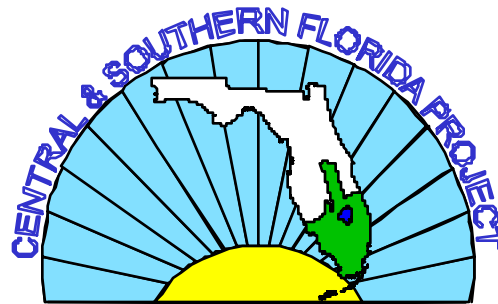


Final

December 2003

CENTRAL AND SOUTHERN FLORIDA PROJECT

COMPREHENSIVE EVERGLADES RESTORATION PLAN



**COMPREHENSIVE
EVERGLADES
RESTORATION PLAN**

PROJECT MANAGEMENT PLAN

WASTEWATER REUSE TECHNOLOGY PILOT PROJECT

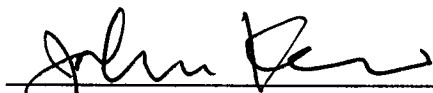


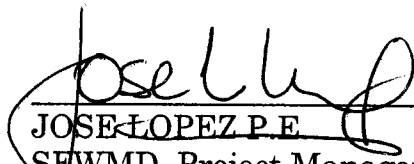
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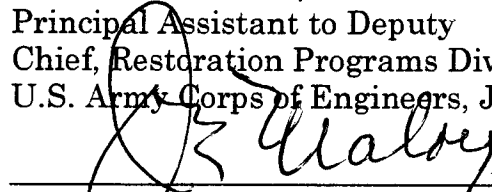

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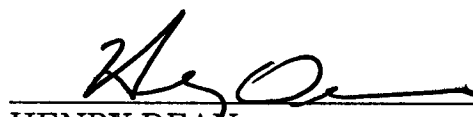

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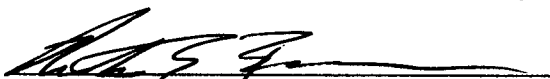

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1.2 List of Acronyms

ACHP	Advisory Council on Historic Preservation
AE	Architect-Engineer (Contractor)
AFB	Alternatives Formulation Briefing
AHPA	Archeological and Historic Preservation Act
ASA (CW)	Assistant Secretary of the Army for Civil Works
AWT	Advanced Water Treatment
BBCW	Biscayne Bay Coastal Wetlands
BDRA	Bird Drive Recharge Area
BNP	Biscayne National Park
BOD	Biological Oxygen Demand
C&SF	Central and Southern Florida Project
CAA	Clean Air Act
CAR	Coordination Act Report
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERP	Comprehensive Everglades Restoration Plan
CERPRA	Comprehensive Everglades Restoration Plan Regulatory Act
cfs	cubic feet per second
CFR	Code of Federal Regulations
CGM	CERP Guidance Memorandum
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DCA	Florida Department of Consumer Affairs
DCT	Design Coordination Team
DERM	Miami-Dade County Department of Environmental Resource Management
EA	Environmental Assessment
E&D	Engineering and Design
EDC	Endocrine Disrupting Chemicals
EIS	Environmental Impact Statement
ENP	Everglades National Park
EPOC	Emerging Pollutants of Concern
ER	Engineering Regulation
ESA	Endangered Species Act
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection

FONSI	Finding of No Significant Impact
F.S.	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
FWCA	Fish and Wildlife Coordination Act
GIS	Geographic Information System
H&H	Hydrology and Hydraulics
HQ	Headquarters (USACE)
HRS	Heath and Rehabilitation Service
HTRW	Hazardous, Toxic, and Radioactive Waste
IPR	In-Progress Review
ITR	Independent Technical Review
LERRD	Lands, Easements, Rights-of-way, Relocations, and Disposal
LECWSP	Lower East Coast Water Supply Plan
MBTA	Migratory Bird Treaty Act
MCACES	Micro Computer Aided Cost Engineering System
MDWASD	Miami-Dade County Water and Sewer Department
MGD	Million Gallons per Day
MPMP	Master Program Management Plan (CERP)
MSFCMA	Magnuson-Stevens Fishery Conservation & Management Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NR	National Register
NW	Northwest
O&M	Operations and Maintenance
OFW	Outstanding Florida Water
P&S	Plans and Specifications (SFWMD)
PAL	Planning Aid Letter
PAR	Planning Aid Report
PCA	Project Cooperation Agreement
PDT	Project Delivery Team

PIM	Project Implementation Monitoring
PIR	Project Implementation Report
PPDR	Pilot Project Design Report
PPTDR	Pilot Project Technical Data Report
PMP	Project Management Plan
POC	Pollutant of Concern
RCRA	Resource Conservation and Recovery Act
RE	Real Estate
RECOVER	Restoration Coordination and Verification
Restudy	C&SF Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement (April 1999 Final Feasibility Report)
RFP	Request for Proposal
SAD	South Atlantic Division (USACE)
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Office, Florida Department of State, Division of Historic Resources
SFWMD	South Florida Water Management District
SOW	Statement Of Work
SW	Southwest
TP	Total Phosphorus
TSS	Total Suspended Solids
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WBS	Work Breakdown Structure
WPA	Water Preserve Areas
WQ	Water Quality
WQC	Water Quality Certification
WRAP	Wetland Rapid Assessment Procedure
WRDA	Water Resources Development Act
WWRPP	Wastewater Reuse Pilot Project
WWTP	Wastewater Treatment Plant

1.3 List of Project Management Plan Preparers

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Shafer, Mark	USACE	Environmental Engineer	904-232-3594
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2.0 PROJECT INFORMATION

This Project Management Plan (PMP) will include detailed task, budget, and schedule information necessary to complete the Pilot Project Design Report (PPDR). Schedules and costs associated with tasks that are to take the project beyond finalization of the PPDR are as shown in the Master Program Management Plan (MPMP). At the completion of the PPDR, the PMP will be revised to include more detail regarding subsequent phases. Prior to construction, the PMP will again be revised.

The official name for this project as authorized in Section 601(b) (2) (B) of the Water Resource Development Act (WRDA) of 2000 is the Wastewater Reuse Technology Pilot Project. The project includes but is not limited to planning, engineering, design, plans and specifications (P&S), real estate (RE) acquisition, Project Cooperation Agreement (PCA), construction, operation, project implementation monitoring (PIM), and a final pilot project technical data report (PPTDR).

2.1 Background

The South Florida ecosystem is a nationally and internationally unique and important natural resource, including three (3) National Parks and one (1) National Preserve Area. It is also a resource in peril, having been severely impacted by human activities for more than 100 years. The Central and Southern Florida Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement (April 1999 Final Feasibility Report) (Restudy) recommends a comprehensive plan for the restoration, protection and preservation of the water resources of central and southern Florida.

This plan is known as the Comprehensive Everglades Restoration Plan (CERP). The primary goal of CERP is the restoration, preservation and protection of the South Florida ecosystem while providing for other water related needs of the region such as flood protection and water supply. The CERP contains more than 60 major components that involve creation of approximately 217,000 acres of reservoirs and wetland-based water treatment areas. These components will vastly increase storage and water supply for the natural system, as well as for urban and agricultural needs, while maintaining current Central and Southern Florida (C&SF) Project purposes.

The CERP will restore more natural flows of water, including sheet flow, improve water quality, and establish more natural hydroperiods in the South Florida ecosystem. Native flora and fauna, including threatened and endangered species, will benefit as a result of the improved hydrologic

conditions. In addition to the project components, CERP implementation includes a number of program-level activities. These program-level activities are defined as work items that span multiple projects and/or involve system-wide issues. Program-level activities include Restoration Coordination and Verification (RECOVER), public outreach, socio-economic and environmental justice, and program management and control tasks.

The PMP follows CERP guidelines to address critical issues, such as water quality, advanced treatment technologies, and possible effects of using reclaimed water on the natural systems, and collect the necessary data so that decision makers can use this information when considering the design of the full-scale reclaimed water components, if it is determined viable.

The CERP Wastewater Reuse Technology Pilot Project (WWRPP) for West and South Miami-Dade envisions two wastewater reuse facilities located in Miami-Dade County to increase the quantity of water available for ecological restoration in the future. One reuse facility would be associated with the existing Miami-Dade South treatment facility located at the southern end of Biscayne Bay (referred to here after as South Miami-Dade); and the other would be associated with a proposed wastewater treatment plant in the west Miami-Dade area near the Bird Drive Basin (referred to here after as West Miami-Dade).

2.1.1 South Miami-Dade

Biscayne Bay, the largest estuary on the coast of southeast Florida, is contiguous with and linked hydrologically to the southern Everglades and Florida Bay systems. Historically, these three regions were part of a larger connected natural system of coastal lagoons and wetlands. Although the connections have been altered by surrounding development and the Central and Southern Florida Flood Control project, Biscayne Bay still supports a diverse natural system of seagrass, hardbottom and coastal mangrove communities. In the past, freshwater flowed overland to the Bay through natural sloughs and rivers, and as groundwater through the Biscayne aquifer. This pattern was altered in later years by regional drainage, canal construction and operation, urban development, and the construction of roads, levees, and other hydrologic barriers to ground water and surface flow.

Biscayne Bay was designated a priority waterbody by the Florida Legislature pursuant to the Surface Water Management and Improvement Act of 1987. The area south of Biscayne National Park is included in the Florida Keys National Marine Sanctuary. Waters of Biscayne Bay Aquatic Preserve and Biscayne National Park are classified as Outstanding Florida Waters (OFWs), and as such are subject to the most stringent regulations, including Florida

antidegradation standards, which prohibit permitted discharges that will degrade ambient water quality. Since the establishment of these protection measures, local, state and federal agencies have implemented monitoring, regulatory and management efforts at maintaining and enhancing biological, recreational and aesthetic values of Biscayne Bay.

Trend analysis on the Bay's water quality monitoring program indicated that, in many instances, efforts to restore and enhance Biscayne Bay have been successful. However, even though some water quality parameters, like turbidity, dissolved oxygen and total coliform bacteria have shown improvement, other parameters, like ammonia and nitrate/nitrogen, are indicating a decline in water quality.

In the first several alternatives evaluated by the Restudy team, freshwater flows to central and southern Biscayne Bay fell short of the targeted flows. In 1999, the Restudy team, as noted in the Appendix C, "Issue Paper on Flows to Biscayne National Park Utilizing Reuse", developed a South Miami-Dade Reuse component which would provide reclaimed water to make up for the redirection of existing flows. The Team anticipated that the reuse water would be treated to a level needed to sustain estuarine and wetland biologic communities in the Bay area. They also recognized the potential for reuse to supply a perpetual source of freshwater to the Bay that would need to be managed to optimally mimic target flow regimes even in the dry season.

For South Miami-Dade it is envisioned that the reuse pilot project will include the construction, operation and monitoring of an advanced wastewater pilot treatment facility followed by a receiving wetland for distribution of the reclaimed water to coastal wetlands and the Biscayne Bay. The pilot project will include research on the types of treatment technologies available, and an assessment on the effects of using reclaimed water to augment freshwater flows to coastal wetlands and the Biscayne Bay.

2.1.2 West Miami-Dade

A *West Miami-Dade Water Reuse Facility Feasibility Study*, sponsored by Miami-Dade County Water and Sewer Department (MDWASD) was authorized in Section 413 of the WRDA of 1996, Public Law 104-303, and adopted October 12, 1996. Miami-Dade Water and Sewer Department is proposing a new 100-150 million gallons per day (MGD) regional wastewater facility that can be used to treat and recycle freshwater effluent from municipal sources.

Study efforts for Phase 1 of this study were initiated in February 2000 and a Final Report has been completed. The Phase I study evaluated several water reuse alternatives and identified the most viable alternatives for further study.

Alternatives included different discharge locations, types of reuse and different treatment technologies to meet the required discharge water quality for each alternative and location. Discharge to the Bird Drive Basin was one of several locations that were evaluated and identified as viable. This study area was limited to western Miami-Dade County, with a tentative facility site location west of the Tamiami Airport in the area of the C-1 canal and the L-31N borrow canal.

The engineering evaluation of the alternatives proposed in Phase 1 of the Feasibility Study report has been completed (PBS&J, 2002). In this report PBS&J determined the existing water quality at the various potential discharge locations, identified the required reclaimed water quality needed for discharge at each location, identified treatment technologies that could deliver the quality needed and provided cost curves for construction, operation and maintenance, and potential storage options.

Concurrent with the engineering effort, a water demand evaluation for urban and agricultural uses is being completed to quantify the potential demand for reclaimed water outside of the identified CERP needs. This effort will also check some of the assumptions made in the engineering effort. The modeling and engineering efforts will not be revised based on the water demand study input. It is expected that the assumptions made initially will allow an adequate comparison of the alternatives.

Since there is not an existing wastewater treatment facility located in west Miami-Dade, this pilot project is directed to evaluate the information and data generated at the City of West Palm Beach's Wetland Based Water Reclamation Project to determine the effects of using reclaimed water in freshwater natural areas. A panel of experts evaluated the comparability between this project and the Bird Drive Recharge Area (BDRA) and it was concluded that there are marked differences between in soils, vegetation and wildlife in these two ecosystems, limiting the ability to transfer data collected at WPB. Additional information on the hydroperiod and hydrogeological characteristics of the BDRA, vegetation and wildlife and an ecological assessment at the BDRA are necessary to evaluate any possible effects the change in water quality and quantity will have on the ecosystem. It is expected that most of this ecological information will be collected by the BDRA-Water Preserve Area (WPA) project.

2.2 Authority/Authorization

The authority for this project is contained within WRDA 2000. The "Design Agreement between the Department of the Army and the South Florida Water Management District (SFWMD) for the Design of Elements of the Comprehensive Plan for the Everglades and South Florida Ecosystem

Restoration Project” contains additional guidance. Section 528 of the WRDA of 1996 includes additional direction and guidance for conducting studies after completion of the feasibility report. The provisions of Section 528 concerning continuing studies are:

(b) RESTORATION ACTIVITIES-

(1) COMPREHENSIVE PLAN-

(A) DEVELOPMENT-

(i) PURPOSE- The Secretary shall develop, as expeditiously as practicable, a proposed Comprehensive Plan for the purpose of restoring, preserving, and protecting the South Florida ecosystem. The Comprehensive Plan shall provide for the protection of water quality in, and the reduction of the loss of fresh water from, the Everglades. The Comprehensive Plan shall include such features as are necessary to provide for the water-related needs of the region, including flood control, the enhancement of water supplies, and other objectives served by the Central and Southern Florida Project.

(ii) CONSIDERATIONS- The Comprehensive Plan shall—

(I) Be developed by the Secretary in cooperation with the non-Federal project sponsor and in consultation with the Task Force; and

(II) Consider the conceptual framework specified in the report titled “Conceptual Plan for the Central and Southern Florida Project Restudy,” published by the Commission and approved by the Governor.

(B) SUBMISSION- *Not later than July 1, 1999, the Secretary shall—*

(i) Complete the feasibility phase of the Central and Southern Florida Project Comprehensive Review Study as authorized by section 309(l) of the Water Resources Development Act of 1992 (106 Statute. 4844), and by two resolutions of the Committee on Public Works and Transportation of the House of Representatives, dated September 24, 1992; and

(ii) Submit to Congress the plan developed under subparagraph (A)(i) consisting of a feasibility report and a programmatic environmental impact statement covering the proposed Federal action set forth in the plan.

(C) ADDITIONAL STUDIES AND ANALYSES- *Notwithstanding the completion of the feasibility report under subparagraph (B), the Secretary shall continue to conduct such studies and analyses as are necessary, consistent with subparagraph (A)(i).*

Further, the WRDA of 1999 included specific language on the in-kind work accomplished by the local sponsor. Section 528(e)(4) CREDIT- of the WRDA of 1999 states:

2) IN-KIND WORK –

- (A) *IN GENERAL - During the preconstruction, engineering, and design phase and the construction phase of the Central and Southern Florida Project, the Secretary shall allow credit against the non-Federal share of the cost of activities described in subsection (b) for work performed by non-Federal interests at the request of the Secretary in furtherance of the design of features included in the comprehensive plan under that subsection.*
- (B) *AUDITS - In-kind work to be credited under subparagraph (A) shall be subject to audit.*

The agreement to perform in-kind services on the projects as part of the CERP was executed on 12 May 2000 between United States Army Corps of Engineers (USACE) and SFWMD. The MPMP was executed on August 24, 2000, outlining the protocols and procedures by which PMPs for all projects would be completed. This document conforms to the guidance provided within the MPMP.

The WRDA of 2000 provides additional guidance and authority for implementing CERP. Section 601, of the Act states:

*(b) Comprehensive Everglades Restoration Plan -
(1) Approval -*

(A) IN GENERAL. —Except as modified by this section, the Plan is approved as a framework for modifications and operational changes to the Central and Southern Florida Project that are needed to restore, preserve, and protect the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection. The Plan shall be implemented to ensure the protection of water quality in, the reduction of the loss of fresh water from, and the improvement of the environment of the South Florida ecosystem and to achieve and maintain the benefits to the natural system and human environment described in the Plan, and required pursuant to this section, for as long as the project is authorized.

Initial authorization for the Wastewater Reuse Technology Pilot Project is contained in WRDA of 2000. Section 601(b)(2) Specific Authorizations, states:

(B) PILOT PROJECTS. —The following pilot projects are authorized for implementation, after review and approval by the Secretary, at a total cost of \$69,000,000, with an estimated Federal cost of \$34,500,000 and an estimated non-Federal cost of \$34,500,000:

(iv) Wastewater Reuse Technology, at a total cost of \$30,000,000, with an estimated Federal cost of \$15,000,000 and an estimated non-Federal cost of \$15,000,000.

3.0 PROJECT SCOPE

The pilot project refers to one reuse facility associated with the existing wastewater treatment facility in South Miami-Dade to provide freshwater flows to Biscayne Bay, and to a proposed treatment facility in West Miami-Dade near the Bird Drive Recharge Area (BDRA).

3.1 Project Goals and Objectives

The main goals and objectives of this pilot project are to address uncertainties associated with water quality requirements, costs and timing of water reuse as well as to evaluate the potential for using reclaimed water in environmental sensitive areas such as the Everglades system and the Biscayne National Park. If the pilot project concludes that the use of reclaimed water is not practicable in this regard, a full-scale project will not be initiated.

3.1.1 Project Goals

The main goals of this pilot project are summarize as to:

- Identify treatment targets consistent with preventing degradation to natural area and to identify advanced water treatment technologies that will produce reclaimed water that will not have adverse effects on natural systems, including freshwater and estuarine wetlands and Biscayne Bay, or human health.
- Develop scientific information and engineering specifications needed to assess cost effectiveness and environmental feasibility of applying reclaimed water to sensitive natural areas.
- Identify constituents of concern that are present in the wastewater and investigate the ability of advanced water treatment technologies to remove them.

3.1.2 Project Objectives

The main objectives of this pilot project are to:

- Determine levels of treatment and technologies needed to prevent degradation of various natural areas, including freshwater wetlands, Bird Drive Recharge Area (BDRA), estuarine wetlands and Biscayne Bay.
- Determine the potential ecological effects and human health effects of discharging reclaimed water in natural systems

including freshwater wetlands, BDRA, estuarine wetlands and Biscayne Bay.

- Assess the availability and cost-effectiveness of advanced treatment technologies that can provide the water quality as identified in the target levels.

3.2 Description of the CERP Components

3.2.1 Summary

As demand for water increases and the available water supply diminishes, both the SFWMD, in its regional water supply plans, and the USACE, in the CERP, consider reclaimed water to be an alternative source for meeting the growing demands for water.

The Restudy recommended the construction of two wastewater reuse facilities in Miami-Dade County to provide freshwater flows to the BDRA, the South Dade Conveyance System and Model Land Basin, Northeast Shark River Slough, Biscayne Bay, and the coastal wetlands pending the completion and outcome of the pilot project studies. One reuse facility could be associated with the existing Miami-Dade County South District Wastewater Treatment Plant (WWTP) located at the southern end of Biscayne Bay (referred to as South Miami-Dade); and the other could be associated with a proposed WWTP in the West Miami-Dade area near the BDRA (referred to as West Miami-Dade)

The CERP Wastewater Reuse Technology Pilot Project will determine the ecological effects of using advanced treated reclaimed water to replace and augment freshwater flows to various natural areas, including the BDRA, estuarine wetlands and Biscayne Bay, and it will determine the level of treatment required to prevent degradation of both Biscayne and Everglades National Parks as the ultimate receiving wetlands. A location map of the project areas can be found in Appendix B (Fig. 1).

3.2.1.1 Excerpt from Restudy

The Restudy defined the Wastewater Reuse Technology Pilot Project (page 9-34) as follows:

Wastewater Reuse Technology – Pilot Project (HHH, BBB, and OPE). Currently, two features involve the advanced treatment of wastewater (see Sections 9.1.8.22 and 9.1.8.24). This pilot project will address water quality issues associated with discharging reclaimed water into natural areas such as the West Palm Beach Water Catchment Area, Biscayne National Park (BNP), and the Bird Drive Basin as well as determine the level of superior treatment

and the appropriate methodologies for that treatment. A series of studies will be conducted to help determine the level of treatment needed.

Pilot facilities will be constructed to determine the ecological effects of using superior, advanced treated reuse water to replace and augment freshwater flows to Biscayne Bay and to determine the level of superior, advanced treatment required to prevent degradation of freshwater and estuarine wetlands and Biscayne Bay. The constituents of concern in treated wastewater will be identified and the ability of superior, advanced treatment to remove those constituents will be determined.

In addition, a pilot facility will be constructed to treat wastewater from the East Central Regional WWTP using advanced and superior wastewater treatment processes to reduce nitrogen and phosphorus concentrations. After treatment, the wastewater will be used to restore 1500 acres of wetlands and to recharge wetlands surrounding the City of West Palm Beach's wellfield. A portion of the treated wastewater will be used to recharge a residential lake system surrounding the City's wellfield and a Palm Beach County wellfield.

Besides serving as a pilot project for wetlands based water reclamation this feature will reduce a portion of the City's dependence on surface water from Lake Okeechobee during dry or drought events. In addition, approximately 2,000 acres of wetlands would be created or restored. Other benefits include aquifer recharge and replenishment, reduction of water disposed in deep injection wells and a reduction of storm water discharge to tide.

3.3 Project Changes from the CERP

3.3.1 Scope Differences

3.3.1.1 West Miami-Dade

Since no opportunity existed in western Miami-Dade County to assess the effects of treated wastewater on wetlands, CERP proposed the use of data obtained from the West Palm Beach Wetlands Based Water Reclamation Project. This project is an advanced water treatment (AWT) wetlands based water reclamation project located just east of the Florida Turnpike in central Palm Beach County (Appendix B, Figure 2). This facility is currently under construction (by the County) at the East Central Regional WWTP, a 55 MGD facility that serves the City of West Palm Beach, Central Palm Beach County, the City of Lake Worth, the City of Riviera Beach and the Town of Palm Beach. The full scale 10 MGD AWT facility is scheduled to begin operation under the City of West Palm Beach management by the first quarter of 2004. Treatment at this facility will include advanced wastewater treatment processes to reduce nitrogen and phosphorus concentrations with chemical

treatment, filtration, and high level disinfection. The reclaimed water will then be used to restore approximately 1,400 acres of wetlands and to recharge the City's adjacent water supply wellfield.

The Restudy envisioned that data collected at the West Palm Beach Wetlands Based Water Reclamation Project site could be used to simulate potential effects at the BDRA. The validity of this assumption was researched under work approved in the initial PMP dated January 2002 for the Wastewater Reuse Technology Pilot Project, Part 1. After site visits and an analysis of background information on both sites, it was concluded by a panel of experts, with Project Delivery Team (PDT) participation, that the BDRA is a different type of wetland with different type of soils than the Wetlands Based Water Reclamation Project, and the data are not transferable. The BDRA is primarily a Muhley grass wetland with infestations of the non-native melaleuca, whereas the Wetlands Based Water Reclamation Project is a more of an open-water wetland, periphyton marsh, with some invasive vegetative communities and a small sawgrass community. Both projects contain sawgrass and melaleuca trees. It was also determined that any modeling conducted at the West Palm Beach site would not be applicable to the BDRA. A separate and unique modeling effort would be needed at the BDRA to account for reclaimed water flows, as well as additional inflows from urban runoff (approximately one to two percent of total inflow) via the C-4 Canal (Tamiami Canal).

The WPAs Project draft report recommended that the BDRA consist of two separate environments: an "L" shaped area on the exterior of the site that would receive runoff and reclaimed water and would have a longer hydroperiod; and the short hydroperiod Muhley grass prairie that would receive water via rainfall and seepage with no direct surface discharge. It will not be possible to determine the effects of reclaimed water until the design and operating regime are determined under the BDRA project. So, the specific evaluation necessary to address effects for the pilot project in west Miami-Dade will be performed during the PIM or PPTDR phase of work, when more information is available regarding the design at the BDRA. It is also hoped, that at that time there may be a more definitive answer regarding the possibility of Miami-Dade constructing a secondary treatment facility in the area of the BDRA.

CERP stated that the purpose of the West Miami-Dade County Reuse feature was to meet the water demands for the BDRA, the South Dade Conveyance System and the Northeast Shark River Slough. It is expected that receiving environments investigated during this project will include BDRA, Levee L-31 North Borrow Canal and Model Lands, Everglades National Park and adjacent and contiguous wetlands.

3.3.1.2 South Miami-Dade

No changes from Comprehensive Plan.

3.3.2 Schedule and Budget Differences

Limited schedule and budget information regarding the pilot project was described in the Restudy. Additional breakdown of information was done in the CERP MPMP dated August 2000 and revised July 2001. The tables below list the information contained in these two documents and compares the budget/schedule to that proposed in this PMP.

TABLE 3-1 : CURRENT VERSUS PLANNED SCHEDULE

Milestone	PMP	Restudy	MPMP
Start – West/South	Jan 2001/ Mar 2002	Oct 1999	Apr 2001/ Feb 2002
Complete PMP - West/South	Feb 2002 / Dec 2003	-	Feb 2002/ Feb 2003
Complete PPDR	Sep 2008	Sep 2002	Feb 2006
Complete P&S	-	Sep 2003	-
RE Acquisition	Aug 2008	Sep 2003	Aug 2006
Complete Construction	Aug 2009	Sep 2005	Feb 2009
Complete PIM	Jul 2013	Sep 2007	May 2013
Complete PPTDR	Jan 2014		Nov 2013

TABLE 3-2 : CURRENT VERSUS PLANNED COSTS

Component	PMP	Restudy	MPMP
PMP	\$838,918	\$0	\$430,000
PPDR	\$4,916,997	\$2,840,000	\$2,075,000
PCA	\$33,250		
RE	\$1,000,000	\$2,800,000	\$1,000,000
Plans & Specs	\$0	\$171,000	\$0
Construction	\$19,465,835	\$23,189,000	\$22,500,000
PIM	\$2,500,000	\$1,000,000	\$2,750,000
PPTDR	\$1,245,000	\$0	\$1,245,000
TOTAL	\$30,000,000	\$30,000,000	\$30,000,000

The total project cost has not been changed and will not be modified until more is known regarding land acquisition and construction costs. This will be done at the final PPDR stage.

3.4 Project Constraints and Assumptions

3.4.1 Assumptions

The following are assumptions identified for this project:

- If it is determined necessary to collect “baseline” data at West Palm Beach, a control wetland will be used once the tertiary treatment has been stabilized. Simultaneous sample collection of control and receiving wetlands should remove some of the sampling uncertainties resulting from uncontrollable factors such as season, weather pattern, and atmospheric inputs that would equally affect both the control and receiving wetlands.
- The physical, regulatory, hydrologic, and ecological requirements necessary for treatment wetlands, buffers and the associated water conveyance for full scale implementation of reclaimed water in South Miami-Dade will be addressed by the BBCW, the full-scale wastewater reuse project, or other related projects.
- Wastewater flows from the various Miami-Dade Water and Sewer Department District facilities can be partially diverted to the North, Central, or South wastewater treatment facilities, as conditions require and within certain limitations. It is assumed this flexibility can affect raw influent quality flowing into the pilot plant.

- The water quality treatment specifications for the selection of the advanced water treatment technologies will be based upon the “nondegradation requirement” established for discharge to an Outstanding Florida Water (Biscayne Bay).
- Every effort will be made to identify land easements and rights-of-way in publicly owned land suitable for use in this project.
- As a federal project, the WWRPP will comply with appropriate federal surface water and groundwater quality standards, water standards and loads, water management, wetland protection, mangrove protection, endangered species, and land use as well as other local, state, and federal regulatory requirements.
- There is limited technical information to rule out with reasonable scientific certainty adverse impacts and/or ecological risk of discharging reclaimed water to sensitive wetlands or Outstanding Florida Waters. Therefore, the WWRPP will conduct a risk and cost analysis for each type of wetland identified in the alternative selected by BBCW project when considering reclaimed water as a source of water. If this information is not available in time for the WWRPP to stay on schedule, a decision will either be made to delay the pilot project schedule or proceed to discharge directly to only a constructed, degraded or non-tidal wetland.
- Assessment of effects on freshwater systems / BDRA will be performed in subsequent project phases (PIM, PPTDR). If upon completion of the design of the BDRA (under a separate CERP component) it is determined that Miami-Dade will construct a full-scale WWTP in western Miami-Dade County, the PMP will be revised to include a literature search and a pilot test with appropriate processes and controls.
- The pilot project is temporary and all facilities will be removed upon accomplishing the primary goals of the project.
- The proposed receiving wetland is not intended to be part of the water treatment train and therefore, reclaimed water will be treated to meet standards or targets prior to introduction into the test site. The test site shall not be required or dependent upon to further improve water quality. However, changes in water quality (influent, effluent, seepage, etc), vegetation and wildlife are likely to occur and they will be monitored during the PMI phase as much as practical.
- It is assumed that there will be no construction or land acquisition required within the BDRA for the West Miami-Dade pilot project component.
- Public and private sector stakeholder involvement is very important and reliable scientific information developed during the pilot project as well as any recommendations concerning future large scale reuse opportunities will be distributed to all stakeholders in a timely manner.

3.4.2 Constraints

The following are constraints identified for this project:

- The state of knowledge regarding EPOC is such that their role in the environment and as potential risk factors in the application of reclaimed water to receiving wetlands is very limited at the time of editing this PMP document. Therefore, the ecological effects of toxic and biologically active substances will be addressed during the PPDR and PIM phases of the project to the extent possible.
- It is expected that the East Central Regional WWTP will be discharging to adjacent wetlands by May 2004. As a result, the ability to conduct background field data collection at the site will be constrained.
- As a CERP component, the pilot project will be carried out following state and federal rules regarding wetland impacts, in such a way as to avoid or minimize any physical disturbance of wetlands, wetland habitats or risks of biological effects to BNP or other sensitive living resources.
- A 50%-50% work split between the USACE and the SFWMD is a goal for the project. Based on the workload, workforce availability, and expertise of the agencies, the workload allocation may deviate somewhat from the goal.
- The pilot project will be conducted in compliance with flood criteria, CDMP and zoning requirements, and assure that adjoining properties are not adversely affected by the pilot project testing.

3.5 Statement of Project Scope

The WWRPP will be conducted in phases. The process begins with the PPDR, which includes preliminary design. After completion of the PPDR, approvals by the State and the Assistant Secretary of the Army for Civil Works (ASA (CW)) are required. After approvals are given and permits are issued, and prior to construction, a PCA must be executed and all lands needed for construction must be acquired. After the PCA is signed, a Design-Build contract will be awarded. The project will be constructed, and the pilot facility will be operated and monitored during the PIM Phase. At the completion of the project, a PPTDR will be prepared documenting the findings of the pilot project. During the implementation of the project, the PMP will be updated as necessary, as described in Section 5.

The emphasis of this PMP is focused on the first phase of the project. Therefore, more detail is given in this PMP for the PPDR than any other phase of the project. Other phases will be given greater detail with each PMP update. Detailed scope, schedule and costs have been developed for the PPDR phase. The costs and schedules for the remaining phases will continue to

evolve as information is obtained. The basis for the costs in subsequent phases is the CERP Master Implementation Schedule.

Appendix C of this document contains detailed information regarding the activities required to complete this project. Appendix C contains reports documenting the work breakdown structure (WBS). Appendix C, Tab A is a listing of the activities by WBS. Tab B lists the constraints and assumptions for each task. Tab C is a dictionary that cross-references the activity identification number and the WBS number. Tab D shows the network logic by listing the predecessor / successor tasks for each item in the WBS.

3.5.1 Pilot Project Design Report Phase

The PPDR will be developed to serve as both a decision document for project authorization as well as a means to fully develop technical information needed for further implementation of the Wastewater Reuse Technology Pilot Project. The PPDR will contain planning documentation, engineering and design (E&D), environmental analysis including National Environmental Policy Act (NEPA) documentation, a real estate appendix, and a proposed monitoring plan. The summary of work for the PPDR phase of this project is described in the subsequent sections.

A multidisciplinary interagency team will conduct work associated with the development of the PPDR. A current team list is included in Appendix A. There will be opportunities for public involvement at critical points during the report development. Independent Technical Reviews (ITR) are scheduled throughout the PPDR process. In-Progress Reviews (IPR) with senior staff of SFWMD, South Atlantic Division (SAD) and Headquarters (HQ) USACE will follow several of the ITR reviews.

One of the issues identified early and captured in the original PMP approved in January 2002, was the possibility of collecting data at the West Palm Beach Regional Wastewater Reclamation Facility Wetland Site and applying those data to the BDRA, as there is no source of highly treated wastewater in West Miami-Dade County. Data collection was conducted (ecological, hydrological, etc), and an assessment was made regarding transferability of data. At this time, draft monitoring and modeling approaches were also drafted for the west portion of the pilot project. A transferability workshop was convened, and a determination was made that the data would not be transferable. This resulted in the total revision to the PMP contained herein.

The PMP has been revised to reflect that the main effort currently envisioned for the PPDR phase of work is associated with the South Miami-Dade WWTPs. This phase of work will culminate in selection of Advanced Water Treatment (AWT) technologies for testing, selection of a test site and a control area that can be used to monitor effects of reclaimed water on wetlands, and a

preliminary design for the pilot plant, water distribution, test areas, and monitoring network. Many of the investigations and information collected will be evaluated and determined if they can be applicable/useful in the evaluation of potential effects of using reclaimed water in freshwater systems in Miami-Dade County (including BDRA). For instance, technology investigations, EPOC research, and identification of existing reclaimed water treatment plants would be applicable. A summary of the work envisioned for this project is provided below.

3.5.1.1 Refinement of Goals and Objectives

Goals and objectives for this PMP have been developed by the PDT but as the pilot project and related studies to identify alternative sources of water proceed, the goals and objectives might be refined to include evaluation of other beneficial uses of reclaimed water to meet other types of water budget demands, such as irrigation, aquifer recharge to offset salt intrusion, etc. Such uses may be feasible and require a lesser degree of water treatment, even if there are regulatory or cost limitations on discharge of reclaimed water directly to natural systems

As objectives are defined, evaluation criteria for these objectives will be identified so that project success can be measured. Early in the PPDR phase, an In-Progress Review (IPR) will be held with HQ USACE and SAD staff, as well as ITR team members.

3.5.1.2 Identification of Alternative Sites and Technologies

The initial tasks of the PPDR include land for the wetland test area (for distribution of the reclaimed water) and the control area and selecting appropriate water treatment technologies to construct and test. Criteria will be developed to help evaluate alternative sites and alternative technologies.

Site selection will start with identification of lands currently owned by state or federal agencies. Information will need to be collected to locate test and control areas that are representative of the BBCW Project Area (probable receptor areas for the full-scale reclaimed water discharge). An in-house literature search of existing geologic, hydrologic, hydraulic, water quality and ecological data will be conducted for BBCW areas and potential pilot test/control area. This information will be evaluated and summarized, and additional field data at potential test/control sites will be collected. The fieldwork will include drilling, well installation, pump tests, limited survey work, and collection/analysis of soil and water samples. The existing information and field data will allow an assessment of regional conditions and comparison to the potential sites.

Effluent water quality standards will be determined early in the project. This is critical in identifying technologies that can meet the required effluent water quality standards. A contractor will perform an investigation of alternative technologies. Researching other reclaimed water facilities in Florida and USA with discharge to a wetland or natural system, and performing an extensive market information survey will identify potential AWT technologies. A market survey will include collection and evaluation of information regarding nutrient removal, filtration, disinfection, organic removal, EPOC removal, etc. The report will include process flow diagrams for various post secondary (advanced) treatment alternatives, catalog cuts, process descriptions, cost curves (including operation and maintenance), evaluation, and recommendations. Investigations of alternative technologies at local reuse plants will also collect information, if available, on ecological effects of the reclaimed water from these various technologies in addition to nutrient removal, filtration, disinfection, organic removal, and EPOC removal.

Regulations will be compiled, meetings will be held with FDEP, DERM, and other permitting agencies, and an evaluation of existing information regarding water quality in potential receiving water will be performed.

Environmental investigations will include consultation with resource agencies such as MDWASD, DERM, the US Fish & Wildlife Service (USFWS) and the National Park Service (NPS). If additional information is needed, field data collection plans will be prepared. It is currently assumed that a wetland habitat assessment will be required, as well as a Hazardous, Toxic and Radioactive Waste (HTRW) ecological risk assessment, a biological assessment, and a cultural assessment.

Water quality will play a critical role in this PPDR. An initial contracted literature search will be conducted to identify the current state of research into EPOCs. To assess the potential effects of using reclaimed water in a wetland cell, a fate/transport model will be developed and applied. Water quality data collection will be conducted at the selected test cell location for use in documenting baseline conditions as well as to provide information for acquisition of state permits. Limited sampling and analysis will be conducted for EPOCs to address any uncertainties related to long-term ecological impacts and their presence in wastewater effluent at the existing plant and as background at the potential test cell. Additionally, reclaimed water, surface water, groundwater and sediments (soils) will be monitored for a variety of contaminants including nutrients, solids, pathogens, toxics (trace metals and organics), as well as EPOCs to assess baseline conditions (for comparison) and project effects.

Pilot plant treatment objectives will then be prepared. Alternatives will then be formulated for treatment technologies and improved through feedback from the PDT, ITR and public reviews.

3.5.1.3 Evaluation of Alternative Plans

The PDT will perform an evaluation of alternatives that will document environmental, water quality, socio-economic, archeological, hydraulic and biological impacts, as well as costs. In addition to adverse impacts, the evaluation will focus on how well the plans perform with regard to the objectives of the project. Each alternative will be evaluated independently.

Use of a desktop computer model will aid in the determination of the optimal size/hydrologic condition of the test cell versus the size of the treatment process. This will help in the determination of the land requirements.

The environmental evaluation will include necessary coordination and assessments required for NEPA and assembling and reviewing project specific environmental information. It is expected that an Environmental Assessment (EA) will be incorporated into the PPDR for this project. The USFWS, with the assistance of the National Marine Fisheries Service (NMFS), will be heavily involved in collecting appropriate ecological information necessary to evaluate benefits and impacts of the project. The USFWS will perform a significant amount of the fieldwork and will assist the PDT in the compilation, synthesis and interpretation of this information. The USFWS will prepare a Coordination Act Report (CAR) that will summarize the findings for use in the planning process. Site-specific information such as vegetative cover and hydrologic conditions will be used in the evaluation process.

An initial real estate evaluation will include a determination of the land parcels required for the alternatives and an appraisal of the costs of the lands and damages, as well as potential availability. Preliminary cost figures will be prepared to assist in the selection of a plan. The preliminary cost analysis will include estimates of real estate needs, construction, average annual operation, maintenance, engineering design, supervision, and administration costs. The PDT and an ITR will provide input.

3.5.1.4 Technology and Site Selection

The selection process involves a final review by the PDT and ITR. An alternative will be selected as the tentatively selected plan, and documentation will be forwarded for review and approval by HQ USACE, SAD and SFWMD.

3.5.1.5 Preliminary Design

Once the selected plan is approved, a preliminary design document will be prepared. The level of design in the PPDR will be preliminary but sufficient to determine real estate needs and prepare realistic cost estimates. It is expected that the design will consist of several unit treatment processes packaged as a complete advanced water treatment system, site foundations, piping lay out including outflow connection of the pilot plant to the South Miami-Dade WWTP and distribution line from the plant to the wetland cell, berms around the wetland test cell, and monitoring set-up. The design document will include a schedule and cost estimate.

3.5.1.6 Project Monitoring Plan

Key performance measures identified during planning will be monitored to assess project performance. Monitoring plans will be prepared during the PPDR phase to assess the presence and removal performance of various advanced water treatment technologies for EPOCs in existing wastewater treatment facilities (South Miami-Dade and West Palm Beach); and to address specific regulatory requirements related to National Pollutant Discharge Elimination System (NPDES), NEPA or other permit compliance

Monitoring plans to establish a baseline for comparison of conditions in the test site, control, and downstream areas that could be affected by the pilot project and for the post-construction phase will be prepared and budgeted during the PPDR phase and will be implemented during the PIM phase.

These measures relate to major objectives and strategies of the project and shall include biological indicators (toxicity bioassays, reproductive success, bioaccumulation, etc.), water quality, hydrologic parameters, sediments (soils), vegetation, animals and water control operations.

Due to the natural variability and confounding variables in the natural system, controlled experimental assessments (bench scale or mesocosms scale) might also be performed in addition to in-situ field observations.

The operations plan will include regulation schedules and operating criteria. In some cases, data collected can fulfill the needs of more than one plan. The monitoring plan will undergo PDT, ITR and RECOVER review.

3.5.1.7 Pilot Project Design Report Preparation

A PPDR will be prepared documenting the planning steps, investigations and analysis. The PPDR will include an EA, RE Plan, monitoring plan, and engineering appendix including the design documentation. The PPDR will

undergo internal, PDT, ITR, state and public reviews. The report will be forwarded to the ASA (CW) for authorization of construction.

3.5.2 Project Cooperation Agreement

A PCA will be prepared and executed between the USACE and SFWMD. The PCA is needed before land acquisition and before solicitation of the design build contract. In order to execute the final PCA, all permits (including Water Quality Certification (WQC)) must be issued. This restriction will need to be reviewed considering the PCA will be needed in order to solicit a contract that will generate the final design documents, and the final design documents are often needed in order to receive final permits.

3.5.3 Real Estate Acquisition

It is assumed that the pilot AWT facility will be constructed on the site of the existing South Miami-Dade WWTP . It is also hoped that land available for lease or easement can be identified so that land purchase can be avoided. Funding is still identified for land purchase in case it is needed (ie for test cell, pump station, etc).

3.5.4 Design-Build

The USACE and the SFWMD will use a Design-Build solicitation process to select a contractor(s) for the design, equipment manufacture, installation and start-up of a complete water treatment system as well as the test and control test area.

Before a contract can be awarded, a procurement strategy will be prepared and approved during the PPDR phase. It is expected that a Request for Proposal (RFP) will be prepared and solicited. Proposals will be received from various contractors and will be evaluated. The preliminary design documentation will be provided to the selected Design-Build contractor. The selected contractor will review existing information and collect additional field data as needed. At a minimum, draft and final design documents will be prepared for review and comment. The design documents will include construction drawings (including a process and instrumentation diagram and site lay-out), final surveys, quantities, utility requirements and relocations (right-of-ways and construction easements), operation and maintenance costs, an operations plan and a residuals management plan, and schedules. If determined necessary, section corner surveys of the areas in which construction is projected to occur will be required prior to the local sponsor providing land certification for the use of the land.

After approval of the design, the contractor will begin construction of the project features. At a minimum, the Design-Build contract will include a start-up/initial operations phase.

3.5.5 Project Implementation Monitoring

PIM typically includes baseline monitoring prior to construction completion and post construction monitoring. The monitoring plans prepared during the PPDR phase will be implemented to gather the necessary data to ensure environmental compliance, calibrate models, evaluate treatment plant effectiveness, monitor water quality, etc. During this stage, additional data collection may be required at the BDRA site, and models may need to be developed to assess potential full-scale implications of reclaimed water use.

3.5.6 Pilot Project Technical Data Report

The PPTDR will document the information gained during the pilot project, identify uncertainties in the potential ecological impacts of discharging reclaimed water into natural wetlands, and include recommendations about further analysis needed before full-scale implementation. The results of the monitoring program will be documented and discussed. This draft report will identify treatment options available to reach the desired water quality standards for each of the alternative reuse locations. The water quality objectives will be 1) based on current regulations and 2) based on results of the monitoring plan.

The regulation and literature review performed during the interim PPDR will be re-evaluated as necessary to account for new research and revised regulation.

3.6 Related Projects

There are several other efforts in the Miami-Dade area that have the potential to impact the CERP Wastewater Reuse Technology Pilot Project:

3.6.1 West Miami-Dade Water Reuse Facility Feasibility Study

The study was authorized in Section 413 of the WRDA of 1996, Public Law 104-303, adopted 12 October 1996 and was sponsored by MDWASD and the USACE. The study area was located in western Dade County, with a tentative facility site location west of Tamiami Airport in the area of canal C-1 and the L-31N Borrow Canal. MDWASD was considering the construction of a new 100-150 MGD regional wastewater facility at that location that could be used to treat and reuse reclaimed water from municipal sources. Phase 1 studies evaluated several water reuse alternatives and identified the most

viable alternatives for further study. Evaluated alternatives included different types of reuse, discharge locations, and treatment technologies to meet the required discharge water quality for each alternative and location. Discharge to the BDRA was one of several locations evaluated by the Feasibility Study. The alternatives evaluated under Phase I were as follows:

- Apply 100 MGD of reclaimed water to L-31N Canal below S-331 pump station project to provide benefits to the C-111 project area or to South Dade.
- Apply approximately 50 MGD to agricultural lands near the plant and 50 MGD to Model Lands via the L-31N and C-111 canals.
- Apply 100 MGD to private agricultural lands near the plant via pipeline.
- Apply 50 MGD to agricultural lands and apply 50 MGD to the Domestic Reuse Network for irrigation. (new construction only and retrofitting some large industrial/commercial users).
- Apply 100 MGD to the BDRA.
- Apply 50 MGD to the BDRA and apply 50 MGD to the L-31N.
- Apply 50 MGD to the BDRA via pipeline and apply 50 MGD to private agricultural lands in the area of the plant.
- Apply 50 MGD to domestic reuse and new development via irrigation networks and 50 MGD to the BDRA via pipeline.
- Consider modification to the Health & Rehabilitation Service - Miami-Dade County Department of Environmental Resource Management (HRS-DERM) regulations to permit greywater reuse.

The Phase I Feasibility Study efforts were initiated by MDWASD in February 2000 and a draft study was completed on January 2003.

The West Miami-Dade Water Reuse Facility Phase I Feasibility Study provided initial information for this pilot project, including analysis of the alternatives, water quality at various discharge locations, and treatment technology research and costs. This Feasibility Study also identified regulations, including restrictions, related to the use of reclaimed water. Assumptions were made regarding plant size, water demands, potential irrigation demands, wellfield demands, land use, etc. For the study, it was also assumed that the C-111 project and the Modified Water Deliveries to Everglades National Park would be implemented. The modeling for Phase I and the engineering evaluation will be based on these assumptions.

Phase II studies, currently planned for continuance to pursue the use of reclaimed water that might be made available by the proposed construction of a Wastewater Treatment Plant in West Miami-Dade, has been deferred.

The results of the Phase I Feasibility Study were such that even though Federal interest does exist in cost sharing additional advanced treatment needed to render treated effluent suitable for environmental restoration benefits, it is considered best to allow CERP to complete their ongoing pilot efforts to study wastewater reuse applications in South Florida and defer the second phase of this effort . The main reasons for this postponement are as follows:

1. The State proposed West Miami Dade Wastewater Reuse Facility is not scheduled for construction until 2020. Technological advances in the cleanup of wastewater should be significant enough to dramatically lower costs.
2. Future population increases will make reclaiming wastewater a more valuable alternative.
3. More CERP features will be in place and there will be a greater understanding of how ecological systems respond to additional, improved water deliveries. All of the above will result in a more educated selection of an alternative. The recommendations contained herein reflect the information available at this time and do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program nor the perspective of higher review levels within the Executive Branch.

Consequently, the recommendations may be modified before they are transmitted to the Office of Management and Budget (OMB) for implementation funding. However, prior to transmittal to the OMB, the sponsor, the State, interested Federal agencies and other parties will be advised of any modifications and will be afforded an opportunity to comment further.

3.6.2 Lower East Coast Regional Water Supply Plan

To prepare for future water supply requirements, the SFWMD completed an eight-year study known as the Lower East Coast Water Supply Plan (LECWSP). The Plan provides several strategies for maintaining adequate water supplies to meet typical demands of natural systems, agriculture, and urban areas within the planning area through the year 2020.

Development of the LECWSP was started in 1992, prior to initiation of the Restudy and CERP. The LECWSP was completed and approved by the District's Governing Board in May 2000. In 1997, the District merged its LECWSP analyses of major water storage facilities into the Restudy process. The water supply planning efforts completed from 1992 to 1997 for the LECWSP provided the foundation, in the form of analytical tools, evaluation techniques, and storage projects for the Restudy. The Restudy is being refined

and implemented through the CERP. The LECWSP incorporates the CERP construction and operational features into the state planning process to determine how much water can be made available from the regional system. The water supply planning process also verified that the sequencing of proposed Restudy components at five-year increments through 2020 would protect existing legal water users, protect water resources from significant harm, and balance the future water needs of the region. The LECWSP also identified improvements that should be considered as the CERP moves forward.

The LECWSP contained two recommendations regarding water reuse: The first recommendation includes the Reclaimed Water System in Northern Palm Beach County and Southern Martin County. The second recommendation relates to Indirect Aquifer Recharge.

The Reclaimed Water System in Northern Palm Beach County and Southern Martin County Study was completed in 2002. The study examined the feasibility of meeting the future demands for irrigation water in northern Palm Beach County and coastal Martin County by conveying reclaimed water from the East Central Regional WWTP into central Palm Beach County. Local utilities will develop the end user distribution network. The study concluded that at this time, it is not feasible to convey reclaimed water north; however, the study did recommend further analysis be conducted on implementation of an irrigation based reuse system in the vicinity of the East Central Regional WWTP. Based on approved development orders and local land use plans and projected flow information from utilities, the demand for reclaimed water in excess of local sources does not warrant construction of a regional conveyance pipeline. In many of the areas, the utilities projected flows will be close to meeting projected demands. The study further concluded that if a large water user, such as a power generating facility, were to locate in this region the feasibility of this system should be re-evaluated.

An Indirect Aquifer Recharge Project will explore the feasibility of recharging primary or secondary canals and/or artificial wetlands with reclaimed water treated to AWT standards in conjunction with cooperative utilities. This project could provide background information regarding the feasibility of using reclaimed water as a water resource for the Miami-Dade area and potential technologies available to meet discharge requirements. The next phase of the Indirect Aquifer Recharge Study is construction of a pilot project. The Wastewater Reuse Technology Pilot Project PDT should coordinate with this team regarding discharge water quality standards as well as availability of AWT technologies. Success of the Indirect Aquifer Recharge Pilot Project could ultimately lead to the development of full-scale projects throughout the region. The use of reclaimed water could reduce the dry season demands on the regional system and serve as a source of water for recharging ground

water and/or meeting local environmental demands. Preliminary analysis indicates that about 170 MGD of water is delivered from the regional system on average to maintain urban canal levels. The Indirect Aquifer Recharge Project will be developed to identify and address regulatory requirements to move this concept forward. The FDEP will be part of the project team seeking to determine the appropriate treatment and timing of reclaimed water use. To date, an agreed approach has not been developed with the regulatory agencies.

3.6.3 Biscayne Bay Coastal Wetlands (CERP)

The primary purpose of the BBCW project is to redistribute freshwater runoff from the watershed into Biscayne Bay, away from the canal discharges that exist today, and provide a more natural and historic overland flow through existing and or improved coastal wetlands. The project consists of two major components: A land intensive system that retains water, improves wetland hydroperiods, and directs water through alternative routes more like the original drainage system; and an operational change to increase water elevations at the coastal water control structures during the dry season (Biscayne Bay Coastal Canals; CERP p. A4-47). The general geographic extent of the project is along the mainland coast of southern Biscayne Bay from the Deering Estate (C-100 basin) south into the undeveloped areas south of Homestead and Florida City known as the Model Lands basin.

The proposed project will replace lost overland flow and partially compensate for the reduction in groundwater seepage by redistributing, through a spreader system, available surface water entering the area from regional canals. The proposed redistribution of freshwater flow across a broad front is expected to restore freshwater wetlands, tidal wetlands, and near shore bay habitat. Sustained lower-than-seawater salinities are required in tidal wetlands and the near shore bay to provide nursery habitat for fish and shellfish. The project is expected to create conditions that will be conducive to the reestablishment of oysters and or shrimp and other components of the estuarine community. Diversion of canal discharges into coastal wetlands is expected not only to reestablish productive nursery habitat all along the shoreline but also to reduce the abrupt freshwater discharges that are physiologically stressful to fish and benthic invertebrates in the bay near canal outlets.

The CERP identified reclaimed water as a potential source of additional flows to Biscayne Bay. The Wastewater Reuse Technology Pilot Project is expected to apply reclaimed water to an area of these wetlands and assess the effects. The BBCW Project will need to identify the desired hydrologic conditions (quantity, timing and distribution), and the Wastewater Reuse Technology Pilot Project team will try to simulate this in the pilot project. Water quality

information will also need to be shared between the projects. The Wastewater Reuse Technology Pilot Project team will need to identify regulatory limits for wetland discharge of reclaimed water and investigate the potential technologies that can meet this requirement. The expected reclaimed water quality will need to be provided to the BBCW team in order for them to assess potential full-scale wetland/bay impacts. The Wastewater Reuse Technology Pilot Project team will also need to review literature and field data collection information accumulated by the BBCW team (ie. vegetation, mapping, epibenthic survey, geotechnical drilling).

3.6.4 Bird Drive Recharge Area

The initial formulation of the BDRA was accomplished as part of the CERP and was conceptually designed to accept inflows from the West Miami-Dade WWTP to recharge groundwater and reduce seepage from Everglades National Park (ENP).

The BDRA component design was optimized and evaluated during the WPA Feasibility Study plan formulation, and was discussed in the preliminary selected plan. Modeling results indicated that the discharge of reclaimed water into the BDRA was a critical factor in meeting ENP seepage reduction targets. The BDRA Project Implementation Report (PIR) is scheduled to begin in September 2003.

The BDRA, as identified in the draft WPA Feasibility Study, includes pumps, water control structures, canals, and an above ground recharge area with a total storage capacity of approximately 5,975 acre-feet located in western Miami-Dade County. The design of the recharge area includes 1,493 acres with water levels fluctuating up to 4 feet above grade. Located immediately east of the recharge area is a 2,243-acre wetland enhancement area. This wetland area has average stages between 1 and 1.5 feet and is operated to maintain a Muhley grass prairie.

The purpose of this feature is to recharge groundwater and reduce seepage from the ENP by increasing water table elevations east of Krome Avenue. The facility will also provide flood peak attenuation for the western C-4 basin and water supply deliveries to the South Dade Conveyance System and Northeast Shark River Slough via seepage.

In the draft WPA Feasibility Study, the following proposal was identified for BDRA: Inflows from the western C-4 basin and from the proposed West Miami-Dade WWTP would be pumped into the western portion of the proposed recharge area. C-4 basin runoff in excess of 200 cubic feet per second (cfs) would be discharged eastward. Inflows from the proposed West Miami-Dade WWTP would be continuous when the Recharge Area depth is equal to

or less than 3 feet above ground. Based on regulatory approval, the proposed West Miami-Dade WWTP would discharge to deep injection wells if the water depth is greater than 3 feet or the C-4 inflow pump is in operation. A seepage management system would be operated around the east and southern perimeters of the recharge area. Seepage would be returned to the 4-foot deep recharge area. Regional system deliveries would be routed through the recharge area via an 800 cfs capacity canal that runs along the north and west side of the recharge area to the South Dade Conveyance System.

The BDRA Project will have a significant impact and task overlap with the Wastewater Reuse Technology Pilot Project. The degree to which the BDRA will overlap with the West Miami-Dade portion of the pilot project is not yet fully defined. For the time being, it is expected that the BDRA project will need to investigate the geology, hydrology and ecology of the area, as well as develop/modify a model for the area. These tasks will be needed in order for the BDRA team to design the project and determine project effects. The Wastewater Reuse Technology Pilot Project would use this information during the PIM or PPTDR phases to aid in the team's assessment of full-scale implementation effects of using reclaimed water at Bird Drive. It is also possible that the Wastewater Reuse Technology Pilot Project team will need to share potential reclaimed water quality information with the Bird Drive team for incorporation into their modeling effort. If the BDRA team does not include water quality modeling, this work will need to be added to the PIM or PPTDR phases of the Wastewater Reuse Technology Pilot Project.

3.6.5 L-31N Seepage Management Pilot Project

The purpose of this project, as described in the CERP, is to reduce levee seepage flow across L-31N adjacent to ENP via a levee cutoff wall. Additionally, the project was designed to reduce groundwater flows during the wet season by capturing them with a series of groundwater wells adjacent to L-31N, then back-pumping those flows to ENP. The pilot project is necessary to determine the appropriate technology to control seepage from ENP. The pilot project will also provide necessary information to determine the appropriate amount of wet season groundwater flow to return to ENP that will minimize potential impacts to Miami-Dade County's West Wellfield and freshwater flows to Biscayne Bay.

The information provided by this project is important to include in the BDRA project design, which in turn will be used by the Wastewater Reuse Technology Pilot Project team in assessment of potential effects of using reclaimed water at the Bird Drive Recharge Area.

3.6.6 Miami-Dade County Wellfield Protection (West Wellfield)

Miami-Dade County's West Wellfield Protection Area abuts the L-31N canal from approximately Northwest 8th Street to Southwest (SW) 112th Street and encompasses the C-4 Canal from SW 187th to 137th Avenue, including the entire Bird Drive Basin. Within the wellfield boundary are certain land use restrictions and prohibitions designed to protect the source water of a public drinking water wellfield. Restrictions include, but are not limited to, a general prohibition against the use, generation, handling, disposal of, discharge, or storage of hazardous materials and hazardous waste. Liquid waste storage, disposal, or treatment methods, other than septic tanks utilized for domestic sewage disposal, sanitary sewer lift stations, and public sanitary sewers, are also prohibited. Restrictions on the disposal of storm water also apply within the innermost zones of the protection area. The DERM should be consulted to determine if any proposed activities are in compliance with Wellfield Protection regulations specified in Chapter 24 of the Code of Miami-Dade County.

