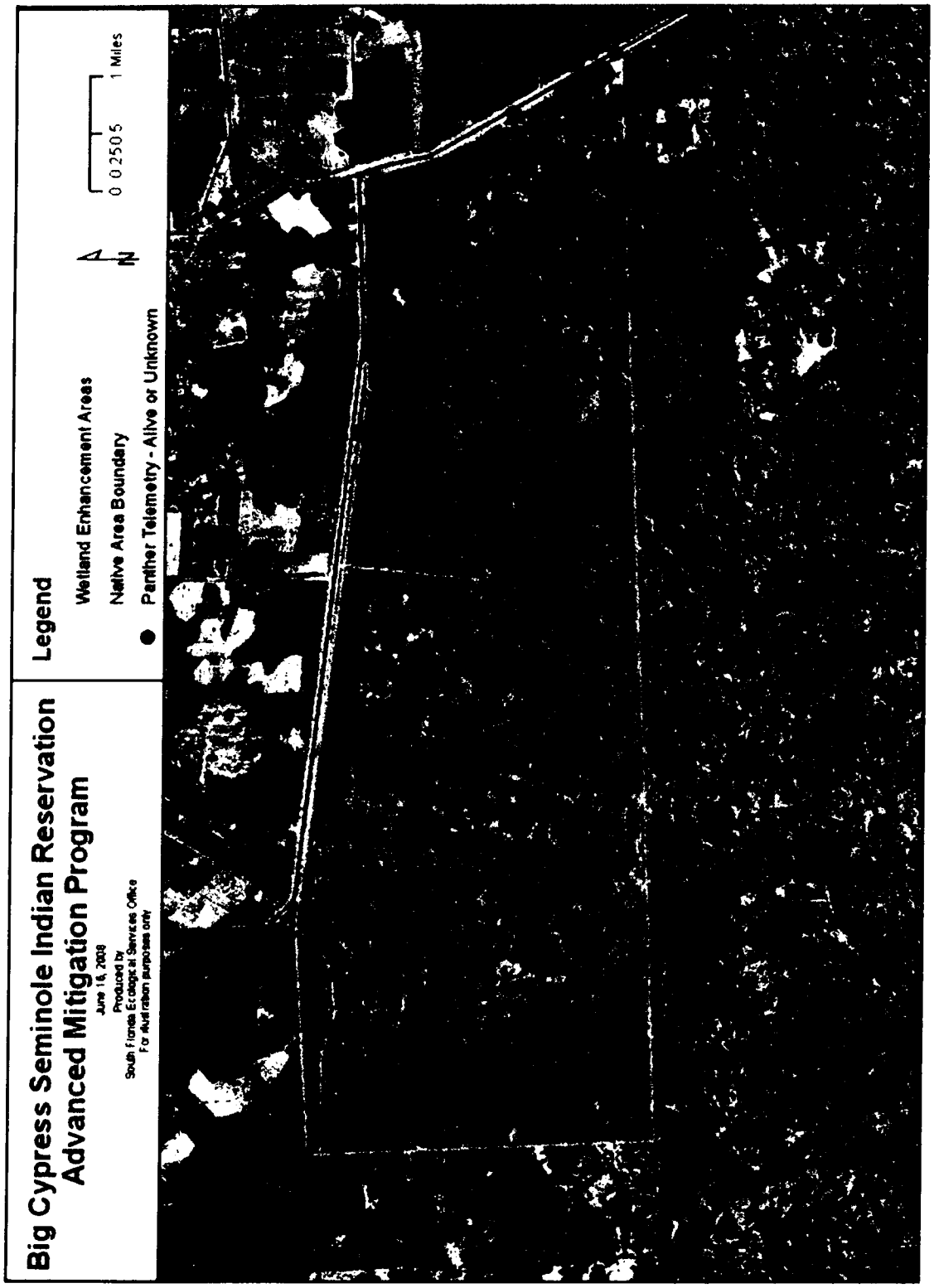


Figure 3. Big Cypress Seminole Indian Reservation Native Area Mitigation Sites.

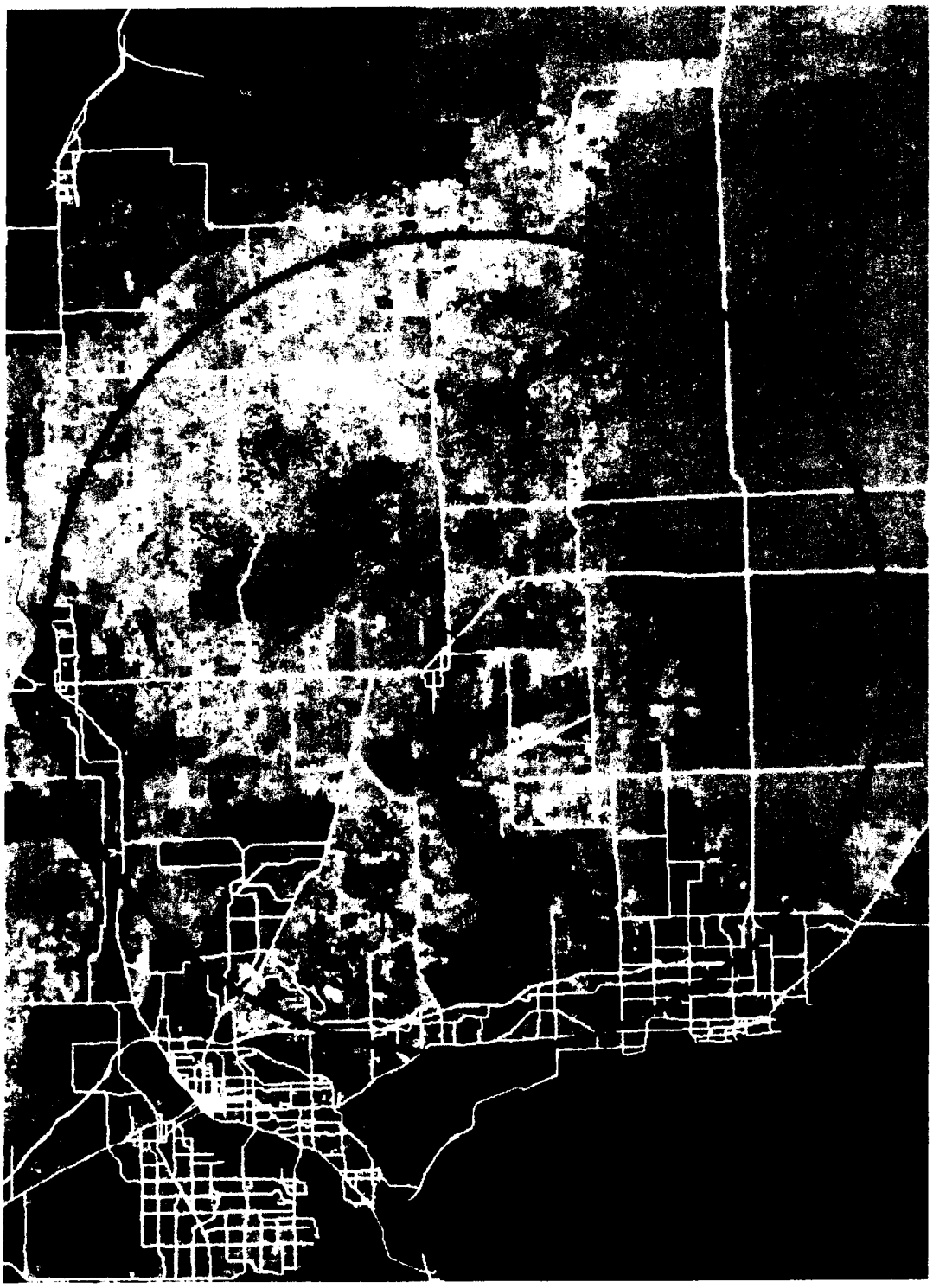


Figure 4. Regional aerial map showing 25-mile action area for the panther.

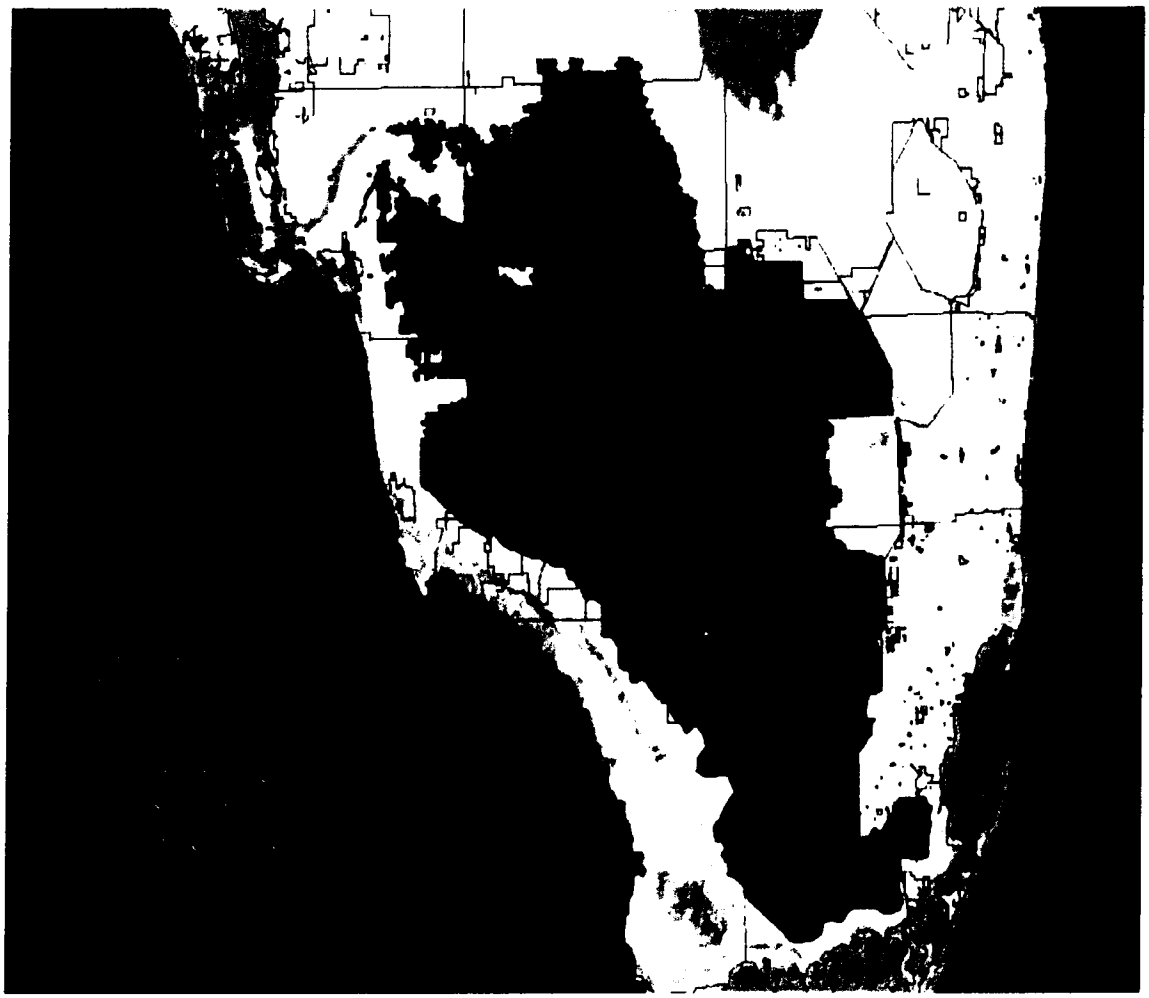


Figure 5. Primary, Secondary, and Dispersal Zones Kautz et al. (2006).

