DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GA 30303-8801

REPLY TO
ATTENTION OF

CESAD-RBT

03 APR 2015

MEMORANDUM FOR COMMANDER, JACKSONVILLE DISTRICT

SUBJECT: Approval of the Review Plan for the Broward County Shore Protection Project, Segment II, Broward County, Florida

1. References:

a. Memorandum, CESAJ-EN-Q, 18 March 2015, subject: Approval of Review Plan for the Broward County Shore Protection Project, Segment II, Broward County, Florida (Encl 1).

b. EC 1165-2-214, Civil Works Review, 15 December 2012.

2. The enclosed subject Review Plan (RP) submitted by the Jacksonville District via reference 1.a has been reviewed by this office and is hereby approved in accordance with reference 1.b above.

3. We concur with the conclusion of the District Chief of Engineering that a Type II IEPR is not required for the Engineering Documentation Report associated with this effort. The primary basis for this concurrence is that failure or loss of this feature would not pose a significant threat to human life. We also concur that the District Technical Review discussed in the RP is the appropriate review since the Plans and Specifications will be prepared by the local sponsor.

4. The District should post the approved RP to its web site and provide a link to CESAD-RBT. Before posting the RP to the web site, the names of Corps/Army employees should be removed. Subsequent significant changes, such as scope or level of review changes, to this RP, should they become necessary, will require new written approval from this office.

5. The SAD point of contact is [redacted].

Encl

C. DAVID TURNER
Brigadier General, USA
Commanding

CF:
[redacted]

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

CESAJ-EN-Q

18 March 2015

MEMORANDUM FOR Commander, South Atlantic Division (CESAD-RBT)

SUBJECT: Approval of Review Plan for the Broward County Shore Protection Project, Segment II, Broward County, Florida

1. References.

a. EC 1165-2-214, Civil Works Review, 15 December 2012
b. River and Harbor Act of 1965, Section 301, Public Law 89-298, 27 October 1965 (Project Authorization)

2. I hereby request approval of the enclosed Review Plan and concurrence with the conclusion that a Type II Independent External Peer Review (IEPR) of the subject project is not required. The recommendation to exclude Type II IEPR is based on the EC 1165-2-214 Risk Informed Decision Process as presented in the Review Plan. Documents to be reviewed include plans, specifications, and design documentation. The Review Plan complies with applicable policy, provides District Technical Review and has been coordinated with the CESAD. It is my understanding that non-substantive changes to this Review Plan, should they become necessary, are authorized by CESAD.

3. The district will post the CESAD approved Review Plan to its website and provide a link to the CESAD for its use. Names of Corps/Army employees will be withheld from the posted version, in accordance with guidance.

FOR THE COMMANDER:

[redacted]

Encl

PROJECT REVIEW PLAN

For

Preconstruction, Engineering and Design Phase

Implementation Documents

For

Shore Protection Project – Segment II
Broward County, Florida

Project P2 Number: 113072

Jacksonville District

March 2015

US Army Corps of Engineers ®

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS

a. Purpose

This Review Plan defines the scope and level of review activities for the Shore Protection Project (SPP), Segment II, Broward County, Florida. The implementation documents to be reviewed are Plans and Specifications (P&S) prepared by the non-federal sponsor and their consultant. As discussed below, the review activities consist of a Quality Control (QC) effort by the local sponsor and their consultant and a District Technical Review performed by members of the Jacksonville District Corps of Engineers (CESAJ). Also as discussed below, an Agency Technical Review (ATR) and an Independent External Peer Review (IEPR) is not recommended. Upon approval, this Review Plan will be included into the Project Management Plan for this project as an appendix to the Quality Management Plan.

b. References

(1). ER 1110-2-1150, "Engineering and Design for Civil Works Projects", 31 August 1999

(2). ER 1110-1-12, "Engineering and Design Quality Management", 31 March 2011

(3). EC 1165-2-214, "Civil Works Review", 15 December 2012

(4). Enterprise Standard (ES) 08025, "Government Construction Quality Assurance Plan and Project/Contract Supplements"

(5). Enterprise Standard (ES) 08026, "Three Phase Quality Control System"

c. Requirements

This Review Plan was developed in accordance with EC 1165-2-214, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). The EC provides the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision, implementation, and operations and maintenance documents and other work products. Review Plan Approval and Updates

The South Atlantic Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review. Like the PMP, the Review Plan is a living document and may change as the project progresses. The Jacksonville District is responsible for keeping the Review Plan up to date. Minor changes to the Review Plan since the last MSC Commander approval are documented in Attachment A. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, will be posted on the Jacksonville District Review Plan webpage. The latest Review Plan will be provided to the home MSC.

d. Review Management Organization

No Review Management Organization as identified in EC 1165-2-214 is needed for the reviews required under this RP.

