PROJECT DEFINITION REPORT

COMPREHENSIVE EVERGLADES RESTORATION PROJECT – LAKE OKEECHOBEE WATERSHED PROJECT (LOWP)

PS ID 101044

DATE: JUNE 9, 2016

REVISION #00

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Approvals

The signatures in this section of the project definition report should be revised to represent the various areas providing significant resources to the project.

Ernie Marks, Director, Office of Everglades Policy & Coordination — Date: 6/14/16

Matt Morrison, Federal Policy Chief, Office of Everglades Policy — Date: 6/14/16

Akin Owosina, Bureau Chief, Hydrology and Hydraulics Bureau — Date: 6/16/2016

John Mitnik, Division Director, Ops., Engineering & Construction — Date: 6/17/16

Susan Gray, Bureau Chief, Applied Sciences — Date: 6/16/16

Terrie Bates, Division Director, Water Resources — Date: 6-22-16

Date: 6/16/16

Document prepared by: Lesley Bertolotti, Extension: 6415

Project Location

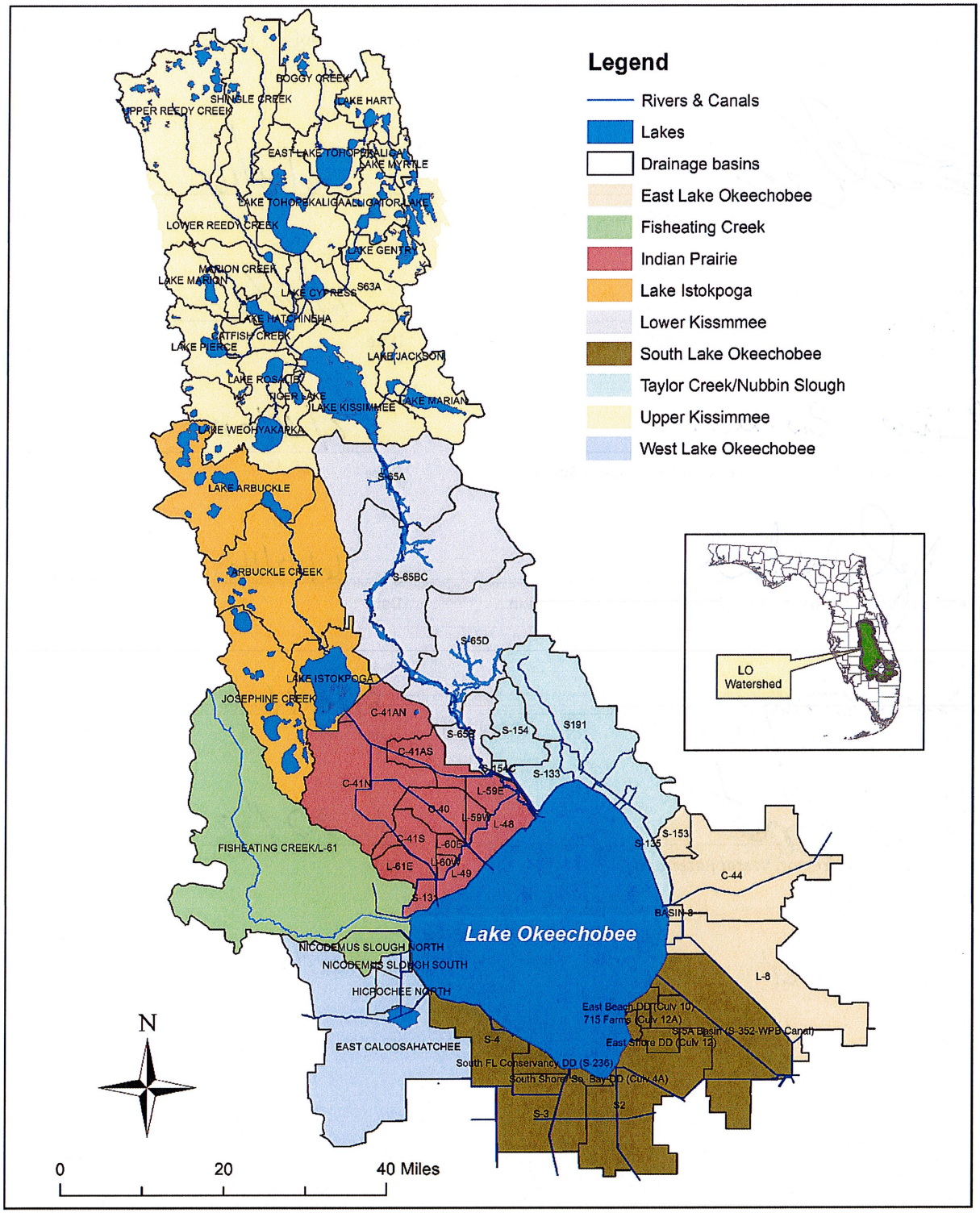


Figure 1 above is a map of the Lake Okeechobee Watershed. The exact location of the project has yet to be defined, however the project study area will likely be similar to the original formulation study area which was north of Lake Okeechobee and close to the Lake.

Project Description

The Lake Okeechobee Watershed Project (LOWP) is a component of the Comprehensive Everglades Restoration Plan (CERP), a 50:50 cost share between the United States Army Corps of Engineers (USACE) Jacksonville District and the local sponsor (South Florida Water Management District - SFWMD). CERP provides a framework and guide to restore, protect, and preserve the water resources of central and southern Florida, including the Everglades. USACE is the Federal Partner, and SFWMD is the Local Sponsor. The project will follow the USACE's Specific, Measurable, Attainable, Risk Informed and Timely (SMART) Planning Feasibility Process.

The primary objective of the LOWP is to improve the quantity, quality, timing and distribution of water in the Northern Everglades and to provide the capability to better manage water levels in Lake Okeechobee. This will be achieved through formulation of regional scale projects. If implemented, these actions will help restore more natural water deliveries, promote improved health and functionality of Lake Okeechobee, the Northern Everglades Coastal Estuaries, and the Southern Everglades, and increase the quantity and quality of habitat available for native wildlife and vegetation.