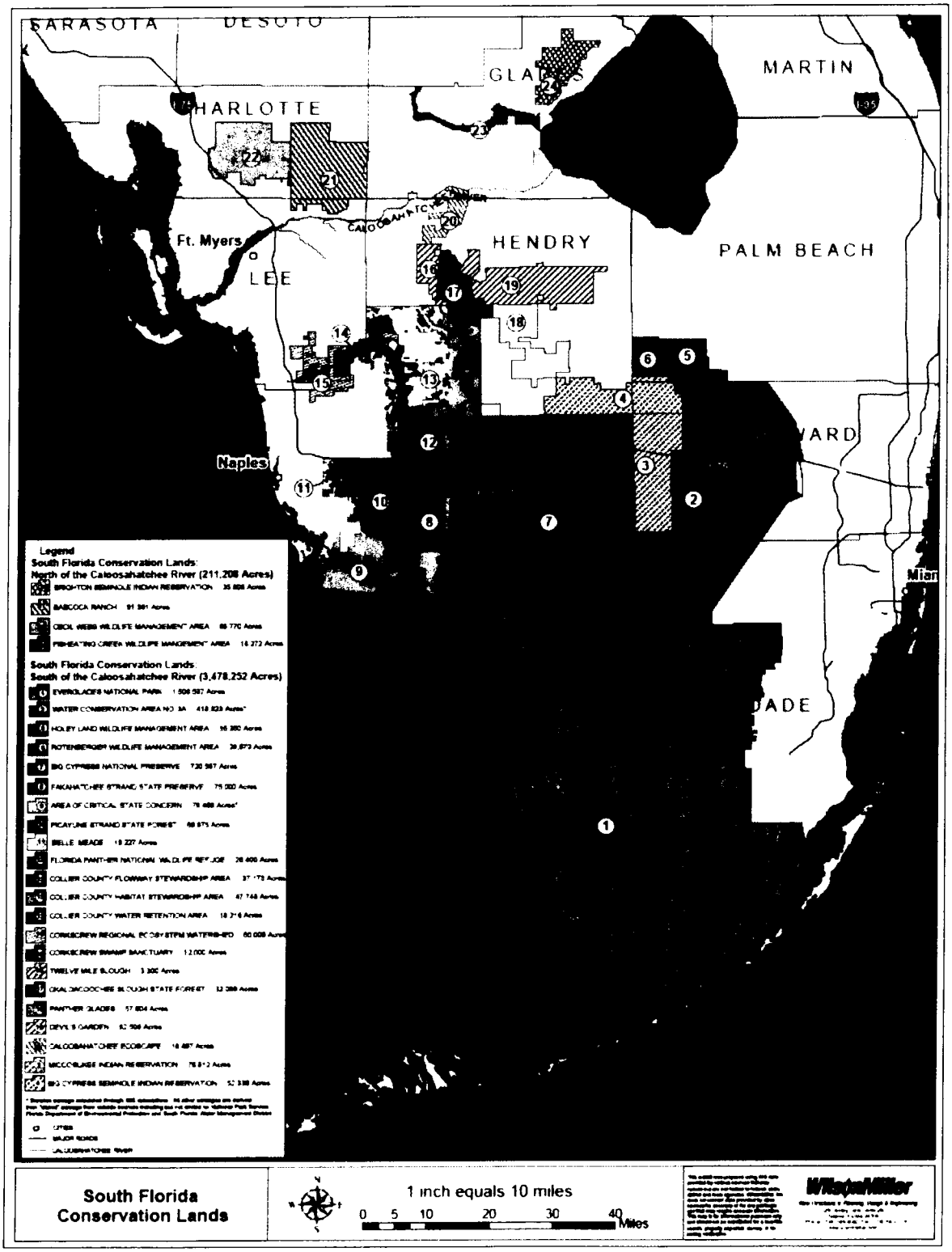


Figure 6. Southwest Florida conservation lands.

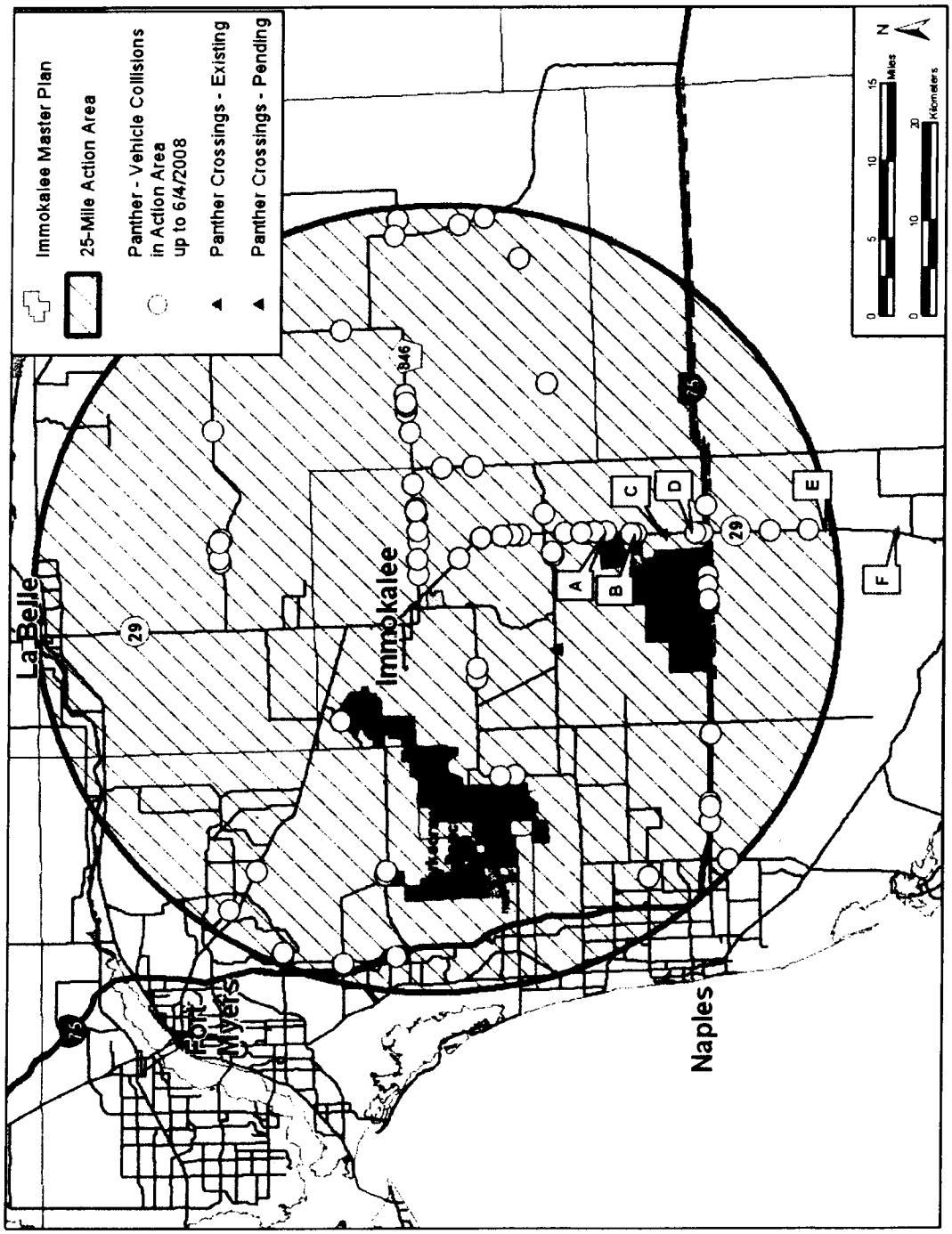


Figure 7. Panther – Vehicle Collisions and Panther Crossings within Action Area.

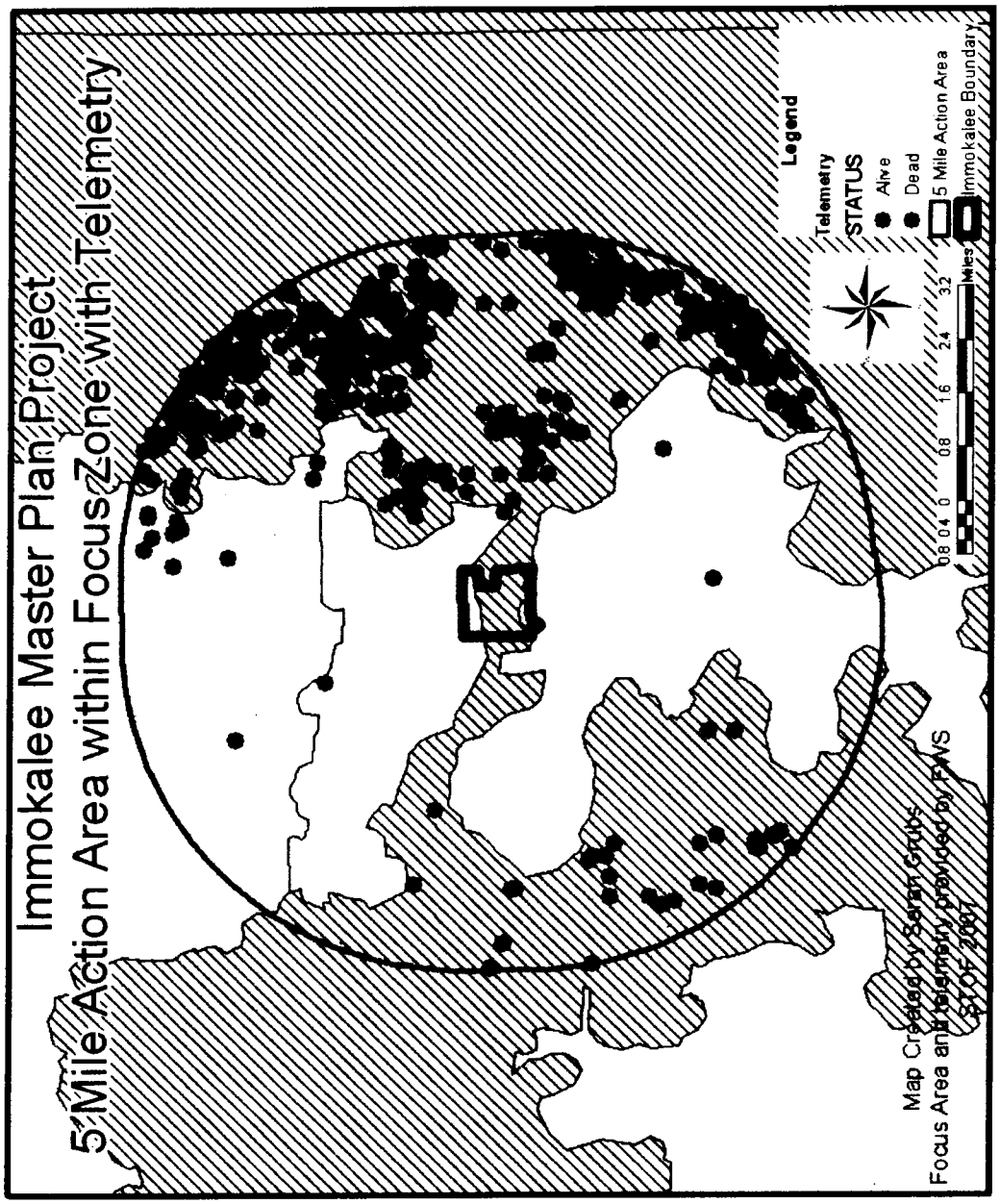


Figure 8. Telemetry showing live panther activity within 5-mile radius of Immokalee Master Plan project.