2. PROJECT INFORMATION

a. Project Location and Name

Segment II of the Broward County, FL SPP is located 32 miles north of Miami Beach on the southeastern coast of Florida. This segment of the Broward County SPP consists of 11.3 miles of Atlantic Ocean shoreline from Hillsboro Inlet south to Port Everglades Inlet (Figure 2.1). The segment is located on a barrier island entirely within Broward County. The municipalities within the segment include Pompano Beach, Sea Ranch Lakes, Lauderdale-by-the-Sea, and Ft. Lauderdale.

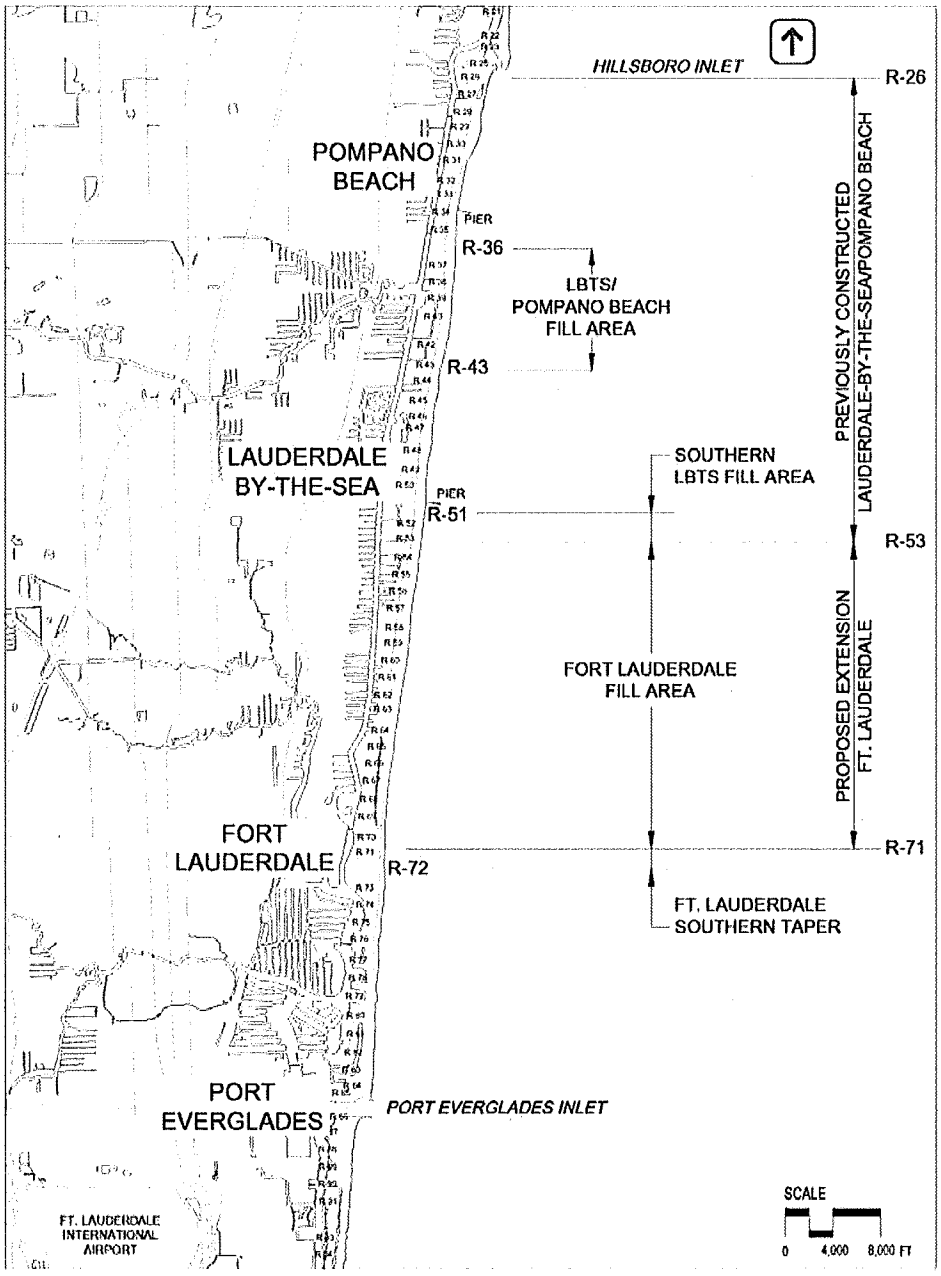

Figure 2-1 Location Map of the Broward County Segment II Shoreline.

b. Project Authorization

The Broward County Shore Protection Project was authorized by Section 301 of the 1965 River and Harbor Act, Public Law 89-298 passed October 27, 1965 (79 STAT.1090). The project is described in House Document 91, 89th Congress. Authority was granted "to permit construction of the beach erosion control features of the projects by local interests, if they desire, with subsequent reimbursement of the Federal share of the beach erosion control work done by them after initiation of the survey study, provided that the work is approved by the Chief of Engineers as being in accordance with the authorized projects." The sponsor is the Board of County Commissioners, Broward County, Florida.

c. Current Project Description

The project will consist of a 100-ft extension of the ECL/baseline between R26 and R53 and a 20-ft extension of the baseline (the 1998 shoreline position) between R53 and R71 and maintenance of the beach through periodic nourishment. The berm crest elevation was also reevaluated and identified to be +9 ft, NGVD29 [+7.4 feet, NAVD].

d. Public Participation

The Jacksonville District Corporate Communications Office continually keeps the affected public informed on Jacksonville District projects and activities. There are no planned activities, public participation meetings or workshops that could generate issues needing provision to review teams. The approved Review Plan will be posted on the Jacksonville District Internet. Any comments or questions regarding the Review Plan will be addressed by the Jacksonville District.

3. QUALITY CONTROL