Project Scope

Initially this is a planning/feasibility study to formulate and evaluate alternatives. The project will follow the USACE's SMART Planning Feasibility Process. It is anticipated that planning/feasibility study effort will require District resources in the following areas:

- Project Management
- Scoping
    - Data Collection
    - Formulation of alternatives
    - Technical Assistance
    - Scoping Meetings
- Alternative Evaluation & Analysis
    - Evaluation/development of Performance Measures
    - Technical Modeling
    - Environmental Effects Analysis
    - Recreation Plan
    - Water Quality
    - Permitting/Endangered Species Act (ESA)
    - Real Estate
    - Cost Analysis
- Feasibility – Level Analysis
- Chief's Report

Once the USACE's SMART Planning Feasibility Process is completed, the project authorized and funding appropriated, engineering and construction of specific project features will commence.

Background

Previous plan formulation occurred in the 2000's but was put on hold due to unresolved policy issues. Recently, due to heightened awareness of the need for storage north of Lake Okeechobee and the 2014 and 2016 periods of high discharges to the northern estuaries, re-initiating the LOWP has come to the forefront. The LOWP Implementation Report has been identified as one of the next CERP studies to be conducted as identified in the Corps' Integrated Delivery Schedule (IDS), with the SMART Planning Feasibility Process beginning in 2016.

Permitting

No permits are needed during the feasibility process phase.

Right of Way

To Be Determined (TBD) – depends on projects selected to be implemented

Real Estate

The map below shows the location of District owned lands in the anticipated project area. These lands were acquired for various projects and efforts (Kissimmee River Restoration, Lake Okeechobee Fast Track, CERP LOWP). Some of these lands have existing projects [Lakeside Ranch Stormwater Treatment Area (STA), Nubbin Slough STA, and Taylor Creek STA], others are currently leased, and some are within the Kissimmee 50 year floodplain and needed for the Kissimmee River Restoration Project. Despite these land holdings, additional land may be needed for the project due to the configuration or location of existing District lands. District lands that are available, may be considered for project features or land swaps for more desirable areas.