Figure 9. Big Cypress Mitigation Bank with Panther Telemetry.

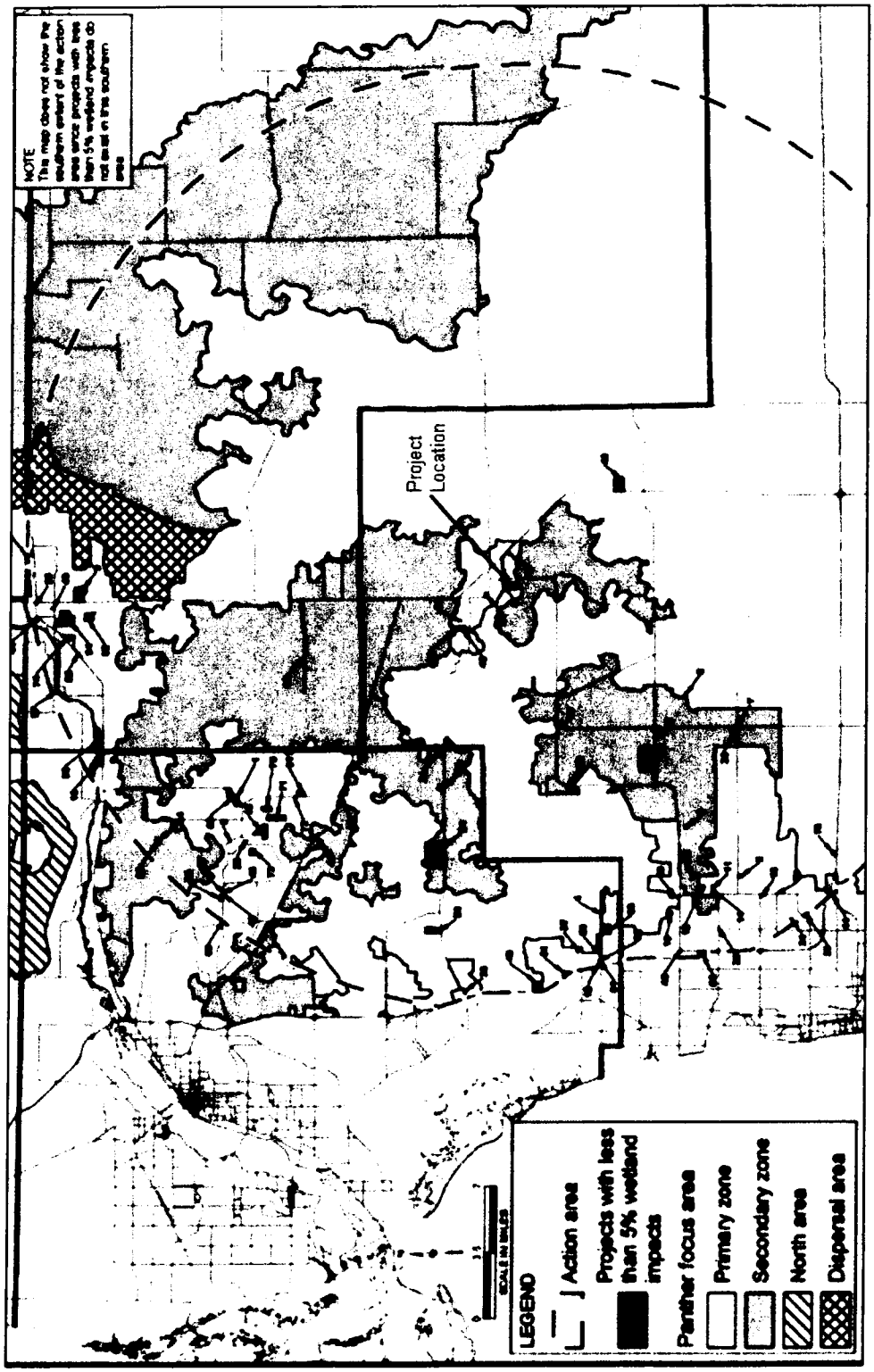

NOTE
This map does not show the southern extent of the action area since projects with less than 5% wetland impacts do not exist in this southern area
Project Location
LEGEND
Action area
Projects with less than 5% wetland impacts
Panther focus area
Primary zone
Secondary zone
North area
Dispersal area

Figure 10. Projects in cumulative impact analysis.

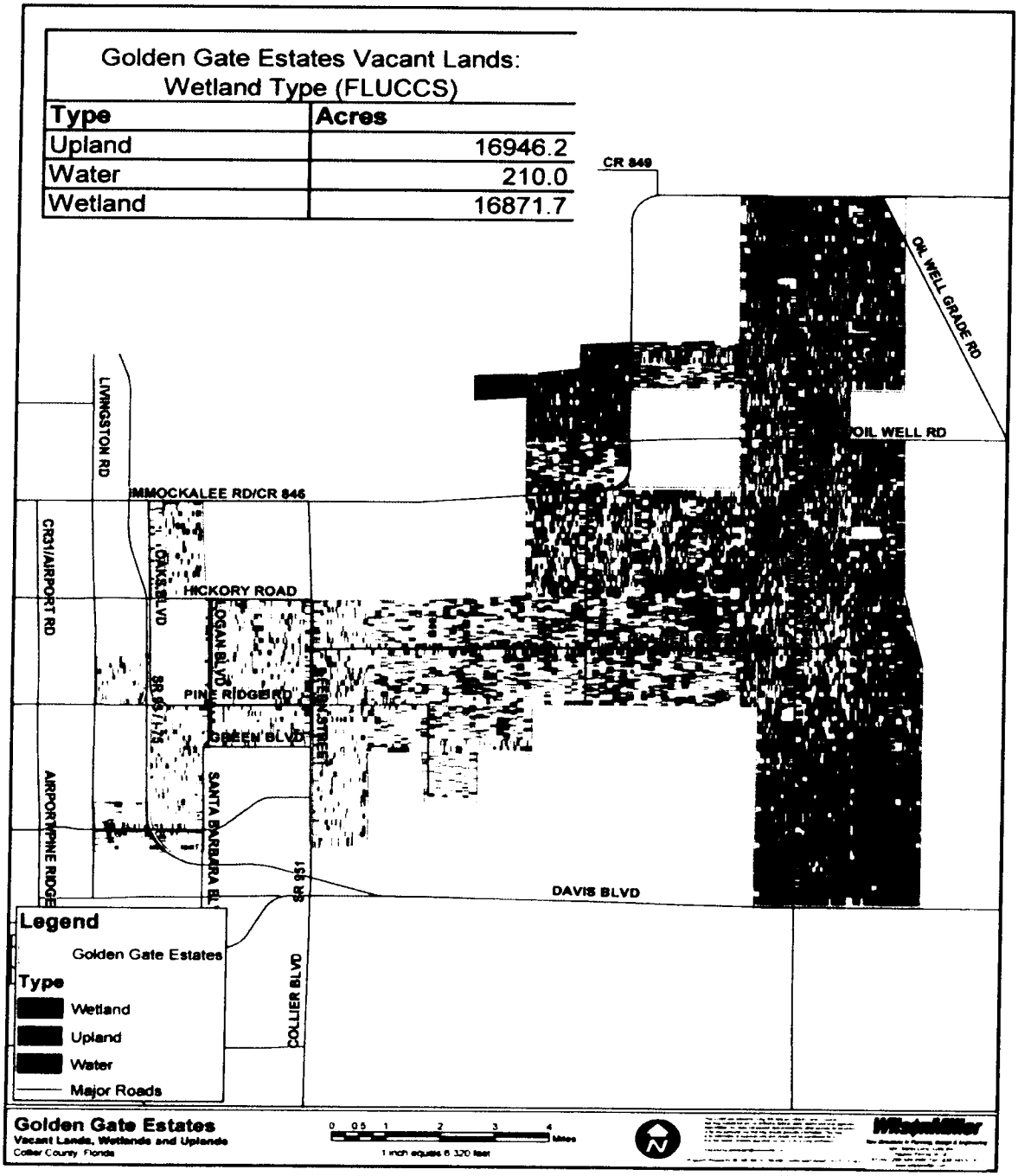


Figure 11. Northern Golden Gate Estates vacant lots (2004).