Quality Control (QC) will be performed on the P&S by the local sponsor and their consultant in accordance with ER 1110-1-12 and the consultant's Quality Control Plan (QCP), Attachment C.

4. DISTRICT TECHNICAL REVIEW

The plans and specifications produced by the local sponsor and their consultant are not work products of the Corps of Engineers. Therefore, the specific ATR requirements in EC 1165-2-214 do not apply. However, as stated in EC 1165-2-214, the use of and compliance with the EC may be advisable to help expedite an eventual USACE review and approval process. A rigorous technical review commensurate with the risk of the proposed activities will be performed by personnel from the Jacksonville District. This review will assist sponsor in assuring that the work is in accordance with the authorized projects. If lacking the appropriate expertise, the District will supplement their staff with outside subject matter experts.

5. INDEPENDENT EXTERNAL PEER REVIEW

a. General.

EC 1165-2-214 provides implementation guidance for both Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007 (Public Law (P.L.) 110-114). The EC addresses review procedures for both the Planning and the Design and Construction Phases (also referred to in USACE guidance as the Feasibility and the Pre-construction, Engineering and Design Phases). The EC defines Section 2035 Safety Assurance Review (SAR), Type II Independent External Peer Review (IEPR). The EC also requires Type II IEPR be managed and conducted outside the Corps of Engineers.

b. Type I Independent External Peer Review Determination.

A Type I IEPR is primarily associated with decision documents. A Type I IEPR is not applicable to the implementation documents covered by this Review Plan.

c. Type II Independent External Peer Review Determination.

This project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-214) and therefore, a review under Section 2035 is not required. The factors in determining whether a review of design and construction activities of a project are necessary as stated under Section 2035 along with the applicability statements for this Review Plan are as follows:

(1) The failure of the project would pose a significant threat to human life.