Restrictions and regulations on wellfield protection in West Miami-Dade are critical to assess the feasibility of using reclaimed water as a water source for the BDRA and should be considered in the PPTDR/PIM assessment of feasibility of using the reclaimed water from a full-scale AWT facility in the Bird Drive Area.

3.6.7 Additional Water for Everglades National Park and Biscayne Bay (245K) Final Reconnaissance Study Report - June 5, 2003

The purpose of the reconnaissance phase of this feasibility study is to determine if there is a need for additional water in Everglades National Park and Biscayne Bay in addition to the amount provided by implementation of the CERP, define the Federal interest in providing additional water to those areas, and identify a non-Federal interest to participate in a cost-shared feasibility study to determine the adverse and beneficial environmental, social, and economic impacts of providing additional water to Everglades National Park and Biscayne Bay. The general objective of this study is to evaluate the feasibility of capturing urban runoff in Palm Beach and Broward Counties that is not captured by the CERP and routing it to natural areas to improve hydrologic and environmental conditions in Everglades National Park and Biscayne Bay. General constraints include delivering water of adequate quality to meet water quality standards and criteria in natural areas that are to receive the additional water, avoiding delivery of additional water into the Water Conservation Areas in a manner that is ecologically damaging to those areas, and avoiding unreasonable impacts to existing public infrastructure.

The study area for this water resources study is essentially the entire South Florida Water Management District, the same study area as that identified in section 1- 3 of the Central and Southern Florida Project Comprehensive Review Study's ***Final Integrated Feasibility Report and Programmatic Environmental Impact Statement*** (April 1999) prepared by the Corps of Engineers and the South Florida Water Management District.

4.0 SUMMARY OF AGENCY RESPONSIBILITY

The USACE and SFWMD will participate in all phases of project execution. It is expected that the SFWMD will have the more significant role during the real estate acquisition and design/build process. The USACE will have a more significant role during the PPDR, PIM, and PPTDR. For each activity listed in the WBS, a responsible office is identified for completing that activity or product. Individual offices within the USACE and the SFWMD will have the lead on executing individual activities. Appendix C, Tab A identifies the office responsible for each task.

TABLE 4-1 : WORK DISTRIBUTION BY TOPIC

Work Topic	Responsible Agency	Comment/Rationale
PPDR	USACE Lead	
Real Estate	SFWMD Lead	
Design/Build	SFWMD Lead	
PIM	USACE Lead	
PPTDR	USACE Lead	

5.0 PROJECT CHANGES

5.1 List of PMP Updates and Revisions

5.1.1 Background

PMPs are not intended to be all-inclusive nor to anticipate or include all possible changes to a project during the lifecycle of its development. The PMP is developed as a dynamic document that will require periodic updates to reflect progress, and revisions to denote major changes in the scope, schedule, costs and/or resource allocation of the project. Appendix K will provide a place to catalog all updates and revisions to the PMP. It will include a history of changes that occur through the life of the project.

5.1.2 Revisions

PMP “Revisions” will occur at two scheduled intervals. The PMP will be revised after completion of the PPDR and will address the detailed WBS, costs, and schedule for development of the P&S and the Design Documentation Report. After completion of the P&S, the PMP will be revised to address the specifics of the real estate acquisition, construction, operations, and testing.

5.1.3 Updates

Between formal revisions, the PMP will also be updated to include correction of errors, addition of new information, or clarifications. PMP updates that change the scope, schedule, cost, or annual work plan beyond the thresholds established by the Program Managers will need to be approved through the established change control process.

5.2 Changes in Project Schedule and Cost

This section provides guidance for the CERP Project Managers to track changes in the project scope, schedule, and cost that have been approved since the approval of the initial PMP. Additional information is available in the CERP Guidance Memorandum (CGM), Project Change Control CGM number 007.00. This section addresses only those changes that impact the cost or schedule for the major work products at Level 4 of the CERP WBS. All changes are subject to the approval levels identified in the CERP Change Control procedures. The project schedule and cost each consist of four components: baseline, current approved, forecast, and actual. These components are defined as follows:

- **Baseline:** The Baseline Schedule and Cost Estimate are defined by the approved initial PMP. The baseline remains constant until an updated PMP is approved and is compared with projected and actual schedules and costs.
- **Current Approved:** The Current Approved Schedule and Cost Estimate reflect changes in project scope, schedule, or cost estimates that have been approved at the appropriate levels. The approval authorities required for a specific change are defined in the CGM and are related to the magnitude of the change. Approvals for some minor changes are within the Project Managers' authority while other more substantive changes might require the approval of the CERP Program Managers.
- **Forecast:** When the Project Managers initially identify changes that impact the current approved schedule and cost estimate, such changes should be reflected in the forecast schedule and cost estimate until they are approved in accordance with CGM procedures.
- **Actual:** The costs and dates of completed milestones will be documented in the Actual Cost and Schedules, respectively.

The Project Changes section of the PMP documents any substantive changes that collectively account for differences between the Baseline and Current Approved Project Schedule and Cost Estimate for Level 4 work products. The Project Managers should document individual changes sufficiently to provide a reasonable accounting of the progression from the Baseline to the Current Approved Schedule and Cost Estimate.

A change in the schedule and cost estimate for a Level 4 work product might be the cumulative impact of several project updates (documented in Appendix K). The description provided in this section describes the series of events that contributed to each approved change in the Level 4 work product schedule or cost estimate. All approved project schedule and cost changes to Level 4 work products are addressed to provide a full description and chronology from the baseline to the current approved schedule and cost estimates.

The following information is provided for each change in the current approved cost and schedule for Level 4 work products:

- Date of approval
- Brief description of change(s)
- Project Cost impact (provide the cost estimate before and after the approval of the change and the total amount of the change)
- Project Schedule impact (provide the schedule before and after approval of the change and the total duration of the change)
- Description of why the change or changes were required

5.2.1 Project Schedule

TABLE 5-1 : PROJECT SCHEDULE

Milestone	Baseline	Current Approved	Forecast	Actual
PMP Completion	Dec 03	Dec 03	Dec 03	
PPDR Completion	Sep 08	Sep 08	Sep 08	
Real Estate Acquisition	Aug 08	Aug 08	Aug 08	
Construction Completion	Aug 09	Aug 09	Aug 09	
PIM Completion	Jul 13	Jul 13	Jul 13	
PPTDR Completion	Jan 14	Jan 14	Jan 14	

5.2.2 Project Cost Estimates

Changes in cost estimates for major project products are addressed in this section. The Project Cost Estimate table includes cost estimates of the major project products at Level 4 of the CERP WBS. More detailed cost tables for the Current Approved Cost Estimate are provided in Appendix E.

TABLE 5-2 : CHANGES IN PROJECT COST ESTIMATES

Phase	Baseline	Current Approved	Forecast	Actual
PMP	\$838,918	\$838,918	\$838,918	
PPDR	\$4,916,997	\$4,916,997	\$4,916,997	
PCA	\$33,250	\$33,250	\$33,250	
Real Estate	\$1,000,000	\$1,000,000	\$1,000,000	
Construction	\$19,465,835	\$19,465,835	\$19,465,835	
PIM	\$2,500,000	\$2,500,000	\$2,500,000	
PPTDR	\$1,245,000	\$1,245,000	\$1,245,000	
Total Cost	\$30,000,000	\$30,000,000	\$30,000,000	

* Task schedule and costs for the various phases of the pilot project will be updated and revised as necessary, as information during the PPDR phase is gathered.

6.0 FINANCIAL MANAGEMENT

6.1 Financial Management Project Cost Estimates

The project cost estimate is developed using the WBS, resources available, established resource rates, activity duration estimates, historical project information and the existing USACE Financial Management Chart of Accounts. It is understood that initial cost estimates will be based on an average full time equivalent employee rate. For the PPDR, the costs shown are 2003 dollars; all other costs are derived from the original Restudy costs. As the PMP is refined with additional detail, the PDT refines the cost estimate to represent all costs charged to the project expressed in current dollars. All cost estimates will be documented in detail and are subject to periodic updates during the project's life. The total project cost summary and the fully funded cost estimate are provided as Tab A and B, respectively, in Appendix E. Note: Tab B of Appendix E will be developed near the end of the PPDR preparation period.

6.2 Project Budget

The project budget allocates the overall cost estimate to individual activities so that project cost performance may be measured. The project budget was developed using the cost estimates, WBS, and project schedule. The project annual budget is included in Appendix E, Tab D of the PMP. A project Cash Flow Curve was also developed and is included as Appendix E, Tab E. A Contingency Summary and Status for the project is included as Appendix E, Tab F.

6.2.1 Cost Listing by Organization

An activity listing was developed with an estimated cost. Tasks for each activity identified to be performed by SFWMD staff and/or their contractor will be considered as in-kind services to be performed by the SFWMD. The Cost Listing by Agency is included in Appendix E Tab C of the PMP. The Summary of Work-In-Kind Services as a part of this PMP once approved by the District Engineer will serve as the authorization for credit for that work described and agreed upon. Additional information showing tasks and costs for each discipline within each organization can be found in Appendix F, Tab A.

7.0 FUNCTIONAL AREA PLANS

7.1 Project Management

The USACE and SFWMD will cooperatively manage this project. Shared project management activities under this task will include:

- Meeting and workshop coordination and attendance;
- Development of internal teams and the PDT;
- Monitoring progress of tasks;
- Periodic reporting and updating;
- Preparation and posting of documents;
- Project presentations;
- Input to brochures;
- Identification of expert reviewers;
- Preparing progress and financial reports;
- Budget management;
- Document reviews;
- Coordination with PDT and other interested parties;
- Ensuring public participation through coordination with outreach staff; and
- Providing team guidance.

The project managers will work together to implement both agencies' programs and provide funds as necessary to have continuous project execution. Both Project Managers are responsible for managing their agencies activities and monitoring progress and funding as well as upward reporting. It is expected that the USACE will have the predominant effort during the PMP, PPDR, PIM, and PPTDR phases. It is expected that the SFWMD Project Manager will have the predominant effort during the real estate efforts and the design/build process.

7.2 Planning

The purpose of the planning process is to develop a structured rational approach to create, evaluate and compare alternatives for water quality, site selection for the pilot plant, advanced water treatment selection and sizing of the pilot plant. Alternatives will be developed that meet the planning goals and objectives while avoiding the project constraints.

The planner will assist the team on the systematic steps needed to develop the PPDR.

7.2.1 Planning Management

The task includes planning technical management function, which includes monthly meetings, team coordination, upward reporting, fact sheet preparations, outreach, national water reuse symposiums, etc. The planner will also assist the project managers and engineering technical lead in the documentation of the thought process necessary to define the pilot project design report.

7.2.2 Refine Goals and Objectives/Identify Problems and Opportunities

In the pilot project setting, a problem can be thought of as an issue or uncertainty; while an opportunity offers a chance for progress or improvement to reduce those uncertainties. The identification of problems and opportunities gives focus to the pilot project effort and aids in the development of the goals and objectives for the pilot project. The objectives are statements of technical uncertainties the pilot project is attempting to resolve; they communicate to others the intended purpose of the pilot project.

The planner will: (1) initiate and assist with coordination meetings, assist with the PDT meeting to discuss and refine the goals and objectives and any other issues which may have come up since the PMP; (2) assisting with coordination meetings with Miami-Dade County Water and Sewer Authority; and (3) assist with Outreach and the initial ITR meeting. The planner will assist and lead discussion on the evaluation criteria for the pilot, refine the objectives and discuss the siting criteria.

7.2.3 Identify Alternative Plans

Alternative plans will be formulated to identify specific ways to achieve objectives for the purpose of meeting the Wastewater Reuse Technology Project goals. The site selection process and the technology selection process begin concurrently. Once both the sites and the technologies have been evaluated, alternatives will be developed that take into account the most suitable site(s), technologies, depth, configuration and other criteria. These plans created by the PDT will be developed further through public scoping.

The planner will (1) document the transferability decision for West Palm Beach and the West Dade Treatment plant; (2) assist in a PDT meeting and the discussion to develop alternative technologies; (3) prepare the project alternatives document from the siting, technologies, and PDT discussions; (4) assist in the ITR on the alternatives document; and (5) assist USACE Geotechnical staff with the SAD/HQ IPR Meeting.

7.2.4 Evaluate and Compare Alternative Plans

The evaluation of plans will yield information for use in the decision making process. Plans will be evaluated according to their costs, proposed environmental effects, social effects, effects on significant resources (such as endangered species), ability to meet planning objectives, and other findings. If the analysis of alternative plans proves that the technologies selected are not cost effective to produce the desired water quality, the design and construction of the pilot plant will be reevaluated at that time.

The planner will perform a qualitative evaluation of the pilot project alternatives to assure that the recommended plan meets the projects goals and objectives. The planner will also edit and prepare the evaluation document from data derived from all other sub teams and assist and lead the alternative evaluation at a PDT meeting.

7.2.5 Technology and Site Selection Recommendation

Criteria will be developed to assist in the selection of the best site and best technology for the pilot project. Criteria will be developed in the PDT process and the team will recommend the selected plan.

The planner will prepare the plan selection document, which includes the planning thought process of how the recommended plan was conceived. Once the document is written, it will be circulated to the ITR and the PDT for review. After revision, the document will be circulated to the public via a public meeting. The meeting will be to discuss the plan selection document, which will include the technology and site selection. Comments will be incorporated into the document and the document will be sent to SAD/HQ for review prior to an IPR meeting. An IPR will be held with SAD/HQ where Planning will assist USACE Engineering staff in the presentation. Following the meeting, USACE Planning will assist USACE Engineering staff in a PDT meeting to finalize the selected plan.

7.2.6 Other Assistance to USACE Staff

The planner will assist USACE Geotechnical staff with the review, evaluation and documentation of the siting, technology selection, and the overall formulation of the pilot project plan.

The planner will assist USACE Environmental staff with the NEPA documentation.

7.3 Engineering and Design

The engineering and design functional area plan will provide descriptions of all engineering and design efforts necessary to implement the pilot project. Engineering and design studies will focus on the collection, management, and analysis of new and existing data needed to evaluate the performance of the Wastewater Reuse Technology Pilot Project alternatives and to support design activities.

As indicated in the Restudy, various advanced water technologies are available to further treat secondary wastewater effluent to a sufficient quality, which can be used as a potential water resource to augment freshwater flows into the ENP and the BBCW. The Wastewater Reuse Technology Pilot Project will evolve as information is obtained, and new information will be used to refine the scope. This adaptive approach will allow the technical investigation to be expanded or reduced to make the best use of available technology. In addition, the completed and ongoing studies/investigations will be reviewed, and more detailed investigations will be performed in order to identify available technologies and regulations that would apply to a full scale reuse facility. Regulation and technology research will be carried out near the completion of this pilot project to assure the most current information is captured. The information identified during this effort will be used to determine the level of water treatment and the appropriate methodologies required to meet the project objectives. . The investigation of the water treatment technology is required to determine the most cost effective and efficient technology available. The technology research will include an Architect Engineer (AE) contract to evaluate various technologies in terms of costs, water quality performance, operation and maintenance and proven history. The PDT members will select the most viable treatment technology through evaluations of technology research performed by a Contractor.

An investigation of geology is required to determine the location of the test cells and to model the impacts of reclaimed water to the region. The geologic analysis will include gathering of existing data, core borings and soil analyses

It is assumed that this facility will be constructed and installed on the premises of the South Miami-Dade WWTP. In order to measure the effects of reclaimed water discharged into the wetlands, two parcels of land (one test cell and one control cell) will be selected and utilized as test cells. The size of these cells, as well as the AWT design capacity, will rely on available hydrological, geological and water quality data and/or outcome of the BBCW studies. The Environmental/Water Quality team will perform the siting of these cells.

7.3.1 Engineering Management

The USACE Engineering Technical Lead will perform various management functions associated with the implementation of the Wastewater Reuse Technology Pilot Project. These tasks will include, but are not limited to, attending monthly meetings and conferences/seminars, team coordination, upward reporting, and fact sheet preparation.

7.3.2 Initial West Palm Beach/West Miami Dade Investigation Effort

7.3.2.1 Background Information Collection

Background information collection is necessary to identify existing conditions and determine the transferability of data. Considerable data has been collected at the West Palm Beach East Central Regional WWTP to support the evaluation of this facility and establish background conditions. It is necessary to know if the data collected at the West Palm Beach Wetlands Based Water Reclamation Site is transferable to BDRA. It is also necessary to know if the wastewater characteristics at the West Palm Beach East Central Regional WWTP are of sufficient similarity to the wastewater in Miami-Dade to allow reasonable comparison. The collection effort will include the following:

- Collection of existing biogeochemical data at the West Palm Beach Wetlands Based Water Reclamation Site.
- Collection of existing ecological data, including, but not limited to, type of vegetation, soils, hydroperiod and wildlife, including species dominance, coverage, canopy, habitat use and community types.
- Collection of existing biogeochemical data at BDRA.
- Collection of existing wastewater inflow and effluent quality data from the West Palm Beach East Central Regional WWTP and a minimum of the three existing Miami-Dade WWTPs. Baseline information shall consider parameters that were removed as well as parameters that were added to the wastewater.
- Identification of toxic pollutants of concern (POCs).
- Identification of EPOCs.

In addition to information collection, this task included:

- Attendance at meetings.

- Preparation of a report summarizing the information collected (data charts).
- Facilitation of transferability workshop.

This task will be performed under a contract authorized during the PMP development stage. A scope of work for this effort will be prepared, a RFP will be issued, costs will be negotiated and a contract will be awarded and administered. Data collection results will be coordinated with the CERP data team.

The USACE environmental staff and the USFWS will provide existing conditions information and compile ecological data. This information will be made available to the data collection contractor.

7.3.2.2 Draft Transferability Criteria

Subsequent to the transferability workshop, criteria will be drafted to allow comparison of wastewater characteristics, receiving environment, and receptor community differences. The role of modeling in extrapolating through these differences will also be considered in developing the transferability criteria. The transferability criteria will be reviewed by the PDT, discussed, and modified at the workshop. At the workshop, it will be used to determine whether data collected from the West Palm Beach Wetlands Based Water Reclamation Site will be transferable to BDRA. The same criteria will be used later, if other monitoring sites are necessary, to review transferability to the other potential reuse sites in West Miami-Dade.

7.3.2.3 Transferability Workshop

The data collection report, draft monitoring and modeling approaches, as well as the transferability issues summary will be disseminated for review and comment by a panel of experts that will be asked to review the report and the draft plans and to participate in a “Transferability Workshop.” The purpose of the workshop is to evaluate the transferability of data from the West Palm Beach site to the BDRA, taking into account differences in source water, substrate, environment, and receptor communities. The public and other government agency officials will also be invited to the workshop. The experts will be asked to recommend changes to the transferability criteria, present opinions on the need for further evaluation of POC/EPOCs and biological data collection needs. The experts will provide written comments on the draft approach plans, and provide independent opinions regarding the transferability of data between the East Central Regional WWTP and the BDRA, as well as the need for monitoring vs. desktop study.

7.3.2.4 Review Transferability Report, Revise Criteria and Approaches

Based on feedback solicited during the transferability workshop and expert reports, the data collection contractor/facilitator will prepare a draft workshop report. PDT members and workshop participants will review the report. After this review, the transferability criteria will be revised, as will the modeling and monitoring plan approaches. The PDT and ITR team members will review these revised documents and the documents will be finalized. The Wastewater Reuse Technology Pilot Project will proceed based on these documents. For the purpose of this PMP, it is assumed that additional sites will need to be considered in order to provide the necessary data for this pilot project.

7.3.2.5 Draft Monitoring Approach

The overall objective of the monitoring program is to obtain accurate, precise, and reliable information about the status and trends of the structures, functions, and throughputs in the system of interest to support design, operation, maintenance, and restoration decision-making. For environmental monitoring, the overall objective is to measure the effects of one or more physical, chemical, or biological influences or stressors on one or more components of the ecosystem or the ecosystem as a whole. This is achieved by using appropriate methods to obtain representative samples at appropriate spatial and temporal intervals and by then analyzing those samples for the pollutants of potential concern using methods with appropriate detection limits. The draft generic monitoring approach will be prepared and submitted for PDT review prior to the transferability workshop. The purpose of documenting the approach is to allow feedback from transferability workshop experts.

7.3.2.6 Draft Modeling Approach

Modeling will be required to predict post-operational impacts at the proposed discharge sites from the data gathered at other sites before full-scale project construction and operation. Hydrodynamic/sediment/water quality will need to be considered. The development and application of simple statistical models for this pilot project presupposes (1) sufficient data set with which to develop and test the models, and (2) no significant pre- and post-operational changes in source concentrations, flows, or receiving environment conditions (criteria that are rarely met in practice). Complex models include physical, chemical, and biological processes that govern transport, fate, and accumulation. However, they require significant source-, pollutant-, and site-specific data to initialize, and monitoring data to calibrate and validate. Simple one- or two-variable mechanistic models offer a compromise between

a purely statistical model and a complex mechanistic model, but such models necessarily combine many distinct physical, chemical, and biological processes into one or two “removal” or “settling” rate coefficients. This precludes discriminating the effect of changes in environmental conditions that affect one but not all of the processes buried in the combined model coefficients. The generic modeling approach will be drafted and reviewed by appropriate PDT members and submitted for expert review at the transferability workshop. A PDT meeting will be utilized to discuss the modeling and monitoring approaches.

7.3.3 Engineering Studies and Investigations

7.3.3.1 Literature Search/ Technology Evaluation

7.3.3.1.1 Review Existing Reports/Studies

A review of available reports related to the Miami Dade Reuse Pilot Project will be performed in order to fully comprehend the project area, to preclude the duplication of effort, and to allow this study to build upon past efforts. The review of these reports is necessary to determine any information that may be applicable, relevant or pertinent to this project. The efforts will comprise of a literature review of existing reports, technical memorandums, and other correspondence. These reports include but are not limited to the following:

- Wastewater Reuse Feasibility Study, PBS&J, 1992 and 1998.
- Dade County 2001 Facilities Plan.
- West Dade Feasibility Study Technical Memorandums, PBS&J, August 2001.
- West Dade Feasibility Study, Economic Analysis, GEC Report, August 2001
- West Dade Feasibility Study, USACE, December 2001 (projected)
- WPA Feasibility Study, draft December 6, 2001
- Studies describing wetlands and dynamics in the area

The identification and review of related work that has been completed and documented in published reports should reduce the level of effort and the number of tasks associated with this pilot project. This review will be performed during the initial stages of this project and after the West Miami-Dade Feasibility Study Draft report is completed (December 2001)

7.3.3.1.2 Regulation Research

To protect the environment from degradation by wastewater management activities, specific rules and regulations have been established by the regulatory agencies. The regulation research task shall be conducted to identify applicable Federal, State, and local regulations related to water quality, wastewater treatment, wetland applications, and land use. This task will involve identifying regulatory requirements of operating a reclaimed water treatment plant and reclaimed water applications. Applicable regulations will be identified and reviewed. A list of applicable regulations that could affect this project will be identified in a letter report, which will also summarize findings. This review shall be completed during the initial stages of the project.

7.3.3.1.3 Access Removal Efficiency of Existing Facilities

The physical, chemical and biological characteristics of the influent and effluent will be identified through existing documentation at a minimum of the three existing Miami-Dade WWTP. The characteristics of the wastewater will be evaluated to determine the removal capabilities and efficiencies of existing treatment plants. Understanding the characteristics of the wastewater will also provide a basis for determining appropriate and cost effective tertiary treatment technologies for reuse. A letter report will be prepared identifying the influent and effluent characteristics of the WWTPs in Miami-Dade and assessing removal efficiencies of existing treatment plants.

7.3.3.1.4 Assess Potential Influent/Effluent Changes

Through discussions with MDWASD, engineering staff will assess potential for change in the influent, secondary effluent and AWT effluent at the south Miami-Dade plant. The probable range of influent quality to the pilot treatment plant will be determined.

7.3.3.1.5 Formulate Treatment Objectives

Under this task, efforts will be made to identify the potential effluent water quality requirements. The final water quality objective will not be available until the discharge permits are received. The pilot study and indeed the final project design may go beyond the minimum requirements specified in Florida's rules (notably in Chapters 62-600, 62-610, and 62-611, F.A.C.) because of Water Quality Based Effluent Limits (WQBL) / Total Maximum Daily Load considerations. In the technology research contract, treatment trains designed to achieve current rule requirements in addition to treatment trains designed to be more stringent can be evaluated. This will provide a useful frame of reference and basis for comparison. It also would highlight

the marginal costs in going from rule requirements to something judged more desirable. In order to begin the technology investigation, a range of potential effluent quality will need to be determined. The treatment objectives will be determined in accordance with the permit and other regulatory requirements. Input will be required from the environmental staff. A report will be generated documenting the treatment objectives. The PDT will review the objectives and a meeting will be held.

7.3.3.1.6 Technology Criteria Development and Evaluation

With the assistance of planning staff and other team members, criteria will be developed to rate alternate technologies. Draft evaluation criteria will be developed and reviewed by PDT members and a contracted expert. After potential technologies are identified, they will be evaluated using the criteria.

7.3.3.1.6.1 Develop Evaluation Criteria

Engineering elements of the PDT will work with other disciplines to prepare technology-screening criteria in order to narrow down the list of potential technologies for implementation. The criteria will be a combination of engineering, regulatory, and ecological measures that allows quick comparison of “gross” technology effects. Engineering considerations may include operation and maintenance, proven history, and ease of construction. Ecological considerations may include reversibility, water quality, and impacts to endangered species and wetlands.

7.3.3.1.6.2 Evaluate Alternative Technologies

After the development of relevant evaluation criteria, an evaluation will be performed to identify the most likely potential technologies. The evaluation will be performed using qualitative measures for the most part. Quantitative criteria, including cost, may also be utilized. In general, comparison tables will be prepared where technologies are rated similar to the system used during the Restudy process. All members of the PDT may participate but it is envisioned that a sub team would complete the bulk of the work. The recommended plan will be an optimal mix of all the various considerations to achieve the overall goals and objectives of the pilot project.

7.3.3.1.7 Technology Investigations

Since the early 1970s, the number of advanced water treatment facilities has increased significantly and a great deal of information has been established regarding advanced or tertiary water treatment. Currently, there are several advanced treatment technologies available in the market that can meet any regulatory requirements for the discharge of treated effluent. The search and

evaluation of these advanced water treatment technologies, as well as disinfection technologies, will assist in selecting an applicable technology and cost-effective process for the proposed South Miami-Dade Wastewater Advanced Treatment Facilities. This effort will build upon the Advanced Treatment Technology research program that the SFWMD has funded as part of their Everglades phosphorus control efforts. In-house efforts under this work include preparation of a contract and review of deliverables. The USACE will use a contractor to provide input to the technology evaluation criteria, and to perform a literature review and evaluation of market information concerning filtration, nutrient removal, disinfection, and organics/EPOC removal technologies.

In addition to reviewing market information, the contractor will identify wastewater treatment plants that employ innovative treatment. Information obtained by evaluating and understanding innovative treatment technologies that are being utilized at municipalities throughout Florida, the United States, and globally would allow designers of the Wastewater Reuse Pilot Plant a selection of the preeminent technologies available. Contacts with reuse coordinators, information obtained in professional journals, and attendance at pertinent conferences will be summarized along with a list innovative treatment plants, specific information on the plant components, range influent acceptable to each treatment unit, etc. Phone interviews with designers and operators of existing plants will be performed and an assessment of the plant and the reclaimed water discharge method will be documented. A more focused search will be conducted on several treatment plants within the State of Florida. These treatment plants will be identified based on the interest in the technology used and if it is determined they are discharging to a wetland system similar to the BDRA or the BBCW. The contractor will review and summarize engineering reports, equipment specifications and layout, operation and maintenance, effluent quality, discharge site characteristics, and regulatory requirements for each plant. The SFWMD will provide a list of technology vendors that would be considered in the contractor's evaluation.

7.3.3.1.7.1 Preliminary Design of Alternatives

The contractor shall make recommendations regarding several treatment processes. Information on each treatment shall include, but not be limited to, design criteria for the selected treatment process, a process and instrumentation diagram, a tentative layout for the water treatment process, and solids management plan. The contractor shall also provide, for each recommended alternative, a preliminary piping layout internal to the plant, including details on the influent, effluent, and solids disposal connections to the existing South Miami-Dade WWTP. Capital and operating costs for the

alternative pilot plants shall also be provided by the Contractor for design evaluations prior to selection of the recommended project plan. The preliminary design of alternatives and information provided by the contractor will allow for the development of a final layout and technology combination.

7.3.3.1.7.2 Develop Preliminary Cost Estimates

As part of the preliminary assessment of alternative plans, cost figures will be prepared by the contractor to assist in the selection of components of the plan. Preliminary cost analysis will include estimates of construction, average annual operation, maintenance and replacement costs.

7.3.3.1.7.3 Types of Technology to Investigate

Evaluate Nutrient Removal Technologies

Nitrogen and phosphorus are the principal nutrients of concern in reclaimed water discharges to natural areas and surface waters. Because of the limitations of nutrient loads, and the fact that various forms of dissolved inorganic nitrogen (ammonia-N vs. nitrate/nitrite N) have different ecological effects on a receiving water body, nutrient removal will be required. Different nutrient removal technologies will be evaluated under this subtask. The technical requirements will be defined including, but not limited to, what equipment can achieve the necessary nutrient removal efficiency at the lowest cost (capital costs, operation and maintenance costs) and greatest reliability. A list of manufactures and equipment suppliers on nutrient removal treatment processes will be generated. Information submitted by vendors will be researched and evaluated. The information received will be reviewed and evaluated based upon the specific technical requirements. This evaluation will be documented in a report.

Evaluate Filtration Technologies

With the necessity for low suspended solids in the reclaimed water, different filtration technologies (such as ultrafiltration, microfilters, and reverse osmosis) will be evaluated under this subtask. The technical requirements will be defined including, but not limited to, which equipment could achieve the necessary suspended solids removal efficiency at the lowest cost (capital costs, operation and maintenance costs) and greatest reliability. Technical criteria will be developed in consideration of regulatory and discharge requirements. A list of filtration manufactures and equipment suppliers will be generated. Information submitted by vendors will be researched and evaluated. The information received will be reviewed and evaluated based upon the specific technical requirements. This evaluation will be documented in a report.

Evaluate Pathogen Control Technologies

Different pathogen control technologies (such as chlorination, ozonation, and UV radiation) will be evaluated under this subtask. The technical requirements will be defined including, but not limited to, what equipment can achieve the necessary disinfection at the lowest cost (capital costs, operation and maintenance costs) and greatest reliability. A list of manufactures and equipment suppliers on disinfection processes will be generated. Information submitted by vendors will be researched and evaluated. The information received will be reviewed and evaluated based upon the specific technical requirements. This evaluation will be documented in a report.

Evaluate Organic Removal Technologies

Increasing attention has been given in recent years to the identification of toxic substances in wastewater, such as priority pollutants and refractory organic compounds. Different dissolved organic removal technologies (such as carbon adsorption) will be evaluated under this subtask. The technical requirements will be defined including, but not limited to, what equipment can achieve the necessary dissolved organic removal rates at the lowest cost (capital costs, operation and maintenance costs) and greatest reliability. A list of manufactures and equipment suppliers will be generated. Information submitted by vendors will be researched and evaluated. The information received will be reviewed and evaluated based upon the specific technical requirements. This evaluation will be documented in a report.

Evaluate POCs/EPOCs Removal Technologies

The technologies, singly or in combination, that may be optimal for nutrient, particle, or pathogen removal may not be optimal for POCs/EPOC removal. This task will evaluate the efficiencies with which various categories of POCs/EPOCs are removed by various physical, chemical, and biological based treatment technologies by reviewing data from various representative existing reuse treatment facilities published in the scientific, engineering, and regulatory literature.

7.3.3.2 Geotechnical/ Hydrogeologic Field Investigations

The objectives of the geotechnical and hydrogeologic studies are to collect and analyze appropriate data in order to understand, formulate, evaluate, and optimize the selection of test cells within the study area. Field investigations will be required to support environmental staff in locating test and control cells that adequately represent the potential discharge area of the full-scale project. This effort will include, but is not limited to the investigations of permeability and continuity of the underlying materials as well as identification of the tidal boundary, hydrologic characteristics and water

quality assessment on potentially suitable lands near the South Miami-Dade WWTP. In-house resources, engineering consultants, and other agency resources (e.g. USGS, DERM) will carry out the investigations

Prescreening of potential sites will be performed prior to beginning field geotechnical investigations. Depending upon available hydrological, geological, water quality and/or outcome of the BBCW studies, the geotechnical investigation will be defining typical conditions in the BBCW area and assessing how well the potential sites meet those conditions. Because the investigation covers the regional area (generally) and the potential sites (specifically), the site selection criteria will not be completed until the fieldwork is completed. Geotechnical and hydrogeologic staff will participate in the criteria development and evaluation process. Geotechnical staff will also work with water quality sub team members by providing input to the water quality scopes of work.

7.3.3.2.1 Efforts for Geotechnical/ Hydrogeologic Work

The Geotechnical Hydrogeological tasks will be conducted in two (2) phases:

Phase 1 : collection and compilation of existing geotechnical data, preparation of a data report.

Phase 2: supplemental field collection of site data and preparation of final report.

The USACE Geotechnical Branch will coordinate with SFWMD and Miami-Dade Water and Sewer Authority staff throughout the project. It is envisioned that the selected water treatment technology will be constructed at South Miami-Dade WWTP. Existing geotechnical data including soil borings and UIC well logs will be used for the design and construction of the pilot plant.

In-house efforts include identifying and collecting existing geotechnical and hydrogeologic data for transmission to the contractor, preparing a scope of work for a contractor to review and summarize existing data as well as perform additional fieldwork, and preparing, and evaluating contract documents. All agencies will coordinate efforts on data collection, data analyses, and alternative evaluation issues. Provisions will be made to thoroughly characterize the area around the SMDWWTF as necessary

7.3.3.2.1.1 Phase 1: Compile, Inventory and Analyze Existing Data

The geotechnical team will compile all relevant subsurface data that is readily available. Information will be collected and compiled from SFWMD,

the USACE, the USGS, ENP, the Florida Geologic Survey, local engineering consultants, local governments and any other appropriate source. The study team will utilize a consultant to compile and summarize the available data into a cohesive report. The report will serve as the baseline for identifying data gaps and planning additional investigations. This will be conducted in house or contractually as demanded by the availability of data.

7.3.3.2.1.2 Phase 2: Data Evaluation and Field Work

The USACE will collect supplemental existing information, review the provided baseline data and perform hydrogeological testing for the proposed receiving parcel sites. It is expected that the contractor will be required to evaluate and summarize the following types of data: topographic, past and future land use, water quality, geotechnical, hydrogeological, hydrologic, hydraulic, hydrodynamic, etc. If the data are not available through any of the PDT members, the contractor may be required to gather it. USACE will perform this work with either in-house or contractor services.

In order to fully characterize the geology and hydrogeology of the test and control cells, it is expected that additional subsurface field data must be collected, reviewed and evaluated. Baseline hydrogeological, hydrological, hydraulic, water quality and hydrodynamic data needs may include:

- Groundwater data including groundwater levels, gradients, and sediment hydraulic conductivity
- Percolation rates (permeability/transmissivity)
- Lithological data including borehole and geophysical logs
- Limited topographic transects
- Surface water/groundwater characterization including geochemical data (sediment analysis)

The fieldwork will consist of drilling at the potential parcel sites selected after the pre-screening selection process (up to four sites) and installing two monitoring wells per site at a depth not to exceed 30 ft. Soil samples will be taken and analyzed, ground water level will be measured, water samples will be taken and analyzed and a hydrogeologic characterization will be performed through the use of a pump test. Further, it is expected that some minimal topographic surveying will be required. This fieldwork will be performed to fill data gaps. Therefore, it should only be performed if equivalent data has not previously been obtained from the project sites.

7.3.3.2.1.3 Technical Report

A draft report comprising data from phase 1 and phase 2 will be assembled in a technical report. This technical report, will serve as a reference the project and be incorporated into the PPDR. A draft of this report will be submitted to PDT for review and comment by all disciplines. The PDT will conduct a review the quality of the data including method of collection, adherence to standard quality control and quality assurance procedures, etc. in order to determine if the data is appropriate for use in the project. The team will provide written comments to the contractor for incorporation in a final report. It is envisioned that this task will involve three teleconferences and two meetings to be held in West Palm Beach, Florida.

With the new data and existing data summarized and evaluated, the contractor will characterize the geology and the hydrogeology. Pertinent aquifers, confining units, preferential flow zones, and restricting flow zones will be delineated. Geologic and hydrogeologic cross-sections will be prepared. Zones of high and low hydraulic conductivity and transmissivity will be identified and quantified. Pertinent maps will be prepared including geologic structure maps, isopach maps, transmissivity contour maps, and well location/core boring location maps. Summary tables will be prepared listing top elevations of various hydrogeologic units.

7.3.3.3 Assistance to Planning

The Geotechnical team will participate in planning, refining issues and uncertainties, refining goals and objectives, and in the site selection process. The team will also participate in developing performance measures and in the identification, evaluation, comparison and selection of alternatives. Geotechnical staff will also participate in required meetings and public workshops. The recommended site will be selected through coordination with other engineering elements.

7.3.3.4 Engineering Appendix Preparation

The USACE will prepare a draft report on the geology and geotechnical engineering properties of the site. The hydrogeology summary report prepared by the contractor will be incorporated into the geotechnical portion of the Engineering Appendix to the PPDR. Geotechnical staff will also be responsible for preparation of the combined Engineering Appendix.

7.3.3.5 Preparation of the PPDR

Geotechnical staff (USACE Engineering Technical Leader) has the responsibility of organizing and preparing the PPDR. Sections will be prepared by various staff members and submitted for incorporation into the

report. The PPDR will be a synthesis of planning activities, NEPA documentation, detailed design, and monitoring plans.

The draft PPDR will initially be reviewed by PDT members and after revision, be released for public review and comment. Necessary changes will be made and the report will be revised. ITR review will take place and the report will then be submitted to the state. After including relevant comments, the PPDR will be submitted through USACE channels for approval by the Assistant Secretary of the Army for Civil Works. Approval is necessary, for construction authorization of the pilot project.

7.3.4 Hydrology & Hydraulics (H&H) Investigations and Studies

The hydrology and hydraulics (H&H) studies will provide support in the evaluation, design, and implementation of the Wastewater Reuse Technology Pilot Project. The H&H analysis will be divided into two separate phases. The first phase will support the design, permitting, and construction of the pilot project alternatives. This effort will occur during the development of the PPDR. The second phase will simulate the effects of the pilot project technology on the regional system if it was implemented at full scale. The second phase will not occur until the PPTDR portion of the pilot project. Thus, two types of hydrologic analyses will be performed for the evaluation of various reuse test cell alternatives. First, in the PPDR phase, a set of theoretical or empirical equations will be used to aid in the design and implementation of the test cells for construction in the pilot scale. Second, in the PPTDR phase, a more detailed regional or sub-regional hydrologic model will be used to determine the effects of reclaimed water on the system if those technologies were implemented at full scale. Only the PPDR work will be identified at this time.

7.3.4.1 Hydrology Modeling for PPDR Phase

It is assumed that the discharge from the wastewater pilot treatment process will be at an approximate rate of 1 MGD. This relatively low discharge rate will result in a test cell with a small design area. For a larger test cell or reservoir, a more complex modeling approach may be necessary. However, at the pilot scale there are theoretical and empirical equations available that are sufficient to describe the effects of the pilot discharge to the test cell both hydraulically and hydrologically. A literature search will be conducted to find theoretical and empirical equations deemed sufficient to represent the effects of the pilot treatment site. This approach will be verified through discussion with team members that are considered experts in the field. Several variables of interest for the design of the pilot test cell are seepage rates, evapotranspiration rates, and quantity of discharge from the test cell

to Biscayne Bay. Collecting the necessary data for hydraulic and hydrologic design of the pilot test cell will be an interdisciplinary effort with input from geotechnical and environmental team members. Tasks associated with this phase of the analysis are described in the following paragraphs.

7.3.4.1.1 Data Collection for use in model(s) or equations

In order to complete the test cell design, certain data must be collected. Following is an overview of the tasks associated with this data collection:

- a. Determine evapotranspiration rate. The evapotranspiration rate will be determined by hydraulics/hydrology staff from available data and will support the development of a water balance for the test cell. These data will ultimately be used to size the test cell.
- b. Coordinate with geotechnical staff for vertical seepage rates and impact to surrounding area. Information provided by the geotechnical staff will be used to determine the vertical seepage rates for variable test cell depths for the areas of interest. Hydraulics/hydrology staff will also determine the impact of the test cell on surrounding areas due to seepage for various test cell depths. Hydraulics/hydrology staff, in determining the optimal test cell depth/size to minimize adverse impacts to surrounding areas, will utilize this information.
- c. Coordinate with water quality experts for test cell depth(s)/size and flow-through rate(s) for optimized water quality benefits. Environmental, geotechnical and hydraulic/hydrology staff, in conjunction with water quality experts on the team, will determine the optimal test cell depth and flow-through rate based on hydraulic characteristics of the test cell. This information will be utilized by hydraulics/hydrology staff in conjunction with other available data in an iterative approach to determine the size of the test cell to minimize adverse impacts and flow short-circuiting.
- d. Compare flow rate to predicted results downstream.
- e. Biological effects of water level or hydroperiod; tide effects (if a tidal wetland is used or will receive water from the test cell); flood criteria and conveyance capacity.

7.3.4.1.2 Identify Test Cell Model or Equations

The design team will develop a list of model or equation parameters that are necessary to satisfy the design requirements and that are capable of representing the effects of the test cell. The checklist will be used in screening appropriate models or equations. The model or set of equations must be able to determine test cell size, shape, operating depth, and flow-

through rates. In addition, the models or equations must be capable of providing additional information to satisfy the goals and objectives identified for the pilot project. A literature search will be conducted to determine the equations or models necessary to design the test cell. Applicable models and/or equations will be discussed with appropriate members of the PDT to determine the adequacy of the chosen method in representing the operations of the test cell.

7.3.4.1.3 Perform Test Cell Model or Equations

The design team will develop a model of the test cell utilizing the equations determined in the previous tasks. This model will be used to develop and evaluate a suite of alternatives for the pilot test cell.

- a. Build test cell model and calibrate with existing known parameters. Available data will be used to develop a model of the test cell that will be calibrated to known parameters.
- b. Perform initial model run, process results with draft report. The calibrated model will be used for an initial model run. The results of the initial analysis will be submitted in a draft report.
- c. Coordinate with design staff for structural design requirements. Hydraulics/hydrology staff will coordinate with design staff to determine structural design requirements for the test cell for each alternative.
- d. Perform alternative formulation runs, sensitivity analysis, and final model run for Selected Plan. The calibrated model will be used to determine the effects of various combinations of test cell size, shape, operating depth, and flow rate, minimizing adverse impacts and flow short-circuiting in the test cell.
- e. Review modeling results to determine if recommended size of test cells will be representative of the BBCW area.

7.3.4.1.4 Report Preparation and Coordination

All analyses performed, as part of the Hydrology and Hydraulics Studies, will be written in a report to be included with the final PPDR.

- a. Coordinate with geotechnical, design and cost estimating staff for report requirements. Hydraulics/hydrology staff will coordinate with geotechnical and design staff to produce a report that documents the engineering analyses that resulted in the design of the selected plan. Hydraulics/hydrology staff will also coordinate with cost estimating staff to produce a construction cost estimate for the selected plan.

- b. Write portions of the draft report, address reviewer comments, and finish with final report. Hydraulics/hydrology staff will submit a draft report documenting the engineering analysis performed during the design phase of the pilot project. Comments on the draft report relating to the hydraulics/hydrology staff portion of the design will be addressed as necessary and will be incorporated into a final report.
- c. Participate in final PPDR. The final Hydrology and Hydraulics report will be submitted for inclusion in the PPDR. In addition, hydraulics/hydrology staff team members will participate as needed in the completion of the PPDR.

7.3.5 Design Studies and Evaluations

The design studies and evaluations for the Pilot Plant in the PPDR phase will be preliminary but sufficient to determine real estate needs and prepare realistic cost estimates. The preliminary design will include specific pilot project features as well as site information, suggested plant layout, unit treatment process and other recommended design criteria. The assumption is made that this preliminary information will be used in a Design-Build contract to further refine and document the design.

It is expected that the design will consist of several unit treatment processes packaged as a turn-key advanced water treatment system, equipment platform, site foundations, piping layout, connection of the pilot plant to the South Miami-Dade WWTP and distribution line from the plant to the wetland cell, berms around the wetland test cell, and monitoring set-up/infrastructure layout. A contractor under the management of geotechnical staff will prepare the design documents for the treatment plant and connection to the South Miami-Dade WWTP. The monitoring layout will be designed by environmental staff.

7.3.5.1 Site Selection

The engineering design staff will provide assistance to the geotechnical and environmental staff in selecting the appropriate site(s) for the pilot treatment plant and test/control cell. The engineering design staff will review pertinent data and information regarding the general area of the pilot plant and cell, and provide recommendations regarding site selection criteria and evaluation of alternative sites, including attendance at meetings, and field visits as necessary. Design staff will also provide input to the scope of work for the geotechnical fieldwork as well as review contract deliverables.

7.3.5.2 Water Treatment Technology Selection

The SFWMD engineering staff and the USACE design staff will provide assistance to the geotechnical staff in selecting the appropriate water treatment technology to meet the pilot project goals. This effort will include development of technology selection criteria, participation in the preparation and negotiation of the technology research contract scope of work, review of technology research contract deliverables, participation in technology evaluation and selection. Work will include attendance at meetings, review of documents and deliverables and field visits as necessary.

7.3.5.3 Assistance to Planning

SFWMD engineering staff and USACE design staff will assist with planning tasks including development of pilot project alternatives, preparation of evaluation documents, preparation and revision of the plan selection documents.

7.3.5.4 Preliminary Design

The technology research contractor (under the management of USACE geotechnical staff) will be providing preliminary design documentation for the advanced water treatment pilot facility and the method of distribution from the South Miami-Dade WWTP to the pilot facility, as well as recommendations regarding the location for the treatment facility. Environmental staff will make recommendations and prepare costs estimates regarding the necessary monitoring set-up/infrastructure in the monitoring plan. The engineering design staff will provide preliminary design documentation for the wetland test cell and conveyance from the pilot facility to the test cell. Prior to the preliminary design, the engineering design staff will participate in a walk through of the proposed area for the test cell and potential areas for the conveyance pipe. During the walk through, a visual observation of the topography of the area will be made. Also, a hand held device will take digital record of limited amounts and types of topographical information. This information will be necessary to determine the most appropriate locations for the pilot treatment plant, the pipe conveyance between the pilot plant and cell, and the test cell.

The preliminary design will include limited calculations, design description and concept sketches for the distribution of water within the test cell and out of the test cell, and cell design. Calculations will be adequate to determine the general alignment and size of pipes for the pipe conveyance connecting the pilot plant and cell, and for the distribution of pilot plant effluent in the cell. Site information shall include, the size and location of the test cell area,

levee construction and supporting structure for the test cell, and structural support for the pilot plant and pump equipment. The preliminary design will also include any auxiliary mechanical and electrical equipment and any structural features necessary to complete the design. The preliminary design detail will be sufficient to determine the real estate requirements for the project and to develop a realistic cost estimate. As needed, USACE design staff will also assist cost estimating staff in the preparation of the construction cost estimates.

A quality control review will be conducted on all reports and documents prepared by the engineering design staff that are to be included in the engineering appendix.

7.3.5.5 Design Appendix

The design appendix will be prepared to document all preliminary design efforts for this project. In-house design staff will incorporate the contracted technology preliminary design information into the design appendix. The design appendix will include preliminary drawings and design calculations.

7.3.5.6 Engineering Appendix

The engineering design staff will assist the geotechnical staff in incorporating the design appendix into the engineering appendix of the PPDR and participate as need in the development of the engineering appendix.

7.3.5.7 PPDR Assembly and Coordination

The engineering design staff will assist the geotechnical staff in assembling the PPDR and coordinating with the various participating organizations for reviews, approvals and signatures and well as making the required revision to the document.

7.3.5.8 Design-Build Procurement Assistance:

The engineering staff will review and comment on procurement strategy for the design and construction contract.

7.3.5.9 Value Engineering

A value engineering study is often used to determine if there are engineering options within any project that could provide less expensive ways to achieve the same goal. By their nature, pilot projects are value-engineering studies for full-scale implementation. The pilot project will investigate various technologies, costs, benefits, and actually construct a test facility using the

recommended technologies. Testing will be performed at the pilot facility and this information will be used/evaluated in the PPTDR to provide recommendations for full-scale implementation for using reclaimed water in Miami-Dade County.

7.3.5.10 Cost Engineering

7.3.5.10.1 Review AE Contract Estimates

The design staff will review the cost estimates for alternate technologies that are prepared by the contractor (under a geotechnical staff contract). Comments will be prepared and incorporated in the contractors report.

7.3.5.10.2 Design Level Cost Estimate for Selected Plan

A cost estimate will be prepared for the preliminary design of the selected plan using the Micro Computer Aided Cost Engineering System (MCACES). These cost estimates will be prepared for the advanced water treatment process, test cells, electrical control panels and instrumentation, conveyance and structures, installation, and start-up as a turn-key system. The technology contractors cost estimates will be provided to in-house staff to assist in this effort.

7.3.5.10.3 Cost Estimate/Schedule for Design Build Contract

As part of the development of the procurement strategy, SFWMD staff will utilize construction estimates from the technology research contract and the in-house preliminary costs for the selected plan and develop a detailed cost estimate for the Design-Build contract. The cost estimate will include pre-construction engineering, construction, supervision and administration, real estate, operations and maintenance (O&M) and appropriate contingencies. In-house staff will review each estimate. The final cost estimate will define the project cost for authorization and will be included in the PPDR. A schedule will also be prepared that includes the contract procurement tasks as well and the design and construction tasks and durations.

7.4 Environmental Evaluation

The Restudy report (*USACE, 1999 p. 9-34*) identified a need to investigate advanced treated water as an alternative water source to meet the current and future ecological demand for water in South Florida. However, the environmental effects of using reclaimed water to rehydrate natural ecosystems require further investigation. Thus, the pilot project will be designed to test advanced treatment technologies, address water quality issues, and measure within a test cell the effects of recycled wastewater on

targeted ecosystems in order to determine full-scale effects. An environmental evaluation, documented in a NEPA report, will be performed for the Wastewater Reuse Pilot Project. Public and environmental concerns will be incorporated into planning and project designs. Environmental input will help to set targets and determine ecosystem benefits and be incorporated into the engineering design to achieve desired water quality, flows and stages of the test site. In addition to the normal NEPA documentation process, the environmental evaluation performed for this project will include tasks to:

- 1) investigate the presence and importance of EPOCs and non-EPOCs, (for example; nutrients, microbes, BOD, etc.) within the study area, in wastewater effluent and receiving waters,
- 2) select test and control wetland sites,
- 3) determine effluent standards for the receiving waters,
- 4) collect additional field data to support a NPDES permit application, and
- 5) prepare a draft monitoring plan for pilot study operations.

Each of these major tasks is outlined below.

7.4.1 Water Quality & Ecological Assessment/Investigations

7.4.1.1 Literature Review for EPOCs

The ecological and human health impact of EPOCs in wastewater effluent has, in recent years, come to the attention of scientists and environmental regulators. In the future, reuse applications might be evaluated relative to the impact of discharging trace levels of the EPOCs. The USGS (Vol. 36, No.6, 2002, pp 1202-1211, Environmental Science & Technology) has identified ninety-five (95) EPOCs. The list of compounds is divided into the following five categories:

1. Steroids and hormones
2. Veterinary and human antibiotics
3. Prescription Drugs
4. Non-prescription Drugs
5. Other wastewater related compounds

Many of these compounds can be found at low concentrations in reclaimed water and sometimes in potable and surface waters. Although the science is relatively new, there is evidence that exposure to EPOCs can cause cancer as well as physiological changes to humans and animals. Of particular concern is human and animal exposure to so called Endocrine Disrupting Chemicals

(EDCs). Recent Safe Drinking Water Act (SDWA) amendments include requirements to test drinking water supplies for these chemicals.

Traditionally, the acceptability of tertiary-treated wastewater for various reuse applications has been evaluated relative to the SDWA Maximum Contaminant Levels for potable and aquifer recharge applications and the Clean Water Act (CWA) water quality criteria for surface water recharge applications. In the future, it is likely that permit reviews for water reuse projects will include an assessment of EPOC impacts to human and ecological health. The impact of discharging trace levels of EPOCs is particularly relevant to the full-scale CERP Water Reuse project because of the proximity of the proposed reuse facilities to sensitive ecosystems (BNP and ENP) as well as a public water supply source (West Dade Wellfield). The focus of this task is to review the results of the limited EPOC monitoring, prepare a summary of relevant EPOC studies, and develop an EPOC monitoring plan to be incorporated into the Pilot Study Monitoring Plan. The USACE will hire a contractor to perform this task. The contractor will prepare a draft report and present it to the PDT. In-house activities will include statement of work (SOW) preparation, contract management and report review.

7.4.1.2 Evaluate and Compare Receiving Wetland Sites

During the pilot testing phase of this project, highly treated reclaimed water will be discharged to a small wetland plot. Ecological and water quality monitoring will be performed at the wetland site (as well as a control site) to measure the impact of reuse water on the coastal wetland systems. Suitable test and control wetland sites must be identified as part of the PPDR phase of the project.

7.4.1.2.1 Develop Site Pre-Screening Criteria

An initial set of site screening criteria will be developed. It is expected that the primary criteria for initial site identification will be proximity to the South Dade WWTP and land availability/public ownership of parcel(s).

7.4.1.2.2 Site Pre-Screening

Once the site selection criteria have been established, preliminary site identification and screening can be performed. This task requires that USACE and/or SFWMD real estate personnel identify publicly owned land that can be used as a receiving wetland for the reuse water. For each parcel, the owner of record (local, state agency) will be contacted and questioned as to the future development plans for that parcel. Once the real estate team

has identified potential sites, PDT engineers and biologist will do a cursory field survey and narrow down the likely candidates.

7.4.1.2.3 Draft Site Selection Criteria

In order to compare the test and control wetland plots, it is necessary to establish detailed site selection criteria. Selection of the sites will depend upon a number of factors. A partial list of potential siting factors is below:

1. Representativeness of test and control site(s) to the wetlands targeted for rehydration (as identified by BBCW project). Sub factors include hydrology, vegetative cover, surficial geology, salinity regime, function level/quality, etc.
2. Presence/absence of protected species.
3. Preferred method of wetland discharge (outlet structure or groundwater infiltration)
4. Hydrology and soils (e.g. proximity to canal, soil type and thickness).
5. Consistency with the adopted components of the Miami-Dade County Comprehensive Development Master Plan (CDMP) and compatibility with the CDMP's Land Use Plan map.
6. Local and state regulations.
7. Proximity to Biscayne National Park and minimum impact.
8. Ability to isolate the test cell in case of operational problems, minimum impact or risks to high quality tidal wetlands.
9. Flood criteria and risk of flooding.

A sub team of the PDT will develop the specifics of the site selection criteria. The Site Selection Sub Team will be composed of USACE and SFWMD hydrologists and wetland biologists, other agency specialists, as well as contracted experts. The hired experts will have expertise in wetland ecology, wetland treatment, and/or coastal ecosystems. To identify wetland types targeted for rehydration, the Site Selection Sub Team will rely heavily on the Wetland Habitat and Terrestrial Vegetation Mapping reports generated by the BBCW PDT. It should also be noted that the waters and wetland systems that may be affected include BNP.

7.4.1.2.4 Site Screening Data Collection

Site reconnaissance will include data collection and a site visit for a preliminary description of existing environmental resources. Information will be used to evaluate available properties for suitability as the test or control site, as well as to identify any unique features that may limit use of a site as a test pilot site. This assessment is also needed to ensure that the test

and control wetlands are similar to the BBCW targeted wetlands. Additional site characterization information necessary to fully evaluate the selected test and control cell will be completed in a later phase to assess project benefits and impacts, and regulatory requirements.

This task includes performing a wetland assessment, which would include characterization of the vegetative cover, wildlife habitat, and threatened and endangered species, as a functional and qualitative ranking of the wetland. The task also includes determining the wetland jurisdiction of the property for Federal and State regulatory requirements, an HTRW review, and hydraulics / hydrology / geotechnical assessment. An interagency team of biologists or ecologist from the FDEP, USACE, SFWMD, DERM, Florida Fish and Wildlife Conservation Commission (FWC), US Environmental Protection Agency (USEPA), NPS, NMFS and USFWS will prepare the inventory and assessment of the ecological communities. Jurisdictional determinations will be conducted or approved by the regulatory personnel responsible at each agency.

7.4.1.2.5 Site Evaluation and Recommendation

Recommendation of the parcel(s) to be used for test and control wetlands will be made based upon an analysis of the biological, geotechnical, and logistical aspects of each candidate parcel. All available information for each parcel will be presented at a PDT meeting. The team members will evaluate the information and rank the parcels based on the site selection criteria.

7.4.1.3 Develop Operating Regime for Test and Control Wetlands

Once the locations for the test and control wetlands have been identified, the hydrologic operating conditions necessary to achieve the desired plant and animal communities will have to be determined. Biologist and ecologists from the Water Quality Sub Team will develop a conceptual hydroperiod for the end-state wetland conditions. This information will be given to the hydraulic/hydrologic modelers, who will determine the site-specific hydrology (Task 37-2580). The Water Quality Sub Team will consult with the hydraulic/hydrologic modelers to ensure that the project design meets the desired wetland hydroperiod. The hydraulic modelers and the Water Quality Sub Team will prepare a technical memorandum that identifies the seasonal hydraulic loading rate, the seasonal depth of inundation, the seasonal daily flow through the wetland, and the expected wetland response.