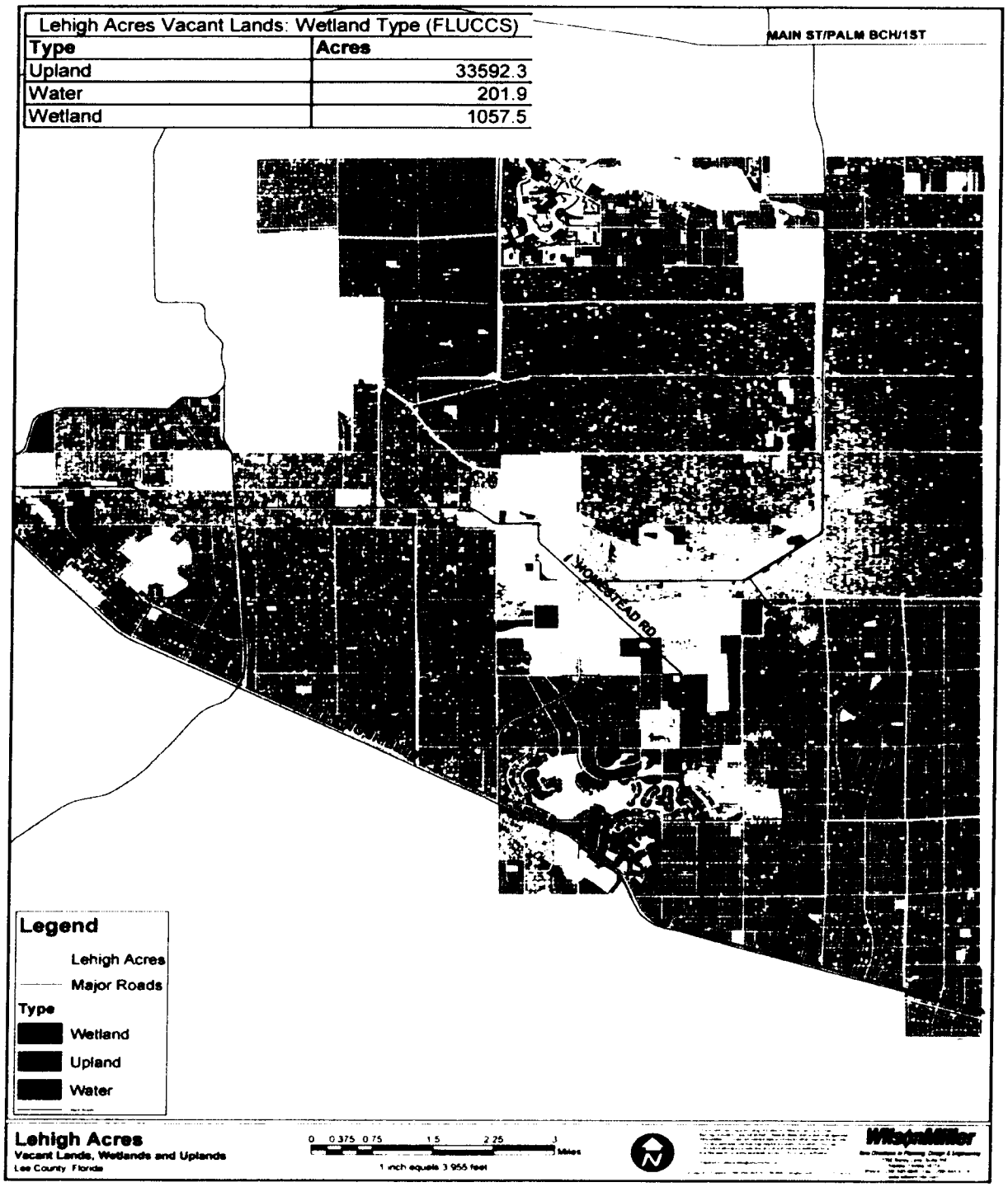


Figure 12. Lehigh Acres vacant lands (2002).

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

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

1. Department of the Army Permit Number: _____

2. Permittee Information:

Name _____

Address _____

_____

3. Project Site Identification:

Physical location/address _____

_____

4. As-Built Certification:

I hereby certify that the authorized work has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

_____ Signature of Engineer

_____ Name (Please type)

_____ Florida Reg. Number

_____ Company Name

_____ Address

_____ City State ZIP

(Affix Seal)

_____ Date

_____ Telephone Number

5. Deviations from the approved plans and specifications: (attach additional pages if necessary) _____

U.S. Army Corps of Engineers
Permit # SAJ-2007-2175
Date: 7/10/2008
Attachment 2 of 2

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

August 29, 2007

Seminole Tribe of Florida
Water Resource Management
Attn: Craig D. Tepper
6300 Stirling Road
Hollywood, FL 33024

Subject: **THIRD AMENDMENT TO THE NINETEENTH ANNUAL WORK PLAN**

Enclosed is a copy of the South Florida Water Management District's staff report covering the permit application referenced therein. It is requested that you read this staff report thoroughly and understand its contents. The recommendations as stated in the staff report will be presented to our Governing Board for consideration on **Thursday, September 13, 2007.**

Should you wish to object to the staff recommendations or file a petition, please provide written objections, petitions and/or waivers (refer to the attached "Notice of Rights") to:

Elizabeth Veguilla, Deputy Clerk
South Florida Water Management District
Post Office Box 24680
West Palm Beach, FL 33416-4680

The "Notice of Rights" addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. You are advised, however, to be prepared to defend your position regarding the permit application when it is considered by the Governing Board for final agency action, even if you agree with the staff recommendation, as the Governing Board may take final agency action which differs materially from the proposed agency action.

Please contact the District if you have any questions concerning this matter.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the addressee this 29th day of August, 2007 in accordance with Section 120.06 (3), Florida Statutes.

Sincerely,

Damon Meiers, P.E., Deputy Director
Environmental Resource Regulation Department

CERTIFIED MAIL #7005 0390 0005 9817 1117
RETURN RECEIPT REQUESTED

RECEIVED
SEP 0 4 2007
BY WRMD-QC

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
NOTICE OF RIGHTS

This Notice of Rights is intended to inform the recipient of the administrative and judicial review which may be available as mandated by Administrative Procedures, Chapter 7, of the Criteria Manual for Seminole Water Rights Compact. Recipients are advised to become familiar with these provisions.

1. The Seminole Tribe may exercise its administrative rights pursuant to the provisions of Chapter 7 of the Criteria Manual for Seminole Water Rights Compact.

2. If a substantially affected third person objects to the staff's recommendation, that person has the right to request an administrative hearing on the proposed agency action. The substantially affected person may request a hearing as set forth below. Failure to comply with the prescribed time periods shall constitute a waiver of the right to a hearing.

3. If the substantially affected third person believes that a genuine issue of material fact is in dispute, that person may request a hearing pursuant to subsection 7.1.1.7 of the Criteria Manual for Seminole Water Rights Compact by filing a request not later than **September 12, 2007**. The request for hearing must comply with the requirements of subsections 7.1.1.7 and 7.3.1.4 of the Criteria Manual for Seminole Water Rights Compact (copies attached). Requests are deemed filed upon receipt by the District and the Seminole Tribe of Florida. Failure to substantially comply with these provisions shall constitute a waiver of the right to a hearing.

4. In lieu of a request for hearing, a person may preserve that person's rights, as specified in Chapter 7 of the Criteria Manual for Seminole Water Rights Compact, in the event the final agency action differs materially from the proposed agency action, by filing a notice of reliance on the proposed agency action by **September 12, 2007**. The notice of reliance must comply with the requirements of subsections 7.1.1.8 and 7.3.1.5 of the Criteria Manual for Seminole Water Rights Compact (copies attached).

5. Pursuant to subsection 7.1.3.1 of the Criteria Manual for Seminole Water Rights Compact, the South Florida Water Management District or any person who timely requested a hearing or timely filed a notice of reliance, shall have forty-five (45) days to commence suit in federal court, after filing by the Tribe of its notice of intentions regarding implementation of the Work Plan. If the District does not file suit in federal court within the prescribed time period, any other person who timely requested a hearing or who timely filed a notice of reliance shall have ten (10) days following the expiration of the forty-five (45) day limit to commence suit in federal court ex rel the District to enforce final agency action taken under Chapter 7 of the Criteria Manual for Seminole Water Rights Compact.

FOR COPIES OF THE WATER RIGHTS COMPACT AND THE CRITERIA MANUAL FOR SEMINOLE WATER RIGHTS COMPACT PLEASE CONTACT THE REGULATION DEPARTMENT, SOUTH FLORIDA WATER MANAGEMENT DISTRICT.

Last Date for Board Action: September 13, 2007

Seminole Tribe of Florida

Third Amendment to Nineteenth Annual Work Plan
WP# 019-3

DRAFT
Subject to Governing Board Approval

Broward, Glades, Hendry and Highland Counties

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

STAFF REPORT

ABSTRACT

The "Water Rights Compact Among the Seminole Tribe of Florida, the State of Florida and the South Florida Water Management District", referred to in this staff report as the "Compact", was ratified by the United States Congress and the Florida Legislature and became Federal and State Law on October 29, 1987. The Compact recognizes Tribal water rights, provides a procedural forum for the settlement of water disputes, provides due process for all affected parties, and ensures that prior existing users will not experience water related adverse impacts as a result of development of Tribal lands. The Compact describes the obligations of the Tribe and the District in exercising Tribal rights under the Compact. The Compact requires the Seminole Tribe of Florida, afterwards referred to as the "Tribe", to submit an Annual Work Plan and also provides flexibility so that Amendments to the Annual Work Plan may be submitted by the Tribe whenever conditions warrant.

This report presents Staff's evaluation, discussion, and recommendations for the Third Amendment to Nineteenth Annual Work Plan. The Work Plan is evaluated in accordance with the "Criteria Manual for the Water Rights Compact", afterwards referred to as the "Manual." The Manual sets forth:

1) Definitions,
2) General provisions,
3) Criteria for water use and surface water management, water well construction, underground injections, water quality criteria,
4) Wetlands protection,
5) Special provisions applicable to specific Reservations,
6) Administrative procedures, and
7) Judicial review.

The First Annual Work Plan analyzed existing facilities, projects, and improvements, excluding works of the District, that are located on the Reservations and Tribal Trust Lands and provided a "baseline" describing all existing facilities, projects, and improvements. The First Annual Work Plan through the Third Amendment to Nineteenth Annual Work Plan was approved at the following Governing Board Meetings.

Work Plan/Amendment	Governing Board Approval Date
First – Twelfth Annual Work Plans	March 8, 1989 – April 13, 2000
Third Amendment to Twelfth Annual Work Plan	April 13, 2000
Fifth Amendment to Twelfth Annual Work Plan	May 11, 2000
Fourth Amendment to Twelfth Annual Work Plan	June 15, 2000
Sixth Amendment to Twelfth Annual Work Plan	July 13, 2000
First Amendment to Thirteenth Annual Work Plan	January 11, 2001
Second Amendment to Thirteenth Annual Work Plan	November 8, 2001
Fourth Amendment to Thirteenth Annual Work Plan	February 14, 2002
Fourteenth Annual Work Plan	April 11, 2002
First Amendment to Fourteenth Annual Work Plan	June 13, 2002
Fifteenth Annual Work Plan	April 10, 2003
First Amendment to Fifteenth Annual Work Plan	May 15, 2003
First Amendment to Sixteenth Annual Work Plan	September 10, 2003
Second Amendment to Sixteenth Annual Work Plan	February 12, 2004
Third Amendment to Sixteenth Annual Work Plan	March 10, 2004
Fifth Amendment to Sixteenth Annual Work Plan	June 9, 2004
Sixth Amendment to Sixteenth Annual Work Plan	September 8, 2004
Seventh Amendment to Sixteenth Annual Work Plan	February 9, 2005
Seventeenth Annual Work Plan	May 11, 2005
First Amendment to Seventeenth Annual Work Plan	July 13, 2005
Second Amendment to Seventeenth Annual Work Plan	September 14, 2005
Third Amendment to Seventeenth Annual Work Plan	January 11, 2006
Eighteenth Annual Work Plan	May 10, 2006
Fourth Amendment to Seventeenth Annual Work Plan	June 14, 2006
First Amendment to Eighteenth Annual Work Plan	October 12, 2006
Second Amendment to Eighteenth Annual Work Plan	October 12, 2006
Third Amendment to Eighteenth Annual Work Plan	October 12, 2006
Nineteenth Annual Work Plan	April 11, 2007
First Amendment to Nineteenth Annual Work Plan	June 14, 2007
Second Amendment to Nineteenth Annual Work Plan	July 12, 2007
Third Amendment to Nineteenth Annual Work Plan	September 13, 2007

This report presents staff's evaluation, discussion, and recommendations of the Third Amendment to Nineteenth Annual Work Plan as provided for in the Compact. The District's evaluation results in recommendations of concurrence, concurrence in part, concurrence with conditions, or objection to the Amendment, including supporting reasons.