This project will perform periodic nourishment that will re-establish an authorized beach section. The beach is designed to protect structures through its sacrificial nature and is continually monitored and renourished in accordance with program requirements and constraints. Failure or loss of the beach fill will not pose a significant threat to human life.

In addition, the prevention of loss of life within the project area from hurricanes and severe storms is via public education about the risks, warning of potential threats, and evacuations before hurricane landfall.

(2) The project involves the use of innovative materials or techniques.

This project will utilize standard methods and procedures used by the Corps of Engineers on other similar works.

(3) The project design lacks redundancy.

The beach fill design is in accordance with the USACE Coastal Engineering Manual. The manual does not employ the concept of redundancy for beach fill design.

(4) The project has unique construction sequencing or a reduced or overlapping design construction schedule.

This project's construction does have unique sequencing. Placement sequence and schedule has been used successfully by the Corps of Engineers on other similar works.

Based on the discussion above, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR Safety Assurance Review of the P&S.

6. MODEL CERTIFICATION AND APPROVAL

This shore protection project does not use any engineering models that have not been approved for use by USACE.

7. PROJECT DELIVERY TEAM DISCIPLINES

Discipline/Expertise
Geology
Geotechnical Engineering
Environmental Engineering
Coastal Engineering
Cost Engineering

8. SCHEDULE

Task	Start Date	End Date
District Technical Review	24-Jul-14	7-Aug-14

ATTACHMENT A: APPROVED REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT B: PARTIAL LIST OF ACRONYMS AND ABBREVIATIONS

Acronyms	Defined
AFB	Alternatives Formulation Briefing
ATR	Agency Technical Review
BCOES	Biddability, Constructability, Operability, Environmental, and Sustainability Review
CAP	Continuing Authorities Program
CERCAP	Corps of Engineers Reviewer Certification and Access Program
CY	Cubic Yards
DDR	Design Documentation Report
DQC	District Quality Control
DQCR	Discipline Quality Control Review
EC	Engineering Circular
EA	Environmental Assessment
ER	Engineering Regulation
EA	Environmental Assessment
ERDC-CERL	Engineer Research and Development Center – Construction Engineering Research Laboratory
ESA	Endangered Species Act
ETL	Engineering Technical Lead
FDEP	Florida Department of Environmental Protection
FONSI	Findings of No Significant Impacts
FSCA	Feasibility and Cost Sharing Agreement
FY	Fiscal Year
GRR	General Reevaluation Report
IEPR	Independent External Peer Review
LPP	Locally Preferred Plan
MCX	Mandatory Center of Expertise
MLLW	Mean Low Low Water
MSC	Major Subordinate Command
NAS	National Academy of Sciences
NEPA	National Environmental Policy Act
ODMDS	Ocean Dredged Material Disposal Site
OMB	Office of Management and Budget
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
P&S	Plans and Specifications
PED	Preconstruction Engineering and Design
PDT	Project Delivery Team
PM	Project Manager

Acronyms	Defined
PMP	Project Management Plan
PPA	Project Partnering Agreement
PQCR	Product Quality Control Review
QA	Quality Assurance
QCP	Quality Control Plan
QMP	Quality Management Plan
QMS	Quality Management System
RMC	Risk Management Center
RMO	Review Management Organization
RP	Review Plan
RTS	Regional Technical Specialist
SAJ	South Atlantic Jacksonville District Office
SAD	South Atlantic Division Office
SAR	Safety Assurance Review (also referred as Type II IEPR)
SME	Subject Matter Expert
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources and Development Act

Attachment C

QUALITY CONTROL PLAN

BROWARD COUNTY FEDERAL SHORE PROTECTION PROJECT
SEGMENT II

1.0 Background Information

This Quality Control Plan (QCP) documents the project scope, schedule, and delivery team to complete contract plans and specifications for the aforementioned project. The QCP summarizes the scope of work, design requirements and review process. Implementation seeks to ensure that a quality product is being produced, in accordance with applicable standards and criteria.

The scope of work for this project is the development of a set of plans and specifications (Contract Documents) for the proposed construction of the Broward County Federal Shore Protection Project – Segment II. Construction specifications and drawings are prepared by the Local Sponsor's consultant, [redacted]. The Jacksonville District is tasked with review of the Contract Documents for compliance with Federal standards.