7.4.1.4 Determine Effluent Standards for Receiving Water

Based upon the FDEP's receiving water rules (62-302 and 62-610 F.A.C.), the receiving water body(s) will be established, and the required effluent discharge quality for the pilot treatment plant effluent will be defined. Several water bodies have been identified as possible receiving waters for the South Plant reuse effluent. They are: Biscayne Bay, L-31E canal, Biscayne Bay jurisdictional wetlands, and freshwater wetlands west of L-31E. Another possibility is that the test wetland would be designed so that all discharge is via groundwater infiltration. This task will require a pre-application meeting with FDEP, an evaluation of the receiving water quality, and perhaps fate/transport simulation modeling to support a NPDES application.

7.4.1.4.1 Multi-Agency Pre-Application Meeting

In order to determine with reasonable certainty that all project components are consistent with applicable law and regulations (including NPDES), and can be operated as proposed, a pre-application conference will be held with all state and federal agencies that have applicable regulatory jurisdiction. Federal and State agencies with applicable regulatory jurisdiction shall participate in the pre-application conference, and shall provide the information necessary for the aforementioned determination. The main topics to be covered at the meeting are:

- 1) Determination of the receiving water(s) from the regulatory perspective;
- 2) Development of WQBELs and/or Technology Based Water Quality Effluent Limits;
- 3) Identification of relevant gaps in water, sediment, and fish criteria that are applicable to this project; and
- 4) Information requirements for NPDES, WQC, Wastewater Reuse, and Section 373.1501 Florida Statutes (F.S.) permits.

A short technical memorandum will be produced that includes a summary of the discussions relevant to the strategy for obtaining the necessary permits. This memorandum will also include a list of water quality parameters relevant to the NPDES permit.

7.4.1.4.2 Evaluate Receiving Water Quality

The area most likely to receive supplementary water derived from advanced wastewater treatment in South Miami-Dade is the Biscayne National Park and Biscayne Bay which are classified as an OFW. In accordance with

Florida Law, this classification prohibits the degradation of the ambient surface water quality from permitted sources that discharge to an OFW. The purpose of this task is to establish the background water quality conditions in the potential receiving waters for pollutants that are directly relevant to the pilot plant's NPDES permit. This assessment will be done using available water quality data. The background water quality conditions, rules and requirements for reclaimed water effluent standards, numerical criteria, narrative standards and prohibitions, limitations on conveyance capacity, and dynamic loadings will be used as a basis for setting WQBELs for the pilot plant effluent. The effluent target should never degrade the existing or "background" water quality in a receiving site.

Given that pollutant concentrations may vary considerably over the spatial scale of Biscayne Bay, the focus will be to develop representative background concentrations for those portions of the bay and watershed that are within the probable rehydration zone of pilot plant effluent. The 1995 Biscayne Bay Surface Water Improvement and Management plan outlined preliminary background concentrations for ammonia, nitrate, nitrite, coliform bacteria, and transparency. As part of this task, these concentrations may be adjusted based upon a sub-basin review of the latest water quality data. For the likely receiving waters (Biscayne Bay, L-31E Canal, etc), representative background water quality concentrations may be developed for trace metals as well as several organic compounds typically found in reclaimed water. For parameters having inadequate data, DERM, BNP, NMFS, USFWS, FDEP, and SFWMD scientists will be asked to develop a consensus background concentration.

The AET Reuse issue paper, includes targets for some nutrient parameters (20-50 ppb ammonia-N; 10 ppb nitrate/nitrite; 5 ppb total P), that were established by an interagency team. In addition to static targets for concentration of contaminants, targets for dynamic loading should also be considered, since even if reclaimed water can be treated to the degree contaminant concentration is similar to Biscayne Bay, there may an increased load of nutrients or toxicants.

7.4.1.4.3 Fate / Transport Modeling to Predict Water Quality changes in the receiving wetland.

Treated effluent will be discharged from the test wetland via surface and/or groundwater flow. While the effluent discharge will meet applicable water quality standards several pollutant, such as Biological Oxygen Demand (BOD), nitrate, nitrite, ammonia, and phosphorus, may experience changes in concentrations as the reclaimed water flows through the receiving wetland. This task involves the fate/transport modeling of conservative and non-

conservative substances in order to predict the effluent water quality from the receiving wetland. Simple mass balance equations will be used to estimate the water quality for conservative substances while more elaborate first order decay equations will be used to estimate water quality for non-conservative substances. The hydraulic flows used in this task will be taken from the hydrologic/hydrologic modeling efforts. This task is expected to be performed by a contractor through the USACE.

7.4.1.5 Develop Performance Measures for Rehydrated Wetlands

Performance measures for the rehydrated wetlands will be required to determine the operating regime of the test wetland as well as develop the ecological and water quality monitoring plan for the test and control wetlands. Performance measures are necessary to establish the expected hydrologic conditions, effluent water quality, wetland function, wetland change, salinity level, etc. The performance measures will consider full-scale implementation but will be developed specifically for the pilot study. A sub team of the PDT will develop the performance measures. The product of this task is a technical memorandum that includes a list of performance measures.

7.4.1.6 Draft Permit Applications (NPDES, Wetlands Reuse, WQC)

Currently, the application and timing of permits and other authorizations that may be required from the State of Florida for permits for CERP are being negotiated and discussed between the FDEP, the SFWMD, and the USACE. When these issues are resolved, the permitting and other authorization requirements in this PMP will be modified to conform to those conclusions.

The pilot treatment plant will require a new or modified NPDES permit. A domestic wastewater application package for a single domestic wastewater permit will be drafted and submitted to FDEP. This package will include design details to at least 30% of final plans. In accordance with Rule 62-611 F.A.C., discharge of treated wastewater to an existing wetland requires a permit. Rule 62-611.420 sets forth *Discharge Limits to Treatment and Receiving Waters*. Rule 62-611.450 sets forth *Discharge Limits from Treatment and Receiving Waters*. Rule 62-611.500 provides detailed *Standards* (too numerous to list here) *within Treatment and Receiving Waters*.

It is important to note that Section 403.201 F.S. provides a mechanism whereby the FDEP may, at its discretion, choose to provide a variance from any criteria contained within Chapter 62-611 F.A.C. Issuance of a variance is

generally contingent on the applicant's ability to demonstrate that strict adherence to the rule would result in substantial hardship to the applicant, as well as the applicant's ability to provide assurances that water quality will not be degraded as a result of the proposed facility or operational changes.

In addition to the aforementioned variance mechanism, Rule 62-600.120(3) F.A.C. provides an exemption for reuse discharge to "experimental wetlands". When seeking an experimental wetlands exemption, a petition that follows the criteria in Rule 62-600.120(3), F.A.C., must be submitted with the permit application. It is important to note that Rule 62-600.120(3), F.A.C., was adopted prior to promulgation of Chapter 62-611, F.A.C. Therefore, facilities are encouraged to obtain a permit under Chapter 62-611, F.A.C., rather than using the experimental wetlands exemption. However, per Rule 62-611.600(2), F.A.C., if the facility is permitted as an experimental wetland pursuant to Rule 62-600.120, F.A.C., the receiving wetland is not regulated under Chapter 62-611, F.A.C.

WQC (Section 1341, previously Section 401, of the CWA) is sought from the State, when a federally sponsored project impacts waters of the state. Since the South Dade Wastewater Reuse Technology Pilot Project will involve flooding a wetland and possibly discharging to surface water bodies, this project will require a WQC. In Florida, the FDEP issues WQC to the USACE by processing a Wetland Resource Permit or, for CERP projects, a CERP Regulatory Act (CERPRA) permit. It is assumed that the WQC application package will be composed of the NPDES and Wetland Reuse applications as well as other materials generated primarily for the PPDR. Since the design of the pilot treatment facilities may not be complete at this stage of the PPDR process, FDEP may not have sufficient information to grant NPDES or Reuse to Wetlands permits. In this situation, An iterative process will be developed in order to meet applicable water quality standards and that the necessary design requirements to meet such requirements will be developed in consultation with FDEP.

7.4.1.6.1 Collect Water Quality Data at Selected Test Wetland to Support NPDES and Other Permit Applications

Preliminary discussions with the FDEP indicate that it is likely that additional water quality (WQ) data will have to be collected at the selected test site in order to provide a NPDES. This baseline sampling effort is anticipated to last one year and includes monthly sampling at two sites for nutrients, pesticides, and metals in the water column. At a minimum, two sediment samples will be collected from each site and analyzed for nutrients and metals. A more extensive baseline data collection program will be developed as part of the Project Monitoring tasks (Section 7.7 of the PMP).

7.4.1.7 Water Quality Monitoring (EPOC Testing)

Preliminary monitoring of EPOCs will be performed to screen for potential water quality problems associated with EPOCs in reclaimed water in South Miami-Dade wastewater existing facility and at the West Palm Beach Advanced Wastewater Treatment Facility. The USGS (Env. Science & Technology, Vol 36, No. 6, 2002, "Pharmaceuticals, Hormones, and Other Organic Wastewater Contaminants in U.S. Streams, 1999-2000, A National Reconnaissance"), samples will be collected from the South Dade WWTP, and the West Palm Beach Regional WWTP, to test for 95 EPOCs. At the South Miami-Dade WWTP, samples will be collected downstream of the primary clarifier, the secondary clarifier, and the sand filter. While this WWTP does not routinely chlorinate its effluent before injection, it will be recommended to coordinate with MDWSA to activate their chlorination facilities, on site and in operating order, for a short period of time to enable sampling of the chlorinated effluent. This Facility is currently evaluating the use of advanced disinfection treatment technologies as noted in a consent agreement between MDWSA and FDEP to continue using the injection wells for treatment disposal. At the West Palm Beach Regional WWTP, samples will be collected downstream of the primary clarifier, secondary clarifier, disinfection process, and in the wetland. Within the Biscayne Bay Watershed, samples will be collected at up to four canals, four wetland tracts, and three in Biscayne Bay. Most of the samples will be taken from the surficial water; however, some limited groundwater and sediment sampling may be performed. As outlined in the referenced USGS paper, each site will only be sampled once during this sampling program. This sampling program is not intended to provide reliable quantification of EPOC concentrations; however, it will provide valuable information on the presence of EPOCs within the environment as well as in reclaimed water. The results of this effort will be used to develop both the pilot treatment train strategy as well as the operational monitoring plan.

A contractor will perform sample collection and analysis. The USACE will perform contract preparation and data validation.

7.4.1.8 Update EPOC Research

One Staff engineer, scientist or chemist from the USACE and the SFWMD will be allocated approximately 10 days per year each to maintain and update their understanding of the EPOC and EDC research and to work closely with scientists from other agencies, particularly USGS, EPA, NPS and FDEP. Funding for attendance at one related conference per year and for the organization of one (1) yearly meeting with scientific panel and/or team of experts in this field is also provided.

7.4.1.9 Summarize WQ Impacts for EA and Permitting

Water quality staff, including experts from NPS, EPA, USACE, DERM, SFWMD, FDEP, USGS and other governmental agencies, will perform the evaluation of water supply/ water quality effects, assist in the identification of potential recreational impacts and the assessment of impacts to fishing, and provide assistance to the environmental staff in the preparation of the EA. A summary of the water quality conditions for both pre- and post-project conditions will be prepared once the water quality load assessment and final water quality data assessment are complete. The summary will include the identification of the necessary permits, water quality standards, and discharge limits that are applicable to project construction. This summary will be an integral part of the NEPA document and subsequent applications for water quality permits such as WQC as well as NPDES.

7.4.2 Environmental / NEPA

7.4.2.1 Federal, State, and Local Requirements

7.4.2.1.1 NEPA Compliance

The National Environmental Policy Act of 1969, as amended (NEPA) (42 U.S.C. 4321 et seq.) and the Council on Environmental Quality NEPA regulations (40 Code of Federal Regulations (CFR) Parts 1500-1508) contain provisions that require Federal agencies to prepare documents and reports that document agencies' compliance with the letter and spirit of the Act. The C&SF Project Comprehensive Review Study (USACE, 1999) represented a Programmatic Environmental Impact Statement (EIS), which addressed at a general level the alternatives and environmental effects of the overall project. As a pilot project, it is assumed significant resources will not be impacted; therefore, the project schedule and cost estimates are based on the production of an EA. If project scoping determines otherwise, the PMP will be changed, and an EIS will be prepared to document possible significant impacts.

The NEPA document will be combined with the PPDR as a single deliverable, and may be used to support permit applications to construct and operate the pilot test. As part of the process that is required by NEPA, the reports will be subjected to public review, and will incorporate comments from state, Federal and local agencies, Native American tribes, and non-governmental agencies. In conjunction with NEPA, the scope of work consists of activities to ensure compliance with other Federal environmental statutes and coordination with Florida agencies and programs. The other federal statutes that apply to this project are:

- Clean Water Act (CWA), especially Section 404 (b)(1),
- Clean Air Act (CAA),
- Fish and Wildlife Coordination Act (FWCA) of 1958, as amended,
- National Historic Preservation Act (NHPA), as amended,
- Archeological and Historic Preservation Act (AHPA), as amended,
- Endangered Species Act (ESA) of 1973, as amended,
- Coastal Zone Management Act (CZMA) of 1972,
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA),
- Resource Conservation and Recovery Act (RCRA),
- Migratory Bird Treaty Act (MBTA),
- Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA),
- Estuary Protection Act (16 U.S.C. 1221-1226),
- Farmlands Protection Policy Act,
- USACE Planning Regulation ER-1105-2-100, and
- NEPA compliance Regulation ER-200-2-2.

Some of these laws require specific analyses, which will be provided as Annexes or Attachments to the report; for example, annexes include Draft and Final FWCA reports (refer also to Par. 7.4.1 and 7.4.2.3); Determination of Consistency with the CZMA under Florida Statutes; Any endangered species Biological Assessments and Biological Opinions, if necessary; and Essential Fish Habitat Assessments as required under the MSFCMA.

Relevant state statutes and regulations include compliance with the State Comprehensive Plan (Section 187.201, F.S.), Air and Water Pollution Control Act (Chapter 403, F.S.), the Water Resources Act (Chapter 373, F.S.), the State Water Resource Implementation Rule (Chapter 62-40, F.A.C.), Consumptive Use impacts (40E-2, F.A.C.), and Reuse of Reclaimed Water and Land Application (Chapter 62-610, Parts II, III, and IV, F.A.C.). Consideration of this project in light of the above statutes and regulations will ensure a thorough assessment of alternatives and allow responsible decisions for choosing the alternative that will provide the most environmental benefit.

Typically, the “NEPA Compliance” process (i.e., compliance with above laws, etc) consists of a series of actions, all of which are concurrent with PPDR formulation actions.

The following is a “bullet” list of NEPA tasks:

- Kick-off scoping letter for the EA. Scoping letter is sent to all potentially interested parties.

- Compile, review and incorporate scoping comments into the planning process.
- Develop SOW for Environmental contract (s). Contract related in-house activities include preparing Requests For Proposals, estimates, and/or negotiating and awarding one or more contracts for the following:
 - USFWS will provide initial fish and wildlife information, lists, and evaluation.
 - Field verification of existing conditions (i.e. wetlands, habitat, etc.).
 - Separate contracts are anticipated for Historic/Cultural resources surveys, and for a formal wetlands delineation/assessment task.
 - Ecotoxicological risk assessment for flooding agricultural properties.
 - Coordinate with environmental resources agencies under existing federal and state legislation.
 - Coordinate, review data collection.
 - Assess ecological impacts/benefits of project alternatives.
 - Write EA document and recommendations / Finding of No Significant Impact (FONSI).

7.4.2.1.2 Fish and Wildlife Service Coordination

The USFWS is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The agency enforces Federal wildlife laws, administers the Endangered Species Act, manages migratory bird populations, restores nationally significant fisheries, and conserves and restores wildlife habitat such as wetlands. Natural resource protection legislation relevant to the projects authorized under the CERP that affect the USFWS's trust resource responsibilities include the ESA of 1973, as amended (16 U.S.C. 1531 et seq.), the FWCA, as amended (16 U.S.C. 661 et seq.), the NEPA of 1969, as amended (42 U.S.C. 4321 et seq.), the MBTA (16 U.S.C. 703-712), the Estuary Protection Act (16 U.S.C. 1221-1226), and the CZMA of 1972 (16 U.S.C. 1451-1464). In addition, several Executive Orders have also established guidance to Federal agencies, including the USFWS, relative to fish and wildlife protection and conservation. For CERP projects authorized under the WRDA, the ESA and the FWCA represent the primary authorities under which the USFWS cooperates and coordinates with project sponsors. No funds are transferred for USFWS activities under this law, and

coordination under ESA will proceed as required under normal USFWS and USACE coordination procedures and applicable Federal Regulations.

7.4.2.1.3 Endangered Species Act

7.4.2.1.3.1 Informal Consultation Process

The USACE will consult or confer with the USFWS and the NMFS regarding federally listed and candidate species. The USFWS will advise the USACE, based on the best scientific and commercial data available, whether any listed or proposed species or designated or proposed critical habitat may be present in the action area. Informal consultation determines the likelihood of adverse effects on a listed species or critical habitat. Informal consultations include:

- 1) Clarify whether and what listed, proposed, and candidate species or designated or proposed critical habitats may occur in the action area;
- 2) Determine what effect the action may have on these species or critical habitats;
- 3) Explore ways to modify the action to reduce or remove adverse effects to the species or critical habitats;
- 4) Determine the need to enter into formal consultation for listed species or designated critical habitats, or conference for proposed species or proposed critical habitats; and
- 5) Explore the design or modification of an action to benefit the species.

If informal consultation occurs early in the planning process (i.e., prior to the development of project alternatives), it may avoid the need for formal consultation and greatly increase the potential for project success.

7.4.2.1.3.2 Biological Assessments

The USACE is required to provide the best scientific and commercial data available concerning the effects of the proposed project on listed species or designated critical habitat. This will require the preparation of a biological assessment by the USACE, which would have to be submitted at a mutually agreeable time, or no more than 180 calendar days after receipt of a species list from the Service(s). The biological assessment describes the project, evaluates its effect on listed species or critical habitat, describes measures to avoid, reduce, or eliminate adverse effects or enhance benefits, and states the USACE's determination. This includes an evaluation of direct, indirect, and cumulative effects.

7.4.2.1.3.3 Formal Consultation Process

Formal consultation will be necessary if:

- The USACE requests consultation after determining the proposed action may affect listed species or critical habitat, or
- The USFWS, through informal consultation, does not concur with the agency's finding that the proposed action is not likely to adversely affect the listed species or critical habitat.

Through the formal consultation process, the Service(s) responsibilities include:

- 1) Review of all relevant information provided by the USACE or otherwise available,
- 2) Evaluation of the current status of the listed species or critical habitat, and
- 3) Evaluation of the effects of the action and cumulative effects on the listed species or critical habitat.

The USFWS then formulates a biological opinion as to whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The USFWS determines the amount or extent of anticipated incidental take in an incidental take statement included in the biological opinion. Formal consultation is concluded within 90 days after its initiation unless extended in accordance with the provisions of 50 CFR § 402.14. Within 45 days after concluding formal consultation, the USFWS delivers its biological opinion. For more detailed information on the consultation process required by the ESA, see the Endangered Species Consultation Handbook (USFWS and NMFS 1998), which is posted on the World Wide Web:

<http://endangered.fws.gov/consultations/s7hndbk/s7hndbk.htm>.

7.4.2.1.4 Fish and Wildlife Coordination Act (FWCA)

The central objective of the FWCA is to allow for equal consideration of wildlife conservation with other features of water resource development programs. Under provisions of the FWCA, the USFWS has the authority to investigate and report on all proposals for work and/or other related activities in or affecting the waters of the United States that are sanctioned, permitted, assisted, or conducted by the Federal government. Section 2(b) of the FWCA allows the USFWS to make recommendations to the USACE that establish

measures to prevent loss of or damage to wildlife resources, as well as to provide concurrently for the development and improvement of such resources.

The USACE and the USFWS have established coordination procedures and policy for funding of USFWS involvement. The USACE provides transfer funds to support the activities of the USFWS as set forth in a SOW. The SOW includes provisions for the USFWS's provision of timely letters or longer reports containing USFWS recommendations. The SOW also defines the USACE's responsibilities. The SOW and funds transfer for CERP projects is renewed annually, according to needs anticipated in the PMP and as subsequently amended.

As determined in the SOW, the USFWS will provide Planning Aid Letters (PALs) or Reports (PAR) during the early planning phases of the PPDR, as noted above. PALs will be provided in a timely manner and according to the PPDR schedule. Under CERP it is understood that USFWS representatives to the PDT are team members, and as such will be aware of ongoing PDT needs for USFWS input. USFWS biologists will participate regularly in PDT activities and provide PALs as appropriate to support (1) issue identification; (2) existing conditions inventories; (3) future-without project projections; (4) alternative development and comparison; and (5) development of a project-level monitoring plan. The purpose of PALs and PARs is to identify problems and opportunities related to the conservation and enhancement of fish and wildlife resources. The USFWS may review conceptual alternatives, provide recommendations for development of new conceptual alternatives, and recommend the course for future coordination. Key objectives for these reporting documents are to ensure that a process for promoting conservation and restoration of "unique or scarce" resources and/or habitats is introduced early in the planning process and carried through detailed design, construction, and post-construction monitoring.

The purpose of the Section 2(b) Report (also called the CAR) is to provide the views and recommendations of the Secretary of the Interior in his/her report to Congress prior to Congressional authorization and funding. When the PDT has identified and tentatively selected a plan, the USFWS will provide a Draft CAR. The CAR is provided as a Draft report, prior to the deadline for compiling the PPDR and EA, so that it can be considered in final recommendation of alternatives, discussed at the scheduled IPR, and incorporated into the consolidated PPDR and EA that is printed and circulated for agency and public review. The report should document the results and findings of the Service's studies, planning, and coordination. It should recommend those actions considered necessary by the USFWS to accomplish the fish and wildlife conservation goal of the FWCA. The CAR addresses those alternatives evaluated in the PPDR, but focuses on the

selected plan. The draft CAR and its findings and recommendations are then available for public release during the public comment period. To the extent that the selected plan is modified as a result of the public review process, the draft Section 2(b) Report is revised by the USFWS and finalized early enough to be made an integral part of the EA and PPDR.

The USFWS will also make recommendations during the planning process regarding mitigation of impairments to fish and wildlife habitats. Avoidance and minimization of any adverse effects is the initial focus of the Service's early planning assistance. The Programmatic EIS for the CERP (USACE 1999) stated that the construction features would be designed to first avoid and then minimize impacts to wetlands or other aquatic sites and natural upland habitats. The USACE concluded that separable mitigation features were not included in the CERP, but a commitment was made to provide separable compensatory mitigation under two conditions:

- 1) Unavoidable impacts on "unique or scarce" habitats, or
- 2) Impacts on existing wetland compensatory mitigation sites that were established by authorized regulatory permits.

7.4.2.1.5 Clean Water Act (CWA)

The CWA is triggered whenever a project proposes discharge into waters of the United States. Section 1344(b) (previously Section 404 (b)(1)) requires an evaluation of such discharges. The Section "1344(b)" evaluation is a stepwise determination of the effects of a proposed action on water quality and the aquatic ecosystem. It is included as an appendix or attachment to the NEPA document. WQC (Section 1341, previously Section 401, of the CWA) is sought from the State, and in some cases a NPDES permit is also requested. WQC requires a fairly detailed description of the proposed action and is usually not obtained until fairly late in project design (after the NEPA coordination is complete). A WQC should be obtained before a project is advertised because conditions in the certificate may influence project design and timing of construction, and it must be obtained before construction can proceed. A NPDES permit is required for point sources and for non-point discharges from project land areas that require clearing of at least 5 acres.

7.4.2.1.6 Coastal Zone Management Act (CZMA)

The CZMA requires that activities in the coastal zone be consistent with approved State programs. Florida exerts coastal zone management in all coastal counties, regardless of whether a project is strictly coastal. Consequently, almost all Florida projects fall under CZMA. The Governors Clearing House Review, conducted by the Florida Department of Community

Affairs (DCA), will provide a process by which the Recommended Plan can receive preliminary approval from the State of Florida. Copies of the PPDR/NEPA document are coordinated at both Draft and Final stages with the DCA in Tallahassee. Sixteen (16) copies of the document are required. The DCA serves as the state clearinghouse for Coastal Zone comments, and sends the reports to all affected agencies and Water Management Districts. The state may determine that a project is not consistent with the State Coastal Management Plan (in Florida, codified State laws and regulations) at any stage of a project's life. Inconsistent projects will not receive water quality certification. The USACE has never built or recommended an inconsistent project. A statement of what needs to be done to gain consistency accompanies a State finding of inconsistency usually. The project will include a determination of consistency in the NEPA document as an appendix, addressing each codified law or regulation related to the Coastal Management Plan.

7.4.2.2 Environmental Site Assessment/ Field Studies

7.4.2.2.1 Wildlife Investigations

During the PPDR phase, funding will be provided for the USFWS to compile and examine all information on wildlife utilization in the project area. Existing data collected by the USFWS and the FWC, as well as data collected by other field researchers, will be included.

7.4.2.2.2 Wetland Habitat Evaluation

7.4.2.2.2.1 Phase 1

A site assessment of the proposed pilot construction and discharge site(s) will be necessary to establish habitat and wetland values. These values will be used as a comparative baseline to evaluate the potential effects of the pilot test. A detailed evaluation will be made by an interagency team using a Wetland Rapid Assessment Procedure (WRAP) or other agreed upon method to characterize flora and fauna coverage/vegetative and habitat communities, threatened and endangered species, water quality and hydrology. Tissue analysis, bioassays, experimental assessment and more detailed types of field work shall complete the WRAP for evaluating ecological effects of potential contaminants in wetlands. Scores will be compiled and reviewed by the team. A wetland jurisdiction review will be conducted by or coordinated with both state and federal regulatory agencies for determination of regulatory or permitting issues, as well as identification of any existing mitigation recorded within the proposed area. This characterization will be used as the baseline to compare the anticipated project impacts in light of test pilot design and

operation, as well as serve as a comparative description for the test and control cell sites.

7.4.2.2.2 Phase 2

In order to assess the impacts of the reclaimed water pilot project to the project area, the interagency team will review the Phase 1 wetland habitat assessment and evaluate effects of alternative water technologies, hydrologic regimes, discharge methods, project designs, water quality, or any other project variable on the test cell. New scores demonstrating the lift (benefit) or impact of the selected alternative will be compiled, reviewed, and used to consider selection of the best environmental plan as well as to meet regulatory and NEPA documenting requirements, as appropriate.

7.4.2.2.3 Cultural Resources Studies & Coordination

Cultural resource studies will include an evaluation of the impacts of the alternative plans upon historical, architectural and archaeological resources. All studies will be coordinated with the State Historic Preservation Office (SHPO) in accordance with the NHPA, as amended (PL 89-665) and the AHPA, as amended (PL93-291). Early coordination ideally is initiated at the same time as public scoping. Initially, a comprehensive archival and background review will be completed, and an historical overview will be compiled. An assessment will be made of architectural and engineering features that may be affected, and an archeological sample survey will be undertaken. Project areas will be visited to determine field conditions. The National Register (NR) eligibility of all historic properties that may be affected will be established and efforts will be made to avoid or reduce effects to NR eligible properties. For those NR historic properties that will be adversely affected, mitigation plans will be developed in consultation with the SHPO. Documentation will be submitted for review to the SHPO and the Advisory Council on Historic Preservation (ACHP), as appropriate.

An assessment of the impacts of the proposed project upon cultural resources will be prepared as part of the NEPA analysis. Costs attributable to work under this account include the effort required to prepare input for the EA, as well as participation in each of the required review conferences and resolution of comments as a result of the conferences.

The NHPA assessments and coordination should conclude by the end of the NEPA compliance process and documented in the Draft PPDR/NEPA report. A professional archeologist familiar with the requirements of the NHPA will conduct NHPA studies and coordination.

7.4.2.2.4 RCRA, CERCLA, and USACE HTRW

The purpose of this evaluation is to facilitate early identification and appropriate consideration of HTRW problems. There are two reasons for this inventory:

- 1) Sources of contamination to natural lands or state waters may affect the description of existing conditions or the siting of project features;
- 2) The USACE generally avoids siting project features on lands containing known HTRW, or, if remediation were practical and cost-effective, the USACE would want to include the cost of remediation in the project cost estimate.

Initial HTRW surveys use existing state and federal databases, supplemented by field investigations if appropriate. During the selection of the test wetland site, it is anticipated that candidate sites posing a HTRW threat will be not considered for use unless no other alternative sites exist.

Civil works project funds are not to be employed for HTRW-related activities except as provided in *ER 1165-2-132, Hazardous, Toxic and Radioactive Waste (HTRW) Guidance for Civil Works Projects*, or otherwise specifically provided in law. Plan formulation and plan selection may be substantially influenced by the presence of HTRW in the project area. They may be a significant factor in project alternative design even though cost may be greater than a plan that provides for HTRW response action.

HTRW assessment will determine the type and extent of HTRW contamination, if any, and how HTRW considerations will impact the alternative project plans. Preliminary cost estimates of required HTRW response actions will be needed for each alternative plan in order to make a reasonable choice among alternative plans.

Alternative plans may consider avoidance of HTRW as well as possible responses. At least one alternative plan should be formulated to avoid HTRW sites to the maximum extent possible, consistent with project objectives. These assessments, conducted during the PPDR stage, are shared with the local sponsor.

7.4.2.2.4.1 Investigation

The HTRW portion of the PPDR phase will include:

- 1) A determination of the nature and extent of contamination in the proposed test wetland, and

- 2) A qualitative analysis of the impacts of any contamination in the absence of response action.

This phase should include a preliminary identification of potential source areas, contaminant release mechanisms, exposure routes, potentially exposed populations, as well as a determination of the non-numerical risk or potential adverse health effects for the identified potential receptors. Investigation activities may include topographic setting, underlying geology, surface and groundwater flow, building and utility layouts, the conditions of all structures above and below ground and characterization of chemical constituents of HTRW contaminants. The level of detail should be sufficient to determine the extent of HTRW contaminants in relation to alternative plan features and adjacent lands potentially impacted by these features.

7.4.2.2.4.2 Alternative Analysis

This analysis shall identify and evaluate alternatives to respond to verify HTRW problems, which cannot be avoided by project design. Activities conducted may include additional sampling and analysis if needed, identification of alternative response measures, alternative screening, cost analysis of alternatives and adherence to environmental standards and criteria. The analysis of proposed response alternatives should include a comparative evaluation of:

- The effectiveness of the alternative or to what degree baseline risks are reduced or minimized by the response and if residuals/action comply with regulatory standards;
- Technical feasibility of the response action alternative; and
- Cost associated with each response alternative.

It is anticipated that a suitable test wetland site without HTRW problems can be identified and that additional sampling and analysis will not be necessary.

The recommended response action will be selected based on a balance of evaluation criteria, developed in full coordination with the appropriate Federal and state regulatory agencies. The evaluation will be included as a NEPA document. The plan will document criteria used in selecting the recommended response action, including degree of reduction or mitigation of potential risks to human health and the environment, compliance with regulatory requirements, long and short-term effectiveness and cost of the recommended response action.

7.4.2.2.4.3 Project Cost Estimate

Design cost estimates, response cost estimates for resolving HTRW, and other regulated contaminant problems, which are a part of project cost, will be developed to the same level of detail as other project features. The cost of HTRW remediation will not be considered as a project cost. It is anticipated that candidate test wetlands will be screened for HTRW problems and that the selected site will be free of HTRW or eco-toxicological problems.

7.4.2.3 Planning Assistance

Environmental engineers and biologists will participate fully in PDT activities, assisting as needed in the following formulation tasks:

- Identify problems and constraints; (stressors on the natural systems requiring restoration).
- Inventory and describe natural resource; including freshwater wetlands, wildlife habitat, and endangered species; physical-chemical environmental quality parameters, including air and water quality; and cultural and recreational resources.
- Assist in development of conceptual models; identify stressors, interactions, and habitat needs (target end states).
- Provide input to performance measures, evaluation criteria and ecosystem benefit measurements.
- Develop, in coordination with the PDT, a project-level monitoring plan that can be implemented during project life.
- Participate in alternative formulation and evaluation.
- Help select the recommended plan and provide a critical analysis, comparison and justification of project benefits, comparing ecologic benefits and adverse effects among plan alternatives.

For this and many CERP projects some environmental “assistance” functions have been delegated to cooperating agencies. For instance, in addition to the work listed under the FWCA section, the USFWS will be funded to participate in PDT activities, providing timely written formulation input containing the Service’s views on formulation tasks. The USFWS will provide detailed descriptions of natural resources under their agency’s stewardship for (“existing conditions” and “future without project”) report sections. The USFWS will participate in PDT activities that develop performance objectives and targets and will participate in alternative evaluation for plan performance elements related to USFWS stewardship resources. Funds for transfer to the USFWS, under the authorities of the

FWCA, to support these expanded USFWS responsibilities under CERP have been identified in the WBS.

7.5 Socio-Economic Analysis

7.5.1 Planning

For the pilot study, a major focus of socio-economic team participation is expected to be in the area of life cycle cost effectiveness. Potential opportunities in planning and design may arise during the PPDR process, and socio-economic team participation will be available for consultation regarding such issues as they arise. This will include input and review of site selection and technology selection criteria.

During planning, socio-economic study focus will be required to identify impacts and other issues associated with the Wastewater Treatment Facility and receiving wetland. Although such effects are likely to be small, they should nevertheless be documented in the PPDR. Issues to be addressed and documented would include regional economic impact, important socio-economic public outreach issues, and costs.

7.5.2 Meetings: Team Planning, Public Outreach, & Environmental Justice

Team meetings will be held throughout the Wastewater Reuse Technology Pilot Project process. It will not be necessary for socio-economics team members to attend all such events, but regular attendance at major team meetings will be required to maintain a level of familiarity with project issues. Additional travel for purposes of site visits, public outreach and environmental justice activity, and special data collection will be done on an as needed basis.

7.6 Real Estate

The Restudy had land acquisition for the project budgeted at \$2.8 million. The July 2000 Master Implementation Plan and associated cash flow estimated the land acquisition for both the South Miami-Dade and West Miami-Dade facilities at \$1.6 million: \$1 million for the South Miami-Dade and \$600 thousand for the West-Miami Dade. During preparation of the initial Project Management Plan, Wastewater Reuse Technology Pilot Project, Part 1, it was determined that no land acquisition would be required for the West-Miami Dade portion of the project, as no facilities were to be constructed. For this PMP it is assumed that lands will only be required for the South Miami-Dade portion of the project in the amount of \$1 million.

It is expected that there will be real estate requirements associated with the siting of the pilot treatment facility and the test/control cells. It is assumed that the treatment plant will be located within the South Miami-Dade WWTP and that a Memorandum of Agreement or Right-of-Entry agreement will be prepared. Every attempt will be made to locate the test/control cells on state/federal property, negating the need to purchase property.

As the Pilot Project is developed, real estate analysis will be required to determine the actual parcels required. The real estate analyses that will be performed during the PPDR phase will include a determination of the estates required for the lands to be acquired for the project, an appraisal of the costs of lands and damages, and preparation of a plan for acquisition of these lands. Other tasks include obtaining rights of entry for various field collection activities, and providing input to the PPDR. This activity includes all written memorandums, opinions, database development reports and other documents provided by Real Estate personnel as required in support of feasibility phase planning efforts. The SFWMD will be responsible for initial identification of land parcels that are already owned by the state and federal government in the vicinity of the existing treatment plant. The SFWMD will also be responsible for participating in the development of the site selection criteria, and other planning steps, obtaining rights of entry, acquiring ownership information, and determining the lands to be acquired. The USACE real estate staff will be responsible for developing the preliminary cost estimates, preparing the gross appraisal, and drafting the appendix to the PPDR. It is assumed that no physical takings analysis or relocation analysis will be required.

Land acquisition and infrastructure that may required for conveyance, distribution or treatment, should it be determined through the pilot project that reclaimed water can be beneficially used in connection with restoration of wetlands and coastal areas, will be addressed by other CERP projects and are not part of the Pilot Project Statement of Work

7.6.1 Planning

Real estate staff will be involved early in the planning process. Assistance will be offered by providing input to development of site selection criteria, identification of alternative sites, evaluation of alternative sites, comparing and ranking of various sites and other activities for which real estate input would be required in completing subject study. Real estate staff will also provide assistance to staff performing the HTRW assessment.

7.6.2 Rights-of-Entry

For work that is to be executed by contract, language will be included directing the contractor to obtain access/rights-of-entry. However, if the contractor is unsuccessful, notification to real estate will be made. A request for rights-of-entry will be submitted, which will include section, township, and range parameters. Real estate staff will gain permission from each landowner to temporarily use his/her land for a specified time and purpose. This permission is typically obtained for purposes of environmental investigations, cultural assessments, core sampling, surveys, explorations, etc. It is assumed that a contractor lead by real estate staff will obtain rights of entry for SFWMD water quality data collection effort and will provide contractor assistance for the geotechnical and ecological fieldwork efforts.

7.6.3 Ownership Information

Real Estate staff will identify land in the area of the existing South Miami-Dade WWTP that is already owned by the State or Federal Government. Provided the land meets the other engineering criteria, every effort will be taken to utilize land that does not require purchase. For potential parcels, real estate staff will determine property size, and access availability existing land use. This work will be performed early and the results will be used in the plan selection process. This will also help to identify the need to purchase land. Upon identification of alternative features (including description and location by section, township, and range parameters), the following data for areas under consideration as project features will be obtained (as appropriate) and used to evaluate alternative plans:

- Tax maps and public right-of-way maps.
- List of property owners.
- Tax rolls including value, structure, type, etc.
- Current and Future Land Use.
- Zoning information.
- Last search of records for each parcel.
- Anticipated mineral extraction and determination if such activity is permitted by law.
- Identification of all structures potentially impacted that are occupied and may be removed due to project implementation.
- Identification of all known public utilities located within the proposed project area that may require relocation.
- Identification of sponsor acquisition costs and real estate administrative costs associated with implementation of each alternative.

- Location maps (city or county) of proposed construction areas including material disposal areas.

7.6.4 Preliminary Real Estate Cost Estimate

Real estate staff will prepare land easements, rights-of-ways, relocations and disposal areas (LERRD), and preliminary cost estimates for multiple components for the preliminary assessment of project alternatives during the plan formulation stage of the study. Initially, real estate staff will identify and review recent existing appraisals available through other agencies for land identified in the alternatives analysis. The preliminary cost estimates along with the aforementioned ownership information will be compiled in the Geographic Information System (GIS) database as polygon attributes for use in the evaluation analyses.

7.6.5 Real Estate Acquisition Maps

Real Estate will prepare an initial set of maps and drawings, utilizing the GIS database developed for this task, that delineate the real estate acquisition lines based on technical design drawings developed during the feasibility phase. This activity is dependent upon receipt of the footprint of project features and tax maps followed by a coordination meeting with the engineering manager to assure all project features are identified including temporary construction areas, road access, borrow/disposal areas, etc. These maps will reflect the minimum real estate required for project purposes.

7.6.6 Gross Appraisal

This task includes activities necessary to complete a detailed, supported appraisal of the collective real estate requirements and impacts of the recommended plan as required by *ER 405-1-12*. This task will only be required if a state or federally owned parcel cannot be identified. The gross appraisal must be of sufficient detail to provide an accurate cost estimate sufficient for Congressional authorization. The USACE will prepare the gross appraisal but SFWMD staff will provide necessary documents and existing appraisals. The SFWMD will also assist during fieldwork and review of draft document. Review and approval of the Gross Appraisal Report will be accomplished concurrently with the draft PPDR. The Gross Appraisal will be submitted concurrently with the draft PPDR and is dependent upon receipt of the final recommended plan including real estate maps with project features, estates to be appraised, tax and ownership information, zoning and land use maps.

7.6.7 Real Estate Plan

The Real Estate Plan will be an appendix to the PPDR and will outline the minimum real estate requirements for the proposed project as required by *ER 405-1-12*. It will contain:

- A description of the area;
- The acreage and proposed estates, including non-standard estates, and justification for the use of non-standard estates;
- A discussion of any land owned by the Federal government, the local sponsor, or any public entity;
- A discussion of the local sponsor's ability to acquire LERRD;
- A discussion of mineral activity, if any, and the attitude of landowners;
- At least a preliminary assessment of facilities/utilities to be relocated; and
- Any other relevant real estate information appropriate for the project.

The results of a physical takings analysis and/or relocation analysis will be included as a part of the real estate plan. Should it be determined that the physical takings analysis and/or the relocation analysis are not required to support continued project planning, there will be a statement and justification explaining how such determination was made.

This activity also includes development of a detailed cost estimate for the recommended plan that will be input for the MCACES (engineering) cost estimate. This baseline cost estimate will be developed from the gross appraisal and will include other costs such as *Public Law 91-646* relocations, administrative costs, and contingencies.

7.6.8 Meetings/Conference

As needed, real estate representatives will attend PDT Meetings, Public Meetings and Conferences (SAD and/or HQ). Real estate staff will also coordinate with federal, state and local agencies (i.e., Miami-Dade DERM, MDWASD, BNP, etc) that have interests in the project area.

7.7 Monitoring Plan

Baseline and post-construction monitoring plans to evaluate the performance of the pilot treatment plant as well as the receiving test wetland will be developed as part of the PPDR and will be coordinated and review by an interagency team of experts. Baseline and post-construction monitoring plans will include monitoring of hydrologic, water quality, ecological parameters, water control, and O&M.

7.7.1 Design Ecological and Water Quality Monitoring Plan

One of the primary purposes of the South Dade Wastewater Reuse project is to determine the ecological and water quality effects of rehydrating South Dade coastal wetlands. An ecological and water quality monitoring plan is necessary in order to implement a multi-year field data collection effort for baseline and during pilot plant operations. Ecological and water quality monitoring will be necessary at control and test wetland plots. The monitoring plans will specify parameters, locations, QA/QC, frequency, data quality objectives, data assessment methodology, and estimated implementation costs. The plan will be developed by SFWMD and USACE personnel in cooperation with PDT WQ sub-team and provided to the PDT for review. Environmental staff will make recommendations and prepare cost estimates regarding the necessary monitoring network in the monitoring plans.

Monitoring of the project features and surrounding areas will demonstrate project related water quality and ecological impacts in the freshwater and estuarine systems. After the “Preliminary Selected Plan” has been identified, water quality and environmental scientists from the SFWMD and the USACE will meet with regulators from the FDEP as well as with scientists from the USEPA, DERM, USFWS, MDWSA, and BNP to develop a draft long-term water quality and ecological monitoring plans for these systems. The draft-monitoring plan will address baseline data collection, construction permit requirements, and operational data collection within the test and control wetlands. Final adjustment of these draft-monitoring plans will occur during the design phase as part of the application/negotiation for NPDES, Wetland Reuse and Water Quality Certification/permits. The design of the sampling plan will be determined by performance evaluation requirements as well as regulatory requirements. At a minimum, water quality sampling is anticipated to occur at the pilot treatment plant inflow, after each treatment unit, at the plant effluent, at the inflow to the test wetland, within the test wetland, at the test wetland outflow, and within the control wetland. Similarly sediment sampling and biological sampling are likely to be performed within the wetland sites. Sampling and analysis of EPOCs is also anticipated during the pilot testing operations. Hydrologic parameters will be included as part of the monitoring plans to comply with the requirements of the water control plan.

A panel of experts will provide written comments on the monitoring plans, and provide independent opinions regarding these plans.

7.7.2 Water Control and Operation and Maintenance Control Plans

It is anticipated that operation of the pilot treatment plant and the receiving wetland will have little to no impact on flood protection levels outside of the test wetland site. Nonetheless, Water Control Plans will be developed to describe the operating criteria for the pilot treatment plant as well as the receiving wetlands. It will consist of detailed operating instructions, to ensure project safety, and carry out the operation of the project facilities in an appropriate manner.

Operational criteria will be developed based upon the requirements of the selected treatment technology as well as the hydrologic demands of the test wetland. Flexibility will be designed into the water control plans to accommodate the adaptive assessment approach to project implementation, and to address operations during extreme events.

Development of the water control plans, including revisions, will be carried out in a public process and within the framework of appropriate laws and regulations. The water control plan may be revised during the design, construction, testing of facilities and implementation phases of the project or to account for changing conditions or new projects coming online. The approval process of these plans rests with the SAD and the SFWMD prior to project implementation.

An O&M Plan will also identify those activities involving the operation of the pilot project and the maintenance of equipment associated with pilot construction. The O&M plan will detail all current or future operational schedules, operating criteria for the project, maintenance schedule and additional provisions, as may be required to meet the functional demands of the project.

7.7.3 Treatment Plant Monitoring

The performance of the advanced water treatment system will be evaluated by monitoring the water quality in various sampling points within the treatment process and adjusting process parameters as necessary to achieve the most favorable results for a sustained period.

Operational variables, such as coagulant dosage and loading rates, will be monitored to optimize treatment efficiency. The process variables will be adjusted with the goal of minimizing coagulant dosages, pH-adjustment chemical usage, energy, polymer dosage and residual solids generation while maximizing process flow and phosphorus removal.

While minor adjustments to the process parameters may be made during the operation of the chemical treatment process, the goal will be to leave the optimized configuration unchanged and to track process performance as influent conditions fluctuate during this period. Daily, weekly or monthly data collection of water and solid parameters is a critical part of this project for on-site process control variables.

Water and solid parameters shall be monitored and sampled in a daily, weekly, bi-weekly and monthly basis for on-site process control (pH, conductivity, flows) and for off-site laboratory testing (TP, TSS, etc.). Data collected during the operation and monitoring of the chemical treatment will be summarized in bi-weekly progress reports and in a final report at the end of the project.

A Laboratory Testing Plan will be developed to include a program of laboratory sampling and approved testing methods. The laboratory-testing plan describes in a tabular format the analyte, sampling locations, sampling frequency, the types of parameters to be tested, the desired testing methodology, and the necessary detection limit(s) if applicable. This Laboratory Testing Plan also describes general procedures and protocols for quality assurance and quality control efforts.

All water quality monitoring must include the lowest possible detection limits for metals, organic chemicals, or other toxics. In addition, because such substances may be below detection limits in water, biological effects tests such as chronic toxicity, bioaccumulation, or reproductive effects should be conducted.

7.8 Contract Acquisition

Contracting and acquisition will be performed by the USACE and the SFWMD. An appropriate solicitation method and contract type will be selected based on the complexity of each contract to be awarded under this project. A separate acquisition plan/strategy will be prepared for each contract. The purpose of the acquisition plan is to ensure that the USACE and the SFWMD meet their needs in the most effective, economical, and timely manner. A team consisting of those who will be responsible for significant aspects of the acquisition (i.e., contracting, fiscal, legal, and technical personnel) will be formed to develop the acquisition plan. The Competition in Contracting Act, as implemented in the Federal Acquisition Regulations Part 7, requires agencies to perform acquisition planning and conduct market surveys in order to promote and provide for full and open competition.

At this time the following contract procurements are anticipated for the PPDR phase of work:

- Meeting Assistance (USACE).
- Outreach Assistance (USACE).
- Baseline Information Collection (SFWMD) complete.
- Expert Assistance for Transferability (SFWMD) complete.
- EPOC Literature Review (USACE).
- Expert Assistance for Site Evaluation (SFWMD).
- EPOC Sampling and Analysis (USACE).
- Baseline WQ Sampling in Test Wetland (SFWMD).
- WQ Modeling (USACE).
- Technology Research (USACE).
- Geotechnical Investigation (data collection for baseline and hydrogeological testing) (USACE).
- Expert assistance for monitoring plan (SFWMD).

7.9 Public Outreach

Public outreach is a process by which interested and affected individuals, organizations, agencies and governmental entities are informed of a project and its goals, and have the opportunity to participate in the decision-making process. Public outreach supports the exchange of ideas and information among individuals and groups, which is critical to resolving the challenges involved in implementing CERP. Outreach also creates and builds partnerships, involves the community, helps form mutual understanding, engenders trust, reduces conflict, and ultimately leads to a more complete project. Public outreach is composed of two primary types of activities, information and involvement. Outreach work will be conducted with the input and involvement of both the USACE and SFWMD Outreach PDT members as well as SFWMD service center staff. In addition to relying upon standard methods of communication and involvement, the outreach activities for the Wastewater Reuse Technology Pilot Project will include activities aimed at informing and engaging minorities and other traditionally under-represented communities, socially and economically disadvantaged persons, including those with a limited ability to communicate in English.

As part of the public outreach, the following activities are expected: three formal public meetings; three public workshops; five formal stakeholder meetings; four informal stakeholder meetings; community workshops; and preparation of informational documents. A detailed outreach plan for this project is contained in Appendix I.

7.10 Restoration Coordination and Verification Integration

The RECOVER Team is designed to examine projects to ensure that a system-wide perspective is maintained. The RECOVER Team is structured to examine projects in a systematic manner to ensure the success of the CERP. RECOVER ensures that a system-wide perspective is maintained as each project is planned and implemented. Overall, RECOVER has two broad objectives in working with the project teams: 1) to assist the project teams in exploring all opportunities to improve the system-wide performance of the CERP, and 2) to assist the project teams with the levels of scientific and technical support needed to insure that projects are efficiently compatible with all system-wide planning, evaluation and assessment tasks that are a part of CERP. For pilot projects, RECOVER has little involvement.

During the PMP development and PPDR phases, RECOVER staff will be consulted as needed to provide technical expertise on the CERP history and vision as to how the project was formulated and how it fits into the larger picture of the Comprehensive Plan

It is expected that RECOVER will have some coordination with the PDT. At a minimum, it is expected that RECOVER will review the draft PPTDR and concur with how the pilot project findings are predicted to influence the full-scale implementation. RECOVER will need to identify any action that may be necessary to amend the Comprehensive Plan.

7.11 Environmental Justice and Economic Equity

Executive Order 12898, *Federal Actions To Address Environmental Justice in Minority Populations and Low Income Populations*, requires the Federal government to achieve environmental justice by identifying and addressing disproportionately high and adverse effects of its activities on minority and low-income, including Indian Tribe populations. Public participation conducted through the Public Outreach Plan during NEPA scoping and screening shall include these populations so that their concerns are considered early. The NEPA process is completed during the PPDR.

By this reference, *The Environmental Justice in Everglades Restoration Planning* becomes part of this PMP. The environmental justice plan provides a subject overview and a work breakdown structure for the environmental justice activities to be performed as part of this PMP. The PDT will utilize the step-by-step process described in the referenced plan. The staff of the Environmental and Economic Equity Program will periodically revise the standard language in *The Environmental Justice in Everglades Restoration Planning*. That plan will follow the evolving body of knowledge recognized in

nation wide literature and will be adjusted periodically as appropriate, to ensure that accepted environmental justice practices are followed. Each CERP project shall address environmental justice in the standardized fashion provided by that plan.

7.12 Quality Control

Quality control is the process employed to ensure that the performance of a task meets the agreed-upon requirements of the customer and appropriate laws, policies and technical criteria, on schedule and within budget. Throughout the life of each project, quality control will be maintained through organizational oversight and by employing periodic ITR and science peer reviews. Appropriate points for ITR and Science Peer Review have been estimated and included in the work breakdown structure of this PMP. An overall Quality Control Plan is provided in Appendix H. ITR is for compliance with USACE Technical Guidance as opposed to Science Peer Review, which is strictly for validation of model refinement, new models and their use in alternatives evaluation. The Appendix describes procedures that will be employed to ensure compliance with all technical and policy requirements.

8.0 UNIQUE FACTORS

All identified unique factors have already been identified in the previous sections.

