



REPLY TO
ATTENTION OF

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

11 FEB 2015

CESAD-RBT

MEMORANDUM FOR COMMANDER, JACKSONVILLE DISTRICT

SUBJECT: Approval of the Review Plan for the Manatee Mitigation Feature, Picayune Strand Restoration Project, Collier County, Florida

1. References:

a. Memorandum, CESAJ-EN-Q, 28 January 2015, subject: Approval of the Review Plan for Manatee Mitigation Feature, Picayune Strand Restoration Project, Collier 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 plans, specifications and design documentation 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.

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

28 January 2015

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

SUBJECT: Approval of Review Plan for Manatee Mitigation Feature, Picayune Strand Restoration Project, Collier County, Florida

1. References.

- a. EC 1165-2-214, Civil Works Review, 15 December 2012
- b. WRDA 2007; PL 110-114 dated 8 November 2007 (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 Agency 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:

Encl



REVIEW PLAN

For

Manatee Mitigation Feature

Picayune Strand Restoration Project

Collier County, Florida

P2 Number: 112375

Jacksonville District

January 2015

THE INFORMATION CONTAINED IN THIS REVIEW PLAN IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PREDISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY THE U.S. ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.



**US Army Corps
of Engineers ®**

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1. PURPOSE AND REQUIREMENTS

a. Purpose.

This Review Plan defines the scope and level of review activities for the Picayune Strand Restoration Project - Manatee Mitigation Feature. Review activities consist of District Quality Control (DQC), Agency Technical Review (ATR), Type II Independent External Peer Review (IEPR), Policy and Legal Review and Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Review. The project is in the Pre-Construction, Engineering and Design (PED) Phase. The related documents are Implementation Documents that consist of Plans and Specifications (P&S) and Design Documentation Reports (DDR) that will be prepared by the South Florida Water Management District (SFWMD). Upon approval, this review plan will be included into the Project Management Plan as an appendix to the Quality Management Plan.

b. References.

- (1) ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999
- (2) ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006
- (3) ER 1165-2-214, Civil Works Review, 15 December 2012
- (4) ER 415-1-11, Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Review, 1 January 2013
- (3) ER 1180-1-6, Construction Quality Management, 30 Sep 1995
- (4) Enterprise Standard (ES)-08025, Government Construction Quality Assurance Plan and Project/Contract Supplements
- (5) Enterprise Standard (ES)-08026, Three Phase Quality Control System
- (6) Central and Southern Florida Project, Project Management Plan, Picayune Strand Restoration Project, P2 Number 112375

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. The EC outlines five levels of review: District Quality Control (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), Policy and Legal Review and a Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Review. Refer to the EC for the definitions and procedures for the five levels of review.

d. 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) shall 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's webpage. The latest Review Plan will be provided to the RMO and home MSC.

e. Review Management Organization (RMO).

The Review Management Organization (RMO) is the South Atlantic Division Office. The RMO will provide technical oversight for the ATR process. In addition, the RMO, in appropriate cooperation of the vertical team will determine/select the ATR team members.

2. PROJECT INFORMATION AND BACKGROUND

a. Project Location

The Manatee Mitigation Feature is part of the overall Picayune Strand Restoration Project (PSRP) which encompasses approximately 55,000 acres (241 km² or 23,995 ha) in Collier County, Florida.

b. Project Authorization

The Picayune Strand Restoration Project was authorized for construction in the Water Resources Development Act of 2007. The manatee mitigation feature is under review with HQ to determine if approval of the feature is within the Chief's discretionary authority. However, no contracting action will proceed until after this the determination of the Chief's authority concerning this feature is reached.

c. Current Project Description

The PSRP (Formerly the Southern Golden Gate Estates Restoration Project) encompasses an area of sensitive environmental land located in southwestern Collier County, Florida. It is located southwest of the Florida Panther National Wildlife Refuge, north of the Ten Thousand Islands National Wildlife Refuge, east of the South Bell Meade State Conservation and Recreation Lands (CARL) project, west of the Fakahatchee Strand State Preserve, and northeast of Collier-Seminole State Park. The South Bell Meade Carl project, known simply as "Belle Meade", and the Picayune Strand Restoration Project have been combined by the State of Florida to form the Picayune Strand State Forest, refer to Figure 1 – Regional Project Map.