The project seeks to place approximately 683,430 cubic yards of sand as beach fill (Federal project) and dune (non-federal feature) along two non-contiguous reaches of the Broward County shoreline between Hillsboro and Port Everglades Inlets. The specific project reaches are located along approximately 1.38 miles of shoreline in southern Pompano Beach and northern Lauderdale-By-The-Sea (LBTS) between Florida Department of Environmental Protection (FDEP) Monuments R36-R41.3 and approximately 3.56 miles of shoreline in southern LBTS and northern and central Ft. Lauderdale between FDEP Monuments R51 and R72. All sand shall be sourced from pre-approved upland sand mines.

The construction berm along both project reaches is designed to have a landward upper beach berm set at elevation +7.9 feet, NAVD88 which will transition at a 1V:20H slope to a seaward lower beach berm set at elevation to +5.9 feet, NAVD88. Seaward of the lower berm elevation, the berm will slope to the ambient seabed at a slope of 1V:10H.

The project reach between (R51 and R72) will include a non-contiguous, vegetated dune feature along discrete areas of the southern fill reach in Ft. Lauderdale. The small dune will have landward and seaward side slopes of 1V:2H rising from the post-construction backshore elevation and a crest elevation of +11 feet, NAVD88. The dune crest width will be about 10 feet, typical. The dune feature is not part of the Federal project and is being constructed as an

option at the Sponsor's expense.

2.0 Quality Control Plan

2.1 Notification of Changes

[redacted] will notify the USACE Representative, in writing, of any proposed change in the QCP a minimum of seven calendar days prior to the change. Changes must have approval of the USACE Representative.

[redacted] will perform site activities in accordance with sound engineering and construction practices and the latest revision/edition of the referenced codes and standards. Field activities shall be conducted in accordance with all applicable standards and regulations.

2.2 Management Philosophy/Approach

[redacted] employs a team approach to the engineering, design and review of projects regardless of their relative complexity. [redacted] recognizes that one firm cannot provide the highest level of specific services for all tasks required to successfully complete coastal and marine related projects. We focus on coastal engineering and team with partners (sub-consultants) who represent the best of the best in their respective fields. This team approach provides the highest level of service and highest commitment to quality for our clients.

2.3 Management Structure

Figure 1 presents the organizational structure employed for the Segment II Shore Protection Project. The design team is overseen a Project Manager (PM), [redacted], who is a registered Professional Engineers and is responsible for all aspects of the project design and delivery. The PM is responsible for coordinating the efforts of all sub-consultants and working on a project. It is the responsibility of the PM to understand the effects of each decision on the overall success of the project and to ensure the needs of the client are best served. As the Alternate Project Manager, [redacted] is responsible for maintain adequate familiarity with all aspects of the project in order to ensure seamless client availability and a rapid response for project-related inquiries. [redacted] the President and Principal Engineer, serves as the Project Quality Control Manager and is ultimately responsible for overall quality assurance.

Members of [redacted] coastal engineering staff, including the project managers, are responsible for various aspects of project design related to coastal engineering. Project-specific tasks are allocated to one or more of the team members as merited by project requirements and staff expertise. Senior engineer(s) are charged with oversight of work performed by junior staff. In due course, the work of the senior engineer(s) is reviewed by the PM and vice versa, as necessary.

Sub-consultants are assigned tasks based on their specific areas of expertise. In addition to their own internal QA/QC assurance plans, their work-products are reviewed for technical competence, completeness and correctness by [redacted] engineers.

The role of the USACE cost engineer will consist of developing project cost estimates and construction schedules in coordination with the [redacted] team. [redacted] will assist the cost engineer in identifying cost-related project items including but not limited to project risk, project contingencies, project schedule, construction schedules, contract phasing, bid schedule, and contract completion dates.

The fact that [redacted] is a relatively small consulting firm allows each of these team members work synergistically and in close communication with one another and the client. Generally speaking, each team member is familiar with a broad range of project details, but overall quality assurance is the responsibility of [redacted], President. [redacted] strives towards achieving a productive back-and-forth between project managers, staff engineers, and sub-consultants.