APPENDIX A: LIST OF PROJECT DELIVERY TEAM MEMBERS

TABLE A-1 : LIST OF PROJECT DELIVERY TEAM MEMBERS

PARTICIPANTS	OFFICE	E-MAIL	PHONE
US ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT			
Arnold, Thomas	PD-D	thomas.g.arnold@saj02.usace.army.mil	904-232-3556
Bealyer, Hansler	RE-A	hansler.a.bealyer@usace.army.mil	904-232-1178
Besrutschko, Peter	PD-E	peter.h.besrutschko@saj02.usace.army.mil	904-232-2298
Brown, Edwin	EN-G	edwin.brown@saj02.usace.army.mil	904-232-3647
Dingle, Claurice	CT-E	claurice.m.dingle@saj02.usace.army.mil	904-232-3736
Dudek, Paul	EN-D	paul.m.dudek@saj02.usace.army.mil	904-232-2214
Falmlen, Martin	EN-HH	martin.r.falmlen@saj02.usace.army.mil	904-232-2205
Files, Jessica	EN-H	jessica.m.files@saj02.usace.army.mil	904-232-1116
Gamliel, Amir	EN-H	amir.gamliel@saj02.usace.army.mil	561-682-2252
Gerland, Diana	CO-C	diana.r.gerland@saj02.usace.army.mil	904-232-1130
Hardee, Harold	EN-G	harold.k.hardee@saj02.usace.army.mil	904-232-1615
Ike, Harry	CO-R	harry.a.ike@saj02.usace.army.mil	904-232-2756
Jenkins, Stephanie	EN-HW	stephanie.l.jenkins@saj02.usace.army.mil	904-232-1612
Keiser, John	DR-S	john.e.keiser@saj02.usace.army.mil	904-232-1758
Kruger, Paul	RD-S	paul.e.kruger@saj02.usace.army.mil	305-526-7185
Mckoy, Peter	DR-W	peter.b.mckoy@saj02.usace.army.mil	561-683-1577
Neimes, William	EN-G	william.c.neimes@saj02.usace.army.mil	904-232-3484
Pax, John	OC	john.a.pax@saj02.usace.army.mil	904-232-1168
Resurreccion, Salvador	EH-G	salvador.resurreccion@saj02.usace.army.mil	904-899-5207
Shafer, Mark	PD-ES	mark.d.shafer@usace.army.mil	904-232-3594
Sutterfield, Steve	PD-R	stephen.t.sutterfield@saj02.usace.army.mil	904-232-1104
Switanek, Milton	EN-G	milton.p.switanek@saj02.usace.army.mil	904-232-1746
Tarr, Bradley	PD-E	bradley.a.tarr@saj02.usace.army.mil	904-232-3582
Taylor, Larry	CO-OP	larry.e.taylor@saj02.usace.army.mil	904-232-1911

SOUTH FLORIDA WATER MANAGEMENT DISTRICT			
Alleman, Richard	SFWMD	ralleman@sfwmd.gov	561-682-6716
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Caffie-Simpson, Wanda	SFWMD	wsimpso@sfwmd.gov	561-682-6445
Cai, Jianchang	SFWMD	jcai@sfwmd.gov	561-602-6690
Chimney, Michael	SFWMD	mchimney@sfwmd.gov	561-682-6523
Elsner, Mark	SFWMD	melsner@sfwmd.gov	561-682-6196
Fink, Larry	SFWMD	lfink@sfwmd.gov	561-602-6749
Fuentes, Jose	SFWMD	jfuentes@sfwmd.gov	305-377-7278
Jaramillo, Jorge	SFWMD	jjaramil@sfwmd.gov	561-628-6981
Jean-Baptiste, Joseph	SFWMD	jbaptis@sfwmd.gov	305-377-7274
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Khanal, Nagendra	SFWMD	nkhanal@sfwmd.gov	561-682-6658
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Lopez, Jose	SFWMD / PM	jlopez@sfwmd.gov	561-682-6584
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Marban, Jorge	SFWMD	jmarban@sfwmd.gov	561-682-6501
Martin, Patrick	SFWMD	pmartin@sfwmd.gov	561-753-4761
Novoa, Raul	SFWMD	rnovoa@sfwmd.gov	561-682-2727
Pietrucha, Marie	SFWMD	mpietruc@sfwmd.gov	561-682-6309
Radzikhosky, Milagros	SFWMD	mradzik@sfwmd.gov	561-682-6082
Scott, Charles	SFWMD	scott@sfwmd.gov	561-682-7208
Wilsnack, Mark	SFWMD	mwilsna@sfwmd.gov	561-682-6713

GOVERNMENT AGENCIES			
Apt, Daniel	FDEP	Daniel.Apt@dep.state.fl.us	305-795-3486
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Bellmund, Sarah	BNP	sarah_bellmund@nps.gov	305-230-1144
Browder, Joan	NOAA	Joan.browder@noaa.gov	305-361-4270
Calas, Jose	FDEP	jose.calas@dep.state.fl.us	561-681-6704
Casey, Jose	Miami-Dade	lel@miamidade.gov	305-594-1670
Castro, Joffre	NPS	Joffre_castro@nps.gov	305-224-4247
Chorlog, John Jr.	MDWSA	JWCHO01@miamidade.gov	786-552-8102
Clark, Rick	NPS	Rick_Clark@nps.gov	305-230-1144
Coro, Ernesto	Miami-Dade	ecoro@miamidade.gov	786-552-8228
Cravens, Michael	City WPB	mcravens@wpb.org	561-644-7512
Curry, Richard	NPS	Richard_Curry@nps.gov	305-230-7275
Diaz, Raymond	Miami-Dade	rdiaz@miamidade.gov	305-275-3659
Dozier, Jane	Miami-Dade	dozie@miamidade.gov	305-372-6863
Dwyer, Cindy	Miami-Dade	cdwyer@miamidade.gov	305-375-2835
Fallon, Howard	MDWASD	hjfallon@miamidade.gov	786-552-8225
Feken, Stacey	FDEP	Stacey.feken@dep.state.fl.us	850-245-8421
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Fusiek, Frank	City of WPB	ffusiek@wpb.org	561-837-4052

GOVERNMENT AGENCIES (continued)			
Gastesi, Roman	Miami-Dade	gastesi@miamidade.gov	305-375-1249
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Grossenbacher, Craig	DERM	grossc@miamidade.gov	305-372-6522
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Hansen, Inger	FDEP	Inger.Hansen@dep.state.fl.us	561-681-6709
Horne, Linda	FDEP	linda.Horne@dep.state.fl.us	561-837-4052
Hunter, Stephen	City of WPB	Shunter@wpb.org	561-835-7484
Iwanczuk, Rodion	Miami-Dade	riwancz@miamidade.gov	305-375-2835
Jurado, Jennifer	Broward Co.	jjurado@broward.org	954-519-1464
Knecht, Greg	FDEP	Greg.Knecht@dep.state.fl.us	850-245-8428
Kottke, Harvey	DERM	KottkH@miamidade.gov	305-372-6524
Kronheim, Steve	MDWASD	SKRON@miamidade.gov	305-257-2124
Lamkin, John	NOAA	John.Lamkin@noaa.gov	305-361-4226
Lee, David	Broward County	dlee@broward.org	954-519-1270
Lietz, Clint	USGS	alietz@usgs.gov	305-717-5800
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Maxwell, Tom	Miami-Dade	tmaxw@miamidade.gov	305-948-2837
Meyer, Miles	USFWS	Miles.A.Meyer@saj02.usace.army.mil	772-562-3909
Nehler, Dan	USFWS	dan_nehler@fws.gov	561-562-3909
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Ortner, Peter	NOAA	Peter.ortner@noaa.gov	305-361-4300
Palmer, Kevin	USFWS	kevin_palmer@fws.gov	561-562-3909
Poole, Mary Ann	USFWS	Maryann_poole@fws.gov	561-562-3909
Powell, Clive	MSWASD	cpowell@miamidade.gov	305-257-2483
Powell, Tim	FDEP	tim.powell@dep.state.fl.us	561-681-6684
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Rice, Terry	Miccosukee	terry.l.rice@worldnet.att.net	786-897-1021
Rivera, Ingrid	NPS	Ingrid_rivera@nps.gov	305-224-4209
Smith, Joseph	Miami-Dade	joesmit@miamidade.gov	305-258-8533
Speas, Shanin	FDEP	Shanin.speas@dep.state.fl.us	850-245-8617
Telis, Pamela	USGS	Pamela.A.Telis@saj02.usace.army.mil	904-232-2602
Torres, Arturo	USGS	aetorres@usgs.gov	813-975-8620
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APPENDIX B: PROJECT MAP

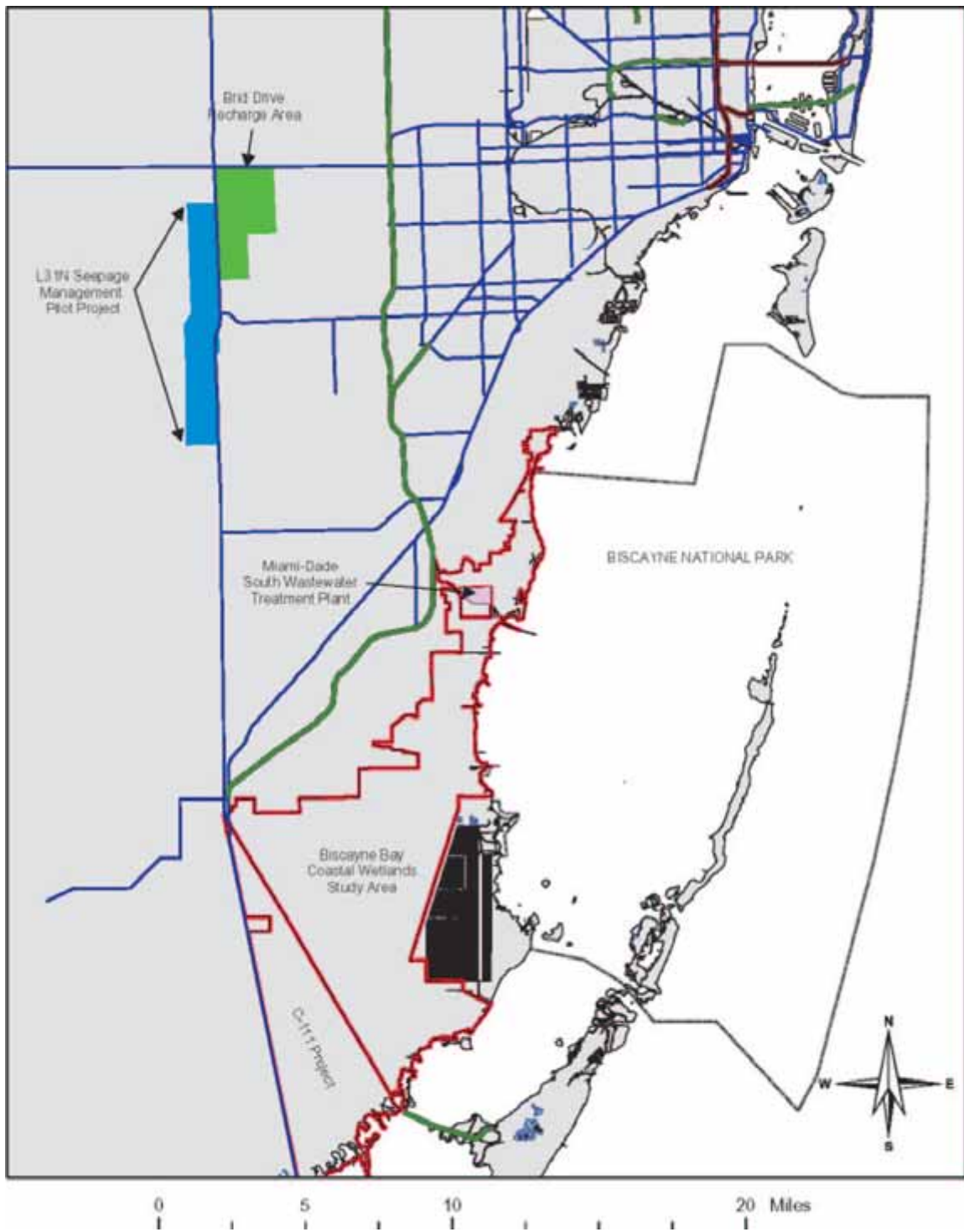


FIGURE B-1: PRELIMINARY PROJECT STUDY AREA

APPENDIX C: WORK BREAKDOWN STRUCTURE

TAB A – Activity Listing by WBS

TAB B – Activity Definitions, Constraints and Assumptions

TAB C – Activity ID/WBS Cross Reference

TAB A – Activity Listing by WBS

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37 CERP Wastewater Reuse Technology Pilot			3323d	0d	10/02/00 A	01/22/14	\$30,000,000
37.1 PROJECT MANAGEMENT PLAN (PMP)			2149d	1106d	01/11/01 A	08/13/09	\$838,918
37-9310		PMP Resource Budgeted Cost	682d		01/11/01 A	09/30/03 A	\$170,587
37-AC11		PMP - West M-D - Actual Costs to Date - CESAJ	310d	2491d	10/01/02 A	02/02/04*	\$0
37-AC12		PMP - South M-D - Actual Costs to Date - CESAJ	310d	2491d	10/01/02 A	02/02/04*	\$0
37.1.1 Project Management			726d	0d	01/11/01 A	12/05/03 A	\$60,642
37-1000	7.1	PMP West, Project Management	270d		01/11/01 A	02/08/02 A	\$60,642
37-1010	7.1	PMP South, Project Management	430d		03/20/02 A	12/05/03 A	\$0
37.1.2 PED (Initial) PMP			748d	159d	01/11/01 A	01/08/04	\$394,833
37.1.2.1 PMP Part 1 - West Miami-Dade			266d	0d	01/11/01 A	02/05/02 A	\$130,413
37-1020		Interagency Kick-off Meeting	1d		01/11/01 A	01/11/01 A	\$0
37-1000M		PMP Initiated - West	0d			01/11/01 A	\$0
37-1030		Project Delivery Team/PM Meeting	1d		01/24/01 A	01/24/01 A	\$0
37-1040		PDT Kick-off Meeting	1d		02/12/01 A	02/12/01 A	\$0
37-1050M		Draft Initial PMP-West	10d		03/16/01 A	03/29/01 A	\$100,986
37-1060		Complete Internal Review	10d		10/16/01 A	10/29/01 A	\$0
37-1070		Revise PMP	8d		10/30/01 A	11/08/01 A	\$0
37-1080		Post on Web for Public & Agency Review	0d		11/13/01 A	11/13/01 A	\$0
37-1090		Hold Public/Stakeholder PMP Workshop	1d		11/19/01 A	11/19/01 A	\$0
37-1100		Complete Final Draft PMP, West	6d		11/20/01 A	11/29/01 A	\$29,427
37-1110		Distribute PMP for DCT, CRG, PRB & SFW MD Senior Management Review	0d		12/03/01 A	12/03/01 A	\$0
37-1120		Present and Discuss PMP at DCT Meeting	0d		12/07/01 A	12/07/01 A	\$0
37-1130		Present and Discuss PMP at CRG Meeting	1d		12/17/01 A	12/17/01 A	\$0
37-1140		Final Approval by SFWMD, Ex. Dir.	29d		12/18/01 A	01/30/02 A	\$0
37-1150		Present and Discuss PMP at PRB Meeting	0d		01/22/02 A	01/22/02 A	\$0
37-1160M		COE Endorse PMP	3d		01/31/02 A	02/04/02 A	\$0
37-1170		Work-in-Kind Letter from District Engineer - West	0d			02/05/02 A	\$0
37.1.2.2 PMP Part 2 - West & South Miami-Dade			452d	159d	03/20/02 A	01/08/04	\$264,420
37-1190M		PMP Initiated - South	0d			03/20/02 A	\$0
37-1200		Internal Meeting	0d		03/20/02 A	03/20/02 A	\$0
37-1210		PDT Kick-off Meeting	6d		04/19/02 A	04/26/02 A	\$0
37-1220M		PDT Kickoff Meeting	0d			04/26/02 A	\$0
37-1230		Draft Initial Revised PMP	143d		04/29/02 A	11/20/02 A	\$182,387

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-1240		Internal /PDT Review of Revised Draft PMP	14d		11/20/02 A	12/11/02 A	\$0
37-1250M		PMP Internal Review Initiated	0d			11/20/02 A	\$0
37-1260M		PMP Internal Review Complete	0d			12/11/02 A	\$0
37-1270		Incorporate Internal/PDT comments	18d		12/13/02 A	01/09/03 A	\$42,733
37-1280		Early Start Letter	19d		01/13/03 A	02/07/03 A	\$0
37-1290		Brief PrePRB/DCT	0d		01/13/03 A	01/13/03 A	\$0
37-1300		Revise PMP	58d		01/20/03 A	04/11/03 A	\$0
37-1310M		PMP Approved by PrePRB	0d			02/10/03 A	\$0
37-1320A		Post on Web for Public Review	6d		04/14/03 A	04/21/03 A	\$0
37-1330		Public Review of PMP	10d		04/22/03 A	05/05/03 A	\$0
37-1340		Incorporate Public Comments into PMP	125d		05/06/03 A	10/31/03 A	\$0
37-1350		Distribute PMP for PrePRB, CRG, PRB & SFW MD Senior Management Review	27d		11/01/03 A	12/12/03 A	\$39,300
37-1370		Present and Discuss PMP at PRB Meeting	0d		12/22/03 A	12/22/03 A	\$0
37-1360M		PMP DDE (PM) Signature	0d			12/22/03 A	\$0
37-1380M		PMP Approved by Local Sponsor	0d			12/22/03 A	\$0
37-1390		Final Approval by SFWMD, Ex. Dir.	5d		12/22/03 A	12/30/03 A	\$0
37-1400		Present and Discuss PMP at CRG Meeting	0d		12/22/03 A	12/22/03 A	\$0
37-1410		Work-in-Kind Letter from District Engineer	5d	74d	12/30/03 A	01/08/04	\$0
37-1420M		Work-in-Kind Letter Signed by District Engineer	0d	159d		01/08/04	\$0
37.1.3 PED PMP Revision			142d	368d	09/09/05	04/07/06	\$106,428
37-1430	5.1	PPDR PMP Revision	142d	368d	09/09/05	04/07/06	\$106,428
37.1.4 Contruction PMP Revision			142d	1106d	01/22/09	08/13/09	\$106,428
37-1435	5.1	Construction PMP Revision	142d	1106d	01/22/09	08/13/09	\$106,428
37.3 PILOT PROJECT DESIGN REPORT (PPDR)			2000d	1323d	10/02/00 A	09/30/08	\$4,916,997
37-AC20		PPDR Actual Costs to Date - CESAJ	310d	2491d	10/01/02 A	02/02/04*	\$0
37-1440M	3.5.1	Initiate Decision Document PPDR	0d			02/07/03 A	\$0
37.3.1 Project Management			1317d	17d	02/08/02 A	05/16/07	\$1,193,403
37-1450	7.1	PPDR, West Project Management	249d		02/08/02 A	02/07/03 A	\$64,245
37-1460	7.1	PPDR, Project Management	1069d	17d	02/07/03 A	05/16/07	\$362,437
37-1470	7.1	Outreach Support	733d	0d	01/09/04	12/14/06	\$60,272
37-1480	7.1	PPDR Contingency	838d	17d	01/09/04	05/16/07	\$700,000
37-1490	7.1	Prepare MOA with Miami-Dade (South Plant)	10d	92d	09/09/05	09/23/05	\$6,449
37.3.2 Plan Formulation			1280d	17d	04/03/02 A	05/16/07	\$340,454

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-1500	7.2.1	Planning Management	838d	17d	01/09/04	05/16/07	\$40,000
37.3.2.1 Refine Goals and Objectives/Identify Problems and Opportunities			425d	628d	02/25/03 A	11/01/04	\$97,598
37.3.2.1.1 Coordination Meetings			280d	273d	02/25/03 A	04/07/04	\$49,508
37-1510	7.2.2	Initial PDT Meeting inc Site Identification	1d		02/25/03 A	02/25/03 A	\$14,425
37-1520	7.2.2	Miami-Dade Coordination Meeting	1d		02/26/03 A	02/26/03 A	\$11,045
37-1530	7.2.2	Initial Outreach Meeting	20d	314d	01/09/04	02/09/04	\$18,878
37-1540	7.2.2	Initial ITR Meeting	1d	74d	04/06/04	04/07/04	\$5,160
37.3.2.1.2 Develop Evaluation Measures			137d	628d	04/19/04	11/01/04	\$48,090
37-1550	7.2.2	PDT Meeting, Discuss Siting Criteria	10d	76d	04/19/04	04/30/04	\$8,900
37-1560	7.2.2	Develop Evaluation Criteria for Pilot/Refine Objectives	10d	628d	10/18/04	11/01/04	\$39,190
37.3.2.2 Identify Alternative Plans			607d	86d	04/03/02 A	09/02/04	\$47,490
37-1570	7.2.3	Document Transferability Decision WPB/West M-D	419d		04/03/02 A	12/05/03 A	\$3,000
37-1580	7.2.3	PDT Meeting to Discuss Alternative Technologies	10d	0d	06/23/04	07/08/04	\$11,750
37-1590	7.2.3	Prepare Project Alternatives Documents	10d	0d	07/08/04	07/22/04	\$16,720
37-1600	7.2.3	ITR/PDT Review of Alternatives Document	10d	0d	07/22/04	08/05/04	\$9,740
37-1610	7.2.3	Initial SAD/HQ In Progress Review Meeting	20d	0d	08/05/04	09/02/04	\$6,280
37-1615M	7.2.3	PPDR Initial In-Progress Review Meeting	0d	86d		09/02/04	\$0
37.3.2.3 Evaluate and Compare Alternative Plans			36d	0d	01/26/05	03/18/05	\$52,285
37-1620	7.2.4	Evaluate Pilot Project Alternatives	10d	0d	01/26/05	02/09/05	\$14,100
37-1630	7.2.4	Prepare Evaluation Documents	10d	0d	02/09/05	02/25/05	\$16,080
37-1640	7.2.4	PDT Review Evaluation Document	10d	0d	02/25/05	03/11/05	\$2,660
37-1650	7.2.4	PDT Alternatives Evaluation Meeting	5d	0d	03/11/05	03/18/05	\$19,445
37-9200	7.2.4	Complete RECOVER Evaluation of Alternatives	0d	0d		03/18/05	\$0
37.3.2.4 Technology and Site Selection Recommendation			122d	0d	03/18/05	09/09/05	\$103,081
37-1660	7.2.5	Prepare Plan Selection Document	15d	0d	03/18/05	04/11/05	\$19,940
37-1670	7.2.5	ITR/PDT Review & Comment Plan Selection Document	10d	0d	04/11/05	04/25/05	\$14,240
37-1680	7.2.5	Revise Plan Selection Document inc ITR Comments	11d	0d	04/25/05	05/10/05	\$10,725
37-1690	7.2.5	Public Review inc Meeting (Technology and Site Selection)	11d	0d	05/10/05	05/24/05	\$15,238
37-1700	7.2.5	Incorporate Public Comments on Selected Plan	11d	0d	05/24/05	06/09/05	\$5,860
37-1710	7.2.5	Submit Plan Selection Documents to SAD/HQ	3d	0d	06/09/05	06/14/05	\$3,655
37-1715M	7.2.5	Submit IPR Documentation to HQ/SAD	0d	20d		06/14/05	\$0
37-1720	7.2.5	Meet with SAD/HQ (IPR)	2d	0d	07/13/05	07/14/05	\$6,877
37-1730	7.2.5	HQ Issue program guidance memo	16d	0d	07/14/05	08/05/05	\$0
37-1725M	7.2.5	Alternative Formulation Briefing (IPR)/Site Visit	0d	0d		07/14/05	\$0

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-1740	7.2.5	Incorporate SAD/HQ Comments	9d	0d	08/05/05	08/18/05	\$5,033
37-1735M	7.2.5	Pilot Project (IPR) Guidance Memorandum Received	0d	0d		08/05/05	\$0
37-1750	7.2.5	PDT Meeting, Plan Selection	9d	0d	08/18/05	08/31/05	\$11,941
37-1760	7.2.5	Finalize Selected Plan	6d	0d	08/31/05	09/09/05	\$9,572
37.3.3 Engineering and Design Appendix			1472d	244d	06/25/01 A	05/16/07	\$768,707
37-1770	7.3.1	Engineering Management	838d	17d	01/09/04	05/16/07	\$34,000
37.3.3.1 Initial WPB/West Miami-Dade (M-D) Effort			277d	0d	06/25/01 A	08/01/02 A	\$170,511
37.3.3.1.1 Baseline Information Contract Scoping & award WPB/WMD			95d	0d	06/25/01 A	11/07/01 A	\$5,458
37-1780	7.3.2.1	Prepare Scope for Information Collection WPB/WMD	47d		06/25/01 A	08/29/01 A	\$1,800
37-1790	7.3.2.1	Review Scope for Information Collection WPB/WMD	4d		08/30/01 A	09/05/01 A	\$1,858
37-1800	7.3.2.1	Revise Scope for Information Collection WPB/WPD	5d		09/06/01 A	09/12/01 A	\$600
37-1810	7.3.2.1	Award Information Collection Contract WPB/WMD	39d		09/13/01 A	11/07/01 A	\$1,200
37.3.3.1.2 Contract management Baseline Information WPB/WMD			96d	0d	11/08/01 A	04/01/02 A	\$8,685
37-1820	7.3.2.1	Administer Baseline Information Collection Contract WPB/WMD	96d		11/08/01 A	04/01/02 A	\$1,500
37-1830	7.3.2.1	Review Draft Baseline Data Collection Report	19d		01/23/02 A	02/19/02 A	\$3,320
37-1840	7.3.2.1	Data Coordination for Baseline Information Collection	20d		01/24/02 A	02/21/02 A	\$960
37-1850	7.3.2.1	Prepare Agenda for Workshop	1d		02/20/02 A	02/20/02 A	\$645
37-1860	7.3.2.1	Review Draft Workshop Report	8d		02/28/02 A	03/11/02 A	\$2,260
37.3.3.1.3 Contract Information Collection and Meeting Facilitation WPB/WMD			90d	0d	11/16/01 A	03/30/02 A	\$24,214
37-1870	7.3.2.1	Collect Baseline Information and Prepare Draft Report	43d		11/16/01 A	01/22/02 A	\$13,437
37-1880	7.3.2.1	Facilitate Workshop	1d		02/22/02 A	02/22/02 A	\$3,054
37-1890	7.3.2.1	Prepare Final Baseline Information Collection Report	5d		02/25/02 A	03/01/02 A	\$1,493
37-1900	7.3.2.1	Draft Workshop Report/Meeting minutes	3d		02/25/02 A	02/27/02 A	\$5,607
37-1910	7.3.2.1	Final Workshop Report	13d		03/13/02 A	03/30/02 A	\$623
37.3.3.1.7 Draft Transferability Criteria, WPB/West M-D			67d	0d	11/08/01 A	02/19/02 A	\$14,260
37-2090	7.3.2.2	Develop Draft Transferability Criteria	24d		11/08/01 A	12/14/01 A	\$10,340
37-2100	7.3.2.2	Review criteria by PDT - webbrd	27d		12/17/01 A	01/25/02 A	\$600
37-2110	7.3.2.2	Revise Draft Criteria	4d		02/13/02 A	02/19/02 A	\$3,320
37.3.3.1.4 Transferability Workshop, WPB/West M-D			82d	0d	11/08/01 A	03/12/02 A	\$31,890
37-1920	7.3.2.3	Contract Preparation and Award for Expert Assistance	33d		11/08/01 A	12/28/01 A	\$1,200
37-1930	7.3.2.3	Send Draft Documents for Review	3d		01/23/02 A	01/25/02 A	\$1,935
37-1940	7.3.2.3	Attend Workshop and Site Visit	1d		02/22/02 A	02/22/02 A	\$12,755
37.3.3.1.4.1 Contract for Expert Assistance			29d	0d	01/30/02 A	03/12/02 A	\$16,000
37-1950	7.3.2.3	Experts Provide Draft Comments	10d		01/30/02 A	02/12/02 A	\$3,000

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-1960	7.3.2.3	Experts Attend Workshop	3d		02/20/02 A	02/22/02 A	\$10,000
37-1970	7.3.2.3	Experts Report (comments on criteria, transferability and approach plans)	10d		02/27/02 A	03/12/02 A	\$3,000
37.3.3.1.5 Review transferability report and identify gaps, WPB/West M-D			54d	0d	02/13/02 A	04/30/02 A	\$19,915
37-1980	7.3.2.4	Review expert draft comments re transferability	4d		02/13/02 A	02/19/02 A	\$3,285
37-1990	7.3.2.4	ITR review transferability reports and criteria	7d		04/03/02 A	04/11/02 A	\$1,920
37-2000	7.3.2.4	PDT Review revised transferability criteria and modeling/monitoring approaches	9d		04/04/02 A	04/16/02 A	\$9,830
37-2010	7.3.2.4	Revise draft transferability criteria, modeling&monitoring approach	16d		04/09/02 A	04/30/02 A	\$2,600
37-2020	7.3.2.4	Incorporate ITR/PDT transferability comments	10d		04/17/02 A	04/30/02 A	\$2,280
37.3.3.1.6 Draft Monitoring Approach, WPB			182d	0d	11/08/01 A	08/01/02 A	\$41,614
37-2030	7.3.2.5	Develop preliminary sampling Criteria	24d		11/08/01 A	12/14/01 A	\$9,800
37-2040	7.3.2.5	Review criteria by PDT - webbrd	27d		12/17/01 A	01/25/02 A	\$7,774
37-2050	7.3.2.5	Revise sampling criteria	4d		02/13/02 A	02/19/02 A	\$3,320
37-2060	7.3.2.5	Prepare Interim Monitoring Plan for WPB Baseline Data Collection	68d		02/28/02 A	06/04/02 A	\$17,480
37-2070	7.3.2.5	Review Interim Monitoring Plan	10d		06/05/02 A	06/18/02 A	\$2,000
37-2080	7.3.2.5	Review & Approve Interim Monitoring Plan	32d		06/18/02 A	08/01/02 A	\$1,240
37.3.3.1.9 Draft Modeling Approach, West M-D			67d	0d	11/08/01 A	02/19/02 A	\$15,840
37-2150	7.3.2.6	Develop preliminary modeling approach	24d		11/08/01 A	12/14/01 A	\$11,160
37-2160	7.3.2.6	Review modeling approach by PDT - webbrd	27d		12/17/01 A	01/25/02 A	\$680
37-2170	7.3.2.6	Revise modeling approach	4d		02/13/02 A	02/19/02 A	\$4,000
37.3.3.1.8 WPB/West M-D PDT meeting			38d	0d	04/30/02 A	06/21/02 A	\$8,635
37-2120	7.3.2.6	Hold WPB/WMD PDT Meeting	30d		04/30/02 A	06/11/02 A	\$5,995
37-2130	7.3.2.6	Notice WPB/WMD PDT Meeting	1d		05/28/02 A	05/28/02 A	\$0
37-2140	7.3.2.6	Receive PDT Comments Re Approaches	9d		06/11/02 A	06/21/02 A	\$2,640
37.3.3.2 Engineering Studies and Investigations			668d	365d	02/05/02 A	10/01/04	\$224,655
37.3.3.2.1 Literature Search/Technology Evaluation			668d	365d	02/05/02 A	10/01/04	\$224,655
37-2180	7.3.3.1.1	Review Existing Reports/Studies inc letter report	165d		02/05/02 A	09/27/02 A	\$6,624
37-2190	7.3.3.1.2	Identify and review regulations	106d		05/31/02 A	10/30/02 A	\$1,845
37-2200	7.3.3.1.2	Regulations Report	145d		10/30/02 A	05/30/03 A	\$2,525
37.3.3.2.1.1 Determine Treatment Objectives			259d	0d	10/01/02 A	10/14/03 A	\$28,892
37-2210	7.3.3.1.3	Removal Efficiency Report (M-D Plants)	213d		10/01/02 A	08/07/03 A	\$1,935
37-2220	7.3.3.1.4	Assess Potential for M-D influent/effluent change	107d		03/10/03 A	08/07/03 A	\$1,970
37-2260	7.3.3.1.5	Revise Treatment objectives	21d		08/08/03 A	09/08/03 A	\$1,845
37-2230	7.3.3.1.5	Formulate treatment objectives	1d		08/08/03 A	08/08/03 A	\$11,170
37-2240	7.3.3.1.5	Letter Report of treatment objectives	5d		08/11/03 A	08/15/03 A	\$645

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-2250	7.3.3.1.5	PDT Review of treatment objective/criteria & meeting	34d		08/26/03 A	10/14/03 A	\$11,327
37.3.3.2.1.2 Technology Criteria Development and Evaluation			298d	112d	07/28/03 A	10/01/04	\$43,925
37-2270	7.3.3.1.6.1	Prepare Draft Evaluation Criteria for Technology	14d		07/28/03 A	08/14/03 A	\$13,220
37-2290	7.3.3.1.6.1	Prepare Final Technology Criteria	38d		09/16/03 A	11/07/03 A	\$9,200
37-2300	7.3.3.1.6.2	List of Technologies from Contractors Report	10d	0d	06/09/04	06/23/04	\$3,240
37-2310	7.3.3.1.6.2	Evaluate Alternative Technologies	10d	86d	09/02/04	09/17/04	\$14,700
37-2320	7.3.3.1.6.2	Prepare Technology Recommendation Documentation	10d	112d	09/17/04	10/01/04	\$3,565
37.3.3.2.1.3 Technology Investigation			227d	416d	08/25/03 A	07/22/04	\$140,844
37.3.3.2.1.3.1 In-House Effort to Identify treatment technologies			227d	416d	08/25/03 A	07/22/04	\$40,344
37-2330	7.3.3.1.7	Prepare Scope, Identify Potential Contractors for Technology Research	46d		08/25/03 A	10/29/03 A	\$17,715
37-2340	7.3.3.1.7	Negotiate and Award technology research contract	23d	0d	12/30/03 A	02/02/04	\$5,345
37-2350	7.3.3.1.7	Technology Research Contract Management	100d	416d	02/02/04	06/23/04	\$2,040
37-2360	7.3.3.1.7	Review Contractors Recommendations Re Technology Criteria	10d	35d	02/24/04	03/09/04	\$3,155
37-2370	7.3.3.1.7	Review Contractors draft Technology Research Report	15d	0d	05/18/04	06/09/04	\$9,405
37-2380	7.3.3.1.7	Backcheck Technology Final Report	10d	416d	07/08/04	07/22/04	\$2,684
37.3.3.2.1.3.2 Contractor Investigate Treatment Technology/Market Information			110d	416d	02/02/04	07/08/04	\$100,500
37-2410	7.3.3.1.7	Contractor Identify other AWT facilities in FL	10d	50d	02/02/04	02/17/04	\$15,000
37-2390	7.3.3.1.7	Contractor Review and Refine Technology Criteria	15d	35d	02/02/04	02/24/04	\$3,000
37-2400	7.3.3.1.7	Contractor Research Technologies	60d	0d	02/02/04	04/27/04	\$55,000
37-2420	7.3.3.1.7	Contractor Draft Report on Technology Information	15d	0d	04/27/04	05/18/04	\$24,000
37-2430	7.3.3.1.7	Contractors Final Report on Technology Information	20d	416d	06/09/04	07/08/04	\$3,500
37.3.3.3 Hydraulics and Hydrological Investigations			376d	0d	09/17/04	03/24/06	\$35,020
37-2560	7.3.4.1.1	Data Collection for Use in Models/Equations	10d	0d	09/17/04	10/01/04	\$3,000
37-2570	7.3.4.1.2	Identify Test Cell Model/Equations	10d	0d	10/01/04	10/18/04	\$3,000
37-2580	7.3.4.1.3	Perform Test Cell Model/Equations	40d	0d	10/18/04	12/16/04	\$15,000
37-2590	7.3.4.1.4	Review Hydrological Model Results	10d	0d	12/16/04	01/04/05	\$6,220
37-2600	7.3.4.1.4	H&H Appendix Preparation and Coordination	22d	0d	02/22/06	03/24/06	\$7,800
37.3.3.4 Preliminary Design for PPDR			161d	15d	07/08/05	03/03/06	\$103,760
37.3.3.4.1 Topographic Survey			6d	39d	07/08/05	07/15/05	\$12,405
37-2700	7.3.5.4	Topographic Assessment/Walk Through	6d	39d	07/08/05	07/15/05	\$12,405
37.3.3.4.2 Cell Design			29d	24d	09/09/05	10/21/05	\$17,250
37-2705	7.3.5.4	Finalize Location, Orientation and Dimension of Cell	17d	0d	09/09/05	10/04/05	\$8,300
37-2710	7.3.5.4	Determine design of Levee and supporting Structure	7d	29d	10/04/05	10/14/05	\$3,750
37-2715	7.3.5.4	Determine Piping Plan for Cell	12d	24d	10/04/05	10/21/05	\$5,200
37.3.3.4.3 Conveyance Design			24d	12d	10/04/05	11/08/05	\$11,900

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-2720	7.3.5.4	Locate Piping Route Between Pilot Plant and Cell	12d	0d	10/04/05	10/21/05	\$4,400
37-2725	7.3.5.4	Determine Piping Plan of Conveyance	12d	12d	10/21/05	11/08/05	\$3,100
37-2730	7.3.5.4	Determine Auxilliary Mechanical & Electrical Equipment	12d	0d	10/21/05	11/08/05	\$4,400
37.3.3.4.4 Structural Support Design			53d	0d	09/09/05	11/29/05	\$5,200
37-2735	7.3.5.4	Slab Design for Support of Pilot Plant	12d	41d	09/09/05	09/27/05	\$2,600
37-2740	7.3.5.4	Support Structure for Pump Equipment	12d	0d	11/08/05	11/29/05	\$2,600
37.3.3.4.5 Cost Engineering			81d	22d	10/21/05	02/22/06	\$5,540
37-2745	7.3.5.10	Prepare Cost Estimate for Cell Design	7d	24d	10/21/05	11/01/05	\$1,950
37-2750	7.3.5.10	Prepare Cost Estimate for Conveyance	7d	12d	11/08/05	11/18/05	\$1,950
37-2755	7.3.5.10	Cost Estimate for Structural Support	7d	0d	11/29/05	12/08/05	\$1,640
37-2760M	7.3.5.10	Baseline Cost Estimate Approved	0d	22d		02/22/06	\$0
37.3.3.4.6 Design Appendix			57d	15d	12/08/05	03/03/06	\$51,465
37-2665	7.3.5.5	Draft Design Report	21d	0d	12/08/05	01/10/06	\$24,650
37-2670	7.3.5.5	EN-D QC of Draft Design Documents and Revise	12d	0d	01/10/06	01/27/06	\$4,550
37-2675	7.3.5.5	Internal/ITR Review of Preliminary Design	17d	0d	01/27/06	02/22/06	\$17,545
37-2680	7.3.5.5	PDT Meeting for Preliminary Design	7d	15d	02/22/06	03/03/06	\$4,720
37.3.3.5 RFP Preparation for Design/Build Contract			171d	404d	01/20/06	09/22/06	\$57,981
37-2682	3.5.4	Prepare Procurement Strategy for Design/Build Contract	22d	404d	01/20/06	02/22/06	\$3,265
37-2684	3.5.4	Governing Board Approval (by May 15, 2005)	20d	404d	02/22/06	03/22/06	\$645
37-2686	3.5.4	Prepare Statement Award	65d	404d	03/22/06	06/21/06	\$38,851
37-2688	3.5.4	Internal Review & ICMS	22d	404d	06/21/06	07/25/06	\$2,575
37-2690	3.5.4	Incorporate Comments	22d	404d	07/25/06	08/24/06	\$645
37-2692	3.5.4	Issue Final Statement Award	20d	404d	08/24/06	09/22/06	\$12,000
37.3.3.6 Engineering Appendix			12d	0d	03/24/06	04/10/06	\$17,090
37-2800	7.3.3.4	Prepare Engineering Appendix to the PPDR	12d	0d	03/24/06	04/10/06	\$17,090
37.3.3.7 PPDR Report Preparation			80d	0d	04/10/06	08/02/06	\$125,690
37-2805	7.3.3.5	Draft PPDR inc Supplemental EA & Draft FONSI	42d	0d	04/10/06	06/08/06	\$68,950
37-2820	7.3.3.5	Technical Editor Review PPDR	17d	0d	06/08/06	07/03/06	\$10,000
37-2825	7.3.3.5	Internal/PDT/ITR Review of PPDR/EA	17d	0d	06/08/06	07/03/06	\$15,900
37-2810M	7.3.3.5	Draft PPDR and NEPA Report Complete	0d	0d		06/08/06	\$0
37-2815M	7.3.3.5	FS 1501 Meeting with FDEP	0d	17d		06/08/06	\$0
37-2840	7.3.3.5	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	21d	0d	07/03/06	08/02/06	\$30,840
37-2830M	7.3.3.5	In-House / Sponsor Review Draft PPDR Complete	0d	0d		07/03/06	\$0
37-2835M	7.3.3.5	ITR of Draft PPDR Complete	0d	0d		07/03/06	\$0

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-2845M	7.3.3.5	Incorporate In-House/Sponsor Cmts on Draft PPDR Report	0d	0d		08/02/06	\$0
37.3.4 Field Investigation			589d	682d	04/08/03 A	08/12/05	\$637,824
37.3.4.1 Water Quality EPOC Monitoring			589d	682d	04/08/03 A	08/12/05	\$424,490
37.3.4.1.1 WQ EPOC Monitoring - South Miami Dade WWT Facility			445d	175d	04/08/03 A	01/18/05	\$184,630
37-3700	7.4.1.7	Develop Scope of Work for EPOC Sampling/Analysis	77d		04/08/03 A	07/25/03 A	\$9,570
37-3710	7.4.1.7	Negotiate and Award EPOC Sampling/Analysis	56d		07/25/03 A	10/14/03 A	\$6,700
37-3740	7.4.1.7	Manage EPOC Sampling Contract	293d	175d	10/14/03 A	12/16/04	\$6,000
37-3720	7.4.1.7	Contractor Perform EPOC Sampling	221d	179d	10/15/03 A	08/31/04	\$30,000
37-3730	7.4.1.7	Data Validation/Data Entry for EPOC Contract	220d	175d	10/15/03 A	08/30/04	\$16,800
37-3750	7.4.1.7	Contractor Perform EPOC Chemical Analysis	220d	175d	10/29/03 A	09/14/04	\$100,000
37-3760	7.4.1.7	Contractor Submits Draft EPOC Sampling/Analysis Report	10d	175d	09/15/04	09/28/04	\$5,000
37-3770	7.4.1.7	Review Draft EPOC Sampling/Analysis Results	10d	175d	09/29/04	10/13/04	\$6,060
37-3780	7.4.1.7	Contractor Submits Final EPOC Sampling/Analysis Report	53d	175d	10/14/04	01/03/05	\$2,000
37-3790	7.4.1.7	Analysis and Summary of EPOC Testing	10d	175d	01/04/05	01/18/05	\$2,500
37.3.4.1.2 WQ EPOC Monitoring - West Palm Beach AWT Facility			400d	682d	01/09/04	08/12/05	\$239,860
37-9135	7.4.1.7	Develop Scope of Work for EPOC Sampling/Analysis	77d	682d	01/09/04	04/29/04	\$71,500
37-9140	7.4.1.7	Negotiate and Award EPOC Sampling/Analysis	35d	682d	04/29/04	06/18/04	\$0
37-9150	7.4.1.7	Contractor Perform EPOC Sampling	66d	682d	06/18/04	09/22/04	\$30,000
37-9145	7.4.1.7	Manage EPOC Sampling Contract	278d	682d	06/18/04	07/29/05	\$6,000
37-9160	7.4.1.7	Contractor Perform EPOC Chemical Analysis	96d	682d	09/22/04	02/14/05	\$100,000
37-9155	7.4.1.7	Data Validation/Data Entry for EPOC Contract	86d	682d	02/14/05	06/16/05	\$16,800
37-9165	7.4.1.7	Contractor Submits Draft EPOC Sampling/Analysis Report	10d	682d	06/16/05	06/30/05	\$5,000
37-9170	7.4.1.7	Review Draft EPOC Sampling/Analysis Results	10d	682d	06/30/05	07/15/05	\$6,060
37-9175	7.4.1.7	Contractor Submits Final EPOC Sampling/Analysis Report	10d	682d	07/15/05	07/29/05	\$2,000
37-9180	7.4.1.7	Analysis and Summary of EPOC Testing	10d	682d	07/29/05	08/12/05	\$2,500
37.3.4.2 Geotechnical/Hydrogeologic Field Investigations			171d	255d	12/30/03 A	09/01/04	\$213,334
37-9185	7.3.3.2.1.1	Compile Inventory & Analyze Existing Data	63d	264d	12/30/03 A	03/30/04	\$34,150
37-9190	7.3.3.2.1.2	Data Evaluation and Field Work	90d	255d	04/12/04	08/18/04	\$145,624
37-9195	7.3.3.2.1.3	Geotechnical Report	10d	255d	08/18/04	09/01/04	\$33,560
37.3.5 Pilot Project Monitoring Plan			1153d	293d	02/28/02 A	10/05/06	\$142,805
37.3.5.1 Design Ecological and WQ Monitoring Plan			1153d	293d	02/28/02 A	10/05/06	\$137,125
37-3050	7.7	Review WPB Monitoring Plan	276d		02/28/02 A	04/04/03 A	\$1,840
37-9085	7.7.1	Develop Scope of Work for Ecological/WQ Monitoring Plan	429d	405d	01/09/04	09/22/05	\$53,600
37-3060	7.7.1	Prepare Draft Ecological/WQ Monitoring Plan	22d	293d	03/09/06	04/10/06	\$34,920

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-3080	7.7.1	PDT/ITR Ecol/WQ Monitoring Plan Review	17d	307d	04/10/06	05/03/06	\$14,045
37-3120	7.7.1	Contract Preparation and Award for Expert Assistance re Monitoring Plan	20d	315d	04/10/06	05/08/06	\$1,200
37-3140	7.7.1	Contract Management for Expert Assistance	42d	293d	04/10/06	06/08/06	\$1,200
37-3090	7.7.1	Revise Ecol/WQ Monitoring Plan	12d	307d	05/03/06	05/19/06	\$4,320
37-3130	7.7.1	Expert Assistance Regarding Monitoring Plan	21d	293d	06/08/06	07/10/06	\$16,000
37-9125	7.7.1	Develop Budget for Ecological/WQ Monitoring Plan	62d	293d	07/10/06	10/05/06	\$10,000
37.3.5.2 O&M Section of Monitoring Plan			11d	115d	10/04/05	10/20/05	\$2,300
37-3100	7.7.5	Prepare Draft O&M Plan for Pilot Plant	11d	115d	10/04/05	10/20/05	\$2,300
37.3.5.3 Treatment Plant Monitoring Plan			61d	103d	06/14/05	09/08/05	\$3,380
37-3150	7.7.4	Prepare Treatment Plant Monitoring Plan	61d	103d	06/14/05	09/08/05	\$3,380
37.3.6 Real Estate Analysis Appendix			451d	347d	01/31/03 A	11/16/04	\$100,040
37.3.6.1 Obtain Rights of Entry			20d	255d	03/15/04	04/09/04	\$7,200
37-3160	7.6.2	Obtain Rights of Entry for Field Work	20d	255d	03/15/04	04/09/04	\$7,200
37.3.6.2 Acquire Ownership Information			17d	0d	01/31/03 A	02/25/03 A	\$8,640
37-3170	7.6.3	Identify Land Already Owned/available	17d		01/31/03 A	02/25/03 A	\$5,840
37-3180	7.6.3	Identify Property information for each Available Site	5d		02/19/03 A	02/25/03 A	\$2,800
37.3.6.3 Preliminary RE Cost Estimate			88d	121d	11/03/03 A	03/12/04	\$15,000
37-3190	7.6.4	Prepare Preliminary Real Estate Cost for Alternative Sites	88d	121d	11/03/03 A	03/12/04	\$15,000
37.3.6.4 RE Acquisition Maps			5d	0d	02/19/03 A	02/25/03 A	\$4,800
37-3200	7.6.5	Prepare RE Acquisition Maps for Alternatives	5d		02/19/03 A	02/25/03 A	\$4,800
37.3.6.5 Gross Appraisal			152d	347d	03/15/04	10/18/04	\$52,000
37-3210	7.6.6	Prepare Gross Appraisal	20d	479d	03/15/04	04/09/04	\$46,000
37-3220	7.6.6	Negotiate Land Use Agreement	10d	347d	10/01/04	10/18/04	\$6,000
37.3.6.6 RE Appendix			20d	347d	10/18/04	11/16/04	\$12,400
37-3230	7.6.7	Prepare RE Appendix/Supplement	20d	347d	10/18/04	11/16/04	\$12,400
37.3.7 Environmental Evaluation Appendix			2000d	1323d	10/02/00 A	09/30/08	\$1,533,476
37.3.7.1 Water Quality and Ecological Assesment/Investigation			1269d	1456d	02/26/03 A	03/25/08	\$773,937
37.3.7.1.1 Literature Review for Emerging Pollutants of Concern (EP OC)			795d	1456d	01/19/05	03/25/08	\$175,074
37-3240	7.4.1.1	Prepare SOW for EPOC Literature Review	20d	430d	01/19/05	02/15/05	\$19,934
37-3250	7.4.1.1	PDT Review and Comment on EPOC SOW	10d	430d	02/16/05	03/02/05	\$10,000
37-3260	7.4.1.1	Revise EPOC SOW , Neg, award contract	20d	430d	03/03/05	03/30/05	\$5,020
37-3270	7.4.1.1	EPOC Contract Management	745d	1456d	03/31/05	03/25/08	\$8,400
37-3280	7.4.1.1	Attend EPOC Presentation	5d	430d	07/18/05	07/22/05	\$5,660
37-3290	7.4.1.1	PDT Comment on EPOC Draft Report	20d	430d	07/25/05	08/19/05	\$4,020
37-3300	7.4.1.1	Backcheck of Final EPOC Report	10d	430d	09/06/05	09/19/05	\$2,040

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37.3.7.1.1.4	Contractor Work for EPOC Literature Review		110d	430d	03/31/05	09/02/05	\$120,000
	37-3310	7.4.1.1 Contractor Perform EPOC Literature Review	60d	430d	03/31/05	06/23/05	\$90,000
	37-3320	7.4.1.1 Contractor Prepare Draft EPOC Report	10d	430d	06/24/05	07/08/05	\$20,000
	37-3330	7.4.1.1 Contractor Present EPOC Report to PDT	10d	430d	07/11/05	07/22/05	\$5,000
	37-3340	7.4.1.1 Contractor Prepare Final EPOC Report	10d	430d	08/22/05	09/02/05	\$5,000
	37.3.7.1.2 Evaluate and Compare Receiving Wetlands		403d	2322d	02/27/03 A	10/01/04	\$103,888
	37-3350	7.4.1.2.1 Develop Site Prescreening Criteria	88d		02/27/03 A	07/01/03 A	\$5,320
	37-3360	7.4.1.2.2 Site Pre-Screening	10d		07/02/03 A	07/16/03 A	\$13,485
	37-3370	7.4.1.2.4 Site Screening Preliminary Data Collection	21d		09/02/03 A	09/30/03 A	\$7,240
	37-3380	7.4.1.2.3 Draft Site Selection Criteria - Phase II	88d	76d	11/03/03 A	03/12/04	\$17,305
	37-3390	7.4.1.2.3 PDT Review of Final Siting Criteria for Phase II	25d	76d	03/15/04	04/16/04	\$4,920
	37-3400	7.4.1.2.3 Prepare Final Siting Criteria	10d	76d	05/03/04	05/14/04	\$9,420
	37-3410	7.4.1.2.5 Evaluation of Alternative Sites	10d	0d	09/02/04	09/17/04	\$11,140
	37-3420	7.4.1.2.5 Prepare Site Recommendation Documentation	10d	3d	09/17/04	10/01/04	\$10,970
	37.3.7.1.2.1 Expert Assistance for Environmental		112d	2322d	04/26/04	10/01/04	\$24,088
	37-3430	7.4.1.2.3 Prepare SOW for Environmental Expert Assistance	15d	2388d	04/26/04	05/14/04	\$2,640
	37-3440	7.4.1.2.3 Negotiate and Award Contract for Expert Environmental Assistance	30d	2388d	05/17/04	06/28/04	\$3,224
	37-3450	7.4.1.2.3 Experts Assistance with Site Selection Criteria for Test and Control Site	67d	3d	06/29/04	10/01/04	\$18,224
	37.3.7.1.3 Develop Expected Operating Regime for Wetland		40d	125d	01/09/04	03/09/04	\$16,665
	37-3460	7.4.1.3 Review BBCW documentation regarding restoration targets	10d	125d	01/09/04	01/26/04	\$5,040
	37-3470	7.4.1.3 Develop hydrologic regime desired	30d	125d	01/26/04	03/09/04	\$11,625
	37.3.7.1.4 Define Effluent Standards for Receiving Waters		780d	293d	02/26/03 A	04/10/06	\$221,015
	37-3475	7.4.1.4.2 Evaluate Receiving Water Quality	115d		02/26/03 A	08/07/03 A	\$50,400
	37-3480	7.4.1.4.1 Multi-Agency NPDES/1501 Pre-application Meeting	10d	3d	10/01/04	10/18/04	\$12,420
	37-3485M	7.4.1.4.1 FS 1501 Pre-Application Meeting	0d	357d		10/18/04	\$0
	37-3490M	7.4.1.4.1 FS 1501 Pre-Application Concurrence Letter Received	0d	357d		11/01/04	\$0
	37.3.7.1.4.1 Fate/Transport Modeling to Develop Water Quality for Receiving Wetland		143d	293d	09/09/05	04/10/06	\$158,195
	37-3500	7.4.1.4.3 Develop Scope of Work for WQ Modeling	17d	293d	09/09/05	10/04/05	\$10,170
	37-3510	7.4.1.4.3 Negotiate and Award WQ Modeling	17d	293d	10/04/05	10/28/05	\$6,700
	37-3530	7.4.1.4.3 Contractor Perform WQ Modeling	62d	293d	10/28/05	02/01/06	\$100,000
	37-3520	7.4.1.4.3 Manage WQ Modeling Contract	89d	293d	10/28/05	03/13/06	\$8,400
	37-3540	7.4.1.4.3 Contractor Submits Draft WQ Modeling Report	12d	293d	02/01/06	02/17/06	\$10,000
	37-3550	7.4.1.4.3 Review Draft WQ Modeling Results	12d	293d	02/17/06	03/08/06	\$10,885
	37-3560	7.4.1.4.3 Contractor Submits Final WQ Modeling Report	11d	293d	03/08/06	03/23/06	\$10,000

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-3570	7.4.1.4.3	Backcheck Final WQ Modeling Report	12d	293d	03/23/06	04/10/06	\$2,040
37.3.7.1.5 Develop Performance Measures for Rehydrated Wetlands			10d	125d	03/09/04	03/23/04	\$27,630
37-3580	7.4.1.5	Develop Performance Measures for Rehydrated Wetlands	10d	125d	03/09/04	03/23/04	\$27,630
37.3.7.1.6 Prepare Permit Application; NPDES, WQC, Reuse to Wetlands			352d	15d	10/18/04	03/21/06	\$193,965
37-3590	7.4.1.6	Compile Draft NPDES/W Q Application Package	20d	15d	01/19/06	02/17/06	\$36,400
37-3600	7.4.1.6	Permit Coordination Meeting	10d	15d	02/17/06	03/06/06	\$4,360
37-3610	7.4.1.6	Respond to Requests for Additional Information	10d	15d	03/06/06	03/21/06	\$11,280
37.3.7.1.6.1 Collect Data at Selected Test Wetland for Permits			311d	15d	10/18/04	01/19/06	\$141,925
37-3620	7.4.1.6.1	Develop Scope of Work for Monitoring	10d	3d	10/18/04	11/01/04	\$4,440
37-3630	7.4.1.6.1	Negotiate and Award Monitoring Contract	10d	3d	11/01/04	11/16/04	\$3,000
37-3640	7.4.1.6.1	Manage Monitoring Contract	271d	15d	11/16/04	12/19/05	\$15,000
37-3650	7.4.1.6.1	Contractor Perform Monitoring	250d	3d	11/16/04	11/17/05	\$100,000
37-3660	7.4.1.6.1	Contractor Submits Draft Monitoring Report	10d	3d	11/17/05	12/05/05	\$10,000
37-3670	7.4.1.6.1	Review Draft Monitoring Results	10d	14d	12/05/05	12/19/05	\$6,285
37-3680	7.4.1.6.1	Contractor Submits Final Monitoring Report	10d	14d	12/19/05	01/04/06	\$2,000
37-3690	7.4.1.6.1	Backcheck Final Monitoring Report	10d	15d	01/04/06	01/19/06	\$1,200
37.3.7.1.8 Update EPOC Research			563d	0d	01/09/04	04/10/06	\$35,700
37-3800	7.4.1.8	Keep Up to Date on EPOC Research	563d	0d	01/09/04	04/10/06	\$35,700
37.3.7.2 Environmental/NEPA			2000d	1323d	10/02/00 A	09/30/08	\$759,539
37-3810	7.4.2.1	Environmental Coordination Federal and State	971d	17d	12/01/03 A	10/16/07	\$43,920
37-3815M	7.4.2.1.1	Notice of Intent to Prepare NEPA Issued	0d	159d		01/08/04	\$0
37-3805M	7.4	Initiate Decision Document (PPDR)	0d	159d		01/08/04	\$0
37-3820	7.4.2.1.1	NEPA Scoping Process	10d	179d	01/09/04	01/26/04	\$3,300
37-3825M	7.4.2.1.1	NEPA Scoping Meeting	0d	159d		02/23/04	\$0
37.3.7.2.1 Detailed Ecological Assessments			563d	55d	08/01/03 A	11/01/05	\$33,720
37-3845	7.4.2.2.4	HTRW Database Survey	162d	416d	08/01/03 A	03/26/04	\$1,400
37-3870	7.4.2.2.2.1	Wetland Habitat Assessment, Existing (field work)	14d	240d	12/30/03 A	01/20/04	\$9,000
37-3860	7.4.2.2.2.3	Cultural Resource Assessment	221d	215d	03/15/04	01/31/05	\$5,000
37-3850	7.4.2.2.4	HTRW Ecological Risk Assessment Documenta tion	10d	416d	03/29/04	04/09/04	\$1,400
37-3880	7.4.2.2.2.2	Wetland Habitat Assessment, Alternative Evaluation	15d	0d	01/04/05	01/26/05	\$9,000
37-3840	7.4.2.2.2	Selection of Impact Assessment Procedure	20d	229d	01/26/05	02/24/05	\$3,600
37-3830	7.4.2.2.2	Biological Assessment Under ESA	42d	25d	08/31/05	11/01/05	\$4,320
37.3.7.2.2 FWS Coordination			2000d	1323d	10/02/00 A	09/30/08	\$608,759
37-9080	7.4.2.1.4	FWS Transfer Funds - FY01	250d		10/02/00 A	09/28/01 A	\$77,500

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-9070	7.4.2.1.4	FWS Transfer Funds - FY02	250d		10/01/01 A	09/30/02 A	\$101,400
37-3890	7.4.2.1.2	F&W Coordination West	182d		01/11/02 A	09/30/02 A	\$0
37-3900	7.4.2.1.2	USFWS Provide Planning Aid Letters (PAL)	869d	0d	01/11/02 A	07/14/05	\$0
37-9060	7.4.2.1.4	FWS Transfer Funds - FY03	250d		10/01/02 A	09/30/03 A	\$73,000
37-9020	7.4.2.1.4	FWS Transfer Funds - FY04	250d	2323d	10/01/03 A	09/29/04	\$83,708
37-9030	7.4.2.1.4	FWS Transfer Funds - FY05	250d	2072d	10/01/04*	09/30/05	\$57,926
37-3905M	7.4.2.1.2	USF&WS Planning Aid Letter Received	0d	51d		07/14/05	\$0
37-3930	7.4.2.1.2	USFWS Prepare Draft CAR	80d	11d	09/09/05	01/09/06	\$0
37-9040	7.4.2.1.4	FWS Transfer Funds - FY06	249d	1823d	10/03/05*	09/29/06	\$60,127
37-3920	7.4.2.1.2	Biological Opinion	30d	25d	11/01/05	12/16/05	\$0
37-3935M	7.4.2.1.2	Submit Draft USFWS Coordination Act Report	0d	11d		01/09/06	\$0
37-9050	7.4.2.1.4	FWS Transfer Funds - FY07	249d	1574d	10/02/06*	09/28/07	\$62,412
37-3910	7.4.2.1.2	USFWS Prepare Final CAR	40d	2d	10/12/06	12/12/06	\$0
37-3915M	7.4.2.1.2	Final USFWS Coordination Act Report Received	0d	2d		12/12/06	\$0
37-9315	7.4.2.1.4	FWS Transfer Funds - FY08	251d	1323d	10/01/07*	09/30/08	\$92,686
37.3.7.2.3 NEPA Documentation			79d	3d	12/05/05	03/30/06	\$69,840
37-3950	7.4.2.1.1	Document Existing Conditions	31d	3d	12/05/05	01/20/06	\$20,160
37-3960	7.4.2.1.1	Document Alternative Effects Evaluation	32d	3d	01/20/06	03/07/06	\$39,600
37-3970	7.4.2.1.1	Draft EA	17d	3d	03/07/06	03/30/06	\$10,080
37.3.8 PPDR Approval			425d	1456d	06/08/06	02/22/08	\$200,288
37-9210	7.3.3.5	Notice of Availability in Federal Register	13d	54d	06/08/06	06/27/06	\$3,000
37-9205	7.3.3.5	Draft PPDR/NEPA Published in Federal Register	0d	54d		06/27/06	\$0
37-2850	7.3.3.5	Print and Mail Draft PPDR/EIS	6d	0d	08/02/06	08/11/06	\$20,000
37-2855	7.3.3.5	HQ (SAD) Review	21d	19d	08/11/06	09/12/06	\$5,000
37-2865	7.3.3.5	Public Meeting on draft PPDR/EA	2d	0d	09/11/06	09/13/06	\$19,838
37-2860M	7.3.3.5	HQ Review of Draft Report	0d	19d		09/12/06	\$0
37-2870	7.3.3.5	Response to HQ comments	7d	19d	09/12/06	09/21/06	\$5,000
37-2890	7.3.3.5	Public Review of Draft PPDR/NEPA	40d	0d	09/13/06	11/09/06	\$0
37-2875	7.3.3.5	PPDR Review Conference with SAD	7d	19d	09/21/06	09/29/06	\$5,000
37-2880M	7.3.3.5	PPDR Review Conference	0d	19d		09/29/06	\$0
37-2885M	7.3.3.5	Project Guidance Memorandum Received	0d	19d		10/16/06	\$0
37-2900	7.3.3.5	Incorporate Public Comments(Revise PPDR)/Respond to Comments	22d	0d	11/09/06	12/14/06	\$29,250
37-2895M	7.3.3.5	Public Review of Draft PPDR/NEPA R eport Complete	0d	0d		11/09/06	\$0
37-2905	7.3.3.5	ITR Review of PPDR/EA	17d	0d	12/14/06	01/09/07	\$23,000