Southern Golden Gate Estates (SGGE) was planned as an extensive residential subdivision by Gulf American Corporation (GAC) beginning in the 1950's. PSRP includes approximately 44 miles (77 km) of drainage canals and 279 miles (449 km) of primary and secondary roads constructed in the 1960's as part of the former Southern Golden Gate Estates (SGGE) development. The residential development failed before many of the planned houses were built. These roads and canals have over drained the area resulting in the reduction of aquifer recharge, increased freshwater shock load discharges to the receiving estuaries to the south, invasion by upland vegetation, loss of ecological connectivity and associated habitat, and increased frequency of forest fires. The Picayune Strand Restoration Project (PSRP or Project) will restore 55,247 acres of land to its pre-development condition.

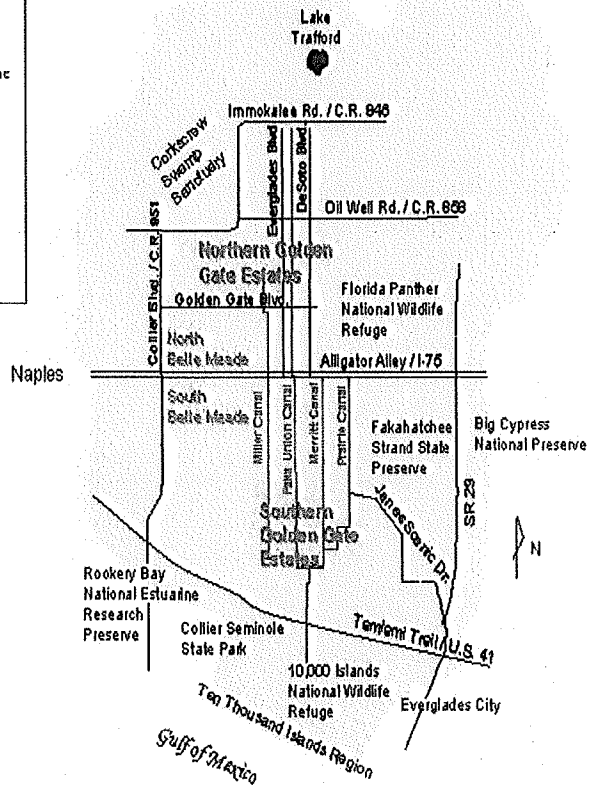
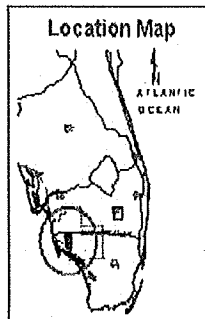


Figure 1 - Regional Project Map

The Biological Opinion, as part of the Project Implementation Report (PIR)/Environmental Impact Statement (EIS), identified a warm water manatee refugium in the Port of the Islands marina and basin. Analysis from the US Geological Survey (USGS) concluded the refugium will likely be affected by the reduction in post project discharge flows versus the pre-construction condition. An interagency team with representatives from USACE, SFWMD, U.S. Fish and Wildlife Service, Florida Fish and Wildlife Conservation Commission, and the Florida Department of Environmental Protection analyzed alternatives that will ensure the continuance of a manatee thermal refugium in the Port of the Islands basin.

The design and construction of the Manatee Mitigation Feature will be completed by SFWMD. The current preliminary design is a feature in the spoil area located on the west side of the Faka Union Canal south of the Port of the Islands Basin (See Figure 2). The Manatee Mitigation Feature is an oxbow that will include multiple deep pools, that when combined will add up to be an area of approximately half-acre at the elevation of -20 NAVD in an effort to provide the manatees a connection to the warm ground water in the winter months. The current preliminary layout has small shallow shelves on the east side of the deep pools to assist in