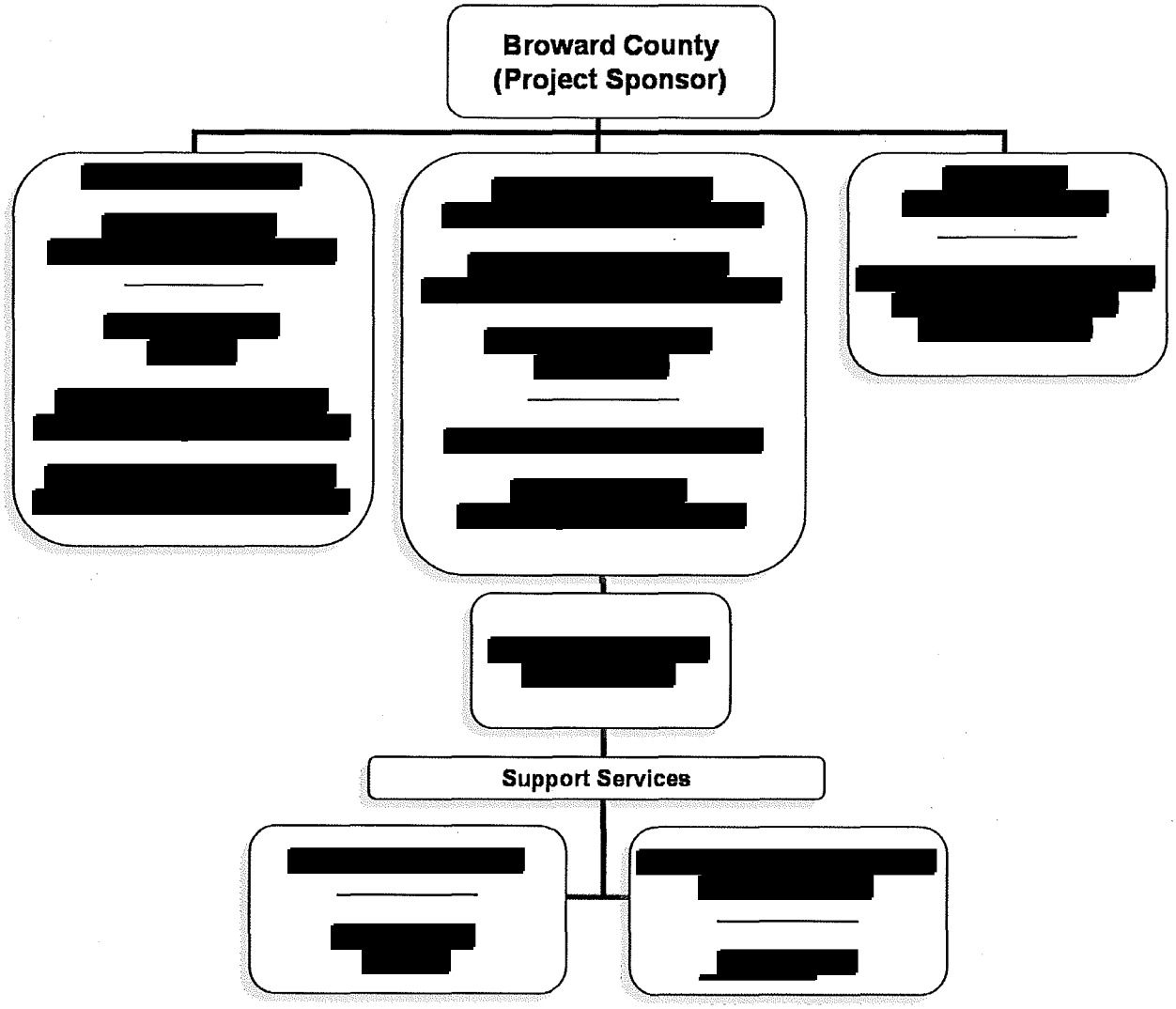

Figure 1: [redacted] organizational chart for engineering design work associated with the Broward County Federal Shore Protection Project, Segment II.