THIRD AMENDMENT TO NINETEENTH ANNUAL WORK PLAN

PURPOSE

The Third Amendment to Nineteenth Annual Work Plan has been submitted to the South Florida Water Management District pursuant to the Compact for District review and concurrence. The Work Plan has been evaluated in accordance with the technical criteria of the Manual.

EXECUTIVE SUMMARY

The current Plan was submitted as the Third Amendment to Nineteenth Annual Work Plan to the District and the Governing Board. The Third Amendment to Nineteenth Annual Work Plan provides descriptions of proposed facilities and activities for each of the Reservations and Tribal Trust Lands.

WORK PROPOSED BY THE WORK PLAN AMENDMENT

Brighton Reservation (Exhibits 1)

There are no projects proposed for the Brighton Reservation.

Big Cypress Reservation (Exhibits 1)

1. Forestry Compound

Hollywood Reservation (Exhibit 1)

There are no projects proposed for the Hollywood Reservation.

Immokalee Reservation (Exhibit 1)

1. Cluster One Housing
2. Master Plan Wetland Permit

Coconut Creek Reservation/Tribal Trust Land (Exhibit 1)

1. Butler Building Expansion

Ft. Pierce Tribal Trust Land (Exhibit 1)

There are no projects proposed for the Ft. Pierce Tribal Trust Land in the Third Amendment to Nineteenth Work Plan. The Ft. Pierce Tribal Trust Land is not subject to the requirements of the Compact.

BIG CYPRESS RESERVATION

INTRODUCTION

The Big Cypress Reservation is located in Township 48 South, Range 35 East, Broward County and in Township 48 South, Ranges 32-34 East, Hendry County. The existing land use consists of improved pasture, citrus, and unimproved range lands and incorporates public water supply and civic use.

WORK PROPOSED BY THE WORK PLAN

Forestry Compound: The Tribe proposes to construct a 1,264 sq/ft office building; a 2,560 sq/ft shop building; a 3,157 sq/ft open garage building; gravel driveways and parking; an on-site septic system; a fuel/storage area and a dry detention area with connecting swales. (Exhibit 2).

Proposed Surface Water Management Activities and Staff Evaluation

Forestry Compound: Proposed is the construction of a three small buildings and associated parking area on a 2.9 acre parcel. The proposed surface water management system will consist of inlets and culverts to direct runoff into a dry detention area which will provide water quality treatment and attenuation prior to discharge into an existing ditch. No adverse water quality or quantity impacts are anticipated.

Proposed Water Use Activities and Staff Evaluation

Forestry Compound: Proposed plans include construction of a 1,264 sq. ft. office building; a 2,560 sq. ft. shop building; a 3,157 sq. ft. open garage building; gravel driveways and parking; an on-site septic system; a fuel storage area and a dry detention area with connecting swales. There are no water use related activities proposed for this project. Any dewatering activities for this project should be performed according to the established criteria.

Environmental Resource Compliance and Natural Resource Management Divisions Staff Evaluation

Forestry Compound: The project area is within a previously developed upland site and does not contain unique upland habitat or preferred habitat for rare, endangered or threatened species of plants or animals.

IMMOKALEE RESERVATION

INTRODUCTION

The Immokalee Reservation is located in Section 11, Township 47 South, Range 29 East, Collier County. The location of the Reservation is shown in Exhibit 1. The Tribal Trust Land is currently served by the City of Immokalee public water supply. Treated water is used to meet landscape irrigation demands. There are no currently existing water use withdrawal facilities located within the Tribal Trust Land. Wetlands are the dominate land cover within the Reservation.

WORK PROPOSED BY THE WORK PLAN

Cluster One Housing: The Tribe proposes to construct the roadway infrastructure to support the development of sixty three (63) single family homes in the southeastern quadrant of the Immokalee Reservation. (Exhibit 3).

Proposed Surface Water Management Activities and Staff Evaluation

Cluster One Housing: Proposed is the construction of a surface water management system to serve the development of 63 single family homes on an 85.2 acre parcel. The proposed surface water management system will consist of inlets, culverts and swales which will direct runoff into 7.04 acres of wet detention ponds which will provide water quality treatment and attenuation prior to overflow into the adjacent wetlands.

Proposed Water Use Activities and Staff Evaluation

Cluster One Housing: Proposed plans include the construction of a roadway infrastructure to support the development of sixty-three (63) single family homes. There are no water use related activities proposed for this project. Any dewatering activities for this project should be performed according to the established criteria.

Environmental Resource Compliance and Natural Resource Management Divisions Staff Evaluation

Cluster One Housing: Proposed are unavoidable impacts to 9.2 acres of wetlands. These wetland impacts have been accounted for under the Master Wetland Permit Work Plan mitigation described in the next section.

Master Plan Wetland Permit: The Tribe has proposed a comprehensive master Work Plan submittal for all unavoidable wetland impacts expected over a period of 25-years. Development would include paving and widening of existing roadways, installation of storm water retention/detention ponds, and placement of fill pads for various residential and commercial developments. (Exhibit 4).

Proposed Surface Water Management Activities and Staff Evaluation

Master Plan Wetland Permit: The proposed permit application will be submitted to the Army Corps of Engineers for a 25 year permit for the development of the Immokalee Reservation master Plan. Development would include paving and widening of existing roadways, installation of storm water retention/detention ponds, and placement of fill pads for various residential and commercial developments. There are no specific Surface Water Management related activities proposed for the project in this master plan submittal. Surface Water Management related projects for specific portions of the overall project should be submitted with the appropriate Annual Work Plan.

Proposed Water Use Activities and Staff Evaluation

Master Plan Wetland Permit: The proposed permit application will be submitted to the Army Corps of Engineers for a 25 year permit for the development of the Immokalee Reservation master Plan. Development would include paving and widening of existing roadways, installation of storm water retention/detention ponds, and placement of fill pads for various residential and commercial developments. There are no water use related activities proposed for the project in this master plan submittal. Water use related projects for specific portions of the overall project should be submitted with the appropriate Annual Work Plan. Any dewatering activities for this project should be performed according to the established criteria.

Environmental Resource Compliance and Natural Resource Management Divisions Staff Evaluation

Master Plan Wetland Permit: The entire master plan for development will result in the filling of 6.11 acres of adjacent jurisdictional wetlands and the excavation of 5.30 acres of wetlands. The required compensatory mitigation for all anticipated wetland impacts will be provided through the purchase of mitigation credits from a District-approved mitigation bank in this area.

COCONUT CREEK TRIBAL TRUST LAND

INTRODUCTION

The Coconut Creek Tribal Trust Land is located in Township 48 South, Range 42 East, Broward County. The existing land use consists of commercial and industrial uses.

WORK PROPOSED BY THE WORK PLAN

Butler Building Expansion: The Tribe is proposing to expand an existing building. Drainage will be handled using downspouts, drop-inlet boxes and an existing 12" underground drainage pipe will be replaced with a 15" underground drainage pipe and routed to an existing lake south of the building (Exhibit 5).

Proposed Surface Water Management Activities and Staff Evaluation

Butler Building Expansion: Proposed is the expansion of the existing butler building. No adverse water quality or quantity impacts are anticipated.

Proposed Water Use Activities and Staff Evaluation

Butler Building Expansion: The proposed plans include the expansion of the existing building. Any dewatering activities for this project should be performed according to the established criteria. Any expansion of the irrigation system would require modification of Water Use Permit 06-03364-W for the Coconut Creek Park of Commerce.

Environmental Resource Compliance and Natural Resource Management Divisions Staff Evaluation

Butler Building Expansion: No adverse impacts to wetlands are anticipated as a result of the proposed activity. The project area is within a previously impacted upland area and does not contain unique upland habitat or preferred habitat for rare, endangered or threatened species of plants or animals.

CONCLUSIONS

Staff has reviewed the submitted information and determined that no adverse water quality or environmental impacts are anticipated as a result of the proposed activities.

STAFF RECOMMENDATIONS TO THIRD AMENDMENT TO NINETEENTH ANNUAL WORK PLAN

District Staff concurs with the Third Amendment to Nineteenth Annual Work Plan as submitted by the Tribe pursuant to the Compact with these conditions:

Within sixty (60) days of the effective date of this Work Plan, the Seminole Tribe shall provide a commitment letter from an approved mitigation bank of debited mitigation credits necessary (3.26 forested credits and 7.56 herbaceous credits required) to compensate for the 11.41 acres of unavoidable wetland impacts expected as a result of the Master Plan Wetland Work Plan. A copy of the mitigation bank ledger showing the debited mitigation credits shall also be provided to the District. A copy of the letter from the Big Cypress Mitigation Bank describing the availability of credits is also attached (Exhibit 6).