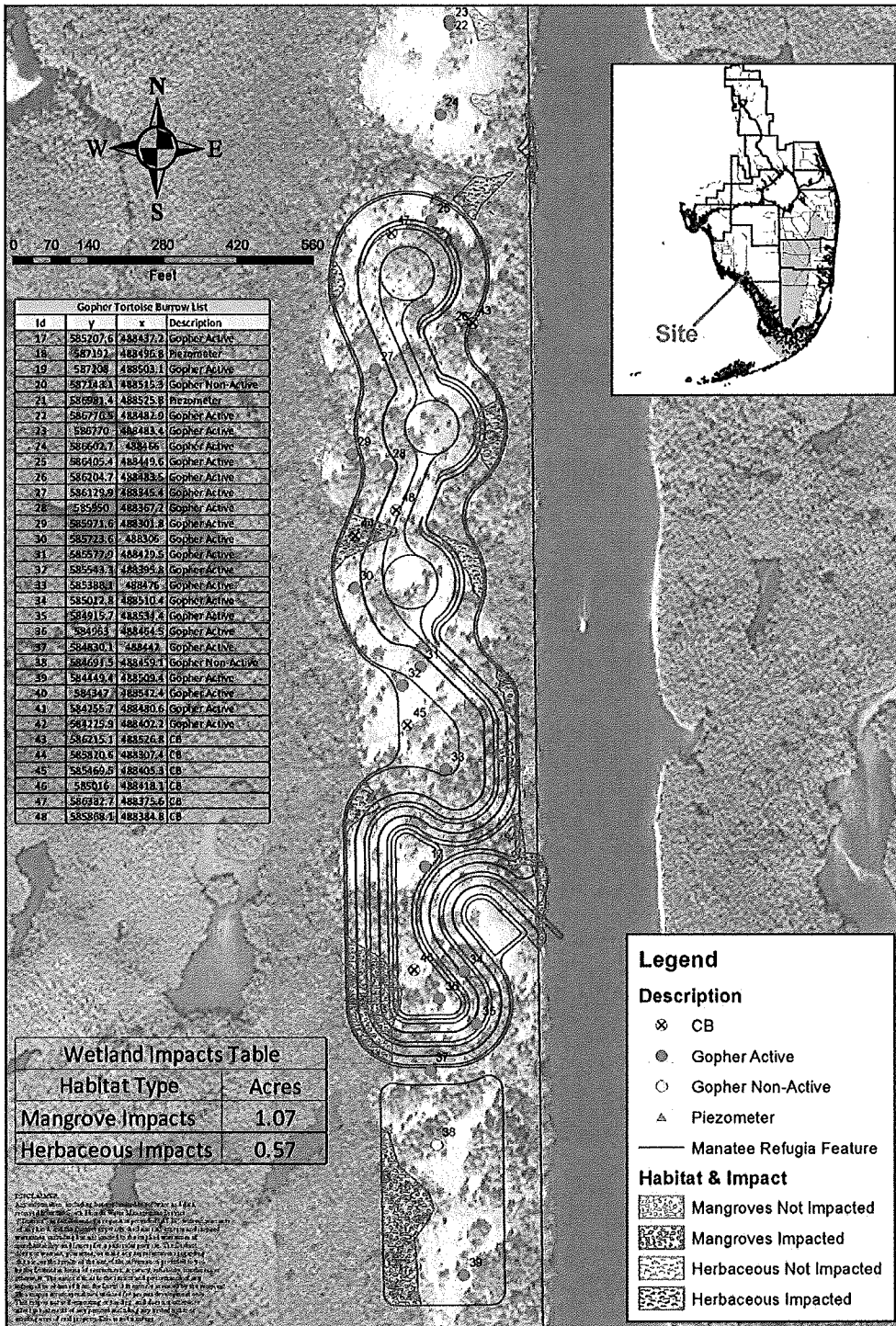
emergency situations like manatee rescues and is connected to the Fake Union canal in two locations, the northern most having manually operated gated culverts that will be opened during the wet, warm season to promote flushing. The entire footprint of the Manatee Mitigation Feature is not expected to be more than 10 acres with a water surface area of approximately three (3) acres. Excavated material will be deposited on the existing Faka Union Canal spoil berm up to 14 feet high. It is anticipated that all spoil material will be left onsite.

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 project 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.

e. In-Kind-Contributions by Project Sponsor

There are no required additional in-kind sponsor contributions that could affect this review plan or related reviews.