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37-2915	7.3.3.5	Incorporate ITR Comments	12d	0d	01/09/07	01/26/07	\$15,570
37-2910M	7.3.3.5	ITR Review/Certification	0d	0d		01/09/07	\$0
37-2925	7.3.3.5	Print and Distribute Revised PPDR to State	7d	0d	01/26/07	02/06/07	\$13,320
37-2920M	7.3.3.5	Final Draft PPDR Report with NEPA Complete	0d	0d		01/26/07	\$0
37-9255	7.3.3.5	In-House Review of Draft Final PPDR/FS/NEPA Complete	0d	47d		01/26/07	\$0
37-2950	7.3.3.5	Receive State Comments on PPDR/EA	40d	0d	02/06/07	04/04/07	\$0
37-2935	7.3.3.5	Letter of Intent	5d	77d	02/06/07	02/13/07	\$1,800
37-2930M	7.3.3.5	FS 1501 Submittal to FDEP with WQC Application	0d	0d		02/06/07	\$0
37-2940M	7.3.3.5	Sponsor's Letter of Intent Received	0d	77d		02/13/07	\$0
37-2945M	7.3.3.5	FS 1501 DEP Approval	0d	0d		04/04/07	\$0
37-2955	7.3.3.5	Incorporate State Comments	12d	0d	04/04/07	04/20/07	\$11,780
37-2960	7.3.3.5	OC Review/ITR Certification (inc EA)	6d	17d	04/20/07	05/01/07	\$13,600
37-9215	7.3.3.5	Submit 1502 WQC Application	2d	0d	04/20/07	04/24/07	\$0
37-9220	7.3.3.5	1502 Application Completeness Review	22d	0d	04/24/07	05/24/07	\$0
37-2965	7.3.3.5	Assemble Final PPDR	6d	17d	05/01/07	05/09/07	\$5,000
37-2962M	7.3.3.5	ITR/Legal Review of Final PPDR Complete	0d	17d		05/01/07	\$0
37-2967M	7.3.3.5	Final PPDR with NEPA Report Complete	0d	17d		05/09/07	\$0
37-2970	7.3.3.5	DE Signature /MSC Notice for PPDR/EA	5d	17d	05/09/07	05/16/07	\$0
37-2980	7.3.3.5	Transmit PPDR/EA to Washington	7d	17d	05/16/07	05/25/07	\$3,450
37-2975M	7.3.3.5	MSC Commander's Public Notice (Complete PPDR)	0d	17d		05/16/07	\$0
37-9225	7.3.3.5	Agency Action Review	65d	0d	05/24/07	08/27/07	\$0
37-2985	7.3.3.5	Publish Final PPDR/NEPA in Federal Register (MCS) Print and Mail	32d	17d	05/25/07	07/12/07	\$3,000
37-3000	7.3.3.5	Public Review Meeting for PPDR/EIS	42d	17d	07/12/07	09/11/07	\$4,000
37-2990M	7.3.3.5	Final PPDR/NEPA Report Published in the Federal Register	0d	17d		07/12/07	\$0
37-9230	7.3.3.5	Reasonable Assurance Status Meeting	5d	0d	08/27/07	09/04/07	\$0
37-9235	7.3.3.5	FS 1501 Reasonable Assurance Status Meeting	0d	0d		09/04/07	\$0
37-9240	7.3.3.5	Publish Notice of Intent and Draft Permit	15d	0d	09/04/07	09/25/07	\$0
37-2995M	7.3.3.5	Washington Level Agency Review/Public Review Complete	0d	17d		09/11/07	\$0
37-3005	7.3.3.5	Prepare Response to Public Comments	12d	17d	09/11/07	09/26/07	\$10,680
37-9245	7.3.3.5	Received State WQC Permits	0d	0d		09/25/07	\$0
37-3020	7.3.3.5	Prepare Chief of Engineers Report	13d	17d	09/26/07	10/16/07	\$3,000
37-3010M	7.3.3.5	Response to Public Comments of Final PPDR/NEPA Complete	0d	17d		09/26/07	\$0
37-3025	7.3.3.5	HQ/MSC Review Conference	13d	17d	09/26/07	10/16/07	\$5,000
37-3015M	7.3.3.5	Filing of Final NEPA Document Complete	0d	17d		10/16/07	\$0

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-3030	7.3.3.5	Review by ASA	10d	17d	10/16/07	10/30/07	\$0
37-3027M	7.3.3.5	PPDR Assessment to CECW-PM	0d	17d		10/16/07	\$0
37-3029M	7.3.3.5	Chief's Report to ASA(CW)	0d	17d		10/16/07	\$0
37-9285	7.3.3.5	ROD Signed	1d	1456d	10/16/07	10/17/07	\$0
37-9280	7.3.3.5	Record of Decision (ROD) Signed	0d	1456d		10/17/07	\$0
37-9290	7.3.3.5	ASA (CW) Letter Submitted to Congress	15d	1456d	10/17/07	11/07/07	\$0
37-3040	7.3.3.5	PPDR Approved by ASA	10d	17d	10/30/07	11/14/07	\$0
37-3035M	7.3.3.5	ASA (CW) Memorandum to OMB	0d	17d		10/30/07	\$0
37-9295	7.3.3.5	Congressional Review	70d	1456d	11/07/07	02/22/08	\$0
37-9305	7.3.3.5	ASA (CW) Report Submitted to Congress	0d	1456d		11/07/07	\$0
37.3.9 PPDR Authorization			22d	1456d	02/22/08	03/25/08	\$0
37-9300	7.3.3.5	Congressional Authorization	22d	1456d	02/22/08	03/25/08	\$0
37.3.A PPDR Close-Out			0d	1456d	03/25/08	03/25/08	\$0
37-3045M	7.3.3.5	PPDR Fiscal Closeout	0d	1456d		03/25/08	\$0
37.6 PROJECT COOPERATION AGREEMENT (PCA)			153d	0d	09/25/07	05/07/08	\$33,250
37-6000	3.5.2	Prepare Draft PCA	41d	0d	09/25/07	11/28/07	\$21,250
37-9250	3.5.2	PCA Initiated	0d	0d		09/25/07	\$0
37-6010	3.5.2	Review Draft PCA	15d	0d	11/28/07	12/19/07	\$0
37-6020	3.5.2	Revise Draft PCA	11d	0d	12/19/07	01/07/08	\$12,000
37-6030	3.5.2	Submit PCA	80d	0d	01/07/08	04/30/08	\$0
37-6040	3.5.2	Approve PCA	5d	0d	04/30/08	05/07/08	\$0
37.7 REAL ESTATE (RE)			128d	105d	02/29/08	08/29/08	\$1,000,000
37.7.2 Acquisition			128d	105d	02/29/08	08/29/08	\$1,000,000
37-7000	7.6	RE Acquisition	128d	105d	02/29/08	08/29/08	\$1,000,000
37.8 CONSTRUCTION (CONS)			845d	1106d	03/30/06	08/13/09	\$19,465,835
37.8.1 Project Management			4d	3d	03/30/06	04/05/06	\$1,400
37-3940	7.4.2.1.1	Draft FONSI	4d	3d	03/30/06	04/05/06	\$1,400
37.8.2 Solicitation/Award			135d	0d	05/07/08	11/19/08	\$0
37.8.2.1 Solicitation/Award for Design/Build Contract			135d	0d	05/07/08	11/19/08	\$0
37-5000	3.5.4	Issue RFP for Design Build	20d	0d	05/07/08	06/05/08	\$0
37-5010	3.5.4	Receive Bids	20d	0d	06/05/08	07/03/08	\$0
37-5020	3.5.4	Evaluate Proposals	15d	0d	07/03/08	07/25/08	\$0
37-5030	3.5.4	Oral Presentations	10d	0d	07/25/08	08/08/08	\$0

Activity ID	PMP Section	Activity Name	Original Duration	Total Float	Start	Finish	Budgeted Total Cost
37-5040	3.5.4	Select Contractors	5d	0d	08/08/08	08/15/08	\$0
37-5050	3.5.4	Negotiate Contractors	20d	0d	08/15/08	09/15/08	\$0
37-5060	3.5.4	Award and Approval of Contract by Governing Board	45d	0d	09/15/08	11/19/08	\$0
37.8.3 Construction Contract			184d	1106d	11/19/08	08/13/09	\$19,464,435
37-5080	3.5.4	Design	41d	0d	11/19/08	01/22/09	\$3,000,000
37-5070	3.5.4	Construction and operation	142d	1106d	01/22/09	08/13/09	\$16,464,435
37.8.3.1 Contract #1			160d	0d	11/19/08	07/13/09	\$0
37.8.3.1.10 Wetland Design/Build			160d	0d	11/19/08	07/13/09	\$0
37-5160	3.5.4	Conduct Survey	10d	0d	11/19/08	12/05/08	\$0
37-5170	3.5.4	Draft Design of Wetland	40d	0d	12/05/08	02/04/09	\$0
37-5180	3.5.4	Review Draft Design	15d	0d	02/04/09	02/26/09	\$0
37-5190	3.5.4	Final Draft	15d	0d	02/26/09	03/19/09	\$0
37-5200	3.5.4	Wetland Construction	80d	0d	03/19/09	07/13/09	\$0
37.8.3.1.1 ATT Design/Build			160d	0d	11/19/08	07/13/09	\$0
37-5090	3.5.4	Draft ATT Design	10d	0d	11/19/08	12/05/08	\$0
37-5100	3.5.4	Final Design	20d	0d	12/05/08	01/06/09	\$0
37-5110	3.5.4	Approval of Final Design	20d	0d	01/06/09	02/04/09	\$0
37-5120	3.5.4	Manufacturing of ATT Pilot Plant	80d	0d	02/04/09	05/29/09	\$0
37-5130	3.5.4	Civil Work for ATT Pilot Plant	20d	70d	02/04/09	03/05/09	\$0
37-5140	3.5.4	Final Inspection	10d	0d	05/29/09	06/12/09	\$0
37-5150	3.5.4	Installation of Pilot Plant	20d	0d	06/12/09	07/13/09	\$0
37.9 TECHNICAL DATA REPORT (TDR)			128d	0d	07/16/13	01/22/14	\$1,245,000
37.9.2 Report Preparation			128d	0d	07/16/13	01/22/14	\$1,245,000
37-9000	3.5.1.7	PPTDR	128d	0d	07/16/13	01/22/14	\$1,245,000
37.B PROJECT IMPLEMENTATION MONITORING (PIM)			1416d	0d	11/14/07	07/16/13	\$2,500,000
37.B.2 Pre-Construction Monitoring			397d	17d	11/14/07	06/17/09	\$750,000
37-9090	7.4.1.6.1	Baseline Monitoring	397d	17d	11/14/07	06/17/09	\$750,000
37.B.3 Post-Construction Monitoring			1002d	0d	07/13/09	07/16/13	\$1,750,000
37-9130	7.4.1.6.1	Post-Construction Monitoring	1002d	0d	07/13/09	07/16/13	\$1,750,000

TAB B – Activity Definitions, Constraints and Assumptions

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

CERP Wastewater Reuse Technology Pilot

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Activity	Constraints & Assumptions
37-1460 PPDR, Project Management	
01Constraints and Assumptions	Includes 12 trips/yr for COE. Assume \$80,000/yr COE; \$47,500/yr SFWMD for 4 years, 5 non-local trips/yr.
Activity Definition	Special coordination with the park and Miami-Dade will be needed
37-1470 Outreach Support	
01Constraints and Assumptions	Assume \$14,872 for public, stakeholder and agency involvement. \$9,460 for outreach to minority and socially and economically disadvantaged communities. \$7,206 for internal management and communications. \$14,040 for publications & presentation materials. \$13,793 for media activities.
37-1510 Initial PDT Meeting inc Site Identification	
Activity Definition	Meeting will allow review of the approved PMP and more detailed discussion of the tasks to be completed in the next 6 months as well as identification of what PDT members would like to more actively participate in specific tasks. Need to include discussion on identification of potential sites.
37-1520 Miami-Dade Coordination Meeting	
Activity Definition	Will ask M-D team members to identify and invite participants for the meeting (DERM, utilities, P&Z, etc). Need to discuss future plans regarding wastewater treatment in Miami-Dade County, also possible new construction, upgrades for west and south plants. Will also use meeting to help identify possible available lands/space for the pilot facility and test/control cells.
37-1530 Initial Outreach Meeting	
01Constraints and Assumptions	Will need to be held between PMP approval and tentatively selected plan.
37-1540 Initial ITR Meeting	
01Constraints and Assumptions	ITR review includes 5 EN, 1 RE, 1 PD-E, 1 PD-P, 1 CO for 4 hrs. All costs under EN-T.
37-1550 PDT Meeting, Discuss Siting Criteria	
01Constraints and Assumptions	CO cost is a combination of CO-R and CO-C.
37-1560 Develop Evaluation Criteria for Pilot/Refine Objectives	
01Constraints and Assumptions	Performance measures limited to pilot study but developed with full-scale implementation in mind. CO cost is a mix of CO-C and CO-R

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

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Activity	Constraints & Assumptions	
Activity Definition	For instance, what are water quality goals (surface water, ground water, receiving water), how will we define adverse/positive effects, how to evaluate success. Include hydrology, effluent quality, wetland function, wetland change, salinity, etc., include plants and animals. Coordination with Biscayne Bay Coastal Wetland PDT will be required. Include Restudy performance measures.	
37-1580 PDT Meeting to Discuss Alternative Technologies		
01Constraints and Assumptions	CO cost is a mix of CO-C and CO-R.	
37-1600 ITR/PDT Review of Alternatives Document		
01Constraints and Assumptions	ITR review includes 4 EN, 1 RE, 1 PD-E, 1 PD-P, 1 CO for 8 hrs.	
37-1620 Evaluate Pilot Project Alternatives		
Activity Definition	The evaluation of technologies will need to include an assessment of alternate number of treatment trains and various process units as well as the number of treatment/control cells.	
37-1650 PDT Alternatives Evaluation Meeting		
01Constraints and Assumptions	Includes meeting facilitation paid by COE. Assume 2 day trip.	
37-1660 Prepare Plan Selection Document		
01Constraints and Assumptions	CO cost is a mix of CO-C and CO-R.	
37-1670 ITR/PDT Review & Comment Plan Selection Document		
01Constraints and Assumptions	-ITR review includes 4 EN, 1 RE, 2 PD-E, 1 PD-P, 1 CO for 10 hrs. All costs under EN-T. -CO cost is a mix of CO-C and CO-R.	
37-1750 PDT Meeting, Plan Selection		
01Constraints and Assumptions	Includes meeting facilitation. CO cost is a mix of CO-C and CO-R.	
37-1770 Engineering Management		
01Constraints and Assumptions	Included ETL management function; monthly VTC, conferences/seminars, team coordination, upward reporting, fact sheet preparation. Assumes PPDR of 3 years, 2 conf/sem per year (one is 1 day, one is 3 day). Based on \$9467/year.	
37-1940 Attend Workshop and Site Visit		

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

CERP Wastewater Reuse Technology Pilot

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Activity	Constraints & Assumptions
01Constraints and Assumptions	Assume 2d per person+ 6hr travel, first day is field trip. Assume 2 ITR members attend (PD-E BIO, PD-E WQ). SFWMD ITR MON and MOD 8 hr. CO cost is a mix of CO-C and CO-R.
37-1990 ITR review transferability reports and criteria	
01Constraints and Assumptions	Assume 3 people, 8 hr each (2 PD-E, 1 EN-H). SFWMD ITR MOD 8 hr.
37-2000 PDT Review revised transferability criteria and modeling /monitoring approaches	
01Constraints and Assumptions	1d mtg + 1d prep (PD-R, PD-E, MON), develop list of candidate alts. Includes meeting facilitation paid from COE.
37-2010 Revise draft transferability criteria, modeling&monitoring approach	
01Constraints and Assumptions	Assume trip from SF to JAX for 1 person.
37-2030 Develop preliminary sampling Criteria	
01Constraints and Assumptions	Assume 1 trip from SF to JAX for 1 person.
37-2060 Prepare Interim Monitoring Plan for WPB Baseline Data Collection	
01Constraints and Assumptions	Assumes WPB will be used for monitoring/data collection. Assume one 2 day trip from SF to JAX for 1 person.
37-2090 Develop Draft Transferability Criteria	
01Constraints and Assumptions	Assume one trip from SF to JAX for 1 person. EN-G includes GG, GH,GS.
37-2100 Review criteria by PDT - webbrd	
01Constraints and Assumptions	2 PD-E reviewers.
37-2150 Develop preliminary modeling approach	
01Constraints and Assumptions	Assume 1 trip from SF to JAX for 1 person.
37-2200 Regulations Report	
Activity Definition	Needed to pick effluent quality water desired.
37-2210 Removal Efficiency Report (M-D Plants)	
Activity Definition	-Review the influent/effluent characteristics of the Miami-Dade wastewater treatment plants.

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

CERP Wastewater Reuse Technology Pilot

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Activity	Constraints & Assumptions
37-2220 Assess Potential for M-D influent/effluent change	
Activity Definition	Assess potential for change in the influent, secondary effluent and AWT effluent at the south M-D plant. Determine range of potential influent quality to the pilot treatment plant.
37-2230 Formulate treatment objectives	
01Constraints and Assumptions	-Need WQ background information from Env staff. -Will include one meeting with DEP and other regulators to help estimate discharge limit.
Activity Definition	Determine range of potential influent quality to the pilot treatment plant and estimate target for effluent discharge quality
37-2250 PDT Review of treatment objective/criteria & meeting	
01Constraints and Assumptions	Assume meeting in SF.
37-2270 Prepare Draft Evaluation Criteria for Technology	
01Constraints and Assumptions	CO cost is a mix of CO-C and CO-R.
Activity Definition	For instance cost, ability to meet WQ objectives, construction cost, O&M cost, flexibility, scalability, reliability, ability to test multiple treatment methods, land requirements, and residual disposal requirements, etc
37-2300 List of Technologies from Contractors Report	
Activity Definition	Prepare list of potential technologies from contractors report, that will be used for further evaluation.
37-2310 Evaluate Alternative Technologies	
01Constraints and Assumptions	EN-D costs includes Me, S.
37-2330 Prepare Scope, Identify Potential Contractors for Technology Research	
01Constraints and Assumptions	-Will need to include a list of vendors that the contractor needs to include in his technology research (provided by SFWMD). -Assume use of an existing contract.
37-2360 Review Contractors Recommendations Re Technology Criteria	
01Constraints and Assumptions	CO cost is a mix of CO-C and CO-R.
37-2370 Review Contractors draft Technology Research Report	
01Constraints and Assumptions	CO cost is a mix of CO-C and CO-R.
37-2390 Contractor Review and Refine Technology Criteria	

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

CERP Wastewater Reuse Technology Pilot

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Activity	Constraints & Assumptions
Activity Definition	Comments/revision on governmentt supplied eval criteria.
37-2400 Contractor Research Technologies	
Activity Definition	In scope includes identification of range influent acceptable to each treatment unit.
37-2410 Contractor Identify other AWT facilities in FL	
Activity Definition	ID other WWTP with reuse feature, ID treatment processes, effluent quality, regulatory requirements, discharge method, characteristics of the discharge site.
37-2420 Contractor Draft Report on Technology Information	
Activity Definition	Consider requiring the contractor to make recommendations regarding number of treatment trains, units to test and number of treatment cells. Or could have contractor participate in technology evaluation steps.
37-2560 Data Collection for Use in Models/Equations	
Activity Definition	Will need to determine evapotranspiration rates; coordinate with EN-G for seepage rates; coordinate with WQ experts.
37-2580 Perform Test Cell Model/Equations	
Activity Definition	Work includes building test cell model/equations and calibrate; perform initial model run, process results with draft report; coordinate with EN-D for structural design requirements; perform model runs. Model/equations will be used to determine test cell size based on various plant sizes (and desired hydrologic state), and to determine the potential area of influence of the test cell for aid in locating the monitoring wells. This will also tell us if we need to consider effects on receiving waters.
37-2590 Review Hydrological Model Results	
01Constraints and Assumptions	EN-D costs include DL & DS.
Activity Definition	Coordinate with H&H regarding probable site size requirements for both test cell and control cell. Env staff will need to determine if cell size can be considered representative of wetland area.
37-2600 H&H Appendix Preparation and Coordination	
Activity Definition	Includes coordination with geotech, design and cost estimating, draft and final report, and including address of comments.
37-2665 Draft Design Report	
01Constraints and Assumptions	EN-D includes DL, DM, DT, DS and \$4,500 for CADD.
37-2675 Internal/ITR Review of Preliminary Design	

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

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Activity	Constraints & Assumptions
01Constraints and Assumptions	-CO cost is a mix of CO-C and CO-R. -ITR 5 ENG, 1 PD-E 1 day. - Assumed 2 day review/comment from SFWMD (WQ, ENG, SCI) and COE (EN-G).
37-2682 Prepare Procurement Strategy for Design/Build Contract	
01Constraints and Assumptions	Activity Design includes Survey, Design and Cost Est. Work.
37-2700 Topographic Assessment/Walk Through	
01Constraints and Assumptions	-Assume a complete topographic survey is not required and an assesemnt of existing maps and a site visit will be sufficient to site the features and route the water. -EN-D costs includes DL, DM, DT includes travel.
37-2720 Locate Piping Route Between Pilot Plant and Cell	
01Constraints and Assumptions	Assume distance between pilot plant and test cell is 1 mi.
37-2725 Determine Piping Plan of Conveyance	
Activity Definition	Determine pipe size, pipe type, method of connetion to distribution.
37-2800 Prepare Engineering Appendix to the PPDR	
01Constraints and Assumptions	-EN-D costs includes Me, S. - Includes revision to preliminary design documents.
37-2840 Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	
01Constraints and Assumptions	EN-D costs includes DL, DS, DM, DT.
37-2850 Print and Mail Draft PPDR/EIS	
Activity Definition	Includes mailing for public review as well as to HQ/SAD. Noticing and posting in Federal Register are not required for an EA.
37-2870 Response to HQ comments	
01Constraints and Assumptions	Costs included in task 2840 & 2890.
Activity Definition	Review conference with SAD/HQ to be held within one week of SAJ response to comments.
37-2875 PPDR Review Conference with SAD	
01Constraints and Assumptions	Costs included in task 2840 & 2890.
37-2905 ITR Review of PPDR/EA	
01Constraints and Assumptions	Includes costs for activity 2825. ITR includes EN, RE, CO, PD-P, PD-E

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

CERP Wastewater Reuse Technology Pilot

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Activity	Constraints & Assumptions
37-2955 Incorporate State Comments	
01Constraints and Assumptions	Assume all permits are received at this time.
37-3060 Prepare Draft Ecological/WQ Monitoring Plan	
01Constraints and Assumptions	-Assume 1 trip from SF to JAX for 1 person/2 nights. -Should include some DEP required effluent monitoring into the monitoring plan. -Includes QA/QC plan. -May include review of other existing monitoring plans
Activity Definition	South Plant- -This monitoring plan would have a baseline at the control cell that would document preconstruction conditions and post construction monitoring at the test cell to assess effects. Some of the monitoring parameters/considerations are: soil, groundwater, surface water, interstitial water, ecological effects, data quality objectives, bioassays to determine effects on target species. -Depending on test/control cell area of influence and the cell proximity to tide, may need to monitor nearshore. -Will also need to consider (control cell and test cell) parameters to allow assessment of effects due to fresh water vs. reclaimed water inputs and what changes are a result of hydrologic changes as opposed to WQ. In the plan an assessment will need to be made to determine how long monitoring will need to be conducted to identify ecological, hydrological and water quality effects of using reclaimed water? -Monitoring before and after each component in the AWT facility will need to be considered to assess the operations. -The monitoring plan will need to include a cost and schedule for monitoring as well as a layout of the monitoring network. -Climitology data may also be needed. May need to include monitoring at WPB or other plant for ecological effects, EPOCs etc. if additional information is needed.
37-3080 PDT/ITR Ecol/WQ Monitoring Plan Review	
01Constraints and Assumptions	- Assume PDT or subteam meeting. - ITR. COE 3 peo/3md each, SFWMD 2 peo/3md each.
37-3090 Revise Ecol/WQ Monitoring Plan	
01Constraints and Assumptions	Minor revisions may be required to incorporate permit requirements once permits are received.
37-3160 Obtain Rights of Entry for Field Work	

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

CERP Wastewater Reuse Technology Pilot

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Activity	Constraints & Assumptions
01Constraints and Assumptions	Needed for geotech, ecological and also for SFWMD baseline WQ. Expect to add requirement to all contracted efforts with in-house staff assisting only.
37-3170 Identify Land Already Owned/available	
01Constraints and Assumptions	Assume this will include one PDT or subteam meeting.
Activity Definition	Will start with lands as close to South Wastewater Plant as possible. Lands already owned, owned by Miami-Dade and/or other agencies, willing seller. Includes possible sites for pilot facility as well as test/control cells.
37-3180 Identify Property information for each Available Site	
Activity Definition	ID owner, property size, maps, access availability.
37-3190 Prepare Preliminary Real Estate Cost for Alternative Sites	
01Constraints and Assumptions	Assume that there are 6 available land parcels, only one requiring purchase.
Activity Definition	Prepare cost for any site requiring purchase. Can use recent appraisals if available.
37-3210 Prepare Gross Appraisal	
01Constraints and Assumptions	Task will only be needed if the selected site is one that requires purchase rather than use of public land. If public land is used, this task can be deleted.
37-3220 Negotiate Land Use Agreement	
01Constraints and Assumptions	Assume only one landowner/agreement is needed. Assume that the owner of a least one site will agree to the project use of their wetland parcel.
Activity Definition	A memorandum of understanding will be required between the sponsors and the property owner of the test/control cell. Will need a use agreement.
37-3240 Prepare SOW for EPOC Literature Review	
Activity Definition	Scope of work to include: compile summary of relevant EPOC studies, investigate laboratory methods for measuring EPOCs, recommend monitoring strategy. Work includes develop scope, review, revise.
37-3260 Revise EPOC SOW, Neg, award contract	
Activity Definition	Revise SOW, prepare contract documents, prepare IGE, and award contract.
37-3290 PDT Comment on EPOC Draft Report	
01Constraints and Assumptions	Assume 3 MDs SFWMD review and 3 MDs COE review.

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

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Activity	Constraints & Assumptions
37-3310 Contractor Perform EPOC Literature Review	
Activity Definition	Contractor to identify contaminants of concern that are likely to be found in wastewater, identify EPOC monitoring targets in effluent, analytical methods, who is performing what research in this area, etc. Make recommendations regarding what EPOCs we should monitor for, identify where analysis can be performed and costs for analysis.
37-3360 Site Pre-Screening	
01Constraints and Assumptions	- Include site visit for PD-E and FWS. -PD-E includes \$2000 for ES.
Activity Definition	Using location, RE ownership information and if possible existing biological information, screen probable sites to narrow down list for full consideration.
37-3370 Site Screening Preliminary Data Collection	
01Constraints and Assumptions	-Assume that initial screening has left 3 sites for further evaluation and that each site is less than 5 acres. Assume 2 bio MDs COE for each site and extensive FWS participation.
Activity Definition	Data collection and site visit for a preliminary description of existing environmental resources. Information will be used to evaluate available properties for suitability, for test or control site as well as identify any unique features that may limit use of site as a test pilot site.
37-3380 Draft Site Selection Criteria - Phase II	
01Constraints and Assumptions	Product will be a memo to PF. Will address physical, ecologic, hydrologic, locational, and wetland impact requirements of the test cell and control cell sites. Will need input from BBCW on type and conditions of wetlands to be rehydrated (BBCW task 7.4.3.4.4.2, Wetland Habitat Evaluation).
Activity Definition	In order to identify usable wetland sites for the test and control site, selection criteria will be developed collaboratively with PDT members. For instance, land already owned or easily available, land close to south WWTP, etc. Will also need to consider the potential for interference by other CERP projects or other development in the area. Will need to consider wetland type, hydrology, condition, legal status.
37-3400 Prepare Final Siting Criteria	
01Constraints and Assumptions	\$2,160 for PD-ES.
37-3410 Evaluation of Alternative Sites	
01Constraints and Assumptions	\$2,160 for PD-ES. CO cost is a mix of CO-C and CO-R.
37-3420 Prepare Site Recommendation Documentation	

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

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Activity	Constraints & Assumptions
01Constraints and Assumptions	Assume one day meeting in SF; 2 SFWMD ENG.
Activity Definition	Evaluate results of field investigation and rank sites according to established criteria. PD-E will prepare a technical memo describing site(s) ranked in order of favorability. Evaluation includes consideration for wetland permitting/mitigation issues.
37-3450	Experts Assistance with Site Selection Criteria for Test and Control Site
Activity Definition	Includes reviewing model results to determine if recommended size of test cell will be representative of BBCW area.
37-3460	Review BBCW documentation regarding restoration targets
01Constraints and Assumptions	Will need to use whatever information is available at the time.
37-3470	Develop hydrologic regime desired
01Constraints and Assumptions	Assume 2 SFWMD Eng; meeting in central location (Orlando, Melbourne); \$120 travel for all; 12 hr each.
37-3475	Evaluate Receiving Water Quality
Task Changes	3/19/2003 - Removed \$20,000 from PD-E and applied to EN-G for task assistance as requested by PD-E.
01Constraints and Assumptions	Assume enough WQ data exists for most parameters of concern to establish the background concentration in the receiving water. Best professional judgement will be used for those parameters lacking sufficient data.
Activity Definition	Establish receiving water quality for Biscayne Bay, canals, wetland area in close proximity to WWTP (that might be used for test cell). A technical memo will be prepared providing an estimate of the baseline WQ concentrations in the receiving waters.
37-3480	Multi-Agency NPDES/1501 Pre-application Meeting
01Constraints and Assumptions	Consider holding pre-application at the South Dade Plant and include MDs to discuss the options for new permit as opposed to modification of South Plant Permit. Includes 1 day meeting in SF and two days for (PD-E and EN-G) summary prep.
Activity Definition	Need to define and establish the receiving water (canal, wetland, bay) and determine the effluent standards for release into the receiving water. Meet with DEP regulators and other interested parties to 1) identify the receiving waters, 2) discuss water quality based effluent limitations (WQBELs)/TBEL development, 3) Identify relevant gaps in existing water, sediment, fish, etc, criteria.
37-3500	Develop Scope of Work for WQ Modeling
01Constraints and Assumptions	Assume 3 MDs PD-E, 2 MDs ENG to write scope. 2 MDs each for PD-E, MOD for review. 2 MDs PD-E and 1 MD MOD for revision.
Activity Definition	Fate/Transport modeling is required to develop WQBELs. Product is

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

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Activity	Constraints & Assumptions
	expected to meet DEP requirements for NPDES permit.
37-3530 Contractor Perform WQ Modeling	
01Constraints and Assumptions	Will be a simple model to simulate fate/transport of nutrients, metals in wetland.
Activity Definition	Will include draft WQBELs for NPDES application.
37-3590 Compile Draft NPDES/WQ Application Package	
Activity Definition	Assemble permit application materials, including site investigation data, wetland delineation data, treatment plant proceed date, expected effluent quality information, receiving water quality information.
37-3610 Respond to Requests for Additional Information	
01Constraints and Assumptions	Assume 2 letters 4 MDs each for NPDES and 2 letters 2 MDs each for WQ Cert.
Activity Definition	Prepare response letters by gathering additional information related to pilot plant design/operations.
37-3700 Develop Scope of Work for EPOC Sampling/Analysis	
01Constraints and Assumptions	-Additional information on fate/transport of EPOCs will be collected. This information could be gathered at WPB, south plant or other plants in FL, depending on what/when the information is needed. -Monitoring before and after process units for assessment of ability to remove EPOC (or other pollutants). Also consider this type of monitoring at other plants that have AWTs. -Assume sampling will happen after 8/3 when WPB AWT is on-line. -Expect to contract with USGS.
37-3810 Environmental Coordination Federal and State	
01Constraints and Assumptions	This is an ongoing interactive process. Final coordination will be during draft EA to demonstrate compliance or address issues.
Activity Definition	Includes ongoing coordination with NOAA, USDA, NRCS, USFWS, FFWCC, St Clearing House, FDOT, etc.
37-3820 NEPA Scoping Process	
01Constraints and Assumptions	Includes 60 day public notice and response time. It is assumed that no public meeting will be required at this stage.
Activity Definition	Coordination with public and agency regarding issues and concerns. Will include scoping letter and NOI (if applicable).
37-3850 HTRW Ecological Risk Assessment Documentation	
Activity Definition	Environmental audit addressing eco risks of contaminants and issues of mobility. Meeting attendance & field inv. as necessary.
37-3860 Cultural Resource Assessment	

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Activity	Constraints & Assumptions
01Constraints and Assumptions	Assume only phase 1 investigation. Coordination with SHPO. No field investigations.
37-3870 Wetland Habitat Assessment, Existing (field work)	
01Constraints and Assumptions	-Field work and score compilation led by USFWS. Includes review time and permit search. PD-E costs include ES and EE. -Expect a limited wetland jurisdictional determination to be performed by RD. No cost has been budgeted. Assessment is for potential sites for assistance in site selection.
Activity Definition	A detailed evaluation will be made by an interagency team using WRAP or other agreed to method to characterize flora and fauna coverage/vegetative and habitat communities, threatened and endangered species, water quality and hydrology. Scores will be compiled and reviewed by team. A wetland jurisdiction will be conducted by or coordinated with both state and federal regulatory agencies for determination of regulatory or permitting issues., as well as identification of any existing mitigation recorded within the proposed area. This characterization will be used as the baseline to compare the anticipate project impacts in lights of test pilot design and operation, an analysis which is completed in Task 37-3880.
37-3880 Wetland Habitat Assessment, Alternative Evaluation	
01Constraints and Assumptions	FWS is taking the lead to compile report on data sheets and scores.
Activity Definition	Interagency team will review wetland habitat assesment of task 37-3870 and evaluate effects of alternatives wastewater technologies, hydrologic regimes, discharge methods, project designs, water quality, or any other project variable on the test cell. New scores demonstrating the lift (benefit) or impact of the selected alternative will be compiled and reviwed and used to consider selection of best environmental paln as well as meet regulatory and NEPA documenting requirements, as appropriate.
37-3900 USFWS Provide Planning Aid Letters (PAL)	
01Constraints and Assumptions	Includes meeting attendance, field work, report reviews, model review.
37-3910 USFWS Prepare Final CAR	
01Constraints and Assumptions	Includes meeting attendance, field work, report reviews, model review.
37-3930 USFWS Prepare Draft CAR	
01Constraints and Assumptions	Duration Minimum 4 months. Includes meeting attendance, field work, report reviews, model review.
37-3970 Draft EA	
Activity Definition	Includes compliance documentation, EIS summary, appendicies, compilation.

Appendix C Tab B - Activity Definitions, Constraints & Assumptions

CERP Wastewater Reuse Technology Pilot

Print Date: 12/19/03

Activity		Constraints & Assumptions
37-7000	RE Acquisition	
	01Constraints and Assumptions	Assumes RE acquisition can be completed 4 months after signed PCA.
37-9135	Develop Scope of Work for EPOC Sampling/Analysis	
	01Constraints and Assumptions	-Additional information on fate/transport of EPOCs will be collected. This information could be gathered at WPB, south plant or other plants in FL, depending on what/when the information is needed. -Monitoring before and after process units for assessment of ability to remove EPOC (or other pollutants). Also consider this type of monitoring at other plants that have AWTs. -Assume sampling will happen after 8/3 when WPB AWT is on-line. -Expect to contract with USGS.

TAB C – Activity ID/WBS Cross Reference

Activity ID/WBS Cross Reference					12/24/03
Activity ID	WBS	Activity Name	Original Duration	Start	Finish
37-1000	37.1.1	PMP West, Project Management	270d	01/11/01 A	02/08/02 A
37-1000M	37.1.2.1	PMP Initiated - West	0d		01/11/01 A
37-1010	37.1.1	PMP South, Project Management	430d	03/20/02 A	12/05/03 A
37-1020	37.1.2.1	Interagency Kick-off Meeting	1d	01/11/01 A	01/11/01 A
37-1030	37.1.2.1	Project Delivery Team/PM Meeting	1d	01/24/01 A	01/24/01 A
37-1040	37.1.2.1	PDT Kick-off Meeting	1d	02/12/01 A	02/12/01 A
37-1050M	37.1.2.1	Draft Initial PMP-West	10d	03/16/01 A	03/29/01 A
37-1060	37.1.2.1	Complete Internal Review	10d	10/16/01 A	10/29/01 A
37-1070	37.1.2.1	Revise PMP	8d	10/30/01 A	11/08/01 A
37-1080	37.1.2.1	Post on Web for Public & Agency Review	0d	11/13/01 A	11/13/01 A
37-1090	37.1.2.1	Hold Public/Stakeholder PMP Workshop	1d	11/19/01 A	11/19/01 A
37-1100	37.1.2.1	Complete Final Draft PMP, West	6d	11/20/01 A	11/29/01 A
37-1110	37.1.2.1	Distribute PMP for DCT, CRG, PRB & SFW MD Senior Management Review	0d	12/03/01 A	12/03/01 A
37-1120	37.1.2.1	Present and Discuss PMP at DCT Meeting	0d	12/07/01 A	12/07/01 A
37-1130	37.1.2.1	Present and Discuss PMP at CRG Meeting	1d	12/17/01 A	12/17/01 A
37-1140	37.1.2.1	Final Approval by SFWMD, Ex. Dir.	29d	12/18/01 A	01/30/02 A
37-1150	37.1.2.1	Present and Discuss PMP at PRB Meeting	0d	01/22/02 A	01/22/02 A
37-1160M	37.1.2.1	COE Endorse PMP	3d	01/31/02 A	02/04/02 A
37-1170	37.1.2.1	Work-in-Kind Letter from District Engineer - West	0d		02/05/02 A
37-1190M	37.1.2.2	PMP Initiated - South	0d		03/20/02 A
37-1200	37.1.2.2	Internal Meeting	0d	03/20/02 A	03/20/02 A
37-1210	37.1.2.2	PDT Kick-off Meeting	6d	04/19/02 A	04/26/02 A
37-1220M	37.1.2.2	PDT Kickoff Meeting	0d		04/26/02 A
37-1230	37.1.2.2	Draft Initial Revised PMP	143d	04/29/02 A	11/20/02 A
37-1240	37.1.2.2	Internal /PDT Review of Revised Draft PMP	14d	11/20/02 A	12/11/02 A
37-1250M	37.1.2.2	PMP Internal Review Initiated	0d		11/20/02 A
37-1260M	37.1.2.2	PMP Internal Review Complete	0d		12/11/02 A
37-1270	37.1.2.2	Incorporate Internal/PDT comments	18d	12/13/02 A	01/09/03 A
37-1280	37.1.2.2	Early Start Letter	19d	01/13/03 A	02/07/03 A
37-1290	37.1.2.2	Brief PrePRB/DCT	0d	01/13/03 A	01/13/03 A
37-1300	37.1.2.2	Revise PMP	58d	01/20/03 A	04/11/03 A
37-1310M	37.1.2.2	PMP Approved by PrePRB	0d		02/10/03 A
37-1320A	37.1.2.2	Post on Web for Public Review	6d	04/14/03 A	04/21/03 A
37-1330	37.1.2.2	Public Review of PMP	10d	04/22/03 A	05/05/03 A
37-1340	37.1.2.2	Incorporate Public Comments into PMP	125d	05/06/03 A	10/31/03 A
37-1350	37.1.2.2	Distribute PMP for PrePRB, CRG, PRB & SFW MD Senior Management Re...	27d	11/01/03 A	12/12/03 A
37-1360M	37.1.2.2	PMP DDE (PM) Signature	0d		12/22/03 A
37-1370	37.1.2.2	Present and Discuss PMP at PRB Meeting	0d	12/22/03 A	12/22/03 A
37-1380M	37.1.2.2	PMP Approved by Local Sponsor	0d		12/22/03 A
37-1390	37.1.2.2	Final Approval by SFWMD, Ex. Dir.	5d	12/22/03 A	12/30/03 A
37-1400	37.1.2.2	Present and Discuss PMP at CRG Meeting	0d	12/22/03 A	12/22/03 A
37-1410	37.1.2.2	Work-in-Kind Letter from District Engineer	5d	12/30/03 A	01/08/04
37-1420M	37.1.2.2	Work-in-Kind Letter Signed by District Engineer	0d		01/08/04
37-1430	37.1.3	PPDR PMP Revision	142d	09/09/05	04/07/06
37-1435	37.1.4	Construction PMP Revision	142d	01/22/09	08/13/09
37-1440M	37.3	Initiate Decision Document PPDR	0d		02/07/03 A
37-1450	37.3.1	PPDR, West Project Management	249d	02/08/02 A	02/07/03 A
37-1460	37.3.1	PPDR, Project Management	1069d	02/07/03 A	05/16/07
37-1470	37.3.1	Outreach Support	733d	01/09/04	12/14/06
37-1480	37.3.1	PPDR Contingency	838d	01/09/04	05/16/07
37-1490	37.3.1	Prepare MOA with Miami-Dade (South Plant)	10d	09/09/05	09/23/05
37-1500	37.3.2	Planning Management	838d	01/09/04	05/16/07
37-1510	37.3.2.1.1	Initial PDT Meeting inc Site Identification	1d	02/25/03 A	02/25/03 A
37-1520	37.3.2.1.1	Miami-Dade Coordination Meeting	1d	02/26/03 A	02/26/03 A
37-1530	37.3.2.1.1	Initial Outreach Meeting	20d	01/09/04	02/09/04
CERP Wastewater Reuse Technology Pilot			Page 1 of 8		Appendix C Tab C

Activity ID	WBS	Activity Name	Original Duration	Start	Finish
37-1540	37.3.2.1.1	Initial ITR Meeting	1d	04/06/04	04/07/04
37-1550	37.3.2.1.2	PDT Meeting, Discuss Siting Criteria	10d	04/19/04	04/30/04
37-1560	37.3.2.1.2	Develop Evaluation Criteria for Pilot/Refine Objectives	10d	10/18/04	11/01/04
37-1570	37.3.2.2	Document Transferability Decision WPB/West M-D	419d	04/03/02 A	12/05/03 A
37-1580	37.3.2.2	PDT Meeting to Discuss Alternative Technologies	10d	06/23/04	07/08/04
37-1590	37.3.2.2	Prepare Project Alternatives Documents	10d	07/08/04	07/22/04
37-1600	37.3.2.2	ITR/PDT Review of Alternatives Document	10d	07/22/04	08/05/04
37-1610	37.3.2.2	Initial SAD/HQ In Progress Review Meeting	20d	08/05/04	09/02/04
37-1615M	37.3.2.2	PPDR Initial In-Progress Review Meeting	0d		09/02/04
37-1620	37.3.2.3	Evaluate Pilot Project Alternatives	10d	01/26/05	02/09/05
37-1630	37.3.2.3	Prepare Evaluation Documents	10d	02/09/05	02/25/05
37-1640	37.3.2.3	PDT Review Evaluation Document	10d	02/25/05	03/11/05
37-1650	37.3.2.3	PDT Alternatives Evaluation Meeting	5d	03/11/05	03/18/05
37-1660	37.3.2.4	Prepare Plan Selection Document	15d	03/18/05	04/11/05
37-1670	37.3.2.4	ITR/PDT Review & Comment Plan Selection Document	10d	04/11/05	04/25/05
37-1680	37.3.2.4	Revise Plan Selection Document inc ITR Comments	11d	04/25/05	05/10/05
37-1690	37.3.2.4	Public Review inc Meeting (Technology and Site Selection)	11d	05/10/05	05/24/05
37-1700	37.3.2.4	Incorporate Public Comments on Selected Plan	11d	05/24/05	06/09/05
37-1710	37.3.2.4	Submit Plan Selection Documents to SAD/HQ	3d	06/09/05	06/14/05
37-1715M	37.3.2.4	Submit IPR Documentation to HQ/SAD	0d		06/14/05
37-1720	37.3.2.4	Meet with SAD/HQ (IPR)	2d	07/13/05	07/14/05
37-1725M	37.3.2.4	Alternative Formulation Briefing (IPR)/Site Visit	0d		07/14/05
37-1730	37.3.2.4	HQ Issue program guidance memo	16d	07/14/05	08/05/05
37-1735M	37.3.2.4	Pilot Project (IPR) Guidance Memorandum Received	0d		08/05/05
37-1740	37.3.2.4	Incorporate SAD/HQ Comments	9d	08/05/05	08/18/05
37-1750	37.3.2.4	PDT Meeting, Plan Selection	9d	08/18/05	08/31/05
37-1760	37.3.2.4	Finalize Selected Plan	6d	08/31/05	09/09/05
37-1770	37.3.3	Engineering Management	838d	01/09/04	05/16/07
37-1780	37.3.3.1.1	Prepare Scope for Information Collection WPB/WMD	47d	06/25/01 A	08/29/01 A
37-1790	37.3.3.1.1	Review Scope for Information Collection WPB/WMD	4d	08/30/01 A	09/05/01 A
37-1800	37.3.3.1.1	Revise Scope for Information Collection WPB/WPD	5d	09/06/01 A	09/12/01 A
37-1810	37.3.3.1.1	Award Information Collection Contract WPB/WMD	39d	09/13/01 A	11/07/01 A
37-1820	37.3.3.1.2	Administer Baseline Information Collection Contract WPB/WMD	96d	11/08/01 A	04/01/02 A
37-1830	37.3.3.1.2	Review Draft Baseline Data Collection Report	19d	01/23/02 A	02/19/02 A
37-1840	37.3.3.1.2	Data Coordination for Baseline Information Collection	20d	01/24/02 A	02/21/02 A
37-1850	37.3.3.1.2	Prepare Agenda for Workshop	1d	02/20/02 A	02/20/02 A
37-1860	37.3.3.1.2	Review Draft Workshop Report	8d	02/28/02 A	03/11/02 A
37-1870	37.3.3.1.3	Collect Baseline Information and Prepare Draft Report	43d	11/16/01 A	01/22/02 A
37-1880	37.3.3.1.3	Facilitate Workshop	1d	02/22/02 A	02/22/02 A
37-1890	37.3.3.1.3	Prepare Final Baseline Information Collection Report	5d	02/25/02 A	03/01/02 A
37-1900	37.3.3.1.3	Draft Workshop Report/Meeting minutes	3d	02/25/02 A	02/27/02 A
37-1910	37.3.3.1.3	Final Workshop Report	13d	03/13/02 A	03/30/02 A
37-1920	37.3.3.1.4	Contract Preparation and Award for Expert Assistance	33d	11/08/01 A	12/28/01 A
37-1930	37.3.3.1.4	Send Draft Documents for Review	3d	01/23/02 A	01/25/02 A
37-1940	37.3.3.1.4	Attend Workshop and Site Visit	1d	02/22/02 A	02/22/02 A
37-1950	37.3.3.1.4.1	Experts Provide Draft Comments	10d	01/30/02 A	02/12/02 A
37-1960	37.3.3.1.4.1	Experts Attend Workshop	3d	02/20/02 A	02/22/02 A
37-1970	37.3.3.1.4.1	Experts Report (comments on criteria, transferability and approach plans)	10d	02/27/02 A	03/12/02 A
37-1980	37.3.3.1.5	Review expert draft comments re transferability	4d	02/13/02 A	02/19/02 A
37-1990	37.3.3.1.5	ITR review transferability reports and criteria	7d	04/03/02 A	04/11/02 A
37-2000	37.3.3.1.5	PDT Review revised transferability criteria and modeling/monitoring approach	9d	04/04/02 A	04/16/02 A
37-2010	37.3.3.1.5	Revise draft transferability criteria, modeling&monitoring approach	16d	04/09/02 A	04/30/02 A
37-2020	37.3.3.1.5	Incorporate ITR/PDT transferability comments	10d	04/17/02 A	04/30/02 A
37-2030	37.3.3.1.6	Develop preliminary sampling Criteria	24d	11/08/01 A	12/14/01 A
37-2040	37.3.3.1.6	Review criteria by PDT - webbrd	27d	12/17/01 A	01/25/02 A

Activity ID/WBS Cross Reference					12/24/03
Activity ID	WBS	Activity Name	Original Duration	Start	Finish
37-2050	37.3.3.1.6	Revise sampling criteria	4d	02/13/02 A	02/19/02 A
37-2060	37.3.3.1.6	Prepare Interim Monitoring Plan for WPB Baseline Data Collection	68d	02/28/02 A	06/04/02 A
37-2070	37.3.3.1.6	Review Interim Monitoring Plan	10d	06/05/02 A	06/18/02 A
37-2080	37.3.3.1.6	Review & Approve Interim Monitoring Plan	32d	06/18/02 A	08/01/02 A
37-2090	37.3.3.1.7	Develop Draft Transferability Criteria	24d	11/08/01 A	12/14/01 A
37-2100	37.3.3.1.7	Review criteria by PDT - webbrd	27d	12/17/01 A	01/25/02 A
37-2110	37.3.3.1.7	Revise Draft Criteria	4d	02/13/02 A	02/19/02 A
37-2120	37.3.3.1.8	Hold WPB/WMD PDT Meeting	30d	04/30/02 A	06/11/02 A
37-2130	37.3.3.1.8	Notice WPB/WMD PDT Meeting	1d	05/28/02 A	05/28/02 A
37-2140	37.3.3.1.8	Receive PDT Comments Re Approaches	9d	06/11/02 A	06/21/02 A
37-2150	37.3.3.1.9	Develop preliminary modeling approach	24d	11/08/01 A	12/14/01 A
37-2160	37.3.3.1.9	Review modeling approach by PDT - webbrd	27d	12/17/01 A	01/25/02 A
37-2170	37.3.3.1.9	Revise modeling approach	4d	02/13/02 A	02/19/02 A
37-2180	37.3.3.2.1	Review Existing Reports/Studies inc letter report	165d	02/05/02 A	09/27/02 A
37-2190	37.3.3.2.1	Identify and review regulations	106d	05/31/02 A	10/30/02 A
37-2200	37.3.3.2.1	Regulations Report	145d	10/30/02 A	05/30/03 A
37-2210	37.3.3.2.1.1	Removal Efficiency Report (M-D Plants)	213d	10/01/02 A	08/07/03 A
37-2220	37.3.3.2.1.1	Assess Potential for M-D influent/effluent change	107d	03/10/03 A	08/07/03 A
37-2230	37.3.3.2.1.1	Formulate treatment objectives	1d	08/08/03 A	08/08/03 A
37-2240	37.3.3.2.1.1	Letter Report of treatment objectives	5d	08/11/03 A	08/15/03 A
37-2250	37.3.3.2.1.1	PDT Review of treatment objective/criteria & meeting	34d	08/26/03 A	10/14/03 A
37-2260	37.3.3.2.1.1	Revise Treatment objectives	21d	08/08/03 A	09/08/03 A
37-2270	37.3.3.2.1.2	Prepare Draft Evaluation Criteria for Technology	14d	07/28/03 A	08/14/03 A
37-2290	37.3.3.2.1.2	Prepare Final Technology Criteria	38d	09/16/03 A	11/07/03 A
37-2300	37.3.3.2.1.2	List of Technologies from Contractors Report	10d	06/09/04	06/23/04
37-2310	37.3.3.2.1.2	Evaluate Alternative Technologies	10d	09/02/04	09/17/04
37-2320	37.3.3.2.1.2	Prepare Technology Recommendation Documentation	10d	09/17/04	10/01/04
37-2330	37.3.3.2.1.3.1	Prepare Scope, Identify Potential Contractors for Technology Research	46d	08/25/03 A	10/29/03 A
37-2340	37.3.3.2.1.3.1	Negotiate and Award technology research contract	23d	12/30/03 A	02/02/04
37-2350	37.3.3.2.1.3.1	Technology Research Contract Management	100d	02/02/04	06/23/04
37-2360	37.3.3.2.1.3.1	Review Contractors Recommendations Re Tec hnology Criteria	10d	02/24/04	03/09/04
37-2370	37.3.3.2.1.3.1	Review Contractors draft Tec hnology Research Report	15d	05/18/04	06/09/04
37-2380	37.3.3.2.1.3.1	Backcheck Technology Final Report	10d	07/08/04	07/22/04
37-2390	37.3.3.2.1.3.2	Contractor Review and Refine Tec hnology Criteria	15d	02/02/04	02/24/04
37-2400	37.3.3.2.1.3.2	Contractor Research Tec hnologies	60d	02/02/04	04/27/04
37-2410	37.3.3.2.1.3.2	Contractor Identify other AWT facilities in FL	10d	02/02/04	02/17/04
37-2420	37.3.3.2.1.3.2	Contractor Draft Report on Technology Information	15d	04/27/04	05/18/04
37-2430	37.3.3.2.1.3.2	Contractors Final Report on Tec hnology Information	20d	06/09/04	07/08/04
37-2560	37.3.3.3	Data Collection for Use in Models/Equations	10d	09/17/04	10/01/04
37-2570	37.3.3.3	Identify Test Cell Model/Equations	10d	10/01/04	10/18/04
37-2580	37.3.3.3	Perform Test Cell Model/Equations	40d	10/18/04	12/16/04
37-2590	37.3.3.3	Review Hydrological Model Results	10d	12/16/04	01/04/05
37-2600	37.3.3.3	H&H Appendix Preparation and Coordination	22d	02/22/06	03/24/06
37-2665	37.3.3.4.6	Draft Design Report	21d	12/08/05	01/10/06
37-2670	37.3.3.4.6	EN-D QC of Draft Design Documents and Revise	12d	01/10/06	01/27/06
37-2675	37.3.3.4.6	Internal/ITR Review of Preliminary Design	17d	01/27/06	02/22/06
37-2680	37.3.3.4.6	PDT Meeting for Preliminary Design	7d	02/22/06	03/03/06
37-2682	37.3.3.5	Prepare Procurement Strategy for Design/Build Contract	22d	01/20/06	02/22/06
37-2684	37.3.3.5	Governing Board Approval (by May 15, 2005)	20d	02/22/06	03/22/06
37-2686	37.3.3.5	Prepare Statement Award	65d	03/22/06	06/21/06
37-2688	37.3.3.5	Internal Review & ICMS	22d	06/21/06	07/25/06
37-2690	37.3.3.5	Incorporate Comments	22d	07/25/06	08/24/06
37-2692	37.3.3.5	Issue Final Statement Award	20d	08/24/06	09/22/06
37-2700	37.3.3.4.1	Topographic Assessment/Walk Through	6d	07/08/05	07/15/05
37-2705	37.3.3.4.2	Finalize Location, Orientation and Dimension of Cell	17d	09/09/05	10/04/05
CERP Wastewater Reuse Technology Pilot			Page 3 of 8		Appendix C Tab C