DEPARTMENT APPROVAL:

DRAFT
Subject to Governing
Board Approval

ENVIRON. RESOURCE COMPL DIVISION

Brian Tilles, Director

DATE: 8/23/07

SURFACE WATER MGT DIVISION

Anthony Waterhouse, Director

DATE: 8/23/07

NATURAL RESOURCE MGT DIVISION

Anita Bain, Director

DATE: 8/21/07

WATER USE DIVISION:

DATE: 8/21/07

ATTACHMENT D

Seminole Reservations/Tribal Trust Lands

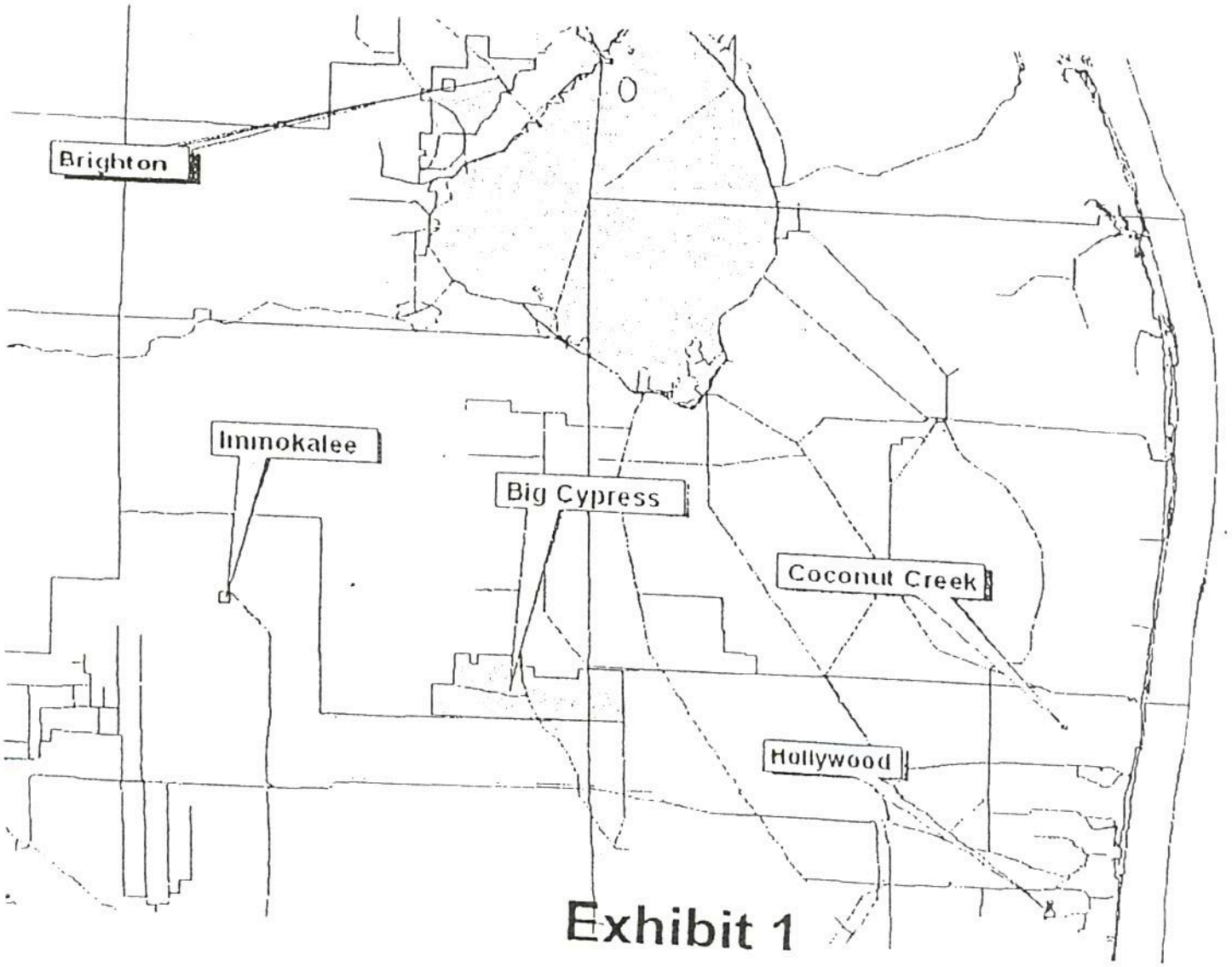
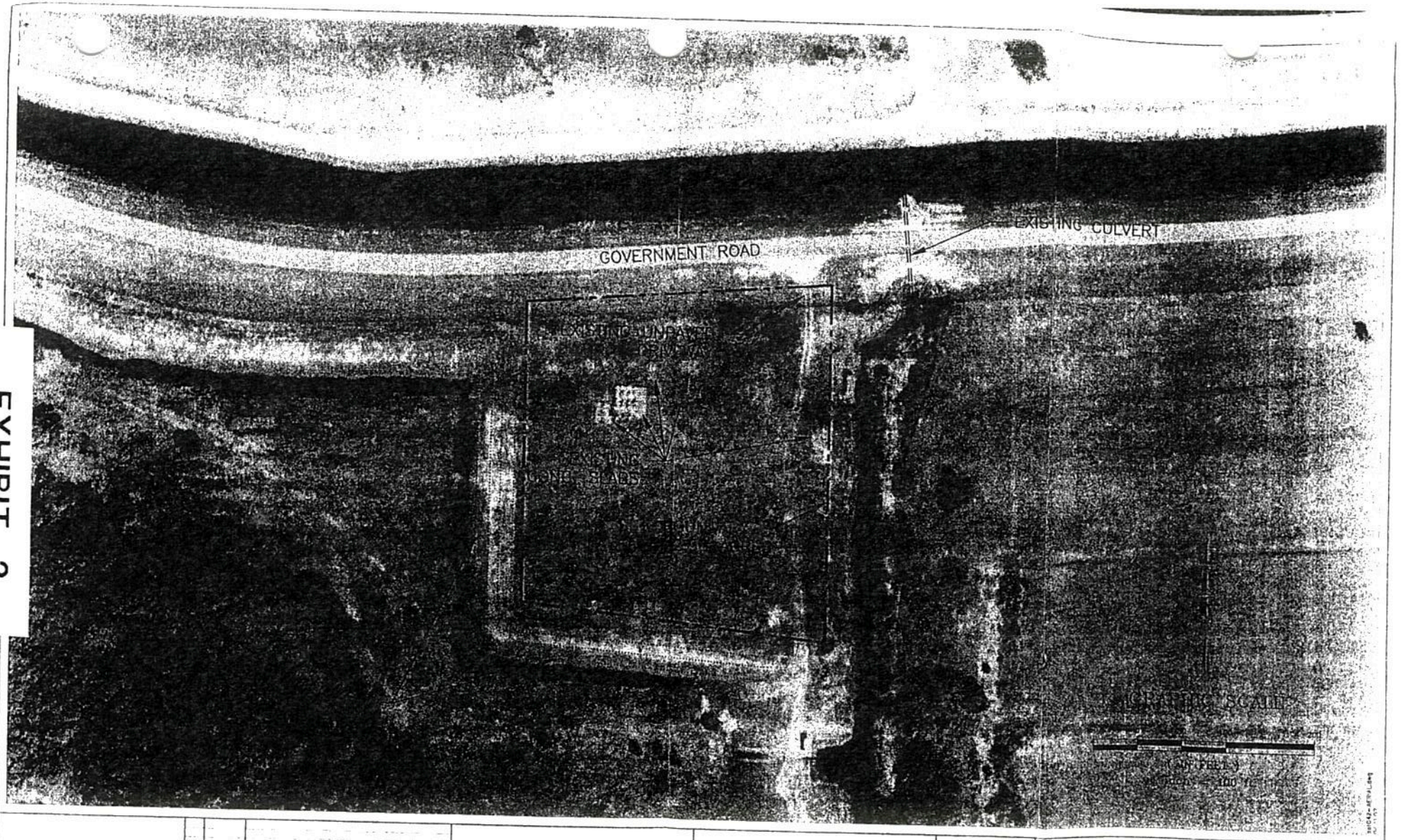


Exhibit 1



JORDAN JONES & GOULDING

SEMINOLE TRIBE OF FLORIDA
HOLLYWOOD, FLORIDA

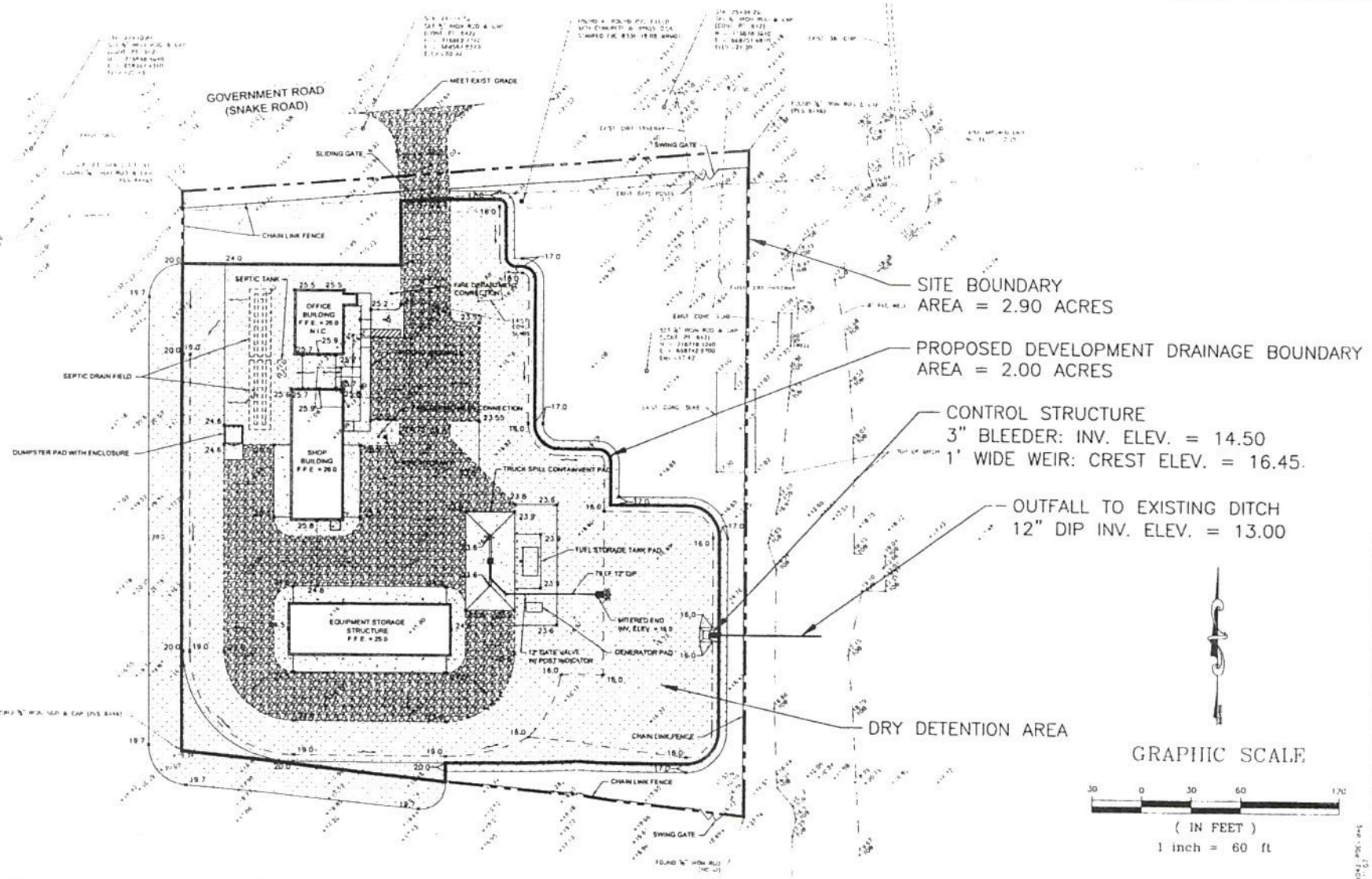
BIG CYPRESS RESERVATION
FORESTRY COMPOUND