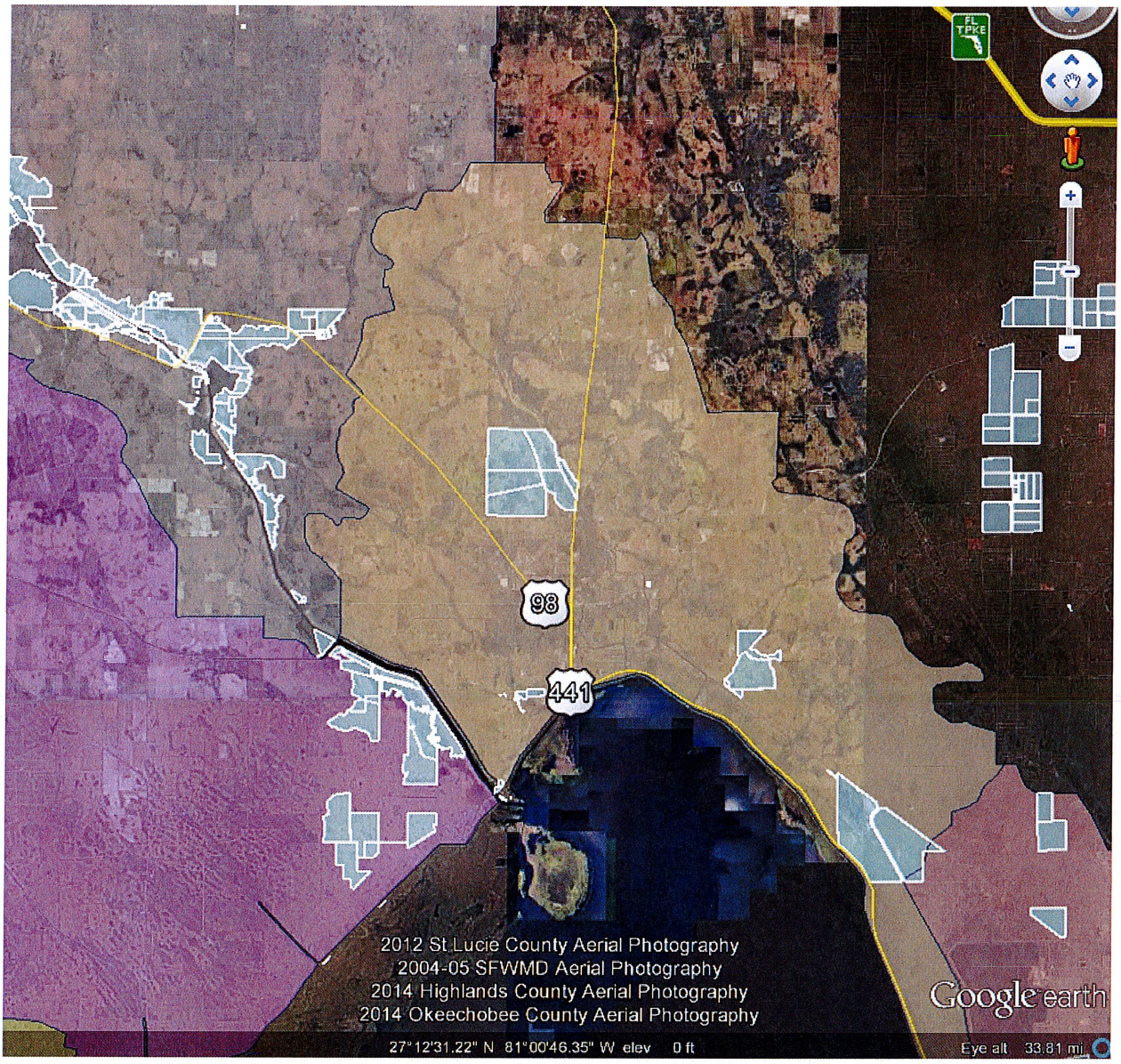


Figure 2. District fee acquired lands in the anticipated study area.

Public Use/ Outreach

A recreation plan will be developed as part of the planning process and included in the Project Implementation Report (PIR). Also, press releases and fact sheets will be coordinated through the District's Division of Public Information at major milestones as appropriate.

Stakeholder Considerations

Internal stakeholders include Governing Board, Executive Office, Applies Sciences, Everglades Policy and Coordination, Hydrology and Hydraulics, Real Estate, Water Quality and Information Technology. External

stakeholders include the Water Resources Advisory Commission (WRAC), the Seminole Tribe of Florida, Non-governmental organizations (NGOs) (i.e. Audubon, The Nature Conservancy, Everglades Foundation), local governments (Counties, Cities) and Florida Department of Environmental Protection (FDEP). The USACE will be the lead on the SMART Planning Feasibility Process and National Environmental Policy Act (NEPA) requirements. The process will include meetings (i.e. scoping) and public review comment periods.