Activity ID/WBS Cross Reference					12/24/03
Activity ID	WBS	Activity Name	Original Duration	Start	Finish
37-2710	37.3.3.4.2	Determine design of Levee and supporting Structure	7d	10/04/05	10/14/05
37-2715	37.3.3.4.2	Determine Piping Plan for Cell	12d	10/04/05	10/21/05
37-2720	37.3.3.4.3	Locate Piping Route Between Pilot Plant and Cell	12d	10/04/05	10/21/05
37-2725	37.3.3.4.3	Determine Piping Plan of Conveyance	12d	10/21/05	11/08/05
37-2730	37.3.3.4.3	Determine Auxilliary Mechanical & Electrical Equipment	12d	10/21/05	11/08/05
37-2735	37.3.3.4.4	Slab Design for Support of Pilot Plant	12d	09/09/05	09/27/05
37-2740	37.3.3.4.4	Support Structure for Pump Equipment	12d	11/08/05	11/29/05
37-2745	37.3.3.4.5	Prepare Cost Estimate for Cell Design	7d	10/21/05	11/01/05
37-2750	37.3.3.4.5	Prepare Cost Estimate for Conveyance	7d	11/08/05	11/18/05
37-2755	37.3.3.4.5	Cost Estimate for Structural Support	7d	11/29/05	12/08/05
37-2760M	37.3.3.4.5	Baseline Cost Estimate Approved	0d		02/22/06
37-2800	37.3.3.6	Prepare Engineering Appendix to the PPDR	12d	03/24/06	04/10/06
37-2805	37.3.3.7	Draft PPDR inc Supplemental EA & Draft FONSI	42d	04/10/06	06/08/06
37-2810M	37.3.3.7	Draft PPDR and NEPA R eport Complete	0d		06/08/06
37-2815M	37.3.3.7	FS 1501 Meeting with FDEP	0d		06/08/06
37-2820	37.3.3.7	Technical Editor Review PPDR	17d	06/08/06	07/03/06
37-2825	37.3.3.7	Internal/PDT/ITR Review of PPDR/EA	17d	06/08/06	07/03/06
37-2830M	37.3.3.7	In-House / Sponsor Review Draft PPDR Complete	0d		07/03/06
37-2835M	37.3.3.7	ITR of Draft PPDR Complete	0d		07/03/06
37-2840	37.3.3.7	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	21d	07/03/06	08/02/06
37-2845M	37.3.3.7	Incorporate In-House/Sponsor Cmts on Draft PPDR Report	0d		08/02/06
37-2850	37.3.8	Print and Mail Draft PPDR/EIS	6d	08/02/06	08/11/06
37-2855	37.3.8	HQ (SAD) Review	21d	08/11/06	09/12/06
37-2860M	37.3.8	HQ Review of Draft Report	0d		09/12/06
37-2865	37.3.8	Public Meeting on draft PPDR/EA	2d	09/11/06	09/13/06
37-2870	37.3.8	Response to HQ comments	7d	09/12/06	09/21/06
37-2875	37.3.8	PPDR Review Conference with SAD	7d	09/21/06	09/29/06
37-2880M	37.3.8	PPDR Review Conference	0d		09/29/06
37-2885M	37.3.8	Project Guidance Memorandum Received	0d		10/16/06
37-2890	37.3.8	Public Review of Draft PPDR/NEPA	40d	09/13/06	11/09/06
37-2895M	37.3.8	Public Review of Draft PPDR/NEPA R eport Complete	0d		11/09/06
37-2900	37.3.8	Incorporate Public Comments(Revise PPDR)/Respond to Comments	22d	11/09/06	12/14/06
37-2905	37.3.8	ITR Review of PPDR/EA	17d	12/14/06	01/09/07
37-2910M	37.3.8	ITR Review/Certification	0d		01/09/07
37-2915	37.3.8	Incorporate ITR Comments	12d	01/09/07	01/26/07
37-2920M	37.3.8	Final Draft PPDR Report with NEPA Complete	0d		01/26/07
37-2925	37.3.8	Print and Distribute Revised PPDR to State	7d	01/26/07	02/06/07
37-2930M	37.3.8	FS 1501 Submittal to FDEP with WQC Application	0d		02/06/07
37-2935	37.3.8	Letter of Intent	5d	02/06/07	02/13/07
37-2940M	37.3.8	Sponsor's Letter of Intent Received	0d		02/13/07
37-2945M	37.3.8	FS 1501 DEP Approval	0d		04/04/07
37-2950	37.3.8	Receive State Comments on PPDR/EA	40d	02/06/07	04/04/07
37-2955	37.3.8	Incorporate State Comments	12d	04/04/07	04/20/07
37-2960	37.3.8	OC Review/ITR Certification (inc EA)	6d	04/20/07	05/01/07
37-2962M	37.3.8	ITR/Legal Review of Final PPDR Complete	0d		05/01/07
37-2965	37.3.8	Assemble Final PPDR	6d	05/01/07	05/09/07
37-2967M	37.3.8	Final PPDR with NEPA Report Complete	0d		05/09/07
37-2970	37.3.8	DE Signature /MSC Notice for PPDR/EA	5d	05/09/07	05/16/07
37-2975M	37.3.8	MSC Commander's Public Notice (Complete PPDR)	0d		05/16/07
37-2980	37.3.8	Transmit PPDR/EA to Washington	7d	05/16/07	05/25/07
37-2985	37.3.8	Publish Final PPDR/NEPA in Federal Register (MCS) Print and Mail	32d	05/25/07	07/12/07
37-2990M	37.3.8	Final PPDR/NEPA Report Published in the Federal Register	0d		07/12/07
37-2995M	37.3.8	Washington Level Agency Review/Public Review Comple te	0d		09/11/07
37-3000	37.3.8	Public Review Meeting for PPDR/EIS	42d	07/12/07	09/11/07
37-3005	37.3.8	Prepare Response to Public Comments	12d	09/11/07	09/26/07
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Activity ID/WBS Cross Reference					12/24/03
Activity ID	WBS	Activity Name	Original Duration	Start	Finish
37-3010M	37.3.8	Response to Public Comments of Final PPDR/NEPA Complete	0d		09/26/07
37-3015M	37.3.8	Filing of Final NEPA Document Complete	0d		10/16/07
37-3020	37.3.8	Prepare Chief of Engineers Report	13d	09/26/07	10/16/07
37-3025	37.3.8	HQ/MSR Review Conference	13d	09/26/07	10/16/07
37-3027M	37.3.8	PPDR Assessment to CECW-PM	0d		10/16/07
37-3029M	37.3.8	Chief's Report to ASA(CW)	0d		10/16/07
37-3030	37.3.8	Review by ASA	10d	10/16/07	10/30/07
37-3035M	37.3.8	ASA (CW) Memorandum to OMB	0d		10/30/07
37-3040	37.3.8	PPDR Approved by ASA	10d	10/30/07	11/14/07
37-3045M	37.3.A	PPDR Fiscal Closeout	0d		03/25/08
37-3050	37.3.5.1	Review WPB Monitoring Plan	276d	02/28/02 A	04/04/03 A
37-3060	37.3.5.1	Prepare Draft Ecological/WQ Monitoring Plan	22d	03/09/06	04/10/06
37-3080	37.3.5.1	PDT/ITR Ecol/WQ Monitoring Plan Review	17d	04/10/06	05/03/06
37-3090	37.3.5.1	Revise Ecol/WQ Monitoring Plan	12d	05/03/06	05/19/06
37-3100	37.3.5.2	Prepare Draft O&M Plan for Pilot Plant	11d	10/04/05	10/20/05
37-3120	37.3.5.1	Contract Preparation and Award for Expert Assistance re Monitoring Plan	20d	04/10/06	05/08/06
37-3130	37.3.5.1	Expert Assistance Regarding Monitoring Plan	21d	06/08/06	07/10/06
37-3140	37.3.5.1	Contract Management for Expert Assistance	42d	04/10/06	06/08/06
37-3150	37.3.5.3	Prepare Treatment Plant Monitoring Plan	61d	06/14/05	09/08/05
37-3160	37.3.6.1	Obtain Rights of Entry for Field Work	20d	03/15/04	04/09/04
37-3170	37.3.6.2	Identify Land Already Owned/available	17d	01/31/03 A	02/25/03 A
37-3180	37.3.6.2	Identify Property information for each Available Site	5d	02/19/03 A	02/25/03 A
37-3190	37.3.6.3	Prepare Preliminary Real Estate Cost for Alternative Sites	88d	11/03/03 A	03/12/04
37-3200	37.3.6.4	Prepare RE Acquisition Maps for Alternatives	5d	02/19/03 A	02/25/03 A
37-3210	37.3.6.5	Prepare Gross Appraisal	20d	03/15/04	04/09/04
37-3220	37.3.6.5	Negotiate Land Use Agreement	10d	10/01/04	10/18/04
37-3230	37.3.6.6	Prepare RE Appendix/Supplement	20d	10/18/04	11/16/04
37-3240	37.3.7.1.1	Prepare SOW for EPOC Literature Review	20d	01/19/05	02/15/05
37-3250	37.3.7.1.1	PDT Review and Comment on EPOC SOW	10d	02/16/05	03/02/05
37-3260	37.3.7.1.1	Revise EPOC SOW , Neg, award contract	20d	03/03/05	03/30/05
37-3270	37.3.7.1.1	EPOC Contract Management	745d	03/31/05	03/25/08
37-3280	37.3.7.1.1	Attend EPOC Presentation	5d	07/18/05	07/22/05
37-3290	37.3.7.1.1	PDT Comment on EPOC Draft Report	20d	07/25/05	08/19/05
37-3300	37.3.7.1.1	Backcheck of Final EPOC Report	10d	09/06/05	09/19/05
37-3310	37.3.7.1.1.4	Contractor Perform EPOC Literature Review	60d	03/31/05	06/23/05
37-3320	37.3.7.1.1.4	Contractor Prepare Draft EPOC Report	10d	06/24/05	07/08/05
37-3330	37.3.7.1.1.4	Contractor Present EPOC Report to PDT	10d	07/11/05	07/22/05
37-3340	37.3.7.1.1.4	Contractor Prepare Final EPOC Report	10d	08/22/05	09/02/05
37-3350	37.3.7.1.2	Develop Site Prescreening Criteria	88d	02/27/03 A	07/01/03 A
37-3360	37.3.7.1.2	Site Pre-Screening	10d	07/02/03 A	07/16/03 A
37-3370	37.3.7.1.2	Site Screening Preliminary Data Collection	21d	09/02/03 A	09/30/03 A
37-3380	37.3.7.1.2	Draft Site Selection Criteria - Phase II	88d	11/03/03 A	03/12/04
37-3390	37.3.7.1.2	PDT Review of Final Siting Criteria for Phase II	25d	03/15/04	04/16/04
37-3400	37.3.7.1.2	Prepare Final Siting Criteria	10d	05/03/04	05/14/04
37-3410	37.3.7.1.2	Evaluation of Alternative Sites	10d	09/02/04	09/17/04
37-3420	37.3.7.1.2	Prepare Site Recommendation Documentation	10d	09/17/04	10/01/04
37-3430	37.3.7.1.2.1	Prepare SOW for Environmental Expert Assistance	15d	04/26/04	05/14/04
37-3440	37.3.7.1.2.1	Negotiate and Award Contract for Expert Environmental Assistance	30d	05/17/04	06/28/04
37-3450	37.3.7.1.2.1	Experts Assistance with Site Selection Criteria for Test and Control Site	67d	06/29/04	10/01/04
37-3460	37.3.7.1.3	Review BBCW documentation regarding restoration targets	10d	01/09/04	01/26/04
37-3470	37.3.7.1.3	Develop hydrologic regime desired	30d	01/26/04	03/09/04
37-3475	37.3.7.1.4	Evaluate Receiving Water Quality	115d	02/26/03 A	08/07/03 A
37-3480	37.3.7.1.4	Multi-Agency NPDES/1501 Pre-application Meeting	10d	10/01/04	10/18/04
37-3485M	37.3.7.1.4	FS 1501 Pre-Application Meeting	0d		10/18/04
37-3490M	37.3.7.1.4	FS 1501 Pre-Application Concurrence Letter Received	0d		11/01/04
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Activity ID/WBS Cross Reference					12/24/03
Activity ID	WBS	Activity Name	Original Duration	Start	Finish
37-3500	37.3.7.1.4.1	Develop Scope of Work for WQ Modeling	17d	09/09/05	10/04/05
37-3510	37.3.7.1.4.1	Negotiate and Award WQ Modeling	17d	10/04/05	10/28/05
37-3520	37.3.7.1.4.1	Manage WQ Modeling Contract	89d	10/28/05	03/13/06
37-3530	37.3.7.1.4.1	Contractor Perform WQ Modeling	62d	10/28/05	02/01/06
37-3540	37.3.7.1.4.1	Contractor Submits Draft W Q Modeling Report	12d	02/01/06	02/17/06
37-3550	37.3.7.1.4.1	Review Draft W Q Modeling Results	12d	02/17/06	03/08/06
37-3560	37.3.7.1.4.1	Contractor Submits Final WQ Modeling Report	11d	03/08/06	03/23/06
37-3570	37.3.7.1.4.1	Backcheck Final W Q Modeling Report	12d	03/23/06	04/10/06
37-3580	37.3.7.1.5	Develop Performance Measures for Rehydrafterd Wetlands	10d	03/09/04	03/23/04
37-3590	37.3.7.1.6	Compile Draft NPDES/W Q Application Package	20d	01/19/06	02/17/06
37-3600	37.3.7.1.6	Permit Coordination Meeting	10d	02/17/06	03/06/06
37-3610	37.3.7.1.6	Respond to Requests for Additional Information	10d	03/06/06	03/21/06
37-3620	37.3.7.1.6.1	Develop Scope of Work for Monitoring	10d	10/18/04	11/01/04
37-3630	37.3.7.1.6.1	Negotiate and Award Monitoring Contract	10d	11/01/04	11/16/04
37-3640	37.3.7.1.6.1	Manage Monitoring Contract	271d	11/16/04	12/19/05
37-3650	37.3.7.1.6.1	Contractor Perform Monitoring	250d	11/16/04	11/17/05
37-3660	37.3.7.1.6.1	Contractor Submits Draft Monitoring Report	10d	11/17/05	12/05/05
37-3670	37.3.7.1.6.1	Review Draft Monitoring Results	10d	12/05/05	12/19/05
37-3680	37.3.7.1.6.1	Contractor Submits Final Monitoring Report	10d	12/19/05	01/04/06
37-3690	37.3.7.1.6.1	Backcheck Final Monitoring Report	10d	01/04/06	01/19/06
37-3700	37.3.4.1.1	Develop Scope of Work for EPOC Sampling/Analysis	77d	04/08/03 A	07/25/03 A
37-3710	37.3.4.1.1	Negotiate and Award EPOC Sampling/Analysis	56d	07/25/03 A	10/14/03 A
37-3720	37.3.4.1.1	Contractor Perform EPOC Sampling	221d	10/15/03 A	08/31/04
37-3730	37.3.4.1.1	Data Validation/Data Entry for EPOC Contract	220d	10/15/03 A	08/30/04
37-3740	37.3.4.1.1	Manage EPOC Sampling Contract	293d	10/14/03 A	12/16/04
37-3750	37.3.4.1.1	Contractor Perform EPOC Chemical Analysis	220d	10/29/03 A	09/14/04
37-3760	37.3.4.1.1	Contractor Submits Draft EPOC Sampling/Analysis Report	10d	09/15/04	09/28/04
37-3770	37.3.4.1.1	Review Draft EPOC Sampling/Analysis Results		09/29/04	10/13/04
37-3780	37.3.4.1.1	Contractor Submits Final EPOC Sampling/Analysis Report	53d	10/14/04	01/03/05
37-3790	37.3.4.1.1	Analysis and Summary of EPOC Testing	10d	01/04/05	01/18/05
37-3800	37.3.7.1.8	Keep Up to Date on EPOC Research	563d	01/09/04	04/10/06
37-3805M	37.3.7.2	Initiate Decision Document (PPDR)	0d		01/08/04
37-3810	37.3.7.2	Environmental Coordination Federal and State	971d	12/01/03 A	10/16/07
37-3815M	37.3.7.2	Notice of Intent to Prepare NEPA Issued	0d		01/08/04
37-3820	37.3.7.2	NEPA Scoping Process	10d	01/09/04	01/26/04
37-3825M	37.3.7.2	NEPA Scoping Meeting	0d		02/23/04
37-3830	37.3.7.2.1	Biological Assessment Under ESA	42d	08/31/05	11/01/05
37-3840	37.3.7.2.1	Selection of Impact Assessment Procedure	20d	01/26/05	02/24/05
37-3845	37.3.7.2.1	HTRW Database Survey	162d	08/01/03 A	03/26/04
37-3850	37.3.7.2.1	HTRW Ecological Risk Assessment Documenta tion	10d	03/29/04	04/09/04
37-3860	37.3.7.2.1	Cultural Resource Assessment	221d	03/15/04	01/31/05
37-3870	37.3.7.2.1	Wetland Habitat Assessment, Existing (field work)	14d	12/30/03 A	01/20/04
37-3880	37.3.7.2.1	Wetland Habitat Assessment, Alternative Evaluation	15d	01/04/05	01/26/05
37-3890	37.3.7.2.2	F&W Coordination West	182d	01/11/02 A	09/30/02 A
37-3900	37.3.7.2.2	USFWS Provide Planning Aid Letters (PAL)	869d	01/11/02 A	07/14/05
37-3905M	37.3.7.2.2	USF&WS Planning Aid Letter Received	0d		07/14/05
37-3910	37.3.7.2.2	USFWS Prepare Final CAR	40d	10/12/06	12/12/06
37-3915M	37.3.7.2.2	Final USFWS Coordination Act Report Received	0d		12/12/06
37-3920	37.3.7.2.2	Biological Opinion	30d	11/01/05	12/16/05
37-3930	37.3.7.2.2	USFWS Prepare Draft CAR	80d	09/09/05	01/09/06
37-3935M	37.3.7.2.2	Submit Draft USFWS Coordination Act Report	0d		01/09/06
37-3940	37.8.1	Draft FONSI	4d	03/30/06	04/05/06
37-3950	37.3.7.2.3	Document Existing Conditions	31d	12/05/05	01/20/06
37-3960	37.3.7.2.3	Document Alternative Effects Evaluation	32d	01/20/06	03/07/06
37-3970	37.3.7.2.3	Draft EA	17d	03/07/06	03/30/06
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Activity ID	WBS	Activity Name	Original Duration	Start	Finish
37-5000	37.8.2.1	Issue RFP for Design Build	20d	05/07/08	06/05/08
37-5010	37.8.2.1	Receive Bids	20d	06/05/08	07/03/08
37-5020	37.8.2.1	Evaluate Proposals	15d	07/03/08	07/25/08
37-5030	37.8.2.1	Oral Presentations	10d	07/25/08	08/08/08
37-5040	37.8.2.1	Select Contractors	5d	08/08/08	08/15/08
37-5050	37.8.2.1	Negotiate Contractors	20d	08/15/08	09/15/08
37-5060	37.8.2.1	Award and Approval of Contract by Governing Board	45d	09/15/08	11/19/08
37-5070	37.8.3	Construction and operation	142d	01/22/09	08/13/09
37-5080	37.8.3	Design	41d	11/19/08	01/22/09
37-5090	37.8.3.1.1	Draft ATT Design	10d	11/19/08	12/05/08
37-5100	37.8.3.1.1	Final Design	20d	12/05/08	01/06/09
37-5110	37.8.3.1.1	Approval of Final Design	20d	01/06/09	02/04/09
37-5120	37.8.3.1.1	Manufacturing of ATT Pilot Plant	80d	02/04/09	05/29/09
37-5130	37.8.3.1.1	Civil Work for ATT Pilot Plant	20d	02/04/09	03/05/09
37-5140	37.8.3.1.1	Final Inspection	10d	05/29/09	06/12/09
37-5150	37.8.3.1.1	Installation of Pilot Plant	20d	06/12/09	07/13/09
37-5160	37.8.3.1.10	Conduct Survey	10d	11/19/08	12/05/08
37-5170	37.8.3.1.10	Draft Design of Wetland	40d	12/05/08	02/04/09
37-5180	37.8.3.1.10	Review Draft Design	15d	02/04/09	02/26/09
37-5190	37.8.3.1.10	Final Draft	15d	02/26/09	03/19/09
37-5200	37.8.3.1.10	Wetland Construction	80d	03/19/09	07/13/09
37-6000	37.6	Prepare Draft PCA	41d	09/25/07	11/28/07
37-6010	37.6	Review Draft PCA	15d	11/28/07	12/19/07
37-6020	37.6	Revise Draft PCA	11d	12/19/07	01/07/08
37-6030	37.6	Submit PCA	80d	01/07/08	04/30/08
37-6040	37.6	Approve PCA	5d	04/30/08	05/07/08
37-7000	37.7.2	RE Acquisition	128d	02/29/08	08/29/08
37-9000	37.9.2	PPTDR	128d	07/16/13	01/22/14
37-9020	37.3.7.2.2	FWS Transfer Funds - FY04	250d	10/01/03 A	09/29/04
37-9030	37.3.7.2.2	FWS Transfer Funds - FY05	250d	10/01/04*	09/30/05
37-9040	37.3.7.2.2	FWS Transfer Funds - FY06	249d	10/03/05*	09/29/06
37-9050	37.3.7.2.2	FWS Transfer Funds - FY07	249d	10/02/06*	09/28/07
37-9060	37.3.7.2.2	FWS Transfer Funds - FY03	250d	10/01/02 A	09/30/03 A
37-9070	37.3.7.2.2	FWS Transfer Funds - FY02	250d	10/01/01 A	09/30/02 A
37-9080	37.3.7.2.2	FWS Transfer Funds - FY01	250d	10/02/00 A	09/28/01 A
37-9085	37.3.5.1	Develop Scope of Work for Ecological/WQ Monitoring Plan	429d	01/09/04	09/22/05
37-9090	37.B.2	Baseline Monitoring	397d	11/14/07	06/17/09
37-9125	37.3.5.1	Develop Budget for Ecological/W Q Monitoring Plan	62d	07/10/06	10/05/06
37-9130	37.B.3	Post-Construction Monitoring	1002d	07/13/09	07/16/13
37-9135	37.3.4.1.2	Develop Scope of Work for EPOC Sampling/Analysis	77d	01/09/04	04/29/04
37-9140	37.3.4.1.2	Negotiate and Award EPOC Sampling/Analysis	35d	04/29/04	06/18/04
37-9145	37.3.4.1.2	Manage EPOC Sampling Contract	278d	06/18/04	07/29/05
37-9150	37.3.4.1.2	Contractor Perform EPOC Sampling	66d	06/18/04	09/22/04
37-9155	37.3.4.1.2	Data Validation/Data Entry for EPOC Contract	86d	02/14/05	06/16/05
37-9160	37.3.4.1.2	Contractor Perform EPOC Chemical Analysis	96d	09/22/04	02/14/05
37-9165	37.3.4.1.2	Contractor Submits Draft EPOC Sampling/Analysis Report	10d	06/16/05	06/30/05
37-9170	37.3.4.1.2	Review Draft EPOC Sampling/Analysis Results	10d	06/30/05	07/15/05
37-9175	37.3.4.1.2	Contractor Submits Final EPOC Sampling/Analysis Report	10d	07/15/05	07/29/05
37-9180	37.3.4.1.2	Analysis and Summary of EPOC Testing	10d	07/29/05	08/12/05
37-9185	37.3.4.2	Compile Inventory & Analyze Existing Data	63d	12/30/03 A	03/30/04
37-9190	37.3.4.2	Data Evaluation and Field Work	90d	04/12/04	08/18/04
37-9195	37.3.4.2	Geotechnical Report	10d	08/18/04	09/01/04
37-9200	37.3.2.3	Complete RECOVER Evaluation of Alternatives	0d		03/18/05
37-9205	37.3.8	Draft PPDR/NEPA Published in Federal Register	0d		06/27/06
37-9210	37.3.8	Notice of Availability in Federal Register	13d	06/08/06	06/27/06

Activity ID	WBS	Activity Name	Original Duration	Start	Finish
37-9215	37.3.8	Submit 1502 WQC Application	2d	04/20/07	04/24/07
37-9220	37.3.8	1502 Application Completeness Review	22d	04/24/07	05/24/07
37-9225	37.3.8	Agency Accion Review	65d	05/24/07	08/27/07
37-9230	37.3.8	Reasonable Assurance Status Meeting	5d	08/27/07	09/04/07
37-9235	37.3.8	FS 1501 Reasonable Assurance Status Meeting	0d		09/04/07
37-9240	37.3.8	Publish Notice of Intent and Draft Permit	15d	09/04/07	09/25/07
37-9245	37.3.8	Received State WQC Permits	0d		09/25/07
37-9250	37.6	PCA Initiated	0d		09/25/07
37-9255	37.3.8	In-House Review of Draft Final PPDR/FS/NEPA Complete	0d		01/26/07
37-9280	37.3.8	Record of Decision (ROD) Signed	0d		10/17/07
37-9285	37.3.8	ROD Signed	1d	10/16/07	10/17/07
37-9290	37.3.8	ASA (CW) Letter Submitted to Congress	15d	10/17/07	11/07/07
37-9295	37.3.8	Congressional Review	70d	11/07/07	02/22/08
37-9300	37.3.9	Congressional Authorization	22d	02/22/08	03/25/08
37-9305	37.3.8	ASA (CW) Report Submitted to Congress	0d		11/07/07
37-9310	37.1	PMP Resource Budgeted Cost	682d	01/11/01 A	09/30/03 A
37-9315	37.3.7.2.2	FWS Transfer Funds - FY08	251d	10/01/07*	09/30/08
37-AC11	37.1	PMP - West M-D - Actual Costs to Date - CESAJ	310d	10/01/02 A	02/02/04*
37-AC12	37.1	PMP - South M-D - Actual Costs to Date - CESAJ	310d	10/01/02 A	02/02/04*
37-AC20	37.3	PPDR Actual Costs to Date - CESAJ	310d	10/01/02 A	02/02/04*

APPENDIX D: PROJECT SCHEDULE

TAB A – Gantt Chart for Current Phase

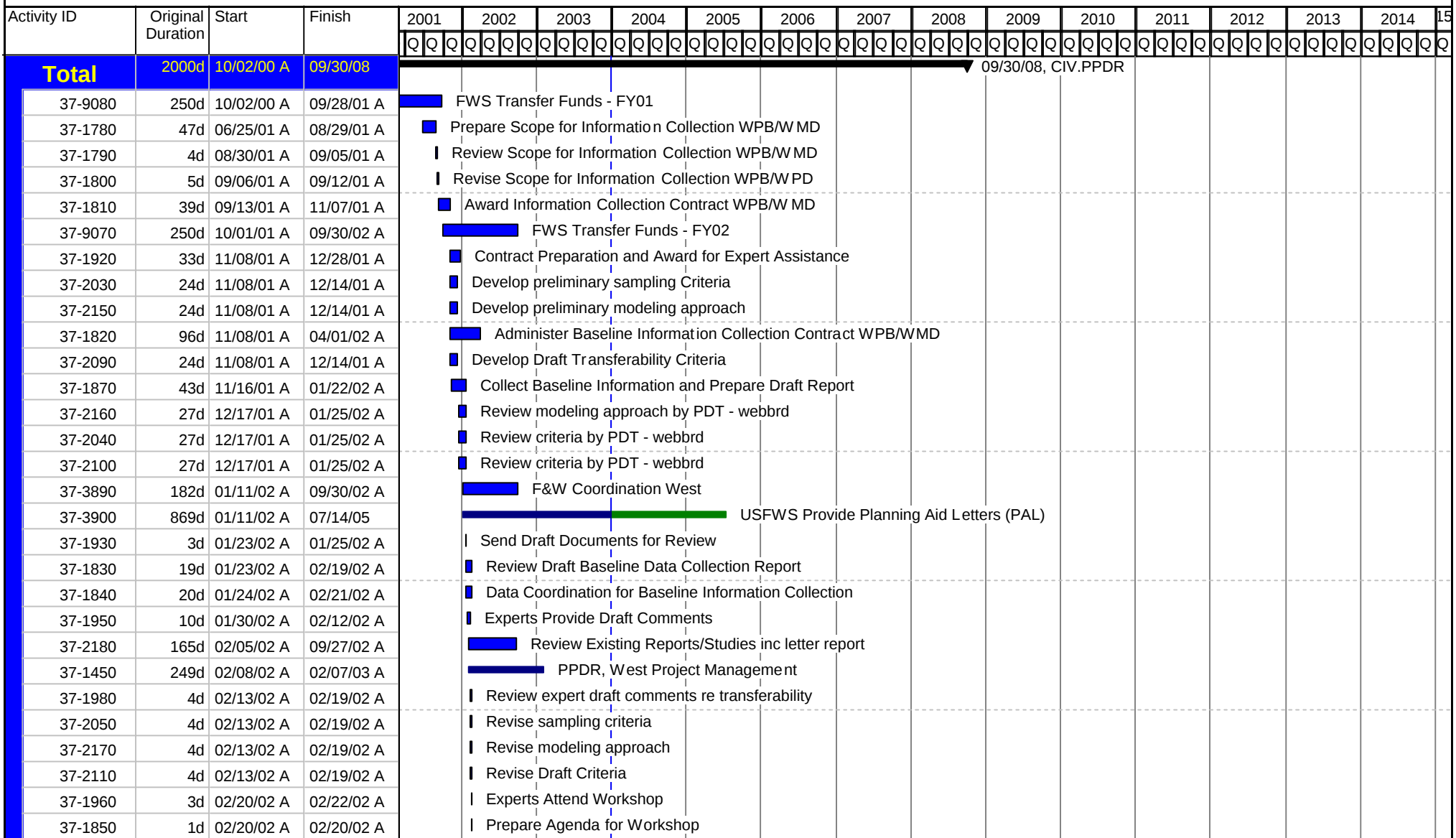
TAB B – Project Milestone Report

TAB A – Gantt Chart for Current Phase

CERP Wastewater Reuse Technology Pilot

Gantt Chart for Current Phase

12/24/03



 Remaining Level of Effort
  Critical Remaining Work
 Actual Level of Effort
  Milestone
 Actual Work
  Summary
 Remaining Work

TASK filter: Current Phase.

CERP Wastewater Reuse Technology Pilot

Gantt Chart for Current Phase

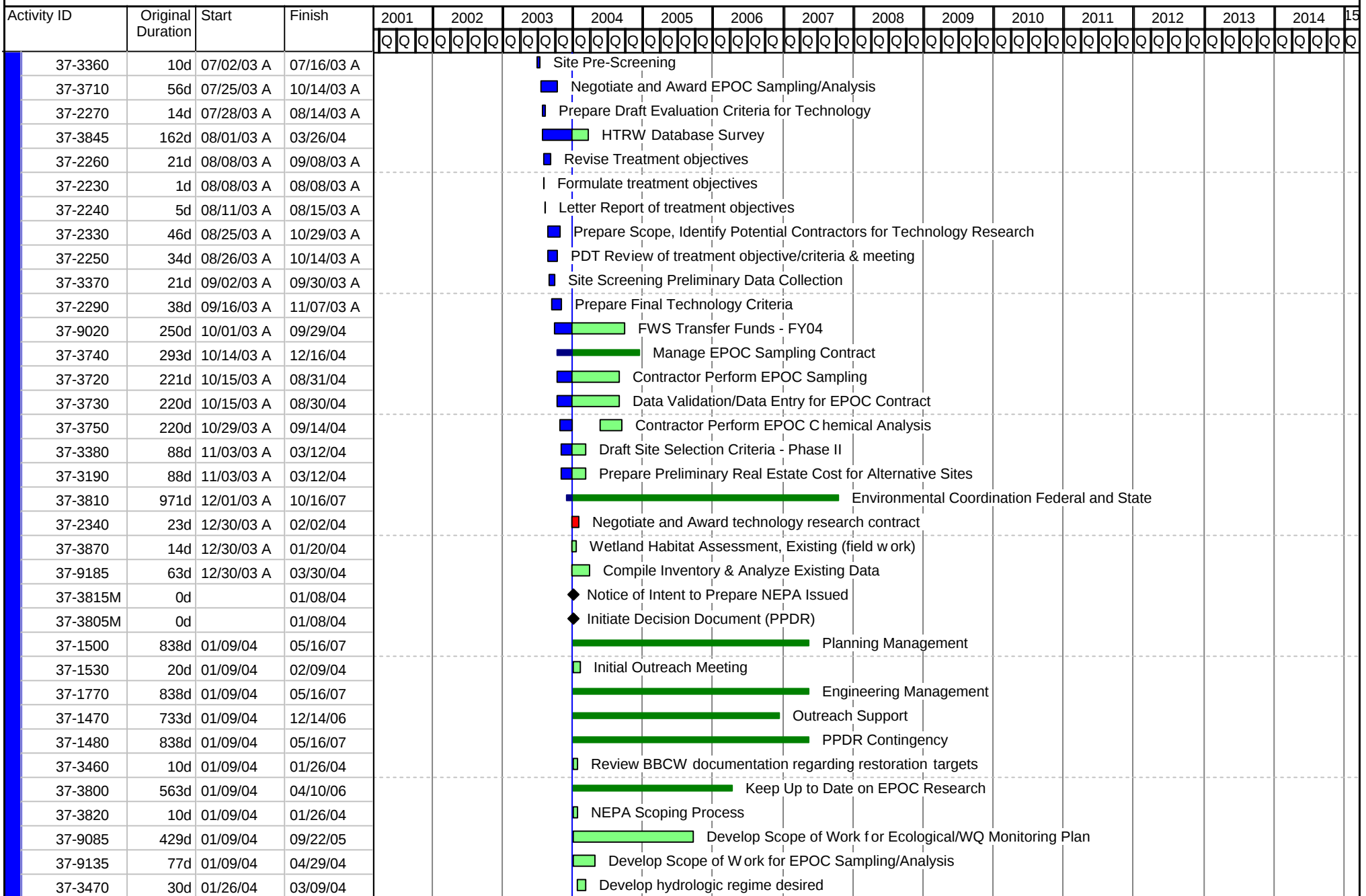
12/24/03

Activity ID	Original Duration	Start	Finish	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	15
				Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
37-1940	1d	02/22/02 A	02/22/02 A															
37-1880	1d	02/22/02 A	02/22/02 A															
37-1890	5d	02/25/02 A	03/01/02 A															
37-1900	3d	02/25/02 A	02/27/02 A															
37-1970	10d	02/27/02 A	03/12/02 A															
37-2060	68d	02/28/02 A	06/04/02 A															
37-1860	8d	02/28/02 A	03/11/02 A															
37-3050	276d	02/28/02 A	04/04/03 A															
37-1910	13d	03/13/02 A	03/30/02 A															
37-1990	7d	04/03/02 A	04/11/02 A															
37-1570	419d	04/03/02 A	12/05/03 A															
37-2000	9d	04/04/02 A	04/16/02 A															
37-2010	16d	04/09/02 A	04/30/02 A															
37-2020	10d	04/17/02 A	04/30/02 A															
37-2120	30d	04/30/02 A	06/11/02 A															
37-2130	1d	05/28/02 A	05/28/02 A															
37-2190	106d	05/31/02 A	10/30/02 A															
37-2070	10d	06/05/02 A	06/18/02 A															
37-2140	9d	06/11/02 A	06/21/02 A															
37-2080	32d	06/18/02 A	08/01/02 A															
37-2210	213d	10/01/02 A	08/07/03 A															
37-AC20	310d	10/01/02 A	02/02/04*															
37-9060	250d	10/01/02 A	09/30/03 A															
37-2200	145d	10/30/02 A	05/30/03 A															
37-3170	17d	01/31/03 A	02/25/03 A															
37-1440M	0d		02/07/03 A															
37-1460	1069d	02/07/03 A	05/16/07															
37-3180	5d	02/19/03 A	02/25/03 A															
37-3200	5d	02/19/03 A	02/25/03 A															
37-1510	1d	02/25/03 A	02/25/03 A															
37-1520	1d	02/26/03 A	02/26/03 A															
37-3475	115d	02/26/03 A	08/07/03 A															
37-3350	88d	02/27/03 A	07/01/03 A															
37-2220	107d	03/10/03 A	08/07/03 A															
37-3700	77d	04/08/03 A	07/25/03 A															

CERP Wastewater Reuse Technology Pilot

Gantt Chart for Current Phase

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CERP Wastewater Reuse Technology Pilot

Gantt Chart for Current Phase

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Activity ID	Original Duration	Start	Finish	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	15
				Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
37-2350	100d	02/02/04	06/23/04															
37-2410	10d	02/02/04	02/17/04															
37-2390	15d	02/02/04	02/24/04															
37-2400	60d	02/02/04	04/27/04															
37-3825M	0d		02/23/04															
37-2360	10d	02/24/04	03/09/04															
37-3580	10d	03/09/04	03/23/04															
37-3390	25d	03/15/04	04/16/04															
37-3860	221d	03/15/04	01/31/05															
37-3210	20d	03/15/04	04/09/04															
37-3160	20d	03/15/04	04/09/04															
37-3850	10d	03/29/04	04/09/04															
37-1540	1d	04/06/04	04/07/04															
37-9190	90d	04/12/04	08/18/04															
37-1550	10d	04/19/04	04/30/04															
37-3430	15d	04/26/04	05/14/04															
37-2420	15d	04/27/04	05/18/04															
37-9140	35d	04/29/04	06/18/04															
37-3400	10d	05/03/04	05/14/04															
37-3440	30d	05/17/04	06/28/04															
37-2370	15d	05/18/04	06/09/04															
37-2430	20d	06/09/04	07/08/04															
37-2300	10d	06/09/04	06/23/04															
37-9150	66d	06/18/04	09/22/04															
37-9145	278d	06/18/04	07/29/05															
37-1580	10d	06/23/04	07/08/04															
37-3450	67d	06/29/04	10/01/04															
37-2380	10d	07/08/04	07/22/04															
37-1590	10d	07/08/04	07/22/04															
37-1600	10d	07/22/04	08/05/04															
37-1610	20d	08/05/04	09/02/04															
37-9195	10d	08/18/04	09/01/04															
37-1615M	0d		09/02/04															
37-2310	10d	09/02/04	09/17/04															
37-3410	10d	09/02/04	09/17/04															

CERP Wastewater Reuse Technology Pilot

Gantt Chart for Current Phase

12/24/03

Activity ID	Original Duration	Start	Finish	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	15
				Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
37-3760	10d	09/15/04	09/28/04															
37-2320	10d	09/17/04	10/01/04															
37-2560	10d	09/17/04	10/01/04															
37-3420	10d	09/17/04	10/01/04															
37-9160	96d	09/22/04	02/14/05															
37-3770	10d	09/29/04	10/13/04															
37-9030	250d	10/01/04*	09/30/05															
37-2570	10d	10/01/04	10/18/04															
37-3480	10d	10/01/04	10/18/04															
37-3220	10d	10/01/04	10/18/04															
37-3780	53d	10/14/04	01/03/05															
37-3230	20d	10/18/04	11/16/04															
37-1560	10d	10/18/04	11/01/04															
37-2580	40d	10/18/04	12/16/04															
37-3485M	0d		10/18/04															
37-3620	10d	10/18/04	11/01/04															
37-3490M	0d		11/01/04															
37-3630	10d	11/01/04	11/16/04															
37-3640	271d	11/16/04	12/19/05															
37-3650	250d	11/16/04	11/17/05															
37-2590	10d	12/16/04	01/04/05															
37-3790	10d	01/04/05	01/18/05															
37-3880	15d	01/04/05	01/26/05															
37-3240	20d	01/19/05	02/15/05															
37-1620	10d	01/26/05	02/09/05															
37-3840	20d	01/26/05	02/24/05															
37-1630	10d	02/09/05	02/25/05															
37-9155	86d	02/14/05	06/16/05															
37-3250	10d	02/16/05	03/02/05															
37-1640	10d	02/25/05	03/11/05															
37-3260	20d	03/03/05	03/30/05															
37-1650	5d	03/11/05	03/18/05															
37-1660	15d	03/18/05	04/11/05															
37-9200	0d		03/18/05															
37-3270	745d	03/31/05	03/25/08															

CERP Wastewater Reuse Technology Pilot

Gantt Chart for Current Phase

12/24/03

Activity ID	Original Duration	Start	Finish	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	15
				Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
37-3310	60d	03/31/05	06/23/05															
37-1670	10d	04/11/05	04/25/05															
37-1680	11d	04/25/05	05/10/05															
37-1690	11d	05/10/05	05/24/05															
37-1700	11d	05/24/05	06/09/05															
37-1710	3d	06/09/05	06/14/05															
37-1715M	0d		06/14/05															
37-3150	61d	06/14/05	09/08/05															
37-9165	10d	06/16/05	06/30/05															
37-3320	10d	06/24/05	07/08/05															
37-9170	10d	06/30/05	07/15/05															
37-2700	6d	07/08/05	07/15/05															
37-3330	10d	07/11/05	07/22/05															
37-1720	2d	07/13/05	07/14/05															
37-1730	16d	07/14/05	08/05/05															
37-1725M	0d		07/14/05															
37-3905M	0d		07/14/05															
37-9175	10d	07/15/05	07/29/05															
37-3280	5d	07/18/05	07/22/05															
37-3290	20d	07/25/05	08/19/05															
37-9180	10d	07/29/05	08/12/05															
37-1740	9d	08/05/05	08/18/05															
37-1735M	0d		08/05/05															
37-1750	9d	08/18/05	08/31/05															
37-3340	10d	08/22/05	09/02/05															
37-1760	6d	08/31/05	09/09/05															
37-3830	42d	08/31/05	11/01/05															
37-3300	10d	09/06/05	09/19/05															
37-2705	17d	09/09/05	10/04/05															
37-1490	10d	09/09/05	09/23/05															
37-3500	17d	09/09/05	10/04/05															
37-3930	80d	09/09/05	01/09/06															
37-2735	12d	09/09/05	09/27/05															
37-9040	249d	10/03/05*	09/29/06															
37-3510	17d	10/04/05	10/28/05															

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Gantt Chart for Current Phase

12/24/03

Activity ID	Original Duration	Start	Finish	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	15
				Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
37-3100	11d	10/04/05	10/20/05															
37-2710	7d	10/04/05	10/14/05															
37-2715	12d	10/04/05	10/21/05															
37-2720	12d	10/04/05	10/21/05															
37-2725	12d	10/21/05	11/08/05															
37-2730	12d	10/21/05	11/08/05															
37-2745	7d	10/21/05	11/01/05															
37-3530	62d	10/28/05	02/01/06															
37-3520	89d	10/28/05	03/13/06															
37-3920	30d	11/01/05	12/16/05															
37-2750	7d	11/08/05	11/18/05															
37-2740	12d	11/08/05	11/29/05															
37-3660	10d	11/17/05	12/05/05															
37-2755	7d	11/29/05	12/08/05															
37-3670	10d	12/05/05	12/19/05															
37-3950	31d	12/05/05	01/20/06															
37-2665	21d	12/08/05	01/10/06															
37-3680	10d	12/19/05	01/04/06															
37-3690	10d	01/04/06	01/19/06															
37-3935M	0d		01/09/06															
37-2670	12d	01/10/06	01/27/06															
37-3590	20d	01/19/06	02/17/06															
37-3960	32d	01/20/06	03/07/06															
37-2682	22d	01/20/06	02/22/06															
37-2675	17d	01/27/06	02/22/06															
37-3540	12d	02/01/06	02/17/06															
37-3600	10d	02/17/06	03/06/06															
37-3550	12d	02/17/06	03/08/06															
37-2600	22d	02/22/06	03/24/06															
37-2680	7d	02/22/06	03/03/06															
37-2760M	0d		02/22/06															
37-2684	20d	02/22/06	03/22/06															
37-3610	10d	03/06/06	03/21/06															
37-3970	17d	03/07/06	03/30/06															
37-3560	11d	03/08/06	03/23/06															

CERP Wastewater Reuse Technology Pilot

Gantt Chart for Current Phase

12/24/03

Activity ID	Original Duration	Start	Finish	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	15
				Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
37-3060	22d	03/09/06	04/10/06															
37-2686	65d	03/22/06	06/21/06															
37-3570	12d	03/23/06	04/10/06															
37-2800	12d	03/24/06	04/10/06															
37-3080	17d	04/10/06	05/03/06															
37-3120	20d	04/10/06	05/08/06															
37-3140	42d	04/10/06	06/08/06															
37-2805	42d	04/10/06	06/08/06															
37-3090	12d	05/03/06	05/19/06															
37-2820	17d	06/08/06	07/03/06															
37-2825	17d	06/08/06	07/03/06															
37-2810M	0d		06/08/06															
37-2815M	0d		06/08/06															
37-9210	13d	06/08/06	06/27/06															
37-3130	21d	06/08/06	07/10/06															
37-2688	22d	06/21/06	07/25/06															
37-9205	0d		06/27/06															
37-2840	21d	07/03/06	08/02/06															
37-2830M	0d		07/03/06															
37-2835M	0d		07/03/06															
37-9125	62d	07/10/06	10/05/06															
37-2690	22d	07/25/06	08/24/06															
37-2850	6d	08/02/06	08/11/06															
37-2845M	0d		08/02/06															
37-2855	21d	08/11/06	09/12/06															
37-2692	20d	08/24/06	09/22/06															
37-2865	2d	09/11/06	09/13/06															
37-2860M	0d		09/12/06															
37-2870	7d	09/12/06	09/21/06															
37-2890	40d	09/13/06	11/09/06															
37-2875	7d	09/21/06	09/29/06															
37-2880M	0d		09/29/06															
37-9050	249d	10/02/06*	09/28/07															
37-3910	40d	10/12/06	12/12/06															
37-2885M	0d		10/16/06															

CERP Wastewater Reuse Technology Pilot

Gantt Chart for Current Phase

12/24/03

Activity ID	Original Duration	Start	Finish	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	15
				Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
37-2900	22d	11/09/06	12/14/06							■	Incorporate Public Comments(Revise PPDR)/Respond to Comments							
37-2895M	0d		11/09/06							◆	Public Review of Draft PPDR/NEPA R eport Complete							
37-3915M	0d		12/12/06							◆	Final USFWS Coordination Act Report Received							
37-2905	17d	12/14/06	01/09/07							■	ITR Review of PPDR/EA							
37-2915	12d	01/09/07	01/26/07							■	Incorporate ITR Comments							
37-2910M	0d		01/09/07							◆	ITR Review/Certification							
37-2925	7d	01/26/07	02/06/07							■	Print and Distribute Revised PPDR to State							
37-2920M	0d		01/26/07							◆	Final Draft PPDR Report with NEPA Complete							
37-9255	0d		01/26/07							◆	In-House Review of Draft Final PPDR/FS/NEPA Complete							
37-2950	40d	02/06/07	04/04/07							■	Receive State Comments on PPDR/EA							
37-2935	5d	02/06/07	02/13/07							■	Letter of Intent							
37-2930M	0d		02/06/07							◆	FS 1501 Submittal to FDEP with WQC Application							
37-2940M	0d		02/13/07							◆	Sponsor's Letter of Intent Received							
37-2945M	0d		04/04/07							◆	FS 1501 DEP Approval							
37-2955	12d	04/04/07	04/20/07							■	Incorporate State Comments							
37-2960	6d	04/20/07	05/01/07							■	OC Review/ITR Certification (inc EA)							
37-9215	2d	04/20/07	04/24/07							■	Submit 1502 WQC Application							
37-9220	22d	04/24/07	05/24/07							■	1502 Application Completeness Review							
37-2965	6d	05/01/07	05/09/07							■	Assemble Final PPDR							
37-2962M	0d		05/01/07							◆	ITR/Legal Review of Final PPDR Complete							
37-2967M	0d		05/09/07							◆	Final PPDR with NEPA Report Complete							
37-2970	5d	05/09/07	05/16/07							■	DE Signature /MSC Notice for PPDR/EA							
37-2980	7d	05/16/07	05/25/07							■	Transmit PPDR/EA to W ashington							
37-2975M	0d		05/16/07							◆	MSC Commander's Public Notice (Complete PPDR)							
37-9225	65d	05/24/07	08/27/07							■	Agency Accion Review							
37-2985	32d	05/25/07	07/12/07							■	Publish Final PPDR/NEPA in Federal Register (MCS) Print and Mail							
37-3000	42d	07/12/07	09/11/07							■	Public Review Meeting for PPDR/EIS							
37-2990M	0d		07/12/07							◆	Final PPDR/NEPA Report Published in the Federal Register							
37-9230	5d	08/27/07	09/04/07							■	Reasonable Assurance Status Meeting							
37-9235	0d		09/04/07							◆	FS 1501 Reasonable Assurance Status Meeting							
37-9240	15d	09/04/07	09/25/07							■	Publish Notice of Intent and Draft Permit							
37-2995M	0d		09/11/07							◆	Washington Level Agency Review/Public Review Comple te							
37-3005	12d	09/11/07	09/26/07							■	Prepare Response to Public Comments							
37-9245	0d		09/25/07							◆	Received State WQC Permits							
37-3020	13d	09/26/07	10/16/07							■	Prepare Chief of Engineers Report							

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Gantt Chart for Current Phase

12/24/03

Activity ID	Original Duration	Start	Finish	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	15
				Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
37-3010M	0d		09/26/07								◆ Response to Public Comments of Final PPDR/NEPA Complete							
37-3025	13d	09/26/07	10/16/07								█ HQ/MSC Review Conference							
37-9315	251d	10/01/07*	09/30/08								█ FWS Transfer Funds - FY08							
37-3015M	0d		10/16/07								◆ Filing of Final NEPA Document Complete							
37-3030	10d	10/16/07	10/30/07								█ Review by ASA							
37-3027M	0d		10/16/07								◆ PPDR Assessment to CECW-PM							
37-3029M	0d		10/16/07								◆ Chief's Report to ASA(CW)							
37-9285	1d	10/16/07	10/17/07								ROD Signed							
37-9280	0d		10/17/07								◆ Record of Decision (ROD) Signed							
37-9290	15d	10/17/07	11/07/07								█ ASA (CW) Letter Submitted to Congress							
37-3040	10d	10/30/07	11/14/07								█ PPDR Approved by ASA							
37-3035M	0d		10/30/07								◆ ASA (CW) Memorandum to OMB							
37-9295	70d	11/07/07	02/22/08								█ Congressional Review							
37-9305	0d		11/07/07								◆ ASA (CW) Report Submitted to Congress							
37-9300	22d	02/22/08	03/25/08								█ Congressional Authorization							
37-3045M	0d		03/25/08								◆ PPDR Fiscal Closeout							

TAB B – Project Milestone Report

Activity ID	Activity Name	COE: Milestone	COE Milestone Reporting	Finish
37-1000M	PMP Initiated - West	01C.L100	DPW	01/11/01 A
37-1170	Work-in-Kind Letter from District Engineer - West	01C.L180	D	02/05/02 A
37-1190M	PMP Initiated - South	01C.L100	DPW	03/20/02 A
37-1220M	PDT Kickoff Meeting	01C.L110	D	04/26/02 A
37-1250M	PMP Internal Review Initiated	01C.L120	D	11/20/02 A
37-1260M	PMP Internal Review Complete	01C.L130	D	12/11/02 A
37-1440M	Initiate Decision Document PPDR	01C.100 S	DPW	02/07/03 A
37-1310M	PMP Approved by PrePRB	01C.L150	DP	02/10/03 A
37-1360M	PMP DDE (PM) Signature	01C.160 F	DPW	12/22/03 A
37-1380M	PMP Approved by Local Sponsor	01C.L170	DP	12/22/03 A
37-1420M	Work-in-Kind Letter Signed by District Engineer	01C.L180	D	01/08/04
37-3815M	Notice of Intent to Prepare NEPA Issued	01C.L200		01/08/04
37-3805M	Initiate Decision Document (PPDR)	01C.100 S	DPW	01/08/04
37-3825M	NEPA Scoping Meeting	01C.L205	DW	02/23/04
37-1615M	PPDR Initial In-Progress Review Meeting	01C.105 S	DP	09/02/04
37-3485M	FS 1501 Pre-Application Meeting	01C.L245	DP	10/18/04
37-3490M	FS 1501 Pre-Application Concurrence Letter Received	01C.L250	DP	11/01/04
37-9200	Complete RECOVER Evaluation of Alternatives	01C.L280	D	03/18/05
37-1715M	Submit IPR Documentation to HQ/SAD	01C.122 F	DP	06/14/05
37-1725M	Alternative Formulation Briefing (IPR)/Site Visit	01C.124 S	DP	07/14/05
37-3905M	USF&WS Planning Aid Letter Received	01C.L255		07/14/05
37-1735M	Pilot Project (IPR) Guidance Memorandum Received	01C.126 F	DP	08/05/05
37-3935M	Submit Draft USFWS Coordination Act Report	01C.L285	P	01/09/06
37-2760M	Baseline Cost Estimate Approved	01C.150 F	DP	02/22/06
37-2810M	Draft PPDR and NEPA R eport Complete	01C.L290	DPW	06/08/06
37-2815M	FS 1501 Meeting with FDEP	01C.L295	DW	06/08/06
37-9205	Draft PPDR/NEPA Published in Federal Register	01C.L325	DPW	06/27/06
37-2830M	In-House / Sponsor Review Draft PPDR Complete	01C.L300		07/03/06
37-2835M	ITR of Draft PPDR Complete	01C.L320		07/03/06
37-2845M	Incorporate In-House/Sponsor Cmts on Draft PPDR Report	01C.P230		08/02/06
37-2860M	HQ Review of Draft Report	01C.128 F	P	09/12/06
37-2880M	PPDR Review Conference	01C.130 S	DP	09/29/06
37-2885M	Project Guidance Memorandum Received	01C.140 F	DP	10/16/06
37-2895M	Public Review of Draft PPDR/NEPA R eport Complete	01C.145 S	PW	11/09/06
37-3915M	Final USFWS Coordination Act Report Received	01C.L340		12/12/06
37-2910M	ITR Review/Certification	01C.L330		01/09/07
37-2920M	Final Draft PPDR Report with NEPA Complete	01C.L345	DPW	01/26/07
37-9255	In-House Review of Draft Final PPDR/FS/NEPA Complete	01C.P235		01/26/07
37-2930M	FS 1501 Submittal to FDEP with WQC Application	01C.L350	DPW	02/06/07
37-2940M	Sponsor's Letter of Intent Received	01C.L375	DPW	02/13/07
37-2945M	FS 1501 DEP Approval	01C.L380	DPW	04/04/07
37-2962M	ITR/Legal Review of Final PPDR Complete	01C.L370	DP	05/01/07
37-2967M	Final PPDR with NEPA Report Complete	01C.165 F	DPW	05/09/07
37-2975M	MSC Commander's Public Notice (Complete PPDR)	01C.170 F	DPW	05/16/07
37-2990M	Final PPDR/NEPA Report Published in the Federal Register	01C.L385	DPW	07/12/07
37-9235	FS 1501 Reasonable Assurance Status Meeting	01C.L355	D	09/04/07
37-2995M	Washington Level Agency Review/Public Review Comple te	01C.180 S	DPW	09/11/07
37-9245	Received State WQC Permits	01C.300 F	DP	09/25/07
37-9250	PCA Initiated	01C.L400	DP	09/25/07
37-3010M	Response to Public Comments of Final PPDR/NEPA Complete	01C.L390		09/26/07
37-3015M	Filing of Final NEPA Document Complete	01C.310 F	DPW	10/16/07
37-3027M	PPDR Assessment to CECW-PM	01C.182 F	DP	10/16/07

Legend:
D: Report to DCT
P: Report to PRB
DP: Report to DCT & PRB
DW: Report to DCT & put on WEB Site
DPW: Report to DCT/PRT & put on WEB Site

Activity ID	Activity Name	COE: Milestone	COE Milestone Reporting	Finish
37-3029M	Chief's Report to ASA(CW)	01C.330 F	DP	10/16/07
37-9280	Record of Decision (ROD) Signed	01C.320 F	DPW	10/17/07
37-3035M	ASA (CW) Memorandum to OMB	01C.175 F	DP	10/30/07
37-9305	ASA (CW) Report Submitted to Congress	01C.340 F	DP	11/07/07
37-3045M	PPDR Fiscal Closeout	01C.L395	DP	03/25/08

APPENDIX E: PROJECT COST ESTIMATE AND BUDGET

TAB A – Total Project Cost Summary

TAB B – Fully Funded Cost Estimate (Post PPDR)

TAB C – Cost Listing by Agency/Organizational Unit

TAB D – Projected Annual Budget

TAB E – Projected Cash Flow Curve

TAB F – Contingency Summary and Status

TAB A – Total Project Cost Summary

Activity ID	Activity Name	Budgeted Total Cost	Start	Finish
37 CERP Wastewater Reuse Technology Pilot		\$30,000,000	10/02/00 A	01/22/14
37.1 PROJECT MANAGEMENT PLAN (PMP)		\$838,918	01/11/01 A	08/13/09
37.3 PILOT PROJECT DESIGN REPORT (PPDR)		\$4,916,997	10/02/00 A	09/30/08
37.6 PROJECT COOPERATION AGREEMENT (PCA)		\$33,250	09/25/07	05/07/08
37.7 REAL ESTATE (RE)		\$1,000,000	02/29/08	08/29/08
37.8 CONSTRUCTION (CONS)		\$19,465,835	03/30/06	08/13/09
37.9 TECHNICAL DATA REPORT (TDR)		\$1,245,000	07/16/13	01/22/14
37.B PROJECT IMPLEMENTATION MONITORING (PIM)		\$2,500,000	11/14/07	07/16/13

TAB B – Fully Funded Cost Estimate (Post PPDR Only)

TAB C – Cost Listing by Agency/Organizational Unit

TABLE E-C-1 : COST LISTING BY AGENCY / ORGANIZATIONAL UNIT

Work Phase	USACE	SFWMD
PMP	\$509,815	\$329,103
PPDR	\$4,096,739	\$820,258
PCA	\$16,000	\$17,250
Real Estate	\$100,000	\$900,000
Construction (Design-Build)	\$1,601,561	\$17,864,274
PIM	\$2,000,000	\$500,000
PPTDR	\$1,130,000	\$115,000
Total Cost	\$9,454,115	\$20,545,885

*Includes Contingencies and Programmatic Contributions

** PIM is Project Implementation Monitoring

TAB D – Projected Annual Budget

CERP Wastewater Reuse Technology Pilot

12/24/03

Projected Annual Budget

Role	Budgeted Cost 10/01/00 - 09/30/14	FY2000-200 1	FY2001-200 2	FY2002-200 3	FY2003-200 4	FY2004-200 5	FY2005-200 6	FY2006-200 7	FY2007-200 8	FY2008-200 9	FY2009-201 0	FY2010-201 1	FY2011-201 2	FY2012-201 3	FY2013-201 4	Period Total
SFWMD.Employee.RENGHYDR	Engineer - Hydraulics						\$6,000	\$1,200								\$7,200
SFWMD.Employee.RENVSCI	Environmental Scientist			\$600	\$600	\$3,000	\$3,000									\$7,200
SFWMD.Employee.RGOV	Governmental	\$3,000	\$645	\$600	\$4,229	\$5,293	\$5,276	\$803								\$19,845
SFWMD.Employee.RMODPRJ	Modeler - Project Level					\$2,179	\$1,421									\$3,600
SFWMD.Employee.RMODREG	Modeler - Regional		\$1,200			\$545	\$1,255									\$3,000
SFWMD.Employee.RPLAN	Planner			\$2,241	\$1,359	\$2,400	\$1,800									\$7,800
SFWMD.Employee.RPROCU	Procurement						\$50,851									\$50,851
SFWMD.Employee.RPROJMG	Project Manager	\$46,564	\$143,150	\$71,399	\$33,531	\$14,544	\$60,705	\$5,290	\$16,340	\$56,428						\$447,951
SFWMD.Employee.RPUBOUTR	Public Outreach	\$1,500			\$2,114	\$9,095	\$2,638	\$401								\$15,749
SFWMD.Employee.RRERELC	RE - Relocation				\$15,000											\$15,000
SFWMD.Employee.RRESUP	RE - Supervisor	\$1,201		\$7,200	\$9,600	\$11,400	\$3,600									\$33,001
SFWMD.Employee.RREGSP	Regulation Specialist		\$962	\$4,438	\$4,200	\$4,727	\$5,569	\$1,969	\$34							\$21,900
SFWMD.Employee.RSCISUPP	Scientific Support		\$600	\$1,800	\$60	\$2,340	\$4,200									\$9,000
SFWMD.Employee.RSUP	Supervisor			\$4,041	\$3,159	\$4,200	\$3,600									\$15,000
SFWMD.Employee.RWQFDC	Water Qual - Fld. Data Collect	\$8,169	\$29,810	\$6,958	\$18,755	\$33,550	\$18,558	\$1,200								\$117,000
SFWMD.Employee.RWQQAQC	Water Qual - QA/QC	\$600	\$652	\$4,148	\$27,557	\$13,461	\$7,881									\$54,300
SFWMD.Non Labor.Operating Expenses.5307	Pro Fees / Consulting Services		\$40,214		\$19,866	\$87,679	\$50,455		\$1,038,835	\$17,989,552	\$62,382	\$62,382	\$62,133	\$97,249	\$66,741	\$19,577,488
SFWMD.Non Labor.Operating Expenses.5901	Contingency Reserve				\$30,891	\$41,744	\$41,577	\$25,788								\$140,000
CESAJ	Corps of Engineers					\$5,460	\$44,540		\$100,000	\$1,650,162				\$474,193	\$655,807	\$2,930,162
CESAJ.CO.HL	Const Ops Labor/Other		\$1,000	\$500	\$2,250	\$1,750	\$2,500									\$8,000
CESAJ.CO.ITR	Construction Operations ITR				\$1,200	\$1,000		\$2,800								\$5,000
CESAJ.CO.C.HL	Construction Labor/Other	\$115	\$158	\$158												\$431
CESAJ.CO.R.HL	CERP Management Labor/Other				\$2,700	\$2,954	\$5,546									\$11,200
CESAJ.CT.E.HL	CERP Labor/Other		\$2,800	\$2,098	\$7,402	\$2,500	\$4,500									\$19,300
CESAJ.DP.E.HL	South Florida Restoration Labor/Other	\$32,835	\$56,632	\$97,550	\$95,100	\$84,761	\$109,422	\$65,361	\$15,191							\$556,850
CESAJ.DP.E.AE	South Florida Restoration AE Services						\$10,000									\$10,000
CESAJ.DP.E.PC	South Florida Restoration Project Contingency				\$123,562	\$166,976	\$166,308	\$103,154								\$560,000
CESAJ.DR.W.HL	South Florida Office Labor/Other		\$1,260		\$10,889	\$13,928	\$13,882	\$2,292								\$42,252
CESAJ.DR.W.AE	South Florida Office AE Services				\$6,737	\$7,446	\$7,435	\$535								\$22,154
CESAJ.EN.C.HL	Cost Engineering Labor/Other			\$1,065	\$1,795	\$1,000	\$6,260									\$10,120
CESAJ.EN.D.HL	Design Labor/Other	\$3,000	\$4,276	\$10,318	\$16,645	\$35,720	\$67,370	\$7,420								\$144,749
CESAJ.EN.G.HL	Geotechnical Labor/Other	\$21,487	\$45,008	\$69,143	\$95,541	\$48,318	\$66,007	\$39,567	\$5,005							\$390,077
CESAJ.EN.G.AE	Geotechnical AE Services				\$260,000											\$260,000
CESAJ.EN.H.HL	Hydrology & Hydraulics Labor/Other	\$2,511	\$12,327	\$5,842	\$11,475	\$23,476	\$38,160	\$3,400								\$97,191
CESAJ.EN.T.HL	Technical Servive Labor/Other				\$1,000											\$1,000
CESAJ.EN.T.ITR	Technical Service ITR				\$5,600	\$4,000	\$7,200	\$9,000								\$25,800
CESAJ.PD.D.HL	Socio-Economics Labor/Other	\$122	\$378	\$422	\$1,882	\$4,518	\$2,560									\$9,882
CESAJ.PD.E.HL	Environmental Labor/Other	\$13,464	\$52,185	\$73,112	\$161,849	\$168,934	\$198,114	\$38,669	\$1,799							\$708,125
CESAJ.PD.E.AE	Environmental AE Services				\$189,071	\$238,529	\$120,000		\$277,669	\$307,005	\$374,293	\$374,293	\$372,796	\$293,945		\$2,547,600
CESAJ.PD.E.FWS	Environmental FWS Transfer Funding	\$77,500	\$101,400	\$73,000	\$83,708	\$57,926	\$60,127	\$62,412	\$92,686							\$608,759

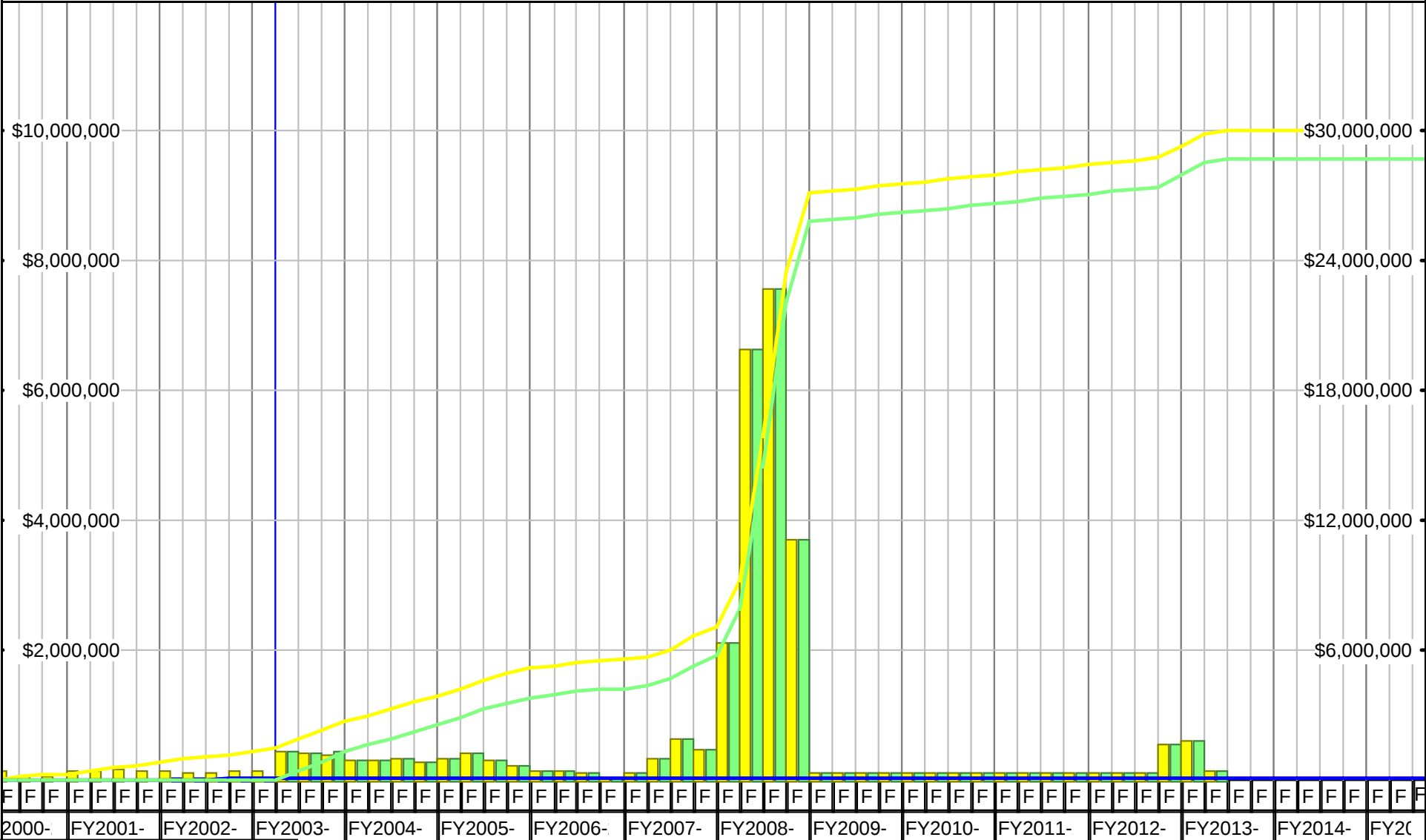
Projected Annual Budget

Role		Budgeted Cost 10/01/00 - 09/30/14	FY2000-200 1	FY2001-200 2	FY2002-200 3	FY2003-200 4	FY2004-200 5	FY2005-200 6	FY2006-200 7	FY2007-200 8	FY2008-200 9	FY2009-201 0	FY2010-201 1	FY2011-201 2	FY2012-201 3	FY2013-201 4	Period Total
CESAJ.PD.E.ITR	Environmental ITR			\$3,090		\$1,600	\$2,000	\$4,800	\$5,600								\$17,090
CESAJ.PD.P.HL	Plan Formulation Labor/Other	\$12,944	\$17,780	\$17,780													\$48,503
CESAJ.PD.P.ITR	Plan Formulation ITR					\$1,200	\$1,000		\$2,800								\$5,000
CESAJ.PD.R.HL	Ecosystem Restoration Labor/Other	\$43,005	\$51,961	\$25,956	\$75,318	\$68,075	\$48,959	\$31,200	\$1,668								\$346,141
CESAJ.RE.A.HL	Acquisition Labor/Other	\$1,500	\$1,065	\$8,805	\$42,360	\$10,000											\$63,730
CESAJ.RE.A.ITR	Acquisition ITR				\$1,200	\$1,000		\$2,800									\$5,000
TOTAL			\$269,514	\$568,552	\$489,174	\$1,371,004	\$1,187,428	\$1,252,077	\$413,662	\$1,549,227	\$20,003,147	\$436,675	\$436,675	\$434,928	\$865,387	\$722,549	\$30,000,000

TAB E – Project Cash Flow Curve

Project Cash Flow Curve

12/24/03



Total Cost										TASK filter: All Activities									
Budgeted																			
Actual																			
Remaining																			

TAB F – Contingency Summary and Status

Once CERP guidance and standardized report instructions are developed and approved, the Contingency Summary and Status Report will be placed in Appendix E, Tab F.