EXISTING SITE AERIAL IMAGE

EXHIBIT 2

ATTACHMENT D

EXHIBIT 2A



NO	DATE	DESCRIPTION OF REVISION
0	4-11-07	INITIAL ISSUE

JORDAN JONES & GOULDING

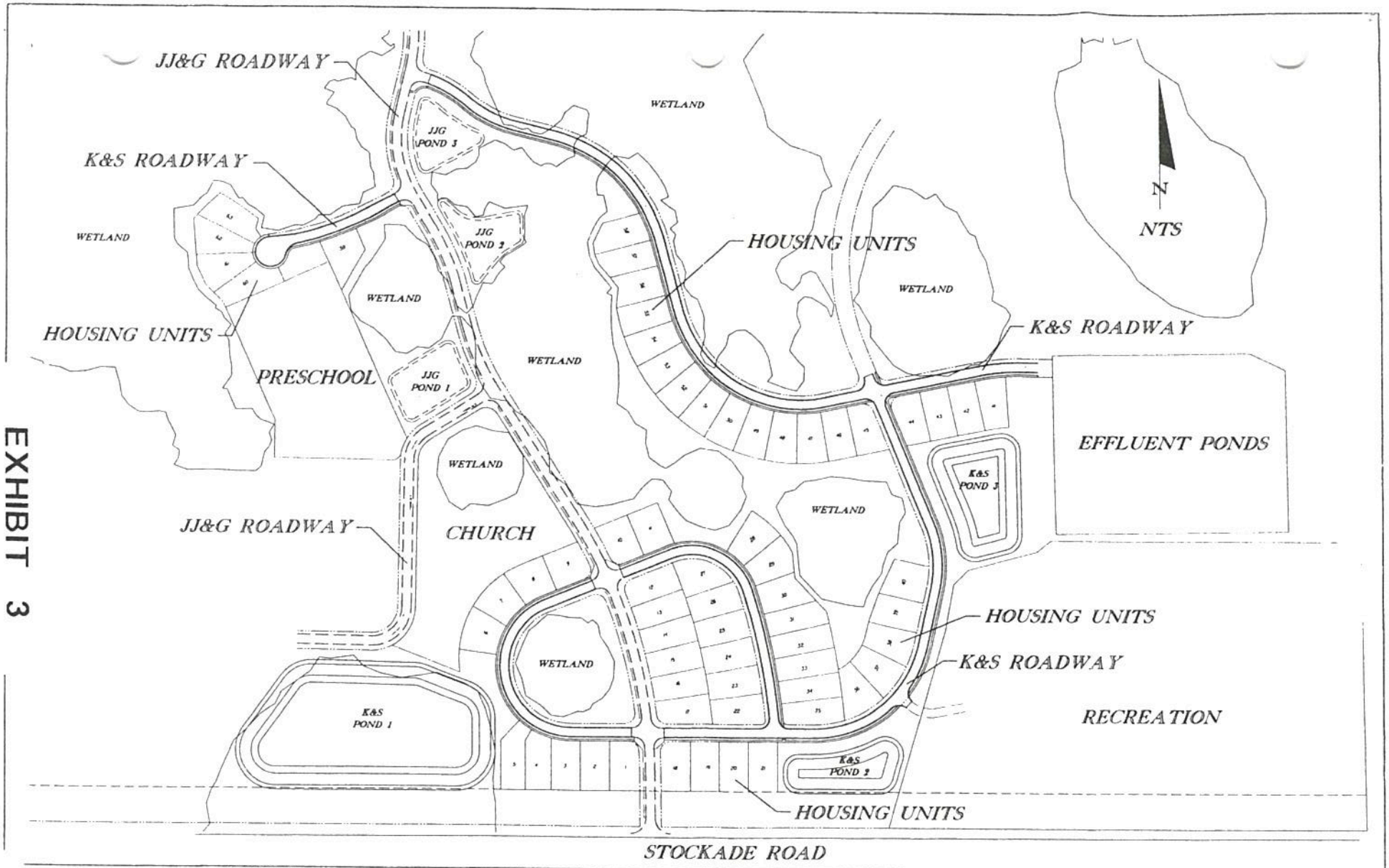
SEMINOLE TRIBE OF FLORIDA
HOLLYWOOD, FLORIDA

BIG CYPRESS RESERVATION
FORESTRY COMPOUND

PROPOSED DEVELOPMENT PLAN

DESIGNED JRC	CHECKED JRC	DATE APRIL 2007	D	0
DRAWN RSS	JOB NO 03038.042	SCALE 1" = 60'	FIGURE	REV

ATTACHMENT D



REVISIONS					
BY	DESCRIPTION	DATE	BY	DESCRIPTION	

KEITH and SCHNARS, P.A.
ENGINEERS PLANNERS SURVEYORS
6500 NORTH ANDREWS AVENUE
FORT LAUDERDALE, FL 33309-2132
CERTIFICATE OF AUTHORIZATION NO. 1337
S. MARK KLINE, P.E. PE NO. 44016

SEMINOLE TRIBE OF FLORIDA

ROAD	COUNTY	FINANCIAL PROJECT ID
ACCESS	COLLIER	N/A

LOCATION MAP

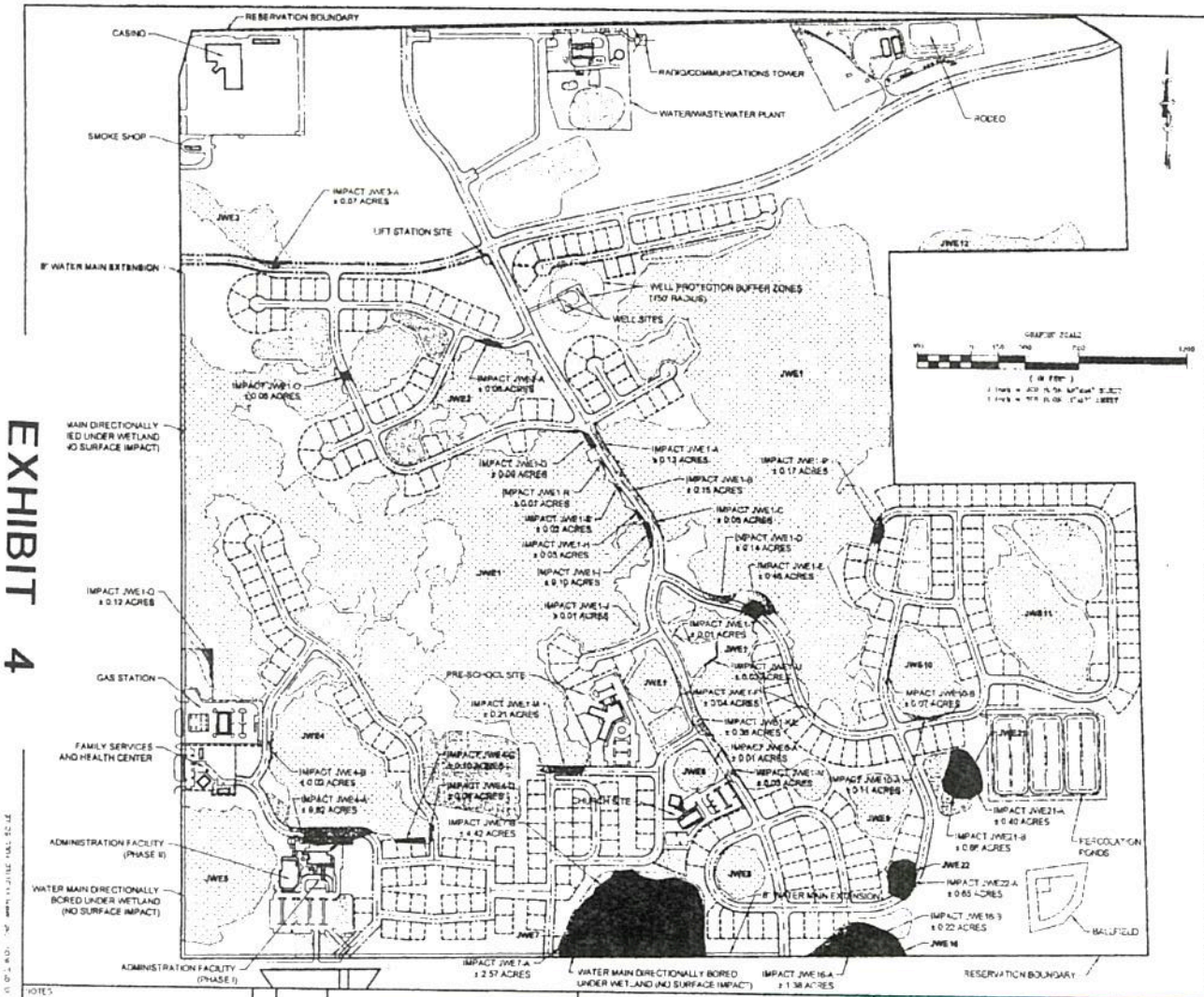
SHEET NO. FIG. 1

3/14/2001 4:36:26 PM

EXHIBIT 3

ATTACHMENT D

EXHIBIT 4



LEGEND

- ROAD/STREET R/W (60' FOR MAIN ACCESS ROADS - N/S & E/W) (50' FOR RESIDENTIAL SUBDIVISION STREETS)
- RESIDENTIAL LOT
- STORMWATER TREATMENT AREA
- WETLAND AREA
- PREVIOUSLY PERMITTED WETLAND IMPACT AREA
- ADDITIONAL WETLAND IMPACT AREA

FILL/EXCAVATION WETLAND IMPACT SUMMARY

IMPACT AREA DESIGNATION	TOTAL IMPACTS (ACRES)	PREVIOUSLY PERMITTED IMPACTS (ACRES)	ADDITIONAL FILL IMPACTS (ACRES)	ADDITIONAL EXCAVATION IMPACTS (ACRES)
JWE1 - A	0.13	0.12	0.01	-
JWE1 - B	0.15	0.15	-	-
JWE1 - C	0.03	0.03	-	-
JWE1 - D	0.14	0.14	-	-
JWE1 - E	0.46	0.22	0.24	-
JWE1 - F	0.04	0.04	-	-
JWE1 - G	0.09	0.04	0.05	-
JWE1 - H	0.03	0.01	0.02	-
JWE1 - I	0.10	0.04	0.06	-
JWE1 - J	0.01	0.01	-	-
JWE1 - KL	0.38	0.38	-	-
JWE1 - M	0.21	0.21	-	-
JWE1 - N	0.03	0.03	-	-
JWE1 - O	0.08	-	0.08	-
JWE1 - P	0.17	-	0.17	-
JWE1 - Q	0.12	-	0.12	-
JWE1 - R	0.01	-	0.01	-
JWE1 - S	0.02	-	0.02	-
JWE1 - T	0.01	-	0.01	-
JWE1 - U	0.03	-	0.03	-
JWE2 - A	0.08	-	0.08	-
JWE3 - A	0.07	0.07	-	-
JWE4 - A	0.82	0.82	-	-
JWE4 - B	0.02	-	0.02	-
JWE4 - C	0.10	-	0.10	-
JWE4 - D	0.04	-	0.04	-
JWE6 - A	0.01	0.01	-	-
JWE7 - A	2.57	-	2.57	-
JWE7 - B	4.42	-	-	4.42
JWE10 - A	0.11	0.11	-	-
JWE10 - B	0.07	-	0.07	-
JWE16 - A	1.38	-	1.38	-
JWE16 - B	0.22	-	-	0.22
JWE21 - A	0.40	-	0.40	-
JWE21 - B	0.66	-	-	0.66
JWE22 - A	0.65	-	0.65	-
TOTALS	13.82	2.41	6.11	5.30