South Florida Water Management District
 State Policy and Coordination - Permit Acquisition Section
 3301 Gun Club Road, West Palm Beach, Florida 33406
 888-184-6800 - FL WATS 1-800-452-2045 - www.sfwmd.gov

Wetland Limits & Impacts Map
Picayune Strand Restoration Project
FAKA Union Spoil Sites - Manatee Refugia
Collier County, Florida

UPDATED
 27-Aug-2014
 Sheet 1 of 1

Project No. 100397

Figure 2 – Preliminary Site Plan

3. DISTRICT QUALITY CONTROL

District Quality Control (DQC) activities for engineering products are stipulated in ER 1110-1-12, Engineering & Design Quality Management and EC 1165-2-214. DQC will be performed on the P&S and DDR in accordance with the non-federal sponsor's quality control plan, Attachment C.

SFWMD will prepare products, including the plans and specifications and a DDR for the Manatee Mitigation Feature and those products are classified by SAJ as Products Prepared by Others. SFWMD will perform quality control (QC) and quality assurance (QA) per ER 1110-1-12. SFWMD DQC reviews will be completed prior to the ATR on the final deliverables. SFWMD's Engineering Design and Review Process is discussed in Attachment E.

4. AGENCY TECHNICAL REVIEW

a. Scope.

Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-214 and ER 1110-1-12. An ATR will be performed on the final Plans and Specifications and DDR.

The ATR Team may contain individuals from the Jacksonville District since the design is by SFWMD. The required disciplines and experience are described below. This review, based on the DESIGN AGREEMENT BETWEEN THE DEPARTMENT OF THE ARMY AND SOUTH FLORIDA WATER MANAGEMENT DISTRICT FOR THE DESIGN OF ELEMENTS OF THE COMPREHENSIVE PLAN FOR THE EVERGLADES AND SOUTH FLORIDA ECOSYSTEM RESTORATION PROJECT, ARTICLE III - DESIGN COORDINATION TEAM, Paragraph C will be to ensure to the maximum extent practicable, that the Government and the Non-Federal Sponsor agree on the design work that is to be performed and the scheduling and total design costs for that work. The charge to reviewers will further define the scope of the ATR review effort.

ATR comments are documented in the DrCheckssm model review documentation database. DrCheckssm is a module in the ProjNetsm suite of tools developed and operated at ERDC-CERL (www.projnet.org).

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. See Attachment D for a draft ATR Report format. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organization affiliations, and include a short paragraph on both the credentials and relevant expertise of each reviewer;
- Include the charge to the reviewer;
- Describe the nature of their review and their findings and conclusions; including if the comment is considered to be an error, omission, oversight, conflicts within the documents, coordination issues, QA/QC, discrepancies, deficiencies, etc.
- Identify and summarize each unresolved issues (if any); and

Include a verbatim copy of each reviewers comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

b. ATR Disciplines.

As stipulated ER 1110-1-12, ATR members will be sought from the following sources: regional technical specialists (RTS); appointed subject matter experts (SME) from other districts; senior level experts from other districts; Center of Expertise staff; appointed SME or senior level experts from the responsible district; experts from other USACE commands; contractors; academic or other technical experts; or a combination of the above. The ATR Team will be comprised of the following disciplines; knowledge, skills and abilities; and experience levels.

ATR Team Leader. The ATR Team Leader should have 10 or more years experience with Civil Works Projects and have performed ATR Team Leader duties on complex civil works projects. ATR Team Leader can also serve as one of the review disciplines.

Civil Engineering. The team member should be a registered professional engineer and have 7 or more years experience with civil/site work.

Geotechnical Engineering. The team member should be a registered professional engineer and have 10 or more years experience in geotechnical engineering.

NEPA Compliance. The team member should have 7 or more years experience in NEPA compliance activities.

Structural Engineering. The team member should be a registered professional engineer and have 7 or more years experience in structural engineering.

5. BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, ENVIRONMENTAL, AND SUSTAINABILITY (BCOES) REVIEW

The value of a BCOES review is based on minimizing problems during the construction phase through effective checks performed by knowledgeable, experienced personnel prior to advertising for a contract. Biddability, constructability, operability, environmental, and sustainability requirements must be emphasized throughout the planning and design processes for all programs and projects, including during planning and design. This will help to ensure that the government's contract requirements are clear, executable, and readily understandable by private sector bidders or proposers. It will also help ensure that the construction may be done efficiently and in an environmentally sound manner, and that the construction activities and projects are sufficiently sustainable. Effective BCOES reviews of design and contract documents will reduce risks of cost and time growth, unnecessary changes and claims, as well as support safe, efficient, sustainable operations and maintenance by the facility users and maintenance organization after construction is complete. A BCOES Review will be conducted for this project. Requirements and further details are stipulated in ER 1110-1-12, ER 415-1-11, and 08550-SAJ, BCOES Reviews.