Operations and Modeling

Modeling support from the Hydrology & Hydraulics (H&H) Bureau is needed for the feasibility process and communications with them on resources are underway.

Operations and Maintenance

The Okeechobee Field Station has responsibilities in the project area. Depending on projects selected, there may be an impact on the level of staffing required once features are implemented in the future (beyond the 3 year planning phase).

SCADA, Instrumentation, Telemetry, Information Technology

Telemetry and SCADA are already present within the Project Area. Additional needs are TBD – depends on projects selected for implementation.

Security and Safety

N/A

Environmental

The primary purpose of the Project is to help restore the Northern Everglades by providing regional projects to improve the quantity, quality, timing and distribution of water. Potential impacts from alternative features to threatened and endangered (T&E) species, other protected species (i.e. migratory bird act) and wetlands/sensitive areas will be considered during the NEPA analysis, as will coordination with SHPPO. Potential agrochemical contamination should also be considered during project siting. The project will not be inconsistent with FDEP's Total Maximum Daily Load (TMDL) program.

Monitoring

The District's current monitoring network includes sample locations within the project area at three hydrologic levels within the Lake Okeechobee Watershed: (1) sub-watershed and drainage basin level (basin loading stations), (2) sub-basin level (tributary and ambient stations), and (3) project/parcel/farm level (dairy stations). Load monitoring is conducted at stations at the sub-watershed and drainage basin level (basin loading stations). Basin loading stations are monitored for Total Phosphorus (TP), Total Nitrogen (TN), and flow. The Lake Okeechobee Operating Permit issued by the FDEP requires additional

Class I water quality parameters be collected from 34 control structures with direct discharges into Lake Okeechobee. Data from all these monitoring efforts reside in the District's hydrometeorologic database (DBHYDRO).

Commissioning

TBD – Commissioning phase is post planning.

Lessons Learned

- Lake O Watershed Phase II Tech Plan, Northern Everglades Water Storage (NEWS) Project - Water Availability – Hydrology north of Lake Okeechobee is extremely flashy. It is important to evaluate "water availability" when siting projects.
- Previous LOWP Formulation – Policy cost share challenges previously cause the project formulation to be put on hold when it was elevated to District of Columbia (DC) Headquarters. The USACE's SMART Planning Feasibility Process vertical team concurrence at critical project milestones allows for concurrence throughout the process to ensure the project and project team is on track. Also, special consideration needs to be given as to how and if water quality features are incorporated.