NOTES

JORDAN JONES & GOULDING

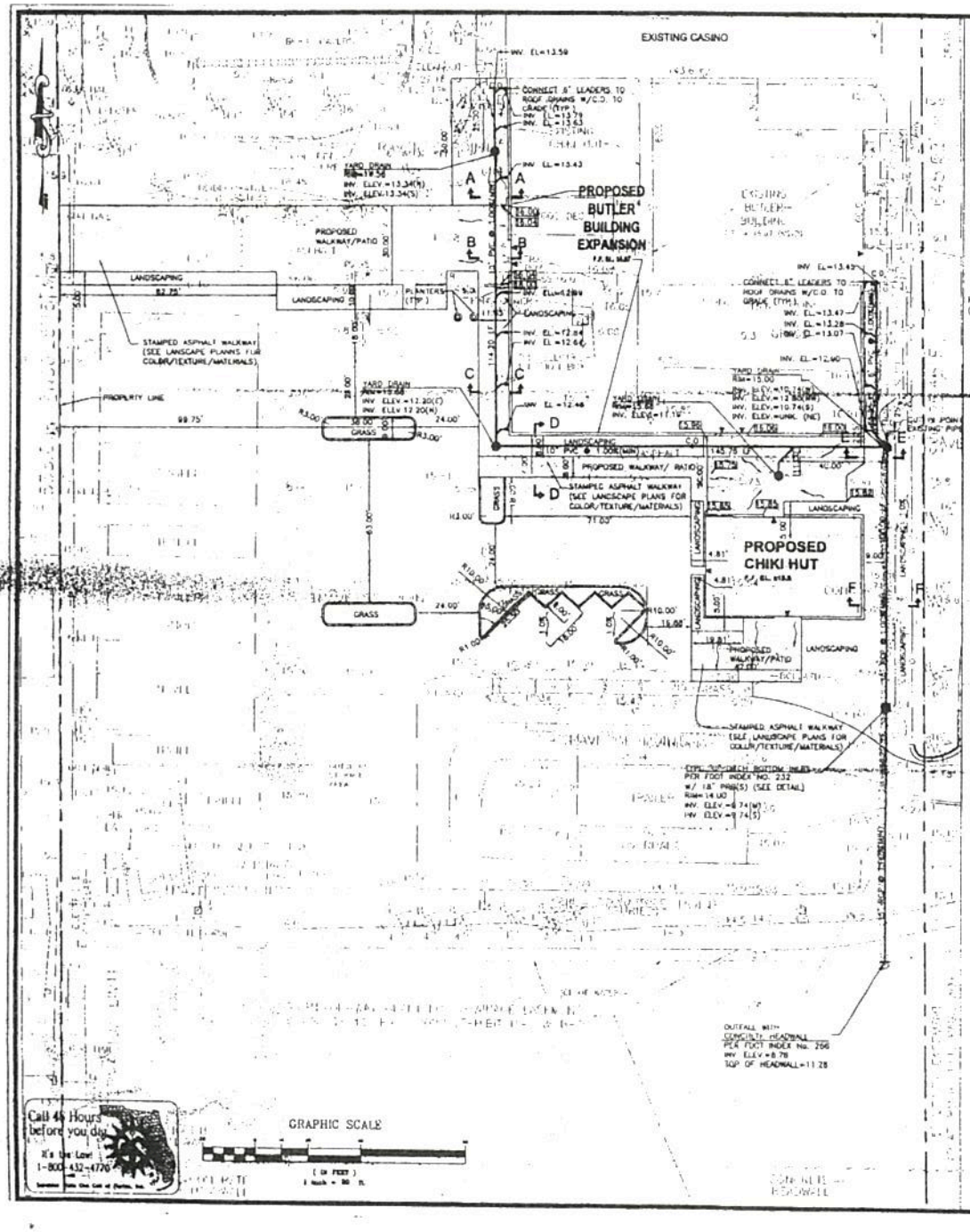
SEMINOLE TRIBE OF FLORIDA
IMMOKALEE, FLORIDA

IMMOKALEE RESERVATION
MASTER DEVELOPMENT PLAN

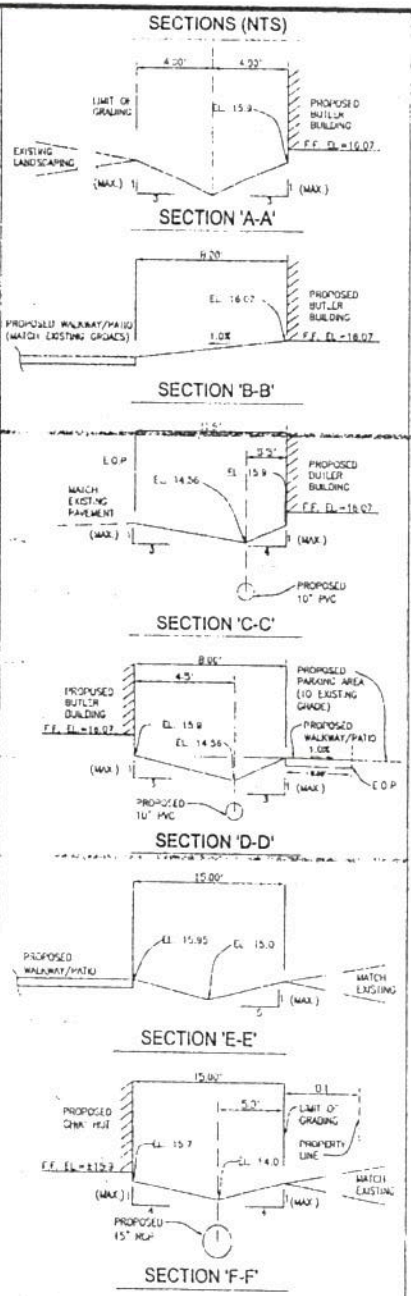
WETLAND IMPACT SUMMARY

DRAWN BY: | CHECKED BY: | DATE: FEBRUARY 2007 | 1 of 1 | 5 REV

ATTACHMENT D



SECTIONS (NTS)



LEGEND:

- TYPE "C" DITCH BOTTOM INLET
- YARD DRAIN
- EXISTING DRAINAGE PIPE
- BLDG ACCESS POINT
- PROPOSED SLOPE
- C.O. CLEAN OUT

NOTES:

1. CONTRACTOR TO ENSURE ALL EXISTING AND PROPOSED ROOFDRAINS, DOWNSPOUTS, AND GUTTERS ARE CONNECTED PROPERLY WITH A 1.00% MINIMUM SLOPE.
2. CONTRACTOR TO MAINTAIN 2.00' OF COVER (MINIMUM) OVER PROPOSED AND EXISTING DRAINAGE PIPES.
3. CONTRACTOR TO VERIFY ELEVATION OF EXISTING 10" PVC DRAINAGE PIPE PRIOR TO CONNECTION OF THE PROPOSED DRAINAGE IMPROVEMENTS
4. ALL ELEVATIONS SHOWN (EXISTING AND PROPOSED), UNLESS OTHERWISE NOTED, ARE BASED ON NATIONAL GEODEDIC VERTICAL DATUM 1929 (NGVD)
5. PRIOR TO THEIR CONSTRUCTION OR INSTALLATION, SHOP DRAWINGS SHALL BE SUMITTED TO AND REVIEWED BY THE ENGINEER OF RECORD FOR ALL DRAINAGE STRUCTURES, PIPES, AND OTHER APPURTENANCES.

Received
APR 16 2007
Jess Burts Enterprises

KEITH and SCHNARS, P.A.
ENGINEERS, PLANNERS, SURVEYORS
CERTIFICATE OF AUTHORIZATION NO. 1337
6500 NORTH ANDREWS AVENUE, FORT LAUDERDALE, FL. 33309-2132 (954)776-1616

DATE	REVISIONS

DATE FEBRUARY 2007
SCALE —
DESIGNED BY
DRAWN BY
CHECKED BY

COCONUT CREEK CASINO
BUTLER BUILDING
CITY OF COCONUT CREEK BROWARD COUNTY, FLORIDA

EXHIBIT 5

SHEET NO. C-2
PROJECT NO. 17094.57

THE J. HALL, P.E.
FLORIDA REG. NO. 50588
(FOR THE FIRM)

ATTACHMENT D

EARTHMARK COMPANIES

MITIGATION BANKING

August 16, 2007

Mr. Craig Tepper
Water Resources Management Department
The Seminole Tribe of Florida
6300 Stirling Road, Suite 324
Hollywood, Florida 33024

Re: Availability of Wetland Mitigation Credits

Dear Mr. Tepper

Pursuant to the request that the Big Cypress Mitigation Bank (BCMB) confirm the availability of wetland mitigation credits for the proposed Immokalee Reservation Master Plan Development: At present, BCMB has 87.42 herbaceous wetland credits, 12.99 forested wetland credits, 151.15 transitional credits and 9.92 upland credits available for purchase at the cost of $50, 000 per credit.

The wetland mitigation credits as specified above are currently available for purchase.

Sincerely,

Lynn Zenczak
Marketing Manager

RECEIVED
AUG 20 2007
BY GE WRMD-QC

EXHIBIT 6

*** STAFF REPORT DISTRIBUTION LIST ***

APPLICANT: SEMINOLE TRIBE OF FLORIDA.
PROJECT: 3rd Amend. To 19th ANNUAL WORK PLAN

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			Boca Raton
X	Jordan Jones and Goulding		Royal Palm
X	Gail Murray, Murray Consultants		W. P. B.
	Applicant's Agent	X	Broward Co.:
X	C. TEPPER		Comp. & Neigh. Planning Div.
			Health Rehabilitative Ser.
X	Engineer, County of Hendry		Office of Environ. Ser.
X	BROWARD		Collier County Ag. Agent
	Local Drainage Districts		Collier County, Poll. Control
X	Gerold Bennock, Seminole Tribe		Dir. Lee Co.:
	DEPARTMENT OF ENVIRONMENTAL REGULATION		Div. of Water Resources
			Development & Review
			Codes & Building Services
	Ft. Myers		Environmental Sciences
	Orlando		Mosquito Control
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			Kissimmee River Coord. Council
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X	Steve Bell, Water Use	X	Carlos DeRojas, SP, SWM
X	Doug MacLaughlin	X	Brian Tilles, Director, ERC
X	Area Engineer	X	Anita Bain, NRM
X	Ernie Barnett, Executive Office	X	Office of Counsel
X	RIGHT-OF-WAY	X	Tom Colios

EXHIBIT 7