APPENDIX F: FUNCTIONAL AREA PLAN

TAB A - Activities by Agency, Organizational Unit & Resource

TAB A – Activities by Agency, Organizational Unit & Resource

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
South Florida Water Management District							
SFWMD.7220	Real Estate						
RE - Relocation							
37-3190	Prepare Preliminary Real Estate Cost for Alternative Sites	121d	88d	11/03/03 A	03/12/04	200.00h	\$15,000
Summary for Role:			88d	11/03/03 A	03/12/04	200.00h	\$15,000
Summary for Division:		SFWMD.7220	88d	11/03/03 A	03/12/04	200.00h	\$15,000
No Division							
Engineer - Hydraulics							
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	40.00h	\$3,000
37-2840	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	0d	21d	07/03/06	08/02/06	40.00h	\$3,000
37-2900	Incorporate Public Comments(Revise PPDR)/Respond to Comments	0d	22d	11/09/06	12/14/06	16.00h	\$1,200
Summary for Role:			170d	04/10/06	12/14/06	96.00h	\$7,200
Environmental Scientist							
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	8.00h	\$600
37-1610	Initial SAD/HQ In Progress Review Meeting	0d	20d	08/05/04	09/02/04	8.00h	\$600
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	8.00h	\$600
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	8.00h	\$600
37-1720	Meet with SAD/HQ (IPR)	0d	2d	07/13/05	07/14/05	8.00h	\$600
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	8.00h	\$600

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2230	Formulate treatment objectives		1d	08/08/03 A	08/08/03 A	8.00h	\$600
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	8.00h	\$600
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	8.00h	\$600
37-3060	Prepare Draft Ecological/W Q Monitoring Plan	293d	22d	03/09/06	04/10/06	8.00h	\$600
37-3550	Review Draft W Q Modeling Results	293d	12d	02/17/06	03/08/06	8.00h	\$600
37-3670	Review Draft Monitoring Results	14d	10d	12/05/05	12/19/05	8.00h	\$600
Summary for Role:			707d	08/08/03 A	06/08/06	96.00h	\$7,200
Governmental							
37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	40.00h	\$3,000
37-1470	Outreach Support	0d	733d	01/09/04	12/14/06	160.00h	\$12,000
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	8.00h	\$600
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/06/04	16.00h	\$1,200
37-1690	Public Review inc Meeting (Technology and Site Selection)	0d	11d	05/10/05	05/24/05	16.00h	\$1,200
37-2120	Hold WPB/WMD PDT Meeting		30d	04/30/02 A	06/11/02 A	8.60h	\$645
37-2865	Public Meeting on draft PPDR/EA	0d	2d	09/11/06	09/13/06	16.00h	\$1,200
Summary for Role:			1437d	03/16/01 A	12/14/06	264.60h	\$19,845
Modeler - Project Level							
37-3500	Develop Scope of Work for WQ Modeling	293d	17d	09/09/05	10/04/05	32.00h	\$2,400
37-3550	Review Draft W Q Modeling Results	293d	12d	02/17/06	03/08/06	8.00h	\$600
37-3570	Backcheck Final W Q Modeling Report	293d	12d	03/23/06	04/10/06	8.00h	\$600
Summary for Role:			143d	09/09/05	04/10/06	48.00h	\$3,600
Modeler - Regional							
37-1940	Attend Workshop and Site Visit		1d	02/22/02 A	02/22/02 A	8.00h	\$600

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1990	ITR review transferability reports and criteria		7d	04/03/02 A	04/11/02 A	8.00h	\$600
37-3500	Develop Scope of Work for WQ Modeling	293d	17d	09/09/05	10/04/05	8.00h	\$600
37-3550	Review Draft WQ Modeling Results	293d	12d	02/17/06	03/08/06	8.00h	\$600
37-3570	Backcheck Final WQ Modeling Report	293d	12d	03/23/06	04/10/06	8.00h	\$600
Summary for Role:			1032d	02/22/02 A	04/10/06	40.00h	\$3,000
Planner							
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	8.00h	\$600
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	8.00h	\$600
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	8.00h	\$600
37-1760	Finalize Selected Plan	0d	6d	08/31/05	09/09/05	8.00h	\$600
37-2230	Formulate treatment objectives		1d	08/08/03 A	08/08/03 A	8.00h	\$600
37-2250	PDT Review of treatment objective/criteria & meeting		34d	08/26/03 A	10/14/03 A	8.00h	\$600
37-2260	Revise Treatment objectives		21d	08/08/03 A	09/08/03 A	8.00h	\$600
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	8.00h	\$600
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	8.00h	\$600
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	8.00h	\$600
37-3470	Develop hydrologic regime desired	125d	30d	01/26/04	03/09/04	8.00h	\$600
37-3550	Review Draft WQ Modeling Results	293d	12d	02/17/06	03/08/06	8.00h	\$600
37-3670	Review Draft Monitoring Results	14d	10d	12/05/05	12/19/05	8.00h	\$600
Summary for Role:			668d	07/02/03 A	03/08/06	104.00h	\$7,800
Procurement							
37-2686	Prepare Statement Award	404d	65d	03/22/06	06/21/06	518.01h	\$38,851
37-2692	Issue Final Statement Award	404d	20d	08/24/06	09/22/06	160.00h	\$12,000
Summary for Role:			129d	03/22/06	09/22/06	678.01h	\$50,851

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
Project Manager							
37-1000	PMP West, Project Management		270d	01/11/01 A	02/08/02 A	602.12h	\$45,159
37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	214.97h	\$16,123
37-1100	Complete Final Draft PMP, West		6d	11/20/01 A	11/29/01 A	42.99h	\$3,224
37-1230	Draft Initial Revised PMP		143d	04/29/02 A	11/20/02 A	1558.49h	\$116,887
37-1270	Incorporate Internal/PDT comments		18d	12/13/02 A	01/09/03 A	268.71h	\$20,153
37-1430	PPDR PMP Revision	368d	142d	09/09/05	04/07/06	752.37h	\$56,428
37-1435	Construction PMP Revision	1106d	142d	01/22/09	08/13/09	752.37h	\$56,428
37-1450	PPDR, West Project Management		249d	02/08/02 A	02/07/03 A	429.93h	\$32,245
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	8.60h	\$645
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	8.60h	\$645
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	17.20h	\$1,290
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	8.60h	\$645
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	8.60h	\$645
37-1740	Incorporate SAD/HQ Comments	0d	9d	08/05/05	08/18/05	8.60h	\$645
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	8.60h	\$645
37-1760	Finalize Selected Plan	0d	6d	08/31/05	09/09/05	8.60h	\$645
37-1850	Prepare Agenda for Workshop		1d	02/20/02 A	02/20/02 A	8.60h	\$645
37-1930	Send Draft Documents for Review		3d	01/23/02 A	01/25/02 A	25.80h	\$1,935
37-1940	Attend Workshop and Site Visit		1d	02/22/02 A	02/22/02 A	8.60h	\$645
37-1980	Review expert draft comments re transferability		4d	02/13/02 A	02/19/02 A	8.60h	\$645
37-2000	PDT Review revised transferability criteria and modeling/monitoring approaches		9d	04/04/02 A	04/16/02 A	8.60h	\$645
37-2040	Review criteria by PDT - webbrd		27d	12/17/01 A	01/25/02 A	94.59h	\$7,094
37-2120	Hold WPB/WMD PDT Meeting		30d	04/30/02 A	06/11/02 A	8.00h	\$600
37-2180	Review Existing Reports/Studies inc letter report		165d	02/05/02 A	09/27/02 A	42.99h	\$3,224
37-2190	Identify and review regulations		106d	05/31/02 A	10/30/02 A	8.60h	\$645
37-2200	Regulations Report		145d	10/30/02 A	05/30/03 A	8.60h	\$645

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2210	Removal Efficiency Report (M-D Plants)		213d	10/01/02 A	08/07/03 A	25.80h	\$1,935
37-2220	Assess Potential for M-D influent/effluent change		107d	03/10/03 A	08/07/03 A	17.20h	\$1,290
37-2230	Formulate treatment objectives		1d	08/08/03 A	08/08/03 A	17.20h	\$1,290
37-2240	Letter Report of treatment objectives		5d	08/11/03 A	08/15/03 A	8.60h	\$645
37-2250	PDT Review of treatment objective/criteria & meeting		34d	08/26/03 A	10/14/03 A	8.60h	\$645
37-2260	Revise Treatment objectives		21d	08/08/03 A	09/08/03 A	8.60h	\$645
37-2320	Prepare Technology Recommendation Documentation	112d	10d	09/17/04	10/01/04	8.60h	\$645
37-2330	Prepare Scope, Identify Potential Contractors for Technology Research		46d	08/25/03 A	10/29/03 A	25.80h	\$1,935
37-2340	Negotiate and Award technology research contract	0d	23d	12/30/03 A	01/30/04	8.60h	\$645
37-2360	Review Contractors Recommendations Re Technology Criteria	35d	10d	02/24/04	03/09/04	8.60h	\$645
37-2370	Review Contractors draft Technology Research Report	0d	15d	05/18/04	06/09/04	8.60h	\$645
37-2380	Backcheck Technology Final Report	416d	10d	07/08/04	07/22/04	8.60h	\$645
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	8.60h	\$645
37-2682	Prepare Procurement Strategy for Design/Build Contract	404d	22d	01/20/06	02/22/06	25.80h	\$1,935
37-2684	Governing Board Approval (by May 15, 2005)	404d	20d	02/22/06	03/22/06	8.60h	\$645
37-2688	Internal Review & ICMS	404d	22d	06/21/06	07/25/06	8.60h	\$645
37-2690	Incorporate Comments	404d	22d	07/25/06	08/24/06	8.60h	\$645
37-2700	Topographic Assessment/Walk Through	39d	6d	07/08/05	07/15/05	8.60h	\$645
37-2800	Prepare Engineering Appendix to the PPDR	0d	12d	03/24/06	04/10/06	17.20h	\$1,290
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	17.20h	\$1,290
37-2840	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	0d	21d	07/03/06	08/02/06	17.20h	\$1,290
37-2900	Incorporate Public Comments(Revise PPDR)/Respond to Comments	0d	22d	11/09/06	12/14/06	17.20h	\$1,290
37-2915	Incorporate ITR Comments	0d	12d	01/09/07	01/26/07	17.20h	\$1,290
37-2935	Letter of Intent	77d	5d	02/06/07	02/13/07	24.00h	\$1,800
37-3080	PDT/ITR Ecol/WQ Monitoring Plan Review	307d	17d	04/10/06	05/03/06	8.60h	\$645
37-3240	Prepare SOW for EPOC Literature Review	430d	20d	01/19/05	02/15/05	25.79h	\$1,934
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	8.60h	\$645

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	8.60h	\$645
37-3420	Prepare Site Recommendation Documentation	3d	10d	09/17/04	10/01/04	17.20h	\$1,290
37-3440	Negotiate and Award Contract for Expert Environmental Assistance	2388d	30d	05/17/04	06/28/04	42.99h	\$3,224
37-3450	Experts Assistance with Site Selection Criteria for Test and Control Site	3d	67d	06/29/04	10/01/04	42.99h	\$3,224
37-3470	Develop hydrologic regime desired	125d	30d	01/26/04	03/09/04	8.60h	\$645
37-3500	Develop Scope of Work for WQ Modeling	293d	17d	09/09/05	10/04/05	17.20h	\$1,290
37-3550	Review Draft WQ Modeling Results	293d	12d	02/17/06	03/08/06	8.60h	\$645
37-3670	Review Draft Monitoring Results	14d	10d	12/05/05	12/19/05	8.60h	\$645
37-3700	Develop Scope of Work for EPOC Sampling/Analysis		77d	04/08/03 A	07/25/03 A	17.20h	\$1,290
37-6000	Prepare Draft PCA	0d	41d	09/25/07	11/28/07	150.00h	\$11,250
37-6020	Revise Draft PCA	0d	11d	12/19/07	01/07/08	80.00h	\$6,000
37-9135	Develop Scope of Work for EPOC Sampling/Analysis	682d	77d	01/09/04	04/29/04	160.00h	\$12,000
37-9185	Compile Inventory & Analyze Existing Data	264d	63d	12/30/03 A	03/29/04	51.60h	\$3,870
37-9190	Data Evaluation and Field Work	255d	90d	04/12/04	08/18/04	42.99h	\$3,224
37-9195	Geotechnical Report	255d	10d	08/18/04	09/01/04	17.20h	\$1,290

Summary for Role:

2149d

01/11/01 A

08/13/09

5972.68h

\$447,951

Public Outreach

37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	20.00h	\$1,500
37-1470	Outreach Support	0d	733d	01/09/04	12/14/06	80.00h	\$6,000
37-1490	Prepare MOA with Miami-Dade (South Plant)	92d	10d	09/09/05	09/23/05	85.99h	\$6,449
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/06/04	8.00h	\$600
37-1690	Public Review inc Meeting (Technology and Site Selection)	0d	11d	05/10/05	05/24/05	8.00h	\$600
37-2865	Public Meeting on draft PPDR/EA	0d	2d	09/11/06	09/13/06	8.00h	\$600

Summary for Role:

1437d

03/16/01 A

12/14/06

209.99h

\$15,749

RE - Supervisor

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	16.01h	\$1,201
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	8.00h	\$600
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	8.00h	\$600
37-1550	PDT Meeting, Discuss Siting Criteria	76d	10d	04/19/04	04/30/04	8.00h	\$600
37-1620	Evaluate Pilot Project Alternatives	0d	10d	01/26/05	02/09/05	16.00h	\$1,200
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	16.00h	\$1,200
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	8.00h	\$600
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	40.00h	\$3,000
37-2865	Public Meeting on draft PPDR/EA	0d	2d	09/11/06	09/13/06	8.00h	\$600
37-3160	Obtain Rights of Entry for Field Work	255d	20d	03/15/04	04/09/04	16.00h	\$1,200
37-3170	Identify Land Already Owned/available		17d	01/31/03 A	02/25/03 A	16.00h	\$1,200
37-3180	Identify Property information for each Available Site		5d	02/19/03 A	02/25/03 A	24.00h	\$1,800
37-3200	Prepare RE Acquisition Maps for Alternatives		5d	02/19/03 A	02/25/03 A	24.00h	\$1,800
37-3210	Prepare Gross Appraisal	479d	20d	03/15/04	04/09/04	80.00h	\$6,000
37-3220	Negotiate Land Use Agreement	347d	10d	10/01/04	10/18/04	80.00h	\$6,000
37-3230	Prepare RE Appendix/Supplement	347d	20d	10/18/04	11/16/04	32.00h	\$2,400
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	16.00h	\$1,200
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	8.00h	\$600
37-3410	Evaluation of Alternative Sites	0d	10d	09/02/04	09/17/04	8.00h	\$600
37-9185	Compile Inventory & Analyze Existing Data	264d	63d	12/30/03 A	03/29/04	8.00h	\$600
Summary for Role:			1375d	03/16/01 A	09/13/06	440.01h	\$33,001
Regulation Specialist							
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	8.00h	\$600
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	8.00h	\$600
37-1550	PDT Meeting, Discuss Siting Criteria	76d	10d	04/19/04	04/30/04	8.00h	\$600
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	16.00h	\$1,200

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	8.00h	\$600
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/08/05	12.00h	\$900
37-2190	Identify and review regulations		106d	05/31/02 A	10/30/02 A	16.00h	\$1,200
37-2200	Regulations Report		145d	10/30/02 A	05/30/03 A	16.00h	\$1,200
37-2825	Internal/PDT/ITR Review of PPDR/EA	0d	17d	06/08/06	07/03/06	16.00h	\$1,200
37-2865	Public Meeting on draft PPDR/EA	0d	2d	09/11/06	09/13/06	8.00h	\$600
37-2900	Incorporate Public Comments(Revise PPDR)/Respond to Comments	0d	22d	11/09/06	12/14/06	8.00h	\$600
37-2925	Print and Distribute Revised PPDR to State	0d	7d	01/26/07	02/06/07	8.00h	\$600
37-3280	Attend EPOC Presentation	430d	5d	07/18/05	07/22/05	8.00h	\$600
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	8.00h	\$600
37-3370	Site Screening Preliminary Data Collection		21d	09/02/03 A	09/30/03 A	16.00h	\$1,200
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	8.00h	\$600
37-3420	Prepare Site Recommendation Documentation	3d	10d	09/17/04	10/01/04	16.00h	\$1,200
37-3480	Multi-Agency NPDES/1501 Pre-application Meeting	3d	10d	10/01/04	10/18/04	8.00h	\$600
37-3590	Compile Draft NPDES/W Q Application Package	15d	20d	01/19/06	02/16/06	16.00h	\$1,200
37-3600	Permit Coordination Meeting	15d	10d	02/17/06	03/06/06	8.00h	\$600
37-3610	Respond to Requests for Additional Information	15d	10d	03/06/06	03/20/06	16.00h	\$1,200
37-3810	Environmental Coordination Federal and State	17d	971d	12/01/03 A	10/16/07	40.00h	\$3,000
37-3820	NEPA Scoping Process	179d	10d	01/09/04	01/26/04	16.00h	\$1,200
Summary for Role:			1345d	05/31/02 A	10/16/07	292.00h	\$21,900

Scientific Support

37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	8.00h	\$600
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	8.00h	\$600
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	4.00h	\$300
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	8.00h	\$600
37-1990	ITR review transferability reports and criteria		7d	04/03/02 A	04/11/02 A	8.00h	\$600

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2230	Formulate treatment objectives		1d	08/08/03 A	08/08/03 A	8.00h	\$600
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	16.00h	\$1,200
37-3080	PDT/ITR Ecol/WQ Monitoring Plan Review	307d	17d	04/10/06	05/03/06	24.00h	\$1,800
37-3090	Revise Ecol/WQ Monitoring Plan	307d	12d	05/03/06	05/19/06	8.00h	\$600
37-3290	PDT Comment on EPOC Draft Report	430d	20d	07/25/05	08/19/05	4.00h	\$300
37-3475	Evaluate Receiving Water Quality		115d	02/26/03 A	08/07/03 A	8.00h	\$600
37-3670	Review Draft Monitoring Results	14d	10d	12/05/05	12/19/05	8.00h	\$600
37-3770	Review Draft EPOC Sampling/Analysis Results	175d	10d	09/29/04	10/13/04	4.00h	\$300
37-9170	Review Draft EPOC Sampling/Analysis Results	682d	10d	06/30/05	07/15/05	4.00h	\$300
Summary for Role:			1033d	04/03/02 A	05/19/06	120.00h	\$9,000
Supervisor							
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	8.00h	\$600
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	8.00h	\$600
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	16.00h	\$1,200
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	8.00h	\$600
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	8.00h	\$600
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	8.00h	\$600
37-1760	Finalize Selected Plan	0d	6d	08/31/05	09/09/05	8.00h	\$600
37-2230	Formulate treatment objectives		1d	08/08/03 A	08/08/03 A	16.00h	\$1,200
37-2250	PDT Review of treatment objective/criteria & meeting		34d	08/26/03 A	10/14/03 A	8.00h	\$600
37-2260	Revise Treatment objectives		21d	08/08/03 A	09/08/03 A	8.00h	\$600
37-2370	Review Contractors draft Technology Research Report	0d	15d	05/18/04	06/09/04	8.00h	\$600
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	8.00h	\$600
37-2700	Topographic Assessment/Walk Through	39d	6d	07/08/05	07/15/05	8.00h	\$600
37-2800	Prepare Engineering Appendix to the PPDR	0d	12d	03/24/06	04/10/06	8.00h	\$600
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	8.00h	\$600

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2840	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	0d	21d	07/03/06	08/02/06	8.00h	\$600
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	8.00h	\$600
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	8.00h	\$600
37-3470	Develop hydrologic regime desired	125d	30d	01/26/04	03/09/04	8.00h	\$600
37-3550	Review Draft WQ Modeling Results	293d	12d	02/17/06	03/08/06	8.00h	\$600
37-3670	Review Draft Monitoring Results	14d	10d	12/05/05	12/19/05	8.00h	\$600
37-9195	Geotechnical Report	255d	10d	08/18/04	09/01/04	16.00h	\$1,200
Summary for Role:			861d	02/25/03 A	08/02/06	200.00h	\$15,000
Water Qual - Fld. Data Collect							
37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	80.00h	\$6,000
37-1100	Complete Final Draft PMP, West		6d	11/20/01 A	11/29/01 A	40.00h	\$3,000
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	8.00h	\$600
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/06/04	8.00h	\$600
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	8.00h	\$600
37-1570	Document Transferability Decision WPB/West M-D		419d	04/03/02 A	12/05/03 A	8.00h	\$600
37-1610	Initial SAD/HQ In Progress Review Meeting	0d	20d	08/05/04	09/02/04	8.00h	\$600
37-1630	Prepare Evaluation Documents	0d	10d	02/09/05	02/24/05	8.00h	\$600
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	8.00h	\$600
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/08/05	16.00h	\$1,200
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	8.00h	\$600
37-1720	Meet with SAD/HQ (IPR)	0d	2d	07/13/05	07/14/05	8.00h	\$600
37-1740	Incorporate SAD/HQ Comments	0d	9d	08/05/05	08/18/05	8.00h	\$600
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	8.00h	\$600
37-1760	Finalize Selected Plan	0d	6d	08/31/05	09/09/05	8.00h	\$600
37-1780	Prepare Scope for Information Collection WPB/W MD		47d	06/25/01 A	08/29/01 A	16.00h	\$1,200
37-1800	Revise Scope for Information Collection WPB/W PD		5d	09/06/01 A	09/12/01 A	8.00h	\$600

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1810	Award Information Collection Contract WPB/W MD		39d	09/13/01 A	11/07/01 A	16.00h	\$1,200
37-1820	Administer Baseline Information Collection Contract WPB/WMD		96d	11/08/01 A	04/01/02 A	20.00h	\$1,500
37-1830	Review Draft Baseline Data Collection Report		19d	01/23/02 A	02/19/02 A	8.00h	\$600
37-1840	Data Coordination for Baseline Information Collection		20d	01/24/02 A	02/21/02 A	8.00h	\$600
37-1860	Review Draft Workshop Report		8d	02/28/02 A	03/11/02 A	8.00h	\$600
37-1920	Contract Preparation and Award for Expert Assistance		33d	11/08/01 A	12/28/01 A	16.00h	\$1,200
37-1940	Attend Workshop and Site Visit		1d	02/22/02 A	02/22/02 A	16.00h	\$1,200
37-1980	Review expert draft comments re transferability		4d	02/13/02 A	02/19/02 A	8.00h	\$600
37-2000	PDT Review revised transferability criteria and modeling/monitoring approaches		9d	04/04/02 A	04/16/02 A	8.00h	\$600
37-2010	Revise draft transferability criteria, modeling&monitoring approach		16d	04/09/02 A	04/30/02 A	8.00h	\$600
37-2020	Incorporate ITR/PDT transferability comments		10d	04/17/02 A	04/30/02 A	8.00h	\$600
37-2030	Develop preliminary sampling Criteria		24d	11/08/01 A	12/14/01 A	40.00h	\$3,000
37-2050	Revise sampling criteria		4d	02/13/02 A	02/19/02 A	8.00h	\$600
37-2060	Prepare Interim Monitoring Plan for WPB Baseline Data Collection		68d	02/28/02 A	06/04/02 A	80.00h	\$6,000
37-2070	Review Interim Monitoring Plan		10d	06/05/02 A	06/18/02 A	8.00h	\$600
37-2080	Review & Approve Interim Monitoring Plan		32d	06/18/02 A	08/01/02 A	8.00h	\$600
37-2090	Develop Draft Transferability Criteria		24d	11/08/01 A	12/14/01 A	20.00h	\$1,500
37-2100	Review criteria by PDT - webbrd		27d	12/17/01 A	01/25/02 A	8.00h	\$600
37-2110	Revise Draft Criteria		4d	02/13/02 A	02/19/02 A	8.00h	\$600
37-2120	Hold WPB/WMD PDT Meeting		30d	04/30/02 A	06/11/02 A	8.00h	\$600
37-2150	Develop preliminary modeling approach		24d	11/08/01 A	12/14/01 A	40.00h	\$3,000
37-2170	Revise modeling approach		4d	02/13/02 A	02/19/02 A	8.00h	\$600
37-2230	Formulate treatment objectives		1d	08/08/03 A	08/08/03 A	16.00h	\$1,200
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	16.00h	\$1,200
37-2688	Internal Review & ICMS	404d	22d	06/21/06	07/25/06	8.00h	\$600
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	8.00h	\$600
37-2840	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	0d	21d	07/03/06	08/02/06	16.00h	\$1,200
37-2900	Incorporate Public Comments(Revise PPDR)/Respond to Comments	0d	22d	11/09/06	12/14/06	16.00h	\$1,200

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-3060	Prepare Draft Ecological/W Q Monitoring Plan	293d	22d	03/09/06	04/10/06	56.00h	\$4,200
37-3080	PDT/ITR Ecol/WQ Monitoring Plan Review	307d	17d	04/10/06	05/03/06	8.00h	\$600
37-3090	Revise Ecol/WQ Monitoring Plan	307d	12d	05/03/06	05/19/06	8.00h	\$600
37-3100	Prepare Draft O&M Plan for Pilot Plant	115d	11d	10/04/05	10/20/05	16.00h	\$1,200
37-3120	Contract Preparation and Award for Expert Assistance re Monitoring Plan	315d	20d	04/10/06	05/08/06	16.00h	\$1,200
37-3140	Contract Management for Expert Assistance	293d	42d	04/10/06	06/08/06	16.00h	\$1,200
37-3150	Prepare Treatment Plant Monitoring Plan	103d	61d	06/14/05	09/08/05	8.00h	\$600
37-3240	Prepare SOW for EPOC Literature Review	430d	20d	01/19/05	02/15/05	8.00h	\$600
37-3280	Attend EPOC Presentation	430d	5d	07/18/05	07/22/05	8.00h	\$600
37-3290	PDT Comment on EPOC Draft Report	430d	20d	07/25/05	08/19/05	8.00h	\$600
37-3300	Backcheck of Final EPOC Report	430d	10d	09/06/05	09/19/05	8.00h	\$600
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	8.00h	\$600
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	8.00h	\$600
37-3420	Prepare Site Recommendation Documentation	3d	10d	09/17/04	10/01/04	8.00h	\$600
37-3430	Prepare SOW for Environmental Expert Assistance	2388d	15d	04/26/04	05/14/04	16.00h	\$1,200
37-3470	Develop hydrologic regime desired	125d	30d	01/26/04	03/09/04	8.00h	\$600
37-3475	Evaluate Receiving Water Quality		115d	02/26/03 A	08/07/03 A	32.00h	\$2,400
37-3480	Multi-Agency NPDES/1501 Pre-application Meeting	3d	10d	10/01/04	10/18/04	16.00h	\$1,200
37-3550	Review Draft WQ Modeling Results	293d	12d	02/17/06	03/08/06	8.00h	\$600
37-3620	Develop Scope of Work for Monitoring	3d	10d	10/18/04	11/01/04	40.00h	\$3,000
37-3630	Negotiate and Award Monitoring Contract	3d	10d	11/01/04	11/16/04	40.00h	\$3,000
37-3640	Manage Monitoring Contract	15d	271d	11/16/04	12/19/05	200.00h	\$15,000
37-3670	Review Draft Monitoring Results	14d	10d	12/05/05	12/19/05	16.00h	\$1,200
37-3690	Backcheck Final Monitoring Report	15d	10d	01/04/06	01/19/06	8.00h	\$600
37-3700	Develop Scope of Work for EPOC Sampling/Analysis		77d	04/08/03 A	07/25/03 A	24.00h	\$1,800
37-3770	Review Draft EPOC Sampling/Analysis Results	175d	10d	09/29/04	10/13/04	16.00h	\$1,200
37-3800	Keep Up to Date on EPOC Research	0d	563d	01/09/04	04/10/06	40.00h	\$3,000

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-9085	Develop Scope of Work for Ecological/WQ Monitoring Plan	405d	429d	01/09/04	09/22/05	40.00h	\$3,000
37-9135	Develop Scope of Work for EPOC Sampling/Analysis	682d	77d	01/09/04	04/29/04	160.00h	\$12,000
37-9170	Review Draft EPOC Sampling/Analysis Results	682d	10d	06/30/05	07/15/05	16.00h	\$1,200
Summary for Role:			1437d	03/16/01 A	12/14/06	1560.00h	\$117,000
Water Qual - QA/QC							
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	8.00h	\$600
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/06/04	8.00h	\$600
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	8.00h	\$600
37-1610	Initial SAD/HQ In Progress Review Meeting	0d	20d	08/05/04	09/02/04	8.00h	\$600
37-1630	Prepare Evaluation Documents	0d	10d	02/09/05	02/24/05	8.00h	\$600
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	8.00h	\$600
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/08/05	8.00h	\$600
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	8.00h	\$600
37-1720	Meet with SAD/HQ (IPR)	0d	2d	07/13/05	07/14/05	8.00h	\$600
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	8.00h	\$600
37-1760	Finalize Selected Plan	0d	6d	08/31/05	09/09/05	8.00h	\$600
37-1780	Prepare Scope for Information Collection WPB/W MD		47d	06/25/01 A	08/29/01 A	8.00h	\$600
37-2230	Formulate treatment objectives		1d	08/08/03 A	08/08/03 A	8.00h	\$600
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	16.00h	\$1,200
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	8.00h	\$600
37-3050	Review WPB Monitoring Plan		276d	02/28/02 A	04/04/03 A	16.00h	\$1,200
37-3060	Prepare Draft Ecological/WQ Monitoring Plan	293d	22d	03/09/06	04/10/06	16.00h	\$1,200
37-3080	PDT/ITR Ecol/WQ Monitoring Plan Review	307d	17d	04/10/06	05/03/06	8.00h	\$600
37-3090	Revise Ecol/WQ Monitoring Plan	307d	12d	05/03/06	05/19/06	8.00h	\$600
37-3100	Prepare Draft O&M Plan for Pilot Plant	115d	11d	10/04/05	10/20/05	8.00h	\$600
37-3150	Prepare Treatment Plant Monitoring Plan	103d	61d	06/14/05	09/08/05	8.00h	\$600

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-3240	Prepare SOW for EPOC Literature Review	430d	20d	01/19/05	02/15/05	8.00h	\$600
37-3280	Attend EPOC Presentation	430d	5d	07/18/05	07/22/05	8.00h	\$600
37-3290	PDT Comment on EPOC Draft Report	430d	20d	07/25/05	08/19/05	8.00h	\$600
37-3300	Backcheck of Final EPOC Report	430d	10d	09/06/05	09/19/05	8.00h	\$600
37-3350	Develop Site Prescreening Criteria		88d	02/27/03 A	07/01/03 A	8.00h	\$600
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	8.00h	\$600
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	8.00h	\$600
37-3420	Prepare Site Recommendation Documentation	3d	10d	09/17/04	10/01/04	8.00h	\$600
37-3430	Prepare SOW for Environmental Expert Assistance	2388d	15d	04/26/04	05/14/04	8.00h	\$600
37-3470	Develop hydrologic regime desired	125d	30d	01/26/04	03/09/04	8.00h	\$600
37-3475	Evaluate Receiving Water Quality		115d	02/26/03 A	08/07/03 A	8.00h	\$600
37-3480	Multi-Agency NPDES/1501 Pre-application Meeting	3d	10d	10/01/04	10/18/04	16.00h	\$1,200
37-3550	Review Draft WQ Modeling Results	293d	12d	02/17/06	03/08/06	8.00h	\$600
37-3620	Develop Scope of Work for Monitoring	3d	10d	10/18/04	11/01/04	8.00h	\$600
37-3670	Review Draft Monitoring Results	14d	10d	12/05/05	12/19/05	16.00h	\$1,200
37-3690	Backcheck Final Monitoring Report	15d	10d	01/04/06	01/19/06	8.00h	\$600
37-3700	Develop Scope of Work for EPOC Sampling/Analysis		77d	04/08/03 A	07/25/03 A	8.00h	\$600
37-3770	Review Draft EPOC Sampling/Analysis Results	175d	10d	09/29/04	10/13/04	16.00h	\$1,200
37-3800	Keep Up to Date on EPOC Research	0d	563d	01/09/04	04/10/06	40.00h	\$3,000
37-9085	Develop Scope of Work for Ecological/WQ Monitoring Plan	405d	429d	01/09/04	09/22/05	8.00h	\$600
37-9135	Develop Scope of Work for EPOC Sampling/Analysis	682d	77d	01/09/04	04/29/04	300.00h	\$22,500
37-9170	Review Draft EPOC Sampling/Analysis Results	682d	10d	06/30/05	07/15/05	16.00h	\$1,200
Summary for Role:			1238d	06/25/01 A	06/08/06	724.00h	\$54,300
Pro Fees / Consulting Services							
37-1870	Collect Baseline Information and Prepare Draft Report		43d	11/16/01 A	01/22/02 A	0.00h	\$13,437
37-1880	Facilitate Workshop		1d	02/22/02 A	02/22/02 A	0.00h	\$3,054

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1890	Prepare Final Baseline Information Collection Report		5d	02/25/02 A	03/01/02 A	0.00h	\$1,493
37-1900	Draft Workshop Report/Meeting minutes		3d	02/25/02 A	02/27/02 A	0.00h	\$5,607
37-1910	Final Workshop Report		13d	03/13/02 A	03/30/02 A	0.00h	\$623
37-1950	Experts Provide Draft Comments		10d	01/30/02 A	02/12/02 A	0.00h	\$3,000
37-1960	Experts Attend Workshop		3d	02/20/02 A	02/22/02 A	0.00h	\$10,000
37-1970	Experts Report (comments on criteria, transferability and approach plans)		10d	02/27/02 A	03/12/02 A	0.00h	\$3,000
37-3130	Expert Assistance Regarding Monitoring Plan	293d	21d	06/08/06	07/10/06	0.00h	\$16,000
37-3160	Obtain Rights of Entry for Field Work	255d	20d	03/15/04	04/09/04	0.00h	\$5,000
37-3450	Experts Assistance with Site Selection Criteria for Test and Control Site	3d	67d	06/29/04	10/01/04	0.00h	\$15,000
37-3590	Compile Draft NPDES/WQ Application Package	15d	20d	01/19/06	02/17/06	0.00h	\$10,000
37-3650	Contractor Perform Monitoring	3d	250d	11/16/04	11/17/05	0.00h	\$100,000
37-3660	Contractor Submits Draft Monitoring Report	3d	10d	11/17/05	12/05/05	0.00h	\$10,000
37-3680	Contractor Submits Final Monitoring Report	14d	10d	12/19/05	01/04/06	0.00h	\$2,000
37-5070	Construction and operation	1106d	142d	01/22/09	08/13/09	0.00h	\$14,864,274
37-5080	Design	0d	41d	11/19/08	01/22/09	0.00h	\$3,000,000
37-7000	RE Acquisition	105d	128d	02/29/08	08/29/08	0.00h	\$900,000
37-9000	PPTDR	0d	128d	07/16/13	01/22/14	0.00h	\$115,000
37-9090	Baseline Monitoring	17d	397d	11/14/07	06/17/09	0.00h	\$250,000
37-9130	Post-Construction Monitoring	0d	1002d	07/13/09	07/16/13	0.00h	\$250,000
Summary for Role:			3041d	11/16/01 A	01/22/14	0.00h	\$19,577,488
Contingency Reserve							
37-1480	PPDR Contingency	17d	838d	01/09/04	05/16/07	0.00h	\$140,000
Summary for Role:			838d	01/09/04	05/16/07	0.00h	\$140,000
Summary for Division:			3255d	01/11/01 A	01/22/14	10845.29h	\$20,530,885

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
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Summary for: **SFWMD** 3255d 01/11/01 A 01/22/14 11045.29h \$20,545,885

Corps of Engineers

CESAJ CESAJ U.S Army Corps of Engineers, Jacksonville District

Corps of Engineers

37-1430	PPDR PMP Revision	368d	142d	09/09/05	04/07/06	0.00h	\$50,000
37-1435	Construction PMP Revision	1106d	142d	01/22/09	08/13/09	0.00h	\$50,000
37-5070	Construction and operation	1106d	142d	01/22/09	08/13/09	0.00h	\$1,600,162
37-7000	RE Acquisition	105d	128d	02/29/08	08/29/08	0.00h	\$100,000
37-9000	PPTDR	0d	128d	07/16/13	01/22/14	0.00h	\$1,130,000

Summary for Role: 2088d 09/09/05 01/22/14 0.00h \$2,930,162

Summary for Division: CESAJ 2088d 09/09/05 01/22/14 0.00h \$2,930,162

CESAJ.CO Construction-Operations Division

Const Ops Labor/Other

37-1550	PDT Meeting, Discuss Siting Criteria	76d	10d	04/19/04	04/30/04	0.00h	\$500
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	0.00h	\$500
37-1580	PDT Meeting to Discuss Alternative Technologies	0d	10d	06/23/04	07/08/04	0.00h	\$250
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/11/05	0.00h	\$500
37-1670	ITR/PDT Review & Comment Plan Selection Document	0d	10d	04/11/05	04/25/05	0.00h	\$500

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	0.00h	\$250
37-1940	Attend Workshop and Site Visit		1d	02/22/02 A	02/22/02 A	0.00h	\$1,000
37-2270	Prepare Draft Evaluation Criteria for Technology		14d	07/28/03 A	08/14/03 A	0.00h	\$500
37-2360	Review Contractors Recommendations Re Technology Criteria	35d	10d	02/24/04	03/09/04	0.00h	\$500
37-2370	Review Contractors draft Technology Research Report	0d	15d	05/18/04	06/09/04	0.00h	\$500
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	0.00h	\$500
37-2825	Internal/PDT/ITR Review of PPDR/EA	0d	17d	06/08/06	07/03/06	0.00h	\$2,000
37-3410	Evaluation of Alternative Sites	0d	10d	09/02/04	09/17/04	0.00h	\$500
Summary for Role:			1091d	02/22/02 A	07/03/06	0.00h	\$8,000
Construction Operations ITR							
37-1540	Initial ITR Meeting	74d	1d	04/06/04	04/07/04	0.00h	\$400
37-1600	ITR/PDT Review of Alternatives Document	0d	10d	07/22/04	08/05/04	0.00h	\$800
37-1670	ITR/PDT Review & Comment Plan Selection Document	0d	10d	04/11/05	04/25/05	0.00h	\$1,000
37-2905	ITR Review of PPDR/EA	0d	17d	12/14/06	01/09/07	0.00h	\$2,800
Summary for Role:			690d	04/06/04	01/09/07	0.00h	\$5,000
Summary for Division:		CESAJ.CO	1220d	02/22/02 A	01/09/07	0.00h	\$13,000
CESAJ.CO.CO-C Construction Branch							
Construction Labor/Other							
37-9310	PMP Resource Budgeted Cost		682d	01/11/01 A	09/30/03 A	0.00h	\$431
Summary for Role:			682d	01/11/01 A	09/30/03 A	0.00h	\$431

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
Summary for Division:		CESAJ.CO.CO-C	682d	01/11/01 A	09/30/03 A	0.00h	\$431
CESAJ.CO.CO-R CERP Management Branch							
CERP Management Labor/Other							
37-1580	PDT Meeting to Discuss Alternative Technologies	0d	10d	06/23/04	07/08/04	0.00h	\$500
37-1600	ITR/PDT Review of Alternatives Document	0d	10d	07/22/04	08/05/04	0.00h	\$700
37-1620	Evaluate Pilot Project Alternatives	0d	10d	01/26/05	02/09/05	0.00h	\$500
37-1640	PDT Review Evaluation Document	0d	10d	02/25/05	03/11/05	0.00h	\$500
37-1670	ITR/PDT Review & Comment Plan Selection Document	0d	10d	04/11/05	04/25/05	0.00h	\$500
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	0.00h	\$500
37-2310	Evaluate Alternative Technologies	86d	10d	09/02/04	09/17/04	0.00h	\$500
37-2430	Contractors Final Report on Technology Information	416d	20d	06/09/04	07/08/04	0.00h	\$500
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	0.00h	\$1,000
37-2680	PDT Meeting for Preliminary Design	15d	7d	02/22/06	03/03/06	0.00h	\$1,000
37-2705	Finalize Location, Orientation and Dimension of Cell	0d	17d	09/09/05	10/04/05	0.00h	\$500
37-2710	Determine design of Levee and supporting Structure	29d	7d	10/04/05	10/14/05	0.00h	\$500
37-2720	Locate Piping Route Between Pilot Plant and Cell	0d	12d	10/04/05	10/21/05	0.00h	\$500
37-2725	Determine Piping Plan of Conveyance	12d	12d	10/21/05	11/08/05	0.00h	\$500
37-2730	Determine Auxilliary Mechanical & Electrical Equipment	0d	12d	10/21/05	11/08/05	0.00h	\$500
37-2825	Internal/PDT/ITR Review of PPDR/EA	0d	17d	06/08/06	07/03/06	0.00h	\$1,000
37-3100	Prepare Draft O&M Plan for Pilot Plant	115d	11d	10/04/05	10/20/05	0.00h	\$500
37-3150	Prepare Treatment Plant Monitoring Plan	103d	61d	06/14/05	09/08/05	0.00h	\$500
37-3410	Evaluation of Alternative Sites	0d	10d	09/02/04	09/17/04	0.00h	\$500
Summary for Role:			516d	06/09/04	07/03/06	0.00h	\$11,200
Summary for Division:		CESAJ.CO.CO-R	516d	06/09/04	07/03/06	0.00h	\$11,200

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
CESAJ.CT.CT-E CERP Branch							
CERP Labor/Other							
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/09/04	0.00h	\$2,000
37-2000	PDT Review revised transferability criteria and modeling/monitoring approaches		9d	04/04/02 A	04/16/02 A	0.00h	\$2,800
37-2340	Negotiate and Award technology research contract	0d	23d	12/30/03 A	02/02/04	0.00h	\$2,500
37-2865	Public Meeting on draft PPDR/EA	0d	2d	09/11/06	09/13/06	0.00h	\$2,000
37-3260	Revise EPOC SOW , Neg, award contract	430d	20d	03/03/05	03/30/05	0.00h	\$2,500
37-3510	Negotiate and Award WQ Modeling	293d	17d	10/04/05	10/28/05	0.00h	\$2,500
37-3710	Negotiate and Award EPOC Sampling/Analysis		56d	07/25/03 A	10/14/03 A	0.00h	\$2,500
37-9185	Compile Inventory & Analyze Existing Data	264d	63d	12/30/03 A	03/30/04	0.00h	\$2,500
Summary for Role:			1112d	04/04/02 A	09/13/06	0.00h	\$19,300
Summary for Division:		CESAJ.CT.CT-E	1112d	04/04/02 A	09/13/06	0.00h	\$19,300
CESAJ.DP.DP-E South Florida Restoration Branch							
South Florida Restoration Labor/Other							
37-1000	PMP West, Project Management		270d	01/18/02 A	02/08/02 A	0.00h	\$15,483
37-1350	Distribute PMP for PrePRB, CRG, PRB & SFWMD Senior Management Review		27d	11/01/03 A	12/12/03 A	0.00h	\$10,000
37-1450	PPDR, West Project Management		249d	02/08/02 A	02/07/03 A	0.00h	\$32,000
37-1460	PPDR, Project Management	17d	1069d	02/07/03 A	05/16/07	0.00h	\$362,437
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	0.00h	\$2,000
37-2850	Print and Mail Draft PPDR/EIS	0d	6d	08/02/06	08/11/06	0.00h	\$20,000

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2925	Print and Distribute Revised PPDR to State	0d	7d	01/26/07	02/06/07	0.00h	\$10,000
37-2980	Transmit PPDR/EA to Washington	17d	7d	05/16/07	05/25/07	0.00h	\$2,000
37-6000	Prepare Draft PCA	0d	41d	09/25/07	11/28/07	0.00h	\$10,000
37-6020	Revise Draft PCA	0d	11d	12/19/07	01/07/08	0.00h	\$6,000
37-9210	Notice of Availability in Federal Register	54d	13d	06/08/06	06/27/06	0.00h	\$3,000
37-9310	PMP Resource Budgeted Cost		682d	01/11/01 A	09/30/03 A	0.00h	\$83,930
Summary for Role:			1745d	01/11/01 A	01/07/08 A	0.00h	\$556,850
South Florida Restoration AE Services							
37-2820	Technical Editor Review PPDR	0d	17d	06/08/06	07/03/06	0.00h	\$10,000
Summary for Role:			17d	06/08/06	07/03/06	0.00h	\$10,000
South Florida Restoration Project Contingency							
37-1480	PPDR Contingency	17d	838d	01/09/04	05/16/07	0.00h	\$560,000
Summary for Role:			838d	01/09/04	05/16/07	0.00h	\$560,000
Summary for Division:		CESAJ.DP.DP-E	1745d	01/11/01 A	01/07/08	0.00h	\$1,126,850

CESAJ.DR.DR-W

South Florida Area Office, West Palm Beach

South Florida Office Labor/Other

37-1470	Outreach Support	0d	733d	01/09/04	12/14/06	0.00h	\$34,272
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/09/04	0.00h	\$2,240
37-1690	Public Review inc Meeting (Technology and Site Selection)	0d	11d	05/10/05	05/24/05	0.00h	\$2,240
37-2120	Hold WPB/WMD PDT Meeting		30d	04/30/02 A	06/11/02 A	0.00h	\$1,260

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2865	Public Meeting on draft PPDR/EA	0d	2d	09/11/06	09/13/06	0.00h	\$2,240
Summary for Role:			1156d	04/30/02 A	12/14/06	0.00h	\$42,252
South Florida Office AE Services							
37-1470	Outreach Support	0d	733d	01/09/04	12/14/06	0.00h	\$8,000
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/09/04	0.00h	\$4,718
37-1690	Public Review inc Meeting (Tec hnology and Site Selection)	0d	11d	05/10/05	05/24/05	0.00h	\$4,718
37-2865	Public Meeting on draft PPDR/EA	0d	2d	09/11/06	09/13/06	0.00h	\$4,718
Summary for Role:			733d	01/09/04	12/14/06	0.00h	\$22,154
Summary for Division:		CESAJ.DR.DR-W	1156d	04/30/02 A	12/14/06	0.00h	\$64,406

CESAJ.EN.EN-C

Cost Engineering Branch

Cost Engineering Labor/Other

37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	0.00h	\$500
37-1620	Evaluate Pilot Project Alternatives	0d	10d	01/26/05	02/09/05	0.00h	\$1,000
37-2330	Prepare Scope, Identify Potential Contractors for Tec hnology Research		46d	08/25/03 A	10/29/03 A	0.00h	\$1,000
37-2370	Review Contractors draft Tec hnology Research Report	0d	15d	05/18/04	06/09/04	0.00h	\$1,360
37-2745	Prepare Cost Estimate for Cell Design	24d	7d	10/21/05	11/01/05	0.00h	\$1,300
37-2750	Prepare Cost Estimate for Conveyance	12d	7d	11/08/05	11/18/05	0.00h	\$1,300
37-2755	Cost Estimate for Structural Support	0d	7d	11/29/05	12/08/05	0.00h	\$1,300
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	0.00h	\$1,000
37-3060	Prepare Draft Ecological/W Q Monitoring Plan	293d	22d	03/09/06	04/10/06	0.00h	\$1,360
Summary for Role:			823d	02/25/03 A	06/08/06	0.00h	\$10,120

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
Summary for Division:		CESAJ.EN.EN-C	823d	02/25/03 A	06/08/06	0.00h	\$10,120
CESAJ.EN.EN-D	Design Branch						
Design Labor/Other							
37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	0.00h	\$3,000
37-1100	Complete Final Draft PMP, West		6d	11/20/01 A	11/29/01 A	0.00h	\$500
37-1230	Draft Initial Revised PMP		143d	04/29/02 A	11/20/02 A	0.00h	\$5,000
37-1270	Incorporate Internal/PDT comments		18d	12/13/02 A	01/09/03 A	0.00h	\$2,079
37-1350	Distribute PMP for PrePRB, CRG, PRB & SFWMD Senior Management Review		27d	11/01/03 A	12/12/03 A	0.00h	\$300
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	0.00h	\$1,200
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	0.00h	\$1,200
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	0.00h	\$4,500
37-1580	PDT Meeting to Discuss Alternative Technologies	0d	10d	06/23/04	07/08/04	0.00h	\$1,920
37-1620	Evaluate Pilot Project Alternatives	0d	10d	01/26/05	02/09/05	0.00h	\$1,360
37-1630	Prepare Evaluation Documents	0d	10d	02/09/05	02/25/05	0.00h	\$1,300
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	0.00h	\$1,280
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/11/05	0.00h	\$1,300
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	0.00h	\$1,300
37-1700	Incorporate Public Comments on Selected Plan	0d	11d	05/24/05	06/09/05	0.00h	\$1,300
37-1740	Incorporate SAD/HQ Comments	0d	9d	08/05/05	08/18/05	0.00h	\$650
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	0.00h	\$1,800
37-1760	Finalize Selected Plan	0d	6d	08/31/05	09/09/05	0.00h	\$650
37-2270	Prepare Draft Evaluation Criteria for Technology		14d	07/28/03 A	08/14/03 A	0.00h	\$2,600
37-2290	Prepare Final Technology Criteria		38d	09/16/03 A	11/07/03 A	0.00h	\$1,300
37-2310	Evaluate Alternative Technologies	86d	10d	09/02/04	09/17/04	0.00h	\$3,840

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2330	Prepare Scope, Identify Potential Contractors for Technology Research		46d	08/25/03 A	10/29/03 A	0.00h	\$2,900
37-2340	Negotiate and Award technology research contract	0d	23d	12/30/03 A	02/02/04	0.00h	\$340
37-2360	Review Contractors Recommendations Re Technology Criteria	35d	10d	02/24/04	03/09/04	0.00h	\$650
37-2370	Review Contractors draft Technology Research Report	0d	15d	05/18/04	06/09/04	0.00h	\$1,700
37-2590	Review Hydrological Model Results	0d	10d	12/16/04	01/04/05	0.00h	\$1,300
37-2665	Draft Design Report	0d	21d	12/08/05	01/10/06	0.00h	\$24,650
37-2670	EN-D QC of Draft Design Documents and Revise	0d	12d	01/10/06	01/27/06	0.00h	\$4,550
37-2680	PDT Meeting for Preliminary Design	15d	7d	02/22/06	03/03/06	0.00h	\$1,860
37-2682	Prepare Procurement Strategy for Design/Build Contract	404d	22d	01/20/06	02/22/06	0.00h	\$650
37-2688	Internal Review & ICMS	404d	22d	06/21/06	07/25/06	0.00h	\$650
37-2700	Topographic Assessment/Walk Through	39d	6d	07/08/05	07/15/05	0.00h	\$9,300
37-2705	Finalize Location, Orientation and Dimension of Cell	0d	17d	09/09/05	10/04/05	0.00h	\$7,800
37-2710	Determine design of Levee and supporting Structure	29d	7d	10/04/05	10/14/05	0.00h	\$3,250
37-2715	Determine Piping Plan for Cell	24d	12d	10/04/05	10/21/05	0.00h	\$5,200
37-2720	Locate Piping Route Between Pilot Plant and Cell	0d	12d	10/04/05	10/21/05	0.00h	\$3,900
37-2725	Determine Piping Plan of Conveyance	12d	12d	10/21/05	11/08/05	0.00h	\$2,600
37-2730	Determine Auxilliary Mechanical & Electrical Equipment	0d	12d	10/21/05	11/08/05	0.00h	\$3,900
37-2735	Slab Design for Support of Pilot Plant	41d	12d	09/09/05	09/27/05	0.00h	\$2,600
37-2740	Support Structure for Pump Equipment	0d	12d	11/08/05	11/29/05	0.00h	\$2,600
37-2745	Prepare Cost Estimate for Cell Design	24d	7d	10/21/05	11/01/05	0.00h	\$650
37-2750	Prepare Cost Estimate for Conveyance	12d	7d	11/08/05	11/18/05	0.00h	\$650
37-2755	Cost Estimate for Structural Support	0d	7d	11/29/05	12/08/05	0.00h	\$340
37-2800	Prepare Engineering Appendix to the PPDR	0d	12d	03/24/06	04/10/06	0.00h	\$3,400
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	0.00h	\$3,250
37-2840	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	0d	21d	07/03/06	08/02/06	0.00h	\$4,550
37-2900	Incorporate Public Comments(Revise PPDR)/Respond to Comments	0d	22d	11/09/06	12/14/06	0.00h	\$3,400
37-2915	Incorporate ITR Comments	0d	12d	01/09/07	01/26/07	0.00h	\$2,720