Conceptual Alternative Options

TBD through the USACE's SMART Planning Feasibility Process

Cost Estimates

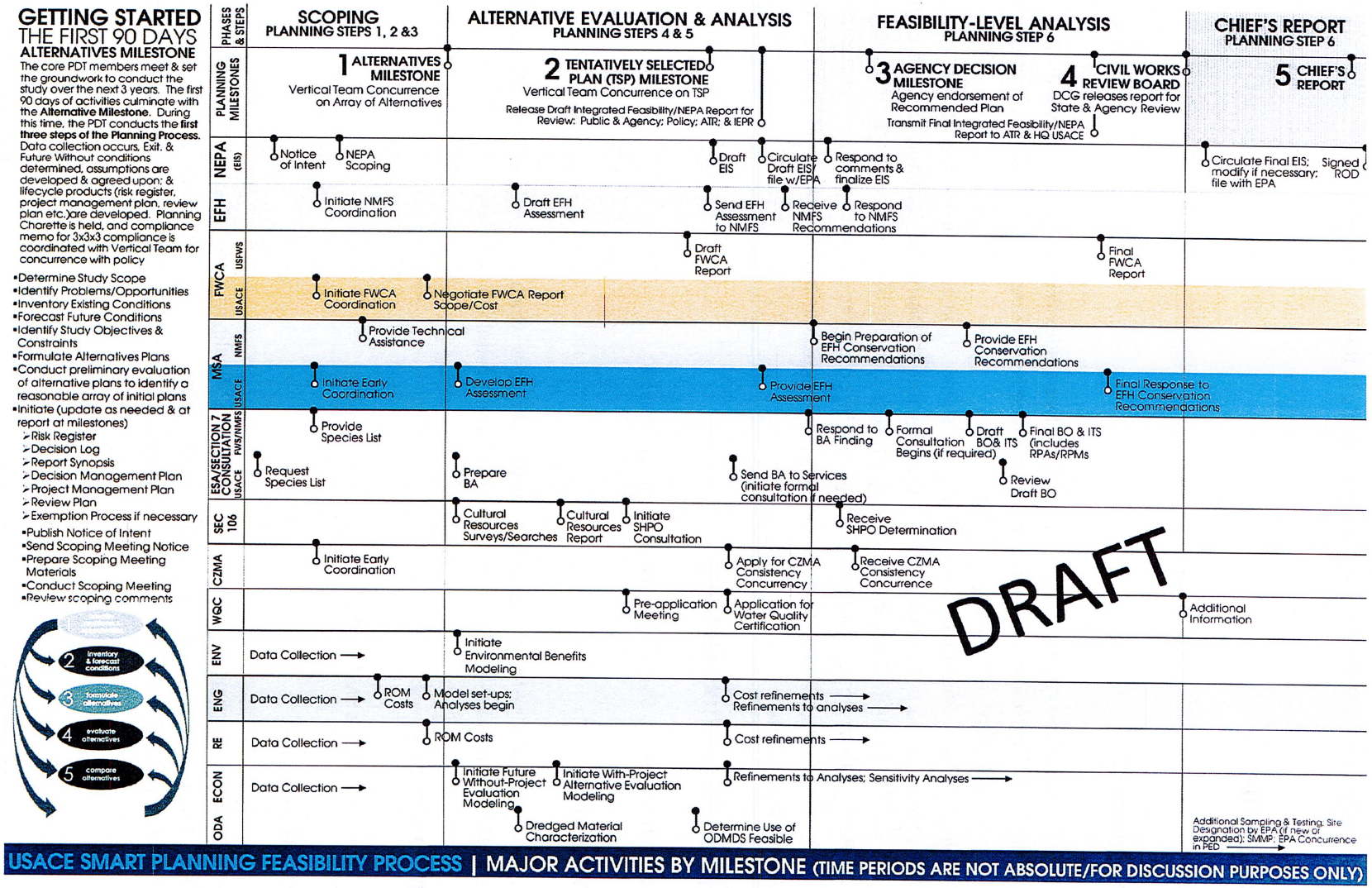
TBD through the USACE's SMART Planning Feasibility Process which has a budget of $3M for planning combined (USACE and SFWMD). Exceedance of $3M would require a variance.

Recommendations

TBD through the USACE's SMART Planning Feasibility Process

Project Milestones

The USACE's SMART Planning Feasibility Process is the schedule driver for the first phase of this project. Please see the planning milestones in the chart below. The SMART planning process will take approximately 3 years. Timeframes for design and construction are in future phases of this project.