3.0 Project Structure

Implementation of the Brevard County Federal Shore Protection Project, Segment II can be broken down into four phases, Permitting, Planning, Engineering, and Construction. The approach [redacted] takes with each of these phases and are discussed in greater detail below:

3.1 Permitting

[redacted] acted as the permit agent for this project. This required coordination between the regulatory agencies at both the State and Federal levels. This effort is intended to secure both a Joint Coastal Permit and Department of the Army Permit. The PM is the recorded permit agent and representative for the local sponsor. Throughout the permitting process, individual team

members will be assigned tasks based on their areas of expertise in order to assist in preparation of permit submittals, additional required work products, or responses to official requests for additional information.

3.2 Planning

3.2.1 Scope of Work

Prior to initiation of consulting services, a detailed Scope of Work (SOW) is prepared with input from Broward County, [redacted], and the State of Florida. This requires iterative drafting and redrafting of the SOW until the needs of each stakeholder have been adequately addressed and project expectations made clear.

3.2.2 Budget/funding

The Segment II project is implemented on a reimbursement basis for the Federal share of the planning, engineering, sand investigation, plans and specifications preparation, contract administration and supervision, construction costs, and biological, turtle, aerial, and beach monitoring and mitigation. The remaining costs are shared by the State of Florida and the local project sponsor. The local sponsor is responsible for acquisition of these funds.

3.2.3 Scheduling

The PM is responsible for coordinating and adherence to all project scheduling including but not limited to regulatory submittal deadlines, construction scheduling estimations, funding requests (as applicable), responses to requests for information, progress meetings, conference calls, etc. Scheduling of individual task items within [redacted] is managed by the team member responsible for completion of said task. All task items and associated technical documents will have a formal production schedule and will be coordinated to meet with needs of the project sponsor, USACE, or requisite regulatory agency. The PM provides oversight regarding the progress and timeliness of individual team tasks. It is the responsibility of the PM(s) to ensure that the proper information is provided to the team including sub-consultants at the proper time to expedite the design process with efficiency and quality.

3.2.4 Communications

One of [redacted]'s priorities is communication. [redacted] makes every effort to clearly and effectively communicate to the team members and the client. Effective communication is paramount to all parties involved. [redacted] is open with our status of schedules, data, estimates and availability. Internal and external communication is vital for any project. The PM or Alternate PM will manage internal communication and craft messages to all employees involved with a project. [redacted] utilizes several methods of communication in all of our projects:

- Web-based communication

- Presentations
- Phone Conferencing
- Meetings
- Email
- Reports

3.4 Engineering

3.4.1 Design Tools

Our team has comprehensive capabilities using AutoCAD with experience integrating this program as a valuable design and planning tool. All team members use this program to enhance presentation, design and planning, estimating, and overall project management. All team members hold licenses for AutoCAD products.

For more complex engineering and design computation our team members are fully proficient in at least one programming language. Most are proficient in multiple languages. [redacted] presently holds licenses for FORTRAN, Matlab, and BASIC. The choice of language for use on a given task is dependent upon the task details and team member's familiarity with each programming language.

The [redacted] team has significant experience with numerical modeling and holds licenses for multiple wave, hydrodynamic, sediment transport, and morphological models. This includes but is not limited to Delft3D, SMS, ADCIRC, CEDAS, and numerous associated sub-models. Application of a given model is highly individualized to each task item.

Among the team's additional resources applicable to this project are ESRI products (GIS); Adobe products; Golden Software products (Didger, Grapher, and Surfer); and Microsoft Office products (Excel, Word and PowerPoint). Excel is used to complete basic engineering computations and produce tabular references for reports and presentations in concert with Word, Adobe products, and PowerPoint.

3.4.2 Quality Checks

Quality checks and reviews are technical checks and reviews performed during the development process. [redacted] selects qualified individuals on our team to perform detailed review and check work. Such reviews include checking basic assumptions and calculations and the correctness of calculations. Quality checks may be performed by staff members responsible for the work, such as supervisors, the PM, alternate PM, or other qualified personnel.

As indicated in **Figure 1**, [redacted] makes use of Internal Technical Advisors as indicated in the organizational chart, with [redacted] being the overall quality assurance manager

of the product. In addition to serving as technical resources, it is the responsibility of the Internal Technical Advisors to perform a review of the design documents prior to release. Review of work products includes but is not limited to assessment of the correct application of methods; completeness of documentation; compliance with guidance, standards and regulations/laws; constructability, operability and biddability of the project.