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2955	Incorporate State Comments	0d	12d	04/04/07	04/20/07	0.00h	\$1,300
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	02/10/04	0.00h	\$1,360
37-3410	Evaluation of Alternative Sites	0d	10d	09/02/04	09/17/04	0.00h	\$1,200
37-9185	Compile Inventory & Analyze Existing Data	264d	63d	12/30/03 A	03/30/04	0.00h	\$1,200
37-9195	Geotechnical Report	255d	10d	08/18/04	09/01/04	0.00h	\$1,950
Summary for Role:			1525d	03/16/01 A	04/20/07	0.00h	\$144,749
Summary for Division:		CESAJ.EN.EN-D	1525d	03/16/01 A	04/20/07	0.00h	\$144,749

CESAJ.EN.EN-G

Geotechnical Branch

Geotechnical Labor/Other

37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	0.00h	\$17,491
37-1100	Complete Final Draft PMP, West		6d	11/20/01 A	11/20/01 A	0.00h	\$12,009
37-1230	Draft Initial Revised PMP		143d	04/29/02 A	11/20/02 A	0.00h	\$17,000
37-1270	Incorporate Internal/PDT comments		18d	12/13/02 A	01/09/03 A	0.00h	\$10,000
37-1350	Distribute PMP for PrePRB, CRG, PRB & SFWMD Senior Management Review		27d	11/01/03 A	12/12/03 A	0.00h	\$12,000
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	0.00h	\$2,160
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	0.00h	\$2,160
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/09/04	0.00h	\$1,080
37-1540	Initial ITR Meeting	74d	1d	04/06/04	04/07/04	0.00h	\$680
37-1550	PDT Meeting, Discuss Siting Criteria	76d	10d	04/19/04	04/30/04	0.00h	\$2,160
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	0.00h	\$6,800
37-1570	Document Transferability Decision WPB/West M-D		419d	04/03/02 A	12/05/03 A	0.00h	\$1,760
37-1580	PDT Meeting to Discuss Alternative Technologies	0d	10d	06/23/04	07/08/04	0.00h	\$3,240
37-1590	Prepare Project Alternatives Documents	0d	10d	07/08/04	07/22/04	0.00h	\$5,400

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1610	Initial SAD/HQ In Progress Review Meeting	0d	20d	08/05/04	09/02/04	0.00h	\$1,080
37-1620	Evaluate Pilot Project Alternatives	0d	10d	01/26/05	02/09/05	0.00h	\$3,240
37-1630	Prepare Evaluation Documents	0d	10d	02/09/05	02/25/05	0.00h	\$2,160
37-1640	PDT Review Evaluation Document	0d	10d	02/25/05	03/11/05	0.00h	\$1,080
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	0.00h	\$3,240
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/11/05	0.00h	\$1,660
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	0.00h	\$2,160
37-1690	Public Review inc Meeting (Technology and Site Selection)	0d	11d	05/10/05	05/24/05	0.00h	\$2,160
37-1700	Incorporate Public Comments on Selected Plan	0d	11d	05/24/05	06/09/05	0.00h	\$1,080
37-1720	Meet with SAD/HQ (IPR)	0d	2d	07/13/05	07/14/05	0.00h	\$1,360
37-1740	Incorporate SAD/HQ Comments	0d	9d	08/05/05	08/18/05	0.00h	\$1,080
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	0.00h	\$1,080
37-1760	Finalize Selected Plan	0d	6d	08/31/05	09/09/05	0.00h	\$2,160
37-1770	Engineering Management	17d	838d	01/09/04	05/16/07	0.00h	\$34,000
37-1940	Attend Workshop and Site Visit		1d	02/22/02 A	02/22/02 A	0.00h	\$2,370
37-1980	Review expert draft comments re transferability		4d	02/13/02 A	02/19/02 A	0.00h	\$680
37-2000	PDT Review revised transferability criteria and modeling/monitoring approaches		9d	04/04/02 A	04/16/02 A	0.00h	\$1,785
37-2040	Review criteria by PDT - webbrd		27d	12/17/01 A	01/25/02 A	0.00h	\$680
37-2060	Prepare Interim Monitoring Plan for WPB Baseline Data Collection		68d	02/28/02 A	06/04/02 A	0.00h	\$680
37-2070	Review Interim Monitoring Plan		10d	06/05/02 A	06/18/02 A	0.00h	\$680
37-2090	Develop Draft Transferability Criteria		24d	11/08/01 A	11/30/01 A	0.00h	\$2,040
37-2120	Hold WPB/WMD PDT Meeting		30d	04/30/02 A	06/11/02 A	0.00h	\$1,150
37-2160	Review modeling approach by PDT - webbrd		27d	12/17/01 A	01/25/02 A	0.00h	\$680
37-2180	Review Existing Reports/Studies inc letter report		165d	02/05/02 A	09/27/02 A	0.00h	\$3,400
37-2200	Regulations Report		145d	10/30/02 A	05/30/03 A	0.00h	\$680
37-2220	Assess Potential for M-D influent/effluent change		107d	03/10/03 A	08/07/03 A	0.00h	\$680
37-2230	Formulate treatment objectives		1d	08/08/03 A	08/08/03 A	0.00h	\$3,400
37-2250	PDT Review of treatment objective/criteria & meeting		34d	08/26/03 A	10/14/03 A	0.00h	\$3,720

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2270	Prepare Draft Evaluation Criteria for Technology		14d	07/28/03 A	08/14/03 A	0.00h	\$6,800
37-2290	Prepare Final Technology Criteria		38d	09/16/03 A	11/07/03 A	0.00h	\$3,400
37-2300	List of Technologies from Contractors Report	0d	10d	06/09/04	06/23/04	0.00h	\$3,240
37-2310	Evaluate Alternative Technologies	86d	10d	09/02/04	09/17/04	0.00h	\$3,400
37-2320	Prepare Technology Recommendation Documentation	112d	10d	09/17/04	10/01/04	0.00h	\$2,040
37-2330	Prepare Scope, Identify Potential Contractors for Technology Research		46d	08/25/03 A	10/29/03 A	0.00h	\$10,200
37-2340	Negotiate and Award technology research contract	0d	23d	12/30/03 A	02/02/04	0.00h	\$1,360
37-2350	Technology Research Contract Management	416d	100d	02/02/04	06/23/04	0.00h	\$2,040
37-2360	Review Contractors Recommendations Re Technology Criteria	35d	10d	02/24/04	03/09/04	0.00h	\$1,360
37-2370	Review Contractors draft Technology Research Report	0d	15d	05/18/04	06/09/04	0.00h	\$2,000
37-2380	Backcheck Technology Final Report	416d	10d	07/08/04	07/22/04	0.00h	\$2,039
37-2590	Review Hydrological Model Results	0d	10d	12/16/04	01/04/05	0.00h	\$3,240
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	0.00h	\$1,360
37-2680	PDT Meeting for Preliminary Design	15d	7d	02/22/06	03/03/06	0.00h	\$1,860
37-2682	Prepare Procurement Strategy for Design/Build Contract	404d	22d	01/20/06	02/22/06	0.00h	\$680
37-2688	Internal Review & ICMS	404d	22d	06/21/06	07/25/06	0.00h	\$680
37-2700	Topographic Assessment/Walk Through	39d	6d	07/08/05	07/15/05	0.00h	\$1,860
37-2800	Prepare Engineering Appendix to the PPDR	0d	12d	03/24/06	04/10/06	0.00h	\$6,800
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	0.00h	\$21,250
37-2825	Internal/PDT/ITR Review of PPDR/EA	0d	17d	06/08/06	07/03/06	0.00h	\$5,100
37-2840	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	0d	21d	07/03/06	08/02/06	0.00h	\$2,720
37-2855	HQ (SAD) Review	19d	21d	08/11/06	09/12/06	0.00h	\$3,000
37-2870	Response to HQ comments	19d	7d	09/12/06	09/21/06	0.00h	\$3,000
37-2875	PPDR Review Conference with SAD	19d	7d	09/21/06	09/29/06	0.00h	\$3,000
37-2900	Incorporate Public Comments(Revise PPDR)/Respond to Comments	0d	22d	11/09/06	12/14/06	0.00h	\$2,720
37-2915	Incorporate ITR Comments	0d	12d	01/09/07	01/26/07	0.00h	\$1,360
37-2925	Print and Distribute Revised PPDR to State	0d	7d	01/26/07	02/06/07	0.00h	\$2,720

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2955	Incorporate State Comments	0d	12d	04/04/07	04/20/07	0.00h	\$1,360
37-2960	OC Review/ITR Certification (inc EA)	17d	6d	04/20/07	05/01/07	0.00h	\$13,600
37-2965	Assemble Final PPDR	17d	6d	05/01/07	05/09/07	0.00h	\$3,000
37-2980	Transmit PPDR/EA to Washington	17d	7d	05/16/07	05/25/07	0.00h	\$850
37-2985	Publish Final PPDR/NEPA in Federal Register (MCS) Print and Mail	17d	32d	05/25/07	07/12/07	0.00h	\$3,000
37-3000	Public Review Meeting for PPDR/EIS	17d	42d	07/12/07	09/11/07	0.00h	\$2,000
37-3005	Prepare Response to Public Comments	17d	12d	09/11/07	09/26/07	0.00h	\$1,700
37-3020	Prepare Chief of Engineers Report	17d	13d	09/26/07	10/16/07	0.00h	\$3,000
37-3025	HQ/MSR Review Conference	17d	13d	09/26/07	10/16/07	0.00h	\$3,000
37-3060	Prepare Draft Ecological/W Q Monitoring Plan	293d	22d	03/09/06	04/10/06	0.00h	\$3,560
37-3280	Attend EPOC Presentation	430d	5d	07/18/05	07/22/05	0.00h	\$1,680
37-3350	Develop Site Prescreening Criteria		88d	02/27/03 A	07/01/03 A	0.00h	\$1,360
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	0.00h	\$1,720
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	02/10/04	0.00h	\$2,040
37-3390	PDT Review of Final Siting Criteria for Phase II	76d	25d	03/15/04	04/16/04	0.00h	\$1,080
37-3400	Prepare Final Siting Criteria	76d	10d	05/03/04	05/14/04	0.00h	\$1,080
37-3410	Evaluation of Alternative Sites	0d	10d	09/02/04	09/17/04	0.00h	\$1,080
37-3420	Prepare Site Recommendation Documentation	3d	10d	09/17/04	10/01/04	0.00h	\$1,360
37-3470	Develop hydrologic regime desired	125d	30d	01/26/04	03/09/04	0.00h	\$1,260
37-3475	Evaluate Receiving Water Quality		115d	02/26/03 A	08/07/03 A	0.00h	\$20,000
37-3480	Multi-Agency NPDES/1501 Pre-application Meeting	3d	10d	10/01/04	10/18/04	0.00h	\$1,940
37-3550	Review Draft WQ Modeling Results	293d	12d	02/17/06	03/08/06	0.00h	\$2,900
37-9185	Compile Inventory & Analyze Existing Data	264d	63d	12/30/03 A	03/30/04	0.00h	\$14,960
37-9190	Data Evaluation and Field Work	255d	90d	04/12/04	08/18/04	0.00h	\$6,800
37-9195	Geotechnical Report	255d	10d	08/18/04	09/01/04	0.00h	\$7,440
37-9310	PMP Resource Budgeted Cost		682d	01/11/01 A	09/30/03 A	0.00h	\$14,973
Summary for Role:			1691d	01/11/01 A	10/16/07 A	0.00h	\$390,077

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
Geotechnical AE Services							
37-2390	Contractor Review and Refine Tec hnology Criteria	35d	15d	02/02/04	02/24/04	0.00h	\$3,000
37-2400	Contractor Research Tec hnologies	0d	60d	02/02/04	04/27/04	0.00h	\$55,000
37-2410	Contractor Identify other AWT facilities in FL	50d	10d	02/02/04	02/17/04	0.00h	\$15,000
37-2420	Contractor Draft Report on Technology Information	0d	15d	04/27/04	05/18/04	0.00h	\$24,000
37-2430	Contractors Final Report on Tec hnology Information	416d	20d	06/09/04	07/08/04	0.00h	\$3,000
37-9185	Compile Inventory & Analyze Existing Data	264d	63d	12/30/03 A	03/30/04	0.00h	\$5,000
37-9190	Data Evaluation and Field Work	255d	90d	04/12/04	08/18/04	0.00h	\$135,000
37-9195	Geotechnical Report	255d	10d	08/18/04	09/01/04	0.00h	\$20,000
Summary for Role:			171d	12/30/03 A	09/01/04	0.00h	\$260,000
Summary for Division:		CESAJ.EN.EN-G	1691d	01/11/01 A	10/16/07	0.00h	\$650,077
CESAJ.EN.EN-H	Hydrology & Hydraulics Branch						
Hydrology & Hydraulics Labor/Other							
37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	0.00h	\$2,511
37-1100	Complete Final Draft PMP, West		6d	11/20/01 A	11/29/01 A	0.00h	\$5,000
37-1230	Draft Initial Revised PMP		143d	04/29/02 A	11/20/02 A	0.00h	\$7,000
37-1270	Incorporate Internal/PDT comments		18d	12/13/02 A	01/09/03 A	0.00h	\$1,700
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	0.00h	\$1,600
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	0.00h	\$800
37-1550	PDT Meeting, Discuss Siting Criteria	76d	10d	04/19/04	04/30/04	0.00h	\$800
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	0.00h	\$700
37-1620	Evaluate Pilot Project Alternatives	0d	10d	01/26/05	02/09/05	0.00h	\$1,200
37-1630	Prepare Evaluation Documents	0d	10d	02/09/05	02/25/05	0.00h	\$300

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1640	PDT Review Evaluation Document	0d	10d	02/25/05	03/11/05	0.00h	\$200
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	0.00h	\$1,600
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/11/05	0.00h	\$500
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	0.00h	\$800
37-2150	Develop preliminary modeling approach		24d	11/08/01 A	12/14/01 A	0.00h	\$1,360
37-2170	Revise modeling approach		4d	02/13/02 A	02/19/02 A	0.00h	\$680
37-2290	Prepare Final Technology Criteria		38d	09/16/03 A	11/07/03 A	0.00h	\$100
37-2560	Data Collection for Use in Models/Equations	0d	10d	09/17/04	10/01/04	0.00h	\$3,000
37-2570	Identify Test Cell Model/Equations	0d	10d	10/01/04	10/18/04	0.00h	\$3,000
37-2580	Perform Test Cell Model/Equations	0d	40d	10/18/04	12/16/04	0.00h	\$15,000
37-2600	H&H Appendix Preparation and Coordination	0d	22d	02/22/06	03/24/06	0.00h	\$7,800
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	0.00h	\$3,000
37-2800	Prepare Engineering Appendix to the PPDR	0d	12d	03/24/06	04/10/06	0.00h	\$5,000
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	0.00h	\$12,920
37-2825	Internal/PDT/ITR Review of PPDR/EA	0d	17d	06/08/06	07/03/06	0.00h	\$3,400
37-2840	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	0d	21d	07/03/06	08/02/06	0.00h	\$1,360
37-2900	Incorporate Public Comments(Revise PPDR)/Respond to Comments	0d	22d	11/09/06	12/14/06	0.00h	\$2,720
37-2915	Incorporate ITR Comments	0d	12d	01/09/07	01/26/07	0.00h	\$680
37-3060	Prepare Draft Ecological/W Q Monitoring Plan	293d	22d	03/09/06	04/10/06	0.00h	\$4,000
37-3080	PDT/ITR Ecol/WQ Monitoring Plan Review	307d	17d	04/10/06	05/03/06	0.00h	\$680
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	0.00h	\$1,500
37-3400	Prepare Final Siting Criteria	76d	10d	05/03/04	05/14/04	0.00h	\$100
37-3410	Evaluation of Alternative Sites	0d	10d	09/02/04	09/17/04	0.00h	\$300
37-3470	Develop hydrologic regime desired	125d	30d	01/26/04	03/09/04	0.00h	\$2,280
37-9185	Compile Inventory & Analyze Existing Data	264d	63d	12/30/03 A	03/30/04	0.00h	\$3,000
37-9190	Data Evaluation and Field Work	255d	90d	04/12/04	08/18/04	0.00h	\$600
Summary for Role:			1466d	03/16/01 A	01/26/07	0.00h	\$97,191

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
Summary for Division:		CESAJ.EN.EN-H	1466d	03/16/01 A	01/26/07	0.00h	\$97,191
CESAJ.EN.EN-T	Technical Services Branch						
Technical Service Labor/Other							
37-2340	Negotiate and Award technology research contract	0d	23d	12/30/03 A	02/02/04	0.00h	\$500
37-9185	Compile Inventory & Analyze Existing Data	264d	63d	12/30/03 A	03/30/04	0.00h	\$500
Summary for Role:			63d	12/30/03 A	03/30/04	0.00h	\$1,000
Technical Service ITR							
37-1540	Initial ITR Meeting	74d	1d	04/06/04	04/07/04	0.00h	\$1,600
37-1600	ITR/PDT Review of Alternatives Document	0d	10d	07/22/04	08/05/04	0.00h	\$3,200
37-1610	Initial SAD/HQ In Progress Review Meeting	0d	20d	08/05/04	09/02/04	0.00h	\$800
37-1670	ITR/PDT Review & Comment Plan Selection Document	0d	10d	04/11/05	04/25/05	0.00h	\$4,000
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	0.00h	\$4,800
37-2905	ITR Review of PPDR/EA	0d	17d	12/14/06	01/09/07	0.00h	\$9,000
37-3080	PDT/ITR Ecol/WQ Monitoring Plan Review	307d	17d	04/10/06	05/03/06	0.00h	\$2,400
Summary for Role:			690d	04/06/04	01/09/07	0.00h	\$25,800
Summary for Division:		CESAJ.EN.EN-T	757d	12/30/03 A	01/09/07	0.00h	\$26,800
CESAJ.PD.PD-D	Socio-Economics Branch						
Socio-Economics Labor/Other							

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	0.00h	\$122
37-1230	Draft Initial Revised PMP		143d	04/29/02 A	11/20/02 A	0.00h	\$500
37-1270	Incorporate Internal/PDT comments		18d	12/13/02 A	01/09/03 A	0.00h	\$300
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	0.00h	\$1,280
37-1620	Evaluate Pilot Project Alternatives	0d	10d	01/26/05	02/09/05	0.00h	\$1,280
37-1630	Prepare Evaluation Documents	0d	10d	02/09/05	02/25/05	0.00h	\$640
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/11/05	0.00h	\$1,280
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	0.00h	\$2,560
37-3390	PDT Review of Final Siting Criteria for Phase II	76d	25d	03/15/04	04/16/04	0.00h	\$1,280
37-3420	Prepare Site Recommendation Documentation	3d	10d	09/17/04	10/01/04	0.00h	\$640
Summary for Role:			1308d	03/16/01 A	06/08/06	0.00h	\$9,882
Summary for Division:		CESAJ.PD.PD-D	1308d	03/16/01 A	06/08/06	0.00h	\$9,882

CESAJ.PD.PD-E Environmental Branch

Environmental Labor/Other

37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	0.00h	\$8,950
37-1100	Complete Final Draft PMP, West		6d	11/20/01 A	11/29/01 A	0.00h	\$1,050
37-1230	Draft Initial Revised PMP		143d	04/29/02 A	11/20/02 A	0.00h	\$22,000
37-1270	Incorporate Internal/PDT comments		18d	12/13/02 A	01/09/03 A	0.00h	\$2,500
37-1350	Distribute PMP for PrePRB, CRG, PRB & SFWMD Senior Management Review		27d	11/01/03 A	12/12/03 A	0.00h	\$5,000
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	0.00h	\$1,680
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	0.00h	\$1,680
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/09/04	0.00h	\$840
37-1550	PDT Meeting, Discuss Siting Criteria	76d	10d	04/19/04	04/30/04	0.00h	\$1,680

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	0.00h	\$9,720
37-1570	Document Transferability Decision WPB/West M-D		419d	04/03/02 A	12/05/03 A	0.00h	\$640
37-1580	PDT Meeting to Discuss Alternative Technologies	0d	10d	06/23/04	07/08/04	0.00h	\$840
37-1590	Prepare Project Alternatives Documents	0d	10d	07/08/04	07/22/04	0.00h	\$2,520
37-1610	Initial SAD/HQ In Progress Review Meeting	0d	20d	08/05/04	09/02/04	0.00h	\$840
37-1620	Evaluate Pilot Project Alternatives	0d	10d	01/26/05	02/09/05	0.00h	\$1,680
37-1630	Prepare Evaluation Documents	0d	10d	02/09/05	02/25/05	0.00h	\$1,680
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	0.00h	\$2,280
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/11/05	0.00h	\$3,200
37-1670	ITR/PDT Review & Comment Plan Selection Document	0d	10d	04/11/05	04/25/05	0.00h	\$3,360
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	0.00h	\$1,280
37-1690	Public Review inc Meeting (Technology and Site Selection)	0d	11d	05/10/05	05/24/05	0.00h	\$1,680
37-1700	Incorporate Public Comments on Selected Plan	0d	11d	05/24/05	06/09/05	0.00h	\$840
37-1720	Meet with SAD/HQ (IPR)	0d	2d	07/13/05	07/14/05	0.00h	\$1,280
37-1740	Incorporate SAD/HQ Comments	0d	9d	08/05/05	08/18/05	0.00h	\$840
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	0.00h	\$940
37-1760	Finalize Selected Plan	0d	6d	08/31/05	09/09/05	0.00h	\$1,280
37-1790	Review Scope for Information Collection WPB/WMD		4d	08/30/01 A	09/05/01 A	0.00h	\$640
37-1830	Review Draft Baseline Data Collection Report		19d	01/23/02 A	02/19/02 A	0.00h	\$1,280
37-1860	Review Draft Workshop Report		8d	02/28/02 A	03/11/02 A	0.00h	\$940
37-1940	Attend Workshop and Site Visit		1d	02/22/02 A	02/22/02 A	0.00h	\$2,180
37-1980	Review expert draft comments re transferability		4d	02/13/02 A	02/19/02 A	0.00h	\$640
37-2000	PDT Review revised transferability criteria and modeling/monitoring approaches		9d	04/04/02 A	04/16/02 A	0.00h	\$1,900
37-2010	Revise draft transferability criteria, modeling&monitoring approach		16d	04/09/02 A	04/30/02 A	0.00h	\$1,280
37-2020	Incorporate ITR/PDT transferability comments		10d	04/17/02 A	04/30/02 A	0.00h	\$960
37-2030	Develop preliminary sampling Criteria		24d	11/08/01 A	12/14/01 A	0.00h	\$3,200
37-2050	Revise sampling criteria		4d	02/13/02 A	02/19/02 A	0.00h	\$1,280
37-2060	Prepare Interim Monitoring Plan for WPB Baseline Data Collection		68d	02/28/02 A	06/04/02 A	0.00h	\$5,400

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2080	Review & Approve Interim Monitoring Plan		32d	06/18/02 A	08/01/02 A	0.00h	\$640
37-2090	Develop Draft Transferability Criteria		24d	11/08/01 A	12/14/01 A	0.00h	\$3,200
37-2110	Revise Draft Criteria		4d	02/13/02 A	02/19/02 A	0.00h	\$1,280
37-2150	Develop preliminary modeling approach		24d	11/08/01 A	12/14/01 A	0.00h	\$3,200
37-2170	Revise modeling approach		4d	02/13/02 A	02/19/02 A	0.00h	\$1,280
37-2230	Formulate treatment objectives		1d	08/08/03 A	08/08/03 A	0.00h	\$1,680
37-2250	PDT Review of treatment objective/criteria & meeting		34d	08/26/03 A	10/14/03 A	0.00h	\$1,680
37-2270	Prepare Draft Evaluation Criteria for Technology		14d	07/28/03 A	08/14/03 A	0.00h	\$680
37-2310	Evaluate Alternative Technologies	86d	10d	09/02/04	09/17/04	0.00h	\$1,680
37-2330	Prepare Scope, Identify Potential Contractors for Technology Research		46d	08/25/03 A	10/29/03 A	0.00h	\$1,680
37-2370	Review Contractors draft Technology Research Report	0d	15d	05/18/04	06/09/04	0.00h	\$840
37-2590	Review Hydrological Model Results	0d	10d	12/16/04	01/04/05	0.00h	\$1,680
37-2675	Internal/ITR Review of Preliminary Design	0d	17d	01/27/06	02/22/06	0.00h	\$840
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	0.00h	\$1,280
37-2825	Internal/PDT/ITR Review of PPDR/EA	0d	17d	06/08/06	07/03/06	0.00h	\$3,200
37-2840	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	0d	21d	07/03/06	08/02/06	0.00h	\$6,120
37-2865	Public Meeting on draft PPDR/EA	0d	2d	09/11/06	09/13/06	0.00h	\$1,800
37-2900	Incorporate Public Comments(Revise PPDR)/Respond to Comments	0d	22d	11/09/06	12/14/06	0.00h	\$6,120
37-2915	Incorporate ITR Comments	0d	12d	01/09/07	01/26/07	0.00h	\$6,120
37-2955	Incorporate State Comments	0d	12d	04/04/07	04/20/07	0.00h	\$6,120
37-3005	Prepare Response to Public Comments	17d	12d	09/11/07	09/26/07	0.00h	\$6,480
37-3050	Review WPB Monitoring Plan		276d	02/28/02 A	04/04/03 A	0.00h	\$640
37-3060	Prepare Draft Ecological/WQ Monitoring Plan	293d	22d	03/09/06	04/10/06	0.00h	\$20,000
37-3080	PDT/ITR Ecol/WQ Monitoring Plan Review	307d	17d	04/10/06	05/03/06	0.00h	\$2,520
37-3090	Revise Ecol/WQ Monitoring Plan	307d	12d	05/03/06	05/19/06	0.00h	\$2,520
37-3150	Prepare Treatment Plant Monitoring Plan	103d	61d	06/14/05	09/08/05	0.00h	\$1,680
37-3240	Prepare SOW for EPOC Literature Review	430d	20d	01/19/05	02/15/05	0.00h	\$16,800

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-3250	PDT Review and Comment on EPOC SOW	430d	10d	02/16/05	03/02/05	0.00h	\$10,000
37-3260	Revise EPOC SOW , Neg, award contract	430d	20d	03/03/05	03/30/05	0.00h	\$2,520
37-3270	EPOC Contract Management	1456d	745d	03/31/05	03/25/08	0.00h	\$8,400
37-3280	Attend EPOC Presentation	430d	5d	07/18/05	07/22/05	0.00h	\$2,180
37-3290	PDT Comment on EPOC Draft Report	430d	20d	07/25/05	08/19/05	0.00h	\$2,520
37-3300	Backcheck of Final EPOC Report	430d	10d	09/06/05	09/19/05	0.00h	\$840
37-3350	Develop Site Prescreening Criteria		88d	02/27/03 A	07/01/03 A	0.00h	\$3,360
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	0.00h	\$5,360
37-3370	Site Screening Preliminary Data Collection		21d	09/02/03 A	09/30/03 A	0.00h	\$6,040
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	0.00h	\$5,040
37-3390	PDT Review of Final Siting Criteria for Phase II	76d	25d	03/15/04	04/16/04	0.00h	\$1,680
37-3400	Prepare Final Siting Criteria	76d	10d	05/03/04	05/14/04	0.00h	\$3,840
37-3410	Evaluation of Alternative Sites	0d	10d	09/02/04	09/17/04	0.00h	\$4,320
37-3420	Prepare Site Recommendation Documentation	3d	10d	09/17/04	10/01/04	0.00h	\$3,520
37-3430	Prepare SOW for Environmental Expert Assistance	2388d	15d	04/26/04	05/14/04	0.00h	\$840
37-3460	Review BBCW documentation regarding restoration targets	125d	10d	01/09/04	01/26/04	0.00h	\$5,040
37-3470	Develop hydrologic regime desired	125d	30d	01/26/04	03/09/04	0.00h	\$5,040
37-3475	Evaluate Receiving Water Quality		115d	02/26/03 A	08/07/03 A	0.00h	\$26,800
37-3480	Multi-Agency NPDES/1501 Pre-application Meeting	3d	10d	10/01/04	10/18/04	0.00h	\$7,480
37-3500	Develop Scope of Work for WQ Modeling	293d	17d	09/09/05	10/04/05	0.00h	\$5,880
37-3510	Negotiate and Award WQ Modeling	293d	17d	10/04/05	10/28/05	0.00h	\$4,200
37-3520	Manage WQ Modeling Contract	293d	89d	10/28/05	03/13/06	0.00h	\$8,400
37-3550	Review Draft WQ Modeling Results	293d	12d	02/17/06	03/08/06	0.00h	\$3,140
37-3570	Backcheck Final WQ Modeling Report	293d	12d	03/23/06	04/10/06	0.00h	\$840
37-3580	Develop Performance Measures for Rehydrafed Wetlands	125d	10d	03/09/04	03/23/04	0.00h	\$23,190
37-3590	Compile Draft NPDES/W Q Application Package	15d	20d	01/19/06	02/17/06	0.00h	\$25,200
37-3600	Permit Coordination Meeting	15d	10d	02/17/06	03/06/06	0.00h	\$3,760
37-3610	Respond to Requests for Additional Information	15d	10d	03/06/06	03/21/06	0.00h	\$10,080

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-3620	Develop Scope of Work for Monitoring	3d	10d	10/18/04	11/01/04	0.00h	\$840
37-3670	Review Draft Monitoring Results	14d	10d	12/05/05	12/19/05	0.00h	\$840
37-3700	Develop Scope of Work for EPOC Sampling/Analysis		77d	04/08/03 A	07/25/03 A	0.00h	\$5,880
37-3710	Negotiate and Award EPOC Sampling/Analysis		56d	07/25/03 A	10/14/03 A	0.00h	\$4,200
37-3740	Manage EPOC Sampling Contract	175d	293d	10/14/03 A	12/16/04	0.00h	\$6,000
37-3770	Review Draft EPOC Sampling/Analysis Results	175d	10d	09/29/04	10/13/04	0.00h	\$3,360
37-3790	Analysis and Summary of EPOC Testing	175d	10d	01/04/05	01/18/05	0.00h	\$2,500
37-3800	Keep Up to Date on EPOC Research	0d	563d	01/09/04	04/10/06	0.00h	\$29,700
37-3810	Environmental Coordination Federal and State	17d	971d	12/01/03 A	10/16/07	0.00h	\$40,920
37-3820	NEPA Scoping Process	179d	10d	01/09/04	01/26/04	0.00h	\$2,100
37-3830	Biological Assessment Under ESA	25d	42d	08/31/05	11/01/05	0.00h	\$4,320
37-3840	Selection of Impact Assessment Procedure	229d	20d	01/26/05	02/24/05	0.00h	\$3,600
37-3845	HTRW Database Survey	416d	162d	08/01/03 A	03/26/04	0.00h	\$1,400
37-3850	HTRW Ecological Risk Assessment Documenta tion	416d	10d	03/29/04	04/09/04	0.00h	\$1,400
37-3860	Cultural Resource Assessment	215d	221d	03/15/04	01/31/05	0.00h	\$5,000
37-3870	Wetland Habitat Assessment, Existing (field w ork)	240d	14d	12/30/03 A	01/20/04	0.00h	\$9,000
37-3880	Wetland Habitat Assessment, Alternative Evaluation	0d	15d	01/04/05	01/26/05	0.00h	\$9,000
37-3940	Draft FONSI	3d	4d	03/30/06	04/05/06	0.00h	\$1,400
37-3950	Document Existing Conditions	3d	31d	12/05/05	01/20/06	0.00h	\$20,160
37-3960	Document Alternative Effects Evaluation	3d	32d	01/20/06	03/07/06	0.00h	\$39,600
37-3970	Draft EA	3d	17d	03/07/06	03/30/06	0.00h	\$10,080
37-9085	Develop Scope of Work for Ecological/WQ Monitoring Plan	405d	429d	01/09/04	09/22/05	0.00h	\$50,000
37-9125	Develop Budget for Ecological/W Q Monitoring Plan	293d	62d	07/10/06	10/05/06	0.00h	\$10,000
37-9135	Develop Scope of Work for EPOC Sampling/Analysis	682d	77d	01/09/04	04/29/04	0.00h	\$25,000
37-9145	Manage EPOC Sampling Contract	682d	278d	06/18/04	07/29/05	0.00h	\$6,000
37-9170	Review Draft EPOC Sampling/Analysis Results	682d	10d	06/30/05	07/15/05	0.00h	\$3,360
37-9180	Analysis and Summary of EPOC Testing	682d	10d	07/29/05	08/12/05	0.00h	\$2,500
37-9185	Compile Inventory & Analyze Existing Data	264d	63d	12/30/03 A	03/30/04	0.00h	\$2,520

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-9195	Geotechnical Report	255d	10d	08/18/04	09/01/04	0.00h	\$1,680
37-9310	PMP Resource Budgeted Cost		682d	01/11/01 A	09/30/03 A	0.00h	\$14,515
Summary for Role:			1799d	01/11/01 A	03/25/08 A	0.00h	\$708,125
Environmental AE Services							
37-3310	Contractor Perform EPOC Literature Review	430d	60d	03/31/05	06/23/05	0.00h	\$90,000
37-3320	Contractor Prepare Draft EPOC Report	430d	10d	06/24/05	07/08/05	0.00h	\$20,000
37-3330	Contractor Present EPOC Report to PDT	430d	10d	07/11/05	07/22/05	0.00h	\$5,000
37-3340	Contractor Prepare Final EPOC Report	430d	10d	08/22/05	09/02/05	0.00h	\$5,000
37-3530	Contractor Perform WQ Modeling	293d	62d	10/28/05	02/01/06	0.00h	\$100,000
37-3540	Contractor Submits Draft WQ Modeling Report	293d	12d	02/01/06	02/17/06	0.00h	\$10,000
37-3560	Contractor Submits Final WQ Modeling Report	293d	11d	03/08/06	03/23/06	0.00h	\$10,000
37-3720	Contractor Perform EPOC Sampling	179d	221d	10/15/03 A	08/31/04	0.00h	\$30,000
37-3730	Data Validation/Data Entry for EPOC Contract	175d	220d	10/15/03 A	08/30/04	0.00h	\$16,800
37-3750	Contractor Perform EPOC C hemical Analysis	175d	220d	10/29/03 A	09/14/04	0.00h	\$100,000
37-3760	Contractor Submits Draft EPO C Sampling/Analysis Report	175d	10d	09/15/04	09/28/04	0.00h	\$5,000
37-3780	Contractor Submits Final EPOC Sampling/Analysis Report	175d	53d	10/14/04	01/03/05	0.00h	\$2,000
37-9090	Baseline Monitoring	17d	397d	11/14/07	06/17/09	0.00h	\$500,000
37-9130	Post-Construction Monitoring	0d	1002d	07/13/09	07/16/13	0.00h	\$1,500,000
37-9150	Contractor Perform EPOC Sampling	682d	66d	06/18/04	09/22/04	0.00h	\$30,000
37-9155	Data Validation/Data Entry for EPOC Contract	682d	86d	02/14/05	06/16/05	0.00h	\$16,800
37-9160	Contractor Perform EPOC C hemical Analysis	682d	96d	09/22/04	02/14/05	0.00h	\$100,000
37-9165	Contractor Submits Draft EPO C Sampling/Analysis Report	682d	10d	06/16/05	06/30/05	0.00h	\$5,000
37-9175	Contractor Submits Final EPOC Sampling/Analysis Report	682d	10d	07/15/05	07/29/05	0.00h	\$2,000
Summary for Role:			2436d	10/15/03 A	07/16/13	0.00h	\$2,547,600
Environmental FWS Transfer Funding							

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-9020	FWS Transfer Funds - FY04	2323d	250d	10/01/03 A	09/29/04	0.00h	\$83,708
37-9030	FWS Transfer Funds - FY05	2072d	250d	10/01/04	09/30/05	0.00h	\$57,926
37-9040	FWS Transfer Funds - FY06	1823d	249d	10/03/05	09/29/06	0.00h	\$60,127
37-9050	FWS Transfer Funds - FY07	1574d	249d	10/02/06	09/28/07	0.00h	\$62,412
37-9060	FWS Transfer Funds - FY03		250d	10/01/02 A	09/30/03 A	0.00h	\$73,000
37-9070	FWS Transfer Funds - FY02		250d	10/01/01 A	09/30/02 A	0.00h	\$101,400
37-9080	FWS Transfer Funds - FY01		250d	10/02/00 A	09/28/01 A	0.00h	\$77,500
37-9315	FWS Transfer Funds - FY08	1323d	251d	10/01/07	09/30/08	0.00h	\$92,686
Summary for Role:			2000d	10/02/00 A	09/30/08	0.00h	\$608,759
Environmental ITR							
37-1540	Initial ITR Meeting	74d	1d	04/06/04	04/07/04	0.00h	\$800
37-1600	ITR/PDT Review of Alternatives Document	0d	10d	07/22/04	08/05/04	0.00h	\$800
37-1670	ITR/PDT Review & Comment Plan Selection Document	0d	10d	04/11/05	04/25/05	0.00h	\$2,000
37-1940	Attend Workshop and Site Visit		1d	02/22/02 A	02/22/02 A	0.00h	\$2,370
37-1990	ITR review transferability reports and criteria		7d	04/03/02 A	04/11/02 A	0.00h	\$720
37-2905	ITR Review of PPDR/EA	0d	17d	12/14/06	01/09/07	0.00h	\$5,600
37-3080	PDT/ITR Ecol/WQ Monitoring Plan Review	307d	17d	04/10/06	05/03/06	0.00h	\$4,800
Summary for Role:			1220d	02/22/02 A	01/09/07	0.00h	\$17,090
Summary for Division: CESAJ.PD.PD-E							
			3195d	10/02/00 A	07/16/13	0.00h	\$3,881,574
CESAJ.PD.PD-P Plan Formulation Branch							
Plan Formulation Labor/Other							
37-9310	PMP Resource Budgeted Cost		682d	01/11/01 A	09/30/03 A	0.00h	\$48,503

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
Summary for Role:			682d	01/11/01 A	09/30/03 A	0.00h	\$48,503
Plan Formulation ITR							
37-1540	Initial ITR Meeting	74d	1d	04/06/04	04/07/04	0.00h	\$400
37-1600	ITR/PDT Review of Alternatives Document	0d	10d	07/22/04	08/05/04	0.00h	\$800
37-1670	ITR/PDT Review & Comment Plan Selection Document	0d	10d	04/11/05	04/25/05	0.00h	\$1,000
37-2905	ITR Review of PPDR/EA	0d	17d	12/14/06	01/09/07	0.00h	\$2,800
Summary for Role:			690d	04/06/04	01/09/07	0.00h	\$5,000
Summary for Division:		CESAJ.PD.PD-P	1498d	01/11/01 A	01/09/07	0.00h	\$53,503
CESAJ.PD.PD-R Ecosystem Restoration Branch							
Ecosystem Restoration Labor/Other							
37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	0.00h	\$39,589
37-1100	Complete Final Draft PMP, West		6d	11/20/01 A	11/20/01 A	0.00h	\$4,334
37-1230	Draft Initial Revised PMP		143d	04/29/02 A	11/20/02 A	0.00h	\$13,000
37-1270	Incorporate Internal/PDT comments		18d	12/13/02 A	01/09/03 A	0.00h	\$5,000
37-1350	Distribute PMP for PrePRB, CRG, PRB & SFWMD Senior Management Review		27d	11/01/03 A	12/12/03 A	0.00h	\$12,000
37-1500	Planning Management	17d	838d	01/09/04	05/16/07	0.00h	\$40,000
37-1510	Initial PDT Meeting inc Site Identification		1d	02/25/03 A	02/25/03 A	0.00h	\$3,040
37-1520	Miami-Dade Coordination Meeting		1d	02/26/03 A	02/26/03 A	0.00h	\$2,160
37-1530	Initial Outreach Meeting	314d	20d	01/09/04	02/09/04	0.00h	\$5,000
37-1540	Initial ITR Meeting	74d	1d	04/06/04	04/07/04	0.00h	\$880
37-1550	PDT Meeting, Discuss Siting Criteria	76d	10d	04/19/04	04/30/04	0.00h	\$2,560

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-1560	Develop Evaluation Criteria for Pilot/Refine Objectives	628d	10d	10/18/04	11/01/04	0.00h	\$9,600
37-1580	PDT Meeting to Discuss Alternative Technologies	0d	10d	06/23/04	07/08/04	0.00h	\$5,000
37-1590	Prepare Project Alternatives Documents	0d	10d	07/08/04	07/22/04	0.00h	\$8,800
37-1600	ITR/PDT Review of Alternatives Document	0d	10d	07/22/04	08/05/04	0.00h	\$2,640
37-1610	Initial SAD/HQ In Progress Review Meeting	0d	20d	08/05/04	09/02/04	0.00h	\$1,760
37-1620	Evaluate Pilot Project Alternatives	0d	10d	01/26/05	02/09/05	0.00h	\$2,640
37-1630	Prepare Evaluation Documents	0d	10d	02/09/05	02/25/05	0.00h	\$8,800
37-1640	PDT Review Evaluation Document	0d	10d	02/25/05	03/11/05	0.00h	\$880
37-1650	PDT Alternatives Evaluation Meeting	0d	5d	03/11/05	03/18/05	0.00h	\$5,000
37-1660	Prepare Plan Selection Document	0d	15d	03/18/05	04/11/05	0.00h	\$8,800
37-1670	ITR/PDT Review & Comment Plan Selection Document	0d	10d	04/11/05	04/25/05	0.00h	\$880
37-1680	Revise Plan Selection Document inc ITR Comments	0d	11d	04/25/05	05/10/05	0.00h	\$2,640
37-1690	Public Review inc Meeting (Technology and Site Selection)	0d	11d	05/10/05	05/24/05	0.00h	\$2,640
37-1700	Incorporate Public Comments on Selected Plan	0d	11d	05/24/05	06/09/05	0.00h	\$2,640
37-1710	Submit Plan Selection Documents to SAD/HQ	0d	3d	06/09/05	06/14/05	0.00h	\$3,655
37-1720	Meet with SAD/HQ (IPR)	0d	2d	07/13/05	07/14/05	0.00h	\$2,437
37-1740	Incorporate SAD/HQ Comments	0d	9d	08/05/05	08/18/05	0.00h	\$1,218
37-1750	PDT Meeting, Plan Selection	0d	9d	08/18/05	08/31/05	0.00h	\$1,726
37-1760	Finalize Selected Plan	0d	6d	08/31/05	09/09/05	0.00h	\$2,437
37-1790	Review Scope for Information Collection WPB/WMD		4d	08/30/01 A	09/05/01 A	0.00h	\$1,218
37-1830	Review Draft Baseline Data Collection Report		19d	01/23/02 A	01/29/02 A	0.00h	\$1,440
37-1840	Data Coordination for Baseline Information Collection		20d	01/24/02 A	02/21/02 A	0.00h	\$360
37-1860	Review Draft Workshop Report		8d	02/28/02 A	03/11/02 A	0.00h	\$720
37-1940	Attend Workshop and Site Visit		1d	02/22/02 A	02/22/02 A	0.00h	\$2,390
37-1980	Review expert draft comments re transferability		4d	02/13/02 A	02/19/02 A	0.00h	\$720
37-2000	PDT Review revised transferability criteria and modeling/monitoring approaches		9d	04/04/02 A	04/16/02 A	0.00h	\$2,100
37-2010	Revise draft transferability criteria, modeling&monitoring approach		16d	04/09/02 A	04/30/02 A	0.00h	\$720
37-2020	Incorporate ITR/PDT transferability comments		10d	04/17/02 A	04/30/02 A	0.00h	\$720

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-2030	Develop preliminary sampling Criteria		24d	11/08/01 A	12/07/01 A	0.00h	\$3,600
37-2050	Revise sampling criteria		4d	02/13/02 A	02/19/02 A	0.00h	\$1,440
37-2060	Prepare Interim Monitoring Plan for WPB Baseline Data Collection		68d	02/28/02 A	06/04/02 A	0.00h	\$5,400
37-2070	Review Interim Monitoring Plan		10d	06/05/02 A	06/18/02 A	0.00h	\$720
37-2090	Develop Draft Transferability Criteria		24d	11/08/01 A	11/30/01 A	0.00h	\$3,600
37-2110	Revise Draft Criteria		4d	02/13/02 A	02/19/02 A	0.00h	\$1,440
37-2120	Hold WPB/WMD PDT Meeting		30d	04/30/02 A	06/11/02 A	0.00h	\$1,740
37-2140	Receive PDT Comments Re Approaches		9d	06/11/02 A	06/21/02 A	0.00h	\$2,640
37-2150	Develop preliminary modeling approach		24d	11/08/01 A	12/14/01 A	0.00h	\$3,600
37-2170	Revise modeling approach		4d	02/13/02 A	02/19/02 A	0.00h	\$1,440
37-2250	PDT Review of treatment objective/criteria & meeting		34d	08/26/03 A	10/14/03 A	0.00h	\$4,082
37-2270	Prepare Draft Evaluation Criteria for Technology		14d	07/28/03 A	08/14/03 A	0.00h	\$2,640
37-2290	Prepare Final Technology Criteria		38d	09/16/03 A	11/07/03 A	0.00h	\$4,400
37-2310	Evaluate Alternative Technologies	86d	10d	09/02/04	09/17/04	0.00h	\$5,280
37-2320	Prepare Technology Recommendation Documentation	112d	10d	09/17/04	10/01/04	0.00h	\$880
37-2370	Review Contractors draft Technology Research Report	0d	15d	05/18/04	06/09/04	0.00h	\$1,760
37-2805	Draft PPDR inc Supplemental EA & Draft FONSI	0d	42d	04/10/06	06/08/06	0.00h	\$15,000
37-2840	Incorporate Internal/PDT/ITR/Editor Comments on PPDR/EA	0d	21d	07/03/06	08/02/06	0.00h	\$10,000
37-2855	HQ (SAD) Review	19d	21d	08/11/06	09/12/06	0.00h	\$2,000
37-2865	Public Meeting on draft PPDR/EA	0d	2d	09/11/06	09/13/06	0.00h	\$6,080
37-2870	Response to HQ comments	19d	7d	09/12/06	09/21/06	0.00h	\$2,000
37-2875	PPDR Review Conference with SAD	19d	7d	09/21/06	09/29/06	0.00h	\$2,000
37-2900	Incorporate Public Comments(Revise PPDR)/Respond to Comments	0d	22d	11/09/06	12/14/06	0.00h	\$10,000
37-2915	Incorporate ITR Comments	0d	12d	01/09/07	01/26/07	0.00h	\$3,400
37-2955	Incorporate State Comments	0d	12d	04/04/07	04/20/07	0.00h	\$3,000
37-2965	Assemble Final PPDR	17d	6d	05/01/07	05/09/07	0.00h	\$2,000
37-2980	Transmit PPDR/EA to Washington	17d	7d	05/16/07	05/25/07	0.00h	\$600
37-3000	Public Review Meeting for PPDR/EIS	17d	42d	07/12/07	09/11/07	0.00h	\$2,000

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost
37-3005	Prepare Response to Public Comments	17d	12d	09/11/07	09/26/07	0.00h	\$2,500
37-3025	HQ/MSR Review Conference	17d	13d	09/26/07	10/16/07	0.00h	\$2,000
37-3170	Identify Land Already Owned/available		17d	01/31/03 A	02/25/03 A	0.00h	\$2,640
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	0.00h	\$1,760
37-3390	PDT Review of Final Siting Criteria for Phase II	76d	25d	03/15/04	04/16/04	0.00h	\$880
37-3400	Prepare Final Siting Criteria	76d	10d	05/03/04	05/14/04	0.00h	\$4,400
37-3410	Evaluation of Alternative Sites	0d	10d	09/02/04	09/17/04	0.00h	\$2,640
37-3420	Prepare Site Recommendation Documentation	3d	10d	09/17/04	10/01/04	0.00h	\$1,760
37-3580	Develop Performance Measures for Rehydrafed Wetlands	125d	10d	03/09/04	03/23/04	0.00h	\$4,440
37-9310	PMP Resource Budgeted Cost		682d	01/11/01 A	09/30/03 A	0.00h	\$8,235
Summary for Role:			1691d	01/11/01 A	10/16/07 A	0.00h	\$346,141
Summary for Division:		CESAJ.PD.PD-R	1691d	01/11/01 A	10/16/07 A	0.00h	\$346,141

CESAJ.RE.RE-A Real Estate Acquisition Branch

Acquisition Labor/Other

37-1050M	Draft Initial PMP-West		10d	03/16/01 A	03/29/01 A	0.00h	\$1,500
37-1100	Complete Final Draft PMP, West		6d	11/20/01 A	11/29/01 A	0.00h	\$310
37-1230	Draft Initial Revised PMP		143d	04/29/02 A	11/20/02 A	0.00h	\$1,000
37-1270	Incorporate Internal/PDT comments		18d	12/13/02 A	01/09/03 A	0.00h	\$1,000
37-3160	Obtain Rights of Entry for Field Work	255d	20d	03/15/04	04/09/04	0.00h	\$1,000
37-3170	Identify Land Already Owned/available		17d	01/31/03 A	02/25/03 A	0.00h	\$2,000
37-3180	Identify Property information for each Available Site		5d	02/19/03 A	02/25/03 A	0.00h	\$1,000
37-3200	Prepare RE Acquisition Maps for Alternatives		5d	02/19/03 A	02/25/03 A	0.00h	\$3,000
37-3210	Prepare Gross Appraisal	479d	20d	03/15/04	04/09/04	0.00h	\$40,000
37-3230	Prepare RE Appendix/Supplement	347d	20d	10/18/04	11/16/04	0.00h	\$10,000

Activities by Agency, Organizational Unit & Resource

Activity ID	Activity Name	Total Float	Original Duration	Start	Finish	Budgeted Units	Budgeted Cost	
37-3360	Site Pre-Screening		10d	07/02/03 A	07/16/03 A	0.00h	\$1,560	
37-3380	Draft Site Selection Criteria - Phase II	76d	88d	11/03/03 A	03/12/04	0.00h	\$1,360	
Summary for Role:			920d	03/16/01 A	11/16/04	0.00h	\$63,730	
Acquisition ITR								
37-1540	Initial ITR Meeting	74d	1d	04/06/04	04/07/04	0.00h	\$400	
37-1600	ITR/PDT Review of Alternatives Document	0d	10d	07/22/04	08/05/04	0.00h	\$800	
37-1670	ITR/PDT Review & Comment Plan Selection Document	0d	10d	04/11/05	04/25/05	0.00h	\$1,000	
37-2905	ITR Review of PPDR/EA	0d	17d	12/14/06	01/09/07	0.00h	\$2,800	
Summary for Role:			690d	04/06/04	01/09/07	0.00h	\$5,000	
Summary for Division:		CESAJ.RE.RE-A	1454d	03/16/01 A	01/09/07	0.00h	\$68,730	
Summary for:			CESAJ	3323d	10/02/00 A	01/22/14	0.00h	\$9,454,115
Summary for: CERP Wastewater Reuse Technology Pilot								
			3323d	10/02/00 A	01/22/14	11045.29h	\$30,000,000	

APPENDIX G: CONTRACTING ACQUISITION PLAN

Individual plans will be developed during the PPDR.

APPENDIX H: QUALITY CONTROL PLAN

TAB A – Independent Technical Review Team

TAB B – Statement of Technical and Legal Review

TAB A – Independent Technical Review Team**TABLE H-A-1 : INDEPENDENT TECHNICAL REVIEW TEAM**

Name	Agency	Specialty
Besrutschko, Peter	USACE	PE-D, WQ
Cintron, Barbara	USACE	PD-e, Biologist
Gysan, Tim	USACE	EN-HI, Modeling
Matthews, Jimmy	USACE	EN-T, ITR Lead
Moore, Brooks	USACE	OC, Attorney
Tipton, Royce	USACE	PD-P, Plan Formulation

Additional ITR members are still being identified

TAB B – Statement of Technical and Legal Review

ER 1110-2-1150

31 Aug 99

F1-1

**STATEMENT OF TECHNICAL AND LEGAL REVIEW
SAMPLE****COMPLETION OF INDEPENDENT TECHNICAL REVIEW:**

The District has completed the (type of study) of (project name and location). Notice is hereby given that an independent technical review, that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the Quality Control Plan. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions were verified. This included review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing USACE policy. The independent technical review was accomplished by (an independent district team/personnel from the District/by AE contractor).

(Signature)
Technical Review Team Leader

(Date)

CERTIFICATION OF INDEPENDENT TECHNICAL REVIEW:

Significant concerns and the explanation of the resolution are as follows:

(Describe the major technical concerns, possible impact, and resolution)

As noted above, all concerns resulting from independent technical review of the project have been considered. The report and all associated documents required by the National Environmental Policy Act have been fully reviewed.

Project Manager Signature	Date
Chief, Planning Division Signature	Date
Chief, Engineering Division Signature	Date
Chief, Operations Division Signature	Date
Chief, Real Estate Division Signature	Date

CERTIFICATION OF LEGAL REVIEW:

The report for _____, including all associated documents required by the National Environmental Policy Act, has been fully reviewed by the Office of Counsel, _____ District and is approved as legally sufficient.

District Counsel Signature	Date
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APPENDIX I: PUBLIC INVOLVEMENT

APPENDIX I

Public Involvement

Public involvement was a critical component of the Wastewater Reuse, WWR Technology Pilot Project due to the public, political, and media interest in the restoration of the Everglades ecosystem. Public Outreach efforts began early in the reconnaissance phase of the Central and Southern Florida (C&SF) Restudy. At this time, the study area of the Restudy included the study area of the WWR pilot project. Such efforts were a very important and integral part of the plan formulation stages of the WWR pilot project and will continue throughout implementation of the preferred plan components.

Public involvement is a process by which interested and affected individuals, organizations, agencies, and governmental entities participate in a decision-making process. Public involvement has been, and will continue to be, a critical component of the WWR pilot project reconnaissance, scoping, plan formulation, report writing, and implementation process. Three goals for public involvement have been identified and implemented throughout the process:

- To inform the public about the WWR pilot project and to generate input on key issues and concerns. This input involves diverse groups outside of the study team who assisted early on in the process of problem definition, issue and opportunity identification, as well as providing input on potential solutions;
- Develop relationships critical to the success of the study and implementation of the recommendations of the study; and
- Facilitate open and honest discussions that enhance efforts to foster public understanding of the tradeoffs and complexities of developing multipurpose water resources.
- Support an exchange of ideas and information among interested individuals and stakeholder groups critical to resolving the challenges involved in an environmental restoration effort of this magnitude.

Further, obligations of the USACE and SFWMD as lead agencies are to:

- Keep people informed so that they can make educated choices;
- Provide visible ways to participate in the process; and
- Provide equal access to information and decision-makers regardless of viewpoint.

APPENDIX J: LIST OF REFERENCE DOCUMENTS

APPENDIX J
List of Reference Documents

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28 December 1990 | <u>Guidance for Conducting Civil Works Planning Studies</u>
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17 August 2001 | <u>U.S. Army Corps of Engineers Business Process</u>
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management of civil works projects. |
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4 March 1988 | <u>Procedures for Implementing NEPA</u>
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Environmental Quality. |
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1 June 1995 | <u>Ecosystem Restoration in the Civil Works Program</u>
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by eliminating the "project linkage" and "modern
historic condition" requirements. All other
provisions of PGL 24 remain in effect. |
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Quality Control Guidance

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CESAD-ET-E Memorandum, dated 13 October 1995, subject: SAD Quality Assurance Plan (Final).

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CESAJ-DP Memorandum, dated 7 Aug 1995, subject: Technical Review at District.

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CESAD-EP-PL Memorandum, dated 28 June 1995, subject: SAD Engineering and Planning Chiefs Meeting.

CECW-A Memorandum, dated 25 Apr 95, subject: Implementation of New Technical and Policy Review Procedures.

CECW-A Memorandum, dated 14 Apr 95, subject: Implementation of New Technical and Policy Review Procedures.

CECW-A Policy Memorandum No. 2, dated 6 Apr 95, subject: Civil Works Decision Document Review - Review Compliance.

ER 1110-1-12, dated 1 June 93, subject: E&D Quality Management.

CEAO-I Memorandum, dated 10 Aug 1988, subject: HQUSACE Internal Review Guides - Compliance with Feasibility Study Guidance

APPENDIX K: LIST OF PMP UPDATES AND REVISIONS

TABLE K-1 : LIST OF PMP UPDATES AND REVISIONS

Date	Type (update/rev)	Page	Description	Reason for Change
06/03	Update	Entire Report	Rewrote entire PMP to include 2 parts (West & South) and to account for the results of the Transferability Study	Added South Plant into the scope of the pilot