GETTING STARTED
THE FIRST 90 DAYS
ALTERNATIVES MILESTONE
The core PDT members meet & set the groundwork to conduct the study over the next 3 years. The first 90 days of activities culminate with the Alternative Milestone. During this time, the PDT conducts the first three steps of the Planning Process. Data collection occurs. Exit. & Future Without conditions determined, assumptions are developed & agreed upon; & lifecycle products (risk register, project management plan, review plan etc.)are developed. Planning Charette is held, and compliance memo for 3x3x3 compliance is coordinated with Vertical Team for concurrence with policy
•Determine Study Scope
•Identify Problems/Opportunities
•Inventory Existing Conditions
•Forecast Future Conditions
•Identify Study Objectives & Constraints
•Formulate Alternatives Plans
•Conduct preliminary evaluation of alternative plans to identify a reasonable array of initial plans
•Initiate (update as needed & at report at milestones)
➢Risk Register
➢Decision Log
➢Report Synopsis
➢Decision Management Plan
➢Project Management Plan
➢Review Plan
➢Exemption Process if necessary
•Publish Notice of Intent
•Send Scoping Meeting Notice
•Prepare Scoping Meeting Materials
•Conduct Scoping Meeting
•Review scoping comments
2 inventory & forecast conditions
3 formulate alternatives
4 evaluate alternatives
5 compare alternatives
PHASES & STEPS
SCOPING
PLANNING STEPS 1, 2 &3
ALTERNATIVE EVALUATION & ANALYSIS
PLANNING STEPS 4 & 5
FEASIBILITY-LEVEL ANALYSIS
PLANNING STEP 6
CHIEF'S REPORT
PLANNING STEP 6
PLANNING MILESTONES
1 ALTERNATIVES MILESTONE
Vertical Team Concurrence on Array of Alternatives
2 TENTATIVELY SELECTED PLAN (TSP) MILESTONE
Vertical Team Concurrence on TSP
Release Draft Integrated Feasibility/NEPA Report for Review: Public & Agency; Policy; ATR; & IEPR
3 AGENCY DECISION MILESTONE
Agency endorsement of Recommended Plan
4 CIVIL WORKS REVIEW BOARD
DCG releases report for State & Agency Review
Transmit Final Integrated Feasibility/NEPA Report to ATR & HQ USACE
5 CHIEF'S REPORT
NEPA (EIS)
Notice of Intent
NEPA Scoping
Draft EIS
Circulate Draft EIS/ file w/EPA
Respond to comments & finalize EIS
Circulate Final EIS; modify if necessary; file with EPA
Signed ROD
EFH
Initiate NMFS Coordination
Draft EFH Assessment
Send EFH Assessment to NMFS
Receive NMFS Recommendations
Respond to NMFS
FWCA USFWS
Draft FWCA Report
Final FWCA Report
FWCA USACE
Initiate FWCA Coordination
Negotiate FWCA Report Scope/Cost
M&A NMFS
Provide Technical Assistance
Begin Preparation of EFH Conservation Recommendations
Provide EFH Conservation Recommendations
M&A USACE
Initiate Early Coordination
Develop EFH Assessment
Provide EFH Assessment
Final Response to EFH Conservation Recommendations
ESA/SECTION 7 CONSULTATION FWS/NMFS
Provide Species List
Respond to BA Finding
Formal Consultation Begins (if required)
Draft BO& ITS
Final BO & ITS (includes RPAs/RPMs
ESA/SECTION 7 CONSULTATION USACE
Request Species List
Prepare BA
Send BA to Services (initiate formal consultation if needed)
Review Draft BO
SEC 106
Cultural Resources Surveys/Searches
Cultural Resources Report
Initiate SHPO Consultation
Receive SHPO Determination
CZMA
Initiate Early Coordination
Apply for CZMA Consistency Concurrency
Receive CZMA Consistency Concurrence
WQC
Pre-application Meeting
Application for Water Quality Certification
Additional Information
ENV
Data Collection
Initiate Environmental Benefits Modeling
ENG
Data Collection
ROM Costs
Model set-ups; Analyses begin
Cost refinements
Refinements to analyses
RE
Data Collection
ROM Costs
Cost refinements
ECON
Data Collection
Initiate Future Without-Project Evaluation Modeling
Initiate With-Project Alternative Evaluation Modeling
Refinements to Analyses; Sensitivity Analyses
ODA
Dredged Material Characterization
Determine Use of ODMDS Feasible
Additional Sampling & Testing, Site Designation by EPA (if new or expanded); SMMP; EPA Concurrence in PED
DRAFT
USACE SMART PLANNING FEASIBILITY PROCESS | MAJOR ACTIVITIES BY MILESTONE (TIME PERIODS ARE NOT ABSOLUTE/FOR DISCUSSION PURPOSES ONLY)

Resource Requirements

Internal Resources

Full Time Equivalents (FTEs) estimated needs are provided below.