Once internal reviews are complete and comments have been incorporated into the documents, work products are submitted to the team of Independent Technical Reviewers (ITR) for additional quality control. Members of the ITR team specifically address and ensure that: the concepts, assumptions, methods and analyses are appropriate and correct; an appropriate range of alternatives was investigated; as well as the constructability, confirmation regarding the constructability, operability and biddability of the project.

3.4.3 Back Check Comments

At each stage of the review process comments are received by the reviewer(s). Addressing comments received during internal review is the responsibility of the team member who produced the original product. [redacted] does not utilize DrChecks internally. Rather, once comments have been addressed, the product goes back through the review channels for a second round of technical checks. This is an iterative process within [redacted] and continues until all comments have been adequately addressed. Once complete, the product is sent out for ITR and the comment >> back check >> resolve comment process begins anew. ITR comments are addressed by the PM or alternate PM directly with coordination with the team member responsible for development of the task in question. This review/rework process repeats until the ITR and Project Manager are satisfied that the product both satisfies the defined Scope of Work and meets the needs of the client.

Our team members are familiar with and have utilized the DrChecks design review and checking system procedures on prior USACE reviews including that for the Segment II Plans and Specifications. Where design review involves direct coordination with the USACE, [redacted] is prepared to make use of the DrChecks system in order to communicate and document review comments.

3.5 Construction

3.5.1 Monitoring

[redacted] is highly experienced with construction management and oversight on projects worldwide. Throughout the construction process, the PM is ultimately responsible for coordinating construction oversight and monitoring. [redacted] team members are assigned tasks based on their level of expertise and experience in order to support the PM in this role.

Prior to construction the PM is responsible for coordinating with the Contractor and leading the pre-construction walkthrough and required meetings. Additionally, the PM is responsible for ensuring compliance with all required pre-construction submittals. This includes both those submittals required of the Contractor and those required of the Permit Holder to the regulatory agencies.

During construction [redacted] employs a designated representative responsible for daily construction monitoring at the job site. It is the responsibility of the on-site monitor(s) to liaise with the Contractor; ensure daily compliance with the Plans and Specifications; document construction progress; attend construction meetings as required; and transmit daily summary reports to the PM. Any problems encountered shall be relayed to the PM or alternate PM immediately. Additionally, [redacted] team members are available on demand for on-site inspection or acceptance of the work in the event that a key construction milestone is reached or problems arise which require direct oversight by a registered professional engineer. The seniority and experience level of [redacted] staff deployed for on-call travel to the job site depends upon the nature and need for on-site inspection. The PM is responsible for coordinating delivery of all during-construction submittals required by the terms of the Permit. [redacted] is additionally responsible for ensuring that the project remains on schedule and adheres to any restrictions to working hours established in the permits or Specifications.

Following construction, the PM is responsible for leading the post-construction walkthrough and ensuring delivery of all required data submittals, surveys, and reports from the Contractor. The PM is additionally responsible for ensuring delivery of all required data submittals, surveys, notices, etc. to the regulatory agencies. [redacted] team members assist the PM in preparing and submitting documentation specific to the construction monitoring task assigned by the PM. QA/QC for these submittals follows the same protocol which was previously outlined herein.

3.5.2 Environmental Compliance Matrix

The PM is responsible for coordination with the members of the team or sub-consultants with expertise in environmental monitoring in order to develop an Environmental Compliance Matrix (ECM). The purpose of the ECM is to summarize all required submittals, monitoring, and data collection efforts pertaining to the environmental compliance requirements within the permits. The ECM shall include the task ID, nature of the task, required submittal date, and actual submittal date. Development of the ECM shall include coordination with the Contractor in order to clarify their responsibilities for environmental compliance under the Specifications.

3.5.3 Cost Estimate Control

[redacted] and the USACE cost engineering section worked in tandem to accurately estimate the bid options included in the construction documents. This partnership allowed the use of MCACES to develop cost estimations which were prepared in accordance with USACE guidelines. [redacted]

and the USACE cost engineering department are prepared to coordinate efforts to assess or develop value engineering alternatives proposed by the Contractor.