Bureau/Office	Section/Unit	Employee	Skill	FTE
Applied Sciences	Coastal Ecosystems	Christopher Buzzelli	Ecologist	0.2
Applied Sciences	Coastal Ecosystems	Zhiqiang Chen	Scientist	0.2
Applied Sciences	Lakes & Rivers	Andrew Rodusky	Ecologist	0.2
Applied Sciences	Lakes & Rivers	Bruce Sharfstein	Ecologist Lead	0.5
Applied Sciences	Lakes & Rivers	Joyce Zhang	Watershed Expert/Technical Lead	0.8
Applied Sciences	Lakes & Rivers	Tom James	In-Lake Physical	0.1
Applied Sciences	Water Supply Development	Bob Verrastro	Technology Expert - ASR	0.15
Applied Sciences	Water Supply Development	Kristopher Esterson	Water Supply lead	0.1
			Total Applied Sciences FTEs	**2.25**
Everglades Policy & Coordination	Everglades Policy & Coordination	Ernie Marks	EXO	0.15
Everglades Policy & Coordination	Everglades Policy & Coordination	Palma Vacarr	Administrative Support	0.1
Everglades Policy & Coordination	Federal	Jen Leeds	Oversight	0.3
Everglades Policy & Coordination	Federal	Matt Morrison	Oversight	0.3
Everglades Policy & Coordination	Federal	Staff Augmentation	Engineering/Technical Assistance	-
Everglades Policy & Coordination	State	Lesley Bertolotti	Project Manager	0.8
Everglades Policy & Coordination	State	Leslye Waugh	Project Management Support	0.15
Everglades Policy & Coordination	State	Open Position	Agricultural/State Policy	0.25
Everglades Policy & Coordination	State	Prajakta Kamthe	Permitting/ESA Expert	0.15
Everglades Policy & Coordination	State	Nimarla Jeyakumar	Permitting/ESA Oversight	0.1
Everglades Policy & Coordination	Tribal	Armando Ramirez	Tribal Liaison	0.3
			Total EPC FTEs	**2.6**
Information Technology	Geospatial Mapping Services	TBD	Geographer	0.1
			Total IT FTE	**0.1**
Office of Counsel	Businesses and Programs	TBD	Legal Counsel	0.15
			Total OC FTE	**0.15**
Ops, Engineering & Construction	Hydrology & Hydraulics Bureau	Clay Brown	Modeling Lead	0.8
Ops, Engineering & Construction	Hydrology & Hydraulics Bureau	Walter Wilcox	Modeling Oversight	0.1
Ops, Engineering & Construction	Modeling Section	Cal Neidrauer	Regulation Schedule Expert	0.1
Ops, Engineering & Construction	Project Development	Jack Ismalon	Cost Estimator	0.1
Ops, Engineering & Construction	Project Development	Lucine Dadrian	Cost Estimating Oversight	0.1
Ops, Engineering & Construction	Project Management	Alan Shirkey	Engineering Oversight	0.1
Ops, Engineering & Construction	Project Management	Matt Alexander	Engineering Lead	0.15
Ops, Engineering & Construction	Ops, Engineering & Construction	John Mitnik	Engineering Oversight	0.1
			Total OE&C FTEs	**0.25**
Real Estate	Leasing & Real Estate Support	Ray Palmer	Real Estate Lead	0.15
			Total Real Estate FTE	**0.15**
			TOTAL Internal FTEs	**5.5**

External Resources

Staff augmentation in the form of 0.5 FTE at a cost of approximately 185,880 is needed to assist with engineering and project management tasks.

Project Deliverable and Schedule

Specific deliverables and schedules are being developed with the USACE. However, below is a potential draft schedule of the SMART Planning Feasibility Process for this project. It is anticipated that work by the USACE and SFWMD on this planning effort will begin in summer of 2106 (July 18). The initial stage of the planning effort will include developing the overall scope for the plan. It is anticipated the planning process will take approximately three years to complete.

Completed Milestones	LOWP
Design Agreement Between the Department of the Army and The South Florida Water Management District for the Design of Elements of the Comprehensive Plan for the Everglades and South Florida Ecosystem Restoration Project.	12 May 2000
Future Milestones	
3x3x3 Compliance	18 July 2016 – 14 Oct. 2016
Alternatives Milestone	17 October 2016
Tentatively Selected Plan Milestone	18 Oct. 2016 – 31 Jan. 2018
Agency Decision Milestone	1 Feb. 2018 – 23 July 2018
Division Engineer Transmittal	24 July 2018 – 7 Dec. 2018
Civil Works Review Board	10 Dec. 2018 – 31 Jan. 2019
FEIS filed with EPA	1 Feb 2019 – 1 March 2019
30-Day S&A Review start	11 March 2019 – 10 April 2019
Chief of Engineers Report	Finish 17 April 2019

It is also anticipated that external contractors will be used to assist with this project

Project Funding Sources

Phase I - Parent Project: Through Legacy Florida, $3M will be provided for CERP planning efforts. The breakout of these funds between this project and other CERP planning projects is currently being

assessed, however at the time of this PDR it is anticipated that approximately $463,000 is needed for external contractual services. $1M is estimated for internal salary dollars for a total estimate of $1.463M.

These funds would be in Fund P101, Functional Area 3310.

Phase II – Project implementation: Funding for future child projects is TBD.

References

South Florida Water Management District (SFWMD), Florida Department of Environmental Protection (FDEP) and Florida Department of Agriculture and Consumer Services (FDACS). 2008. Lake Okeechobee Watershed Construction Project Phase II Technical Plan. South Florida Water Management District, West Palm Beach, FL.