6. INDEPENDENT EXTERNAL PEER REVIEW (WRDA 2007 Section 2035 Safety Assurance 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). Sections 2034 and 2035 call for peer review procedures for both the Planning and the Design and Construction (PED) phases. The EC terms the Section 2034 Independent Peer Review, Type I Independent External Peer Review and the Section 2035 Safety Assurance Review, Type II Independent External Peer Review.

b. Type I Independent External Peer Review (IEPR) Determination (Section 2034).

Type I IEPR is generally for decision documents. No decision documents or other applicable Section 2034 products are addressed by this Review Plan. Therefore Type I IEPR is not applicable to the implementation documents addressed by this Review Plan.

c. Type II Independent External Peer Review (IEPR) Determination

This project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-209) and therefore, a review under Section 2035 is not warranted. The factors in determining whether a Type II IEPR review of design and construction activities of a project is necessary are based on the EC 1165-2-214 Type II IEPR Risk Informed Decision Process. The following EC 1165-2-214 risk decision criteria are followed by a statement that forms the basis for the Type II IEPR determination.

1. The Federal action is justified by life safety or the failure of the project would pose a significant threat to human life.

The Jacksonville District has not identified any concerns with respect to life safety since the level of water associated with the project features would not create an adverse condition for life safety. The primary purpose is to recreate a refugium for the manatee habitat.

2. The project involves the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices.

The project involves standard materials and techniques for installation of constructed features. Consequently, no unique materials or techniques are proposed for this project. Subsequently, the methods utilized do not set a precedent and are not likely to change prevailing practices.

3. The project design lacks redundancy, resiliency, and robustness.

The project design does not require the addition of redundant project features. Resiliency or robustness incorporated into design features are a function of normal civil works design criteria and are not in excess of customary practice.

4. The project has unique construction sequencing or a reduced or overlapping design construction schedule; for example, significant project features accomplished using the Design-Build or Early Contractor Involvement (ECI) delivery systems.

Construction schedule does not have unique sequencing and activities are not reduced or overlapped. The construction methods associated with this project have been used successfully by the Corps of Engineers and SFWMD on similar projects.

7. POLICY AND LEGAL COMPLIANCE

The Jacksonville District Office of Counsel reviews all contract actions for legal sufficiency in accordance with Engineer Federal Acquisition Regulation Supplement 1.602-2 Responsibilities. The subject implementation documents and supporting environmental documents will be reviewed for legal sufficiency prior to advertisement.

8. ENGINEERING MODELS UTILIZED

Engineering Models. Manatee Mitigation will not use any engineering modeling for the design. The design is based upon field work to include: geotechnical, civil survey, and HTRW assessments and data.

9. PROJECT DELIVERY TEAM DISCIPLINES

Discipline/Expertise
Geomatics & Survey
Civil Site Design
Geotechnical Engineering
Environmental Engineering
Structural Engineering
Hydrogeology & Geology
Hydraulic & Hydrologic Engineering

10. SCHEDULE

a. Project Milestones

	Start	Finish
Draft Final P&S Complete		10/7/2014
Technical Review by SFWMD Design Review Team	10/7/2014	10/28/2014
Resolution of Comments by SFWMD	10/29/2014	1/18/2015
Final Quality Control Review by SFWMD	1/19/2015	1/23/2015
ATR	1/26/2014	2/13/2014
BCOES	2/2/2015	2/18/2015

ATTACHMENT A

REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

Attachment B

ACRONYMS AND ABBREVIATIONS

<u>Acronyms</u>	<u>Defined</u>
ATR	Agency Technical Review
BCOES	Biddability, Constructability, Operability, Environmental, and Sustainability
C&SF	Central and Southern Florida
CERP	Comprehensive Everglades Restoration Project
CESAJ	US Army Corps of Engineers, Jacksonville District
CESAJ-EN	US Army Corps of Engineers, Jacksonville District, Engineering Division
CGM	Comprehensive Everglades Restoration Plan Guidance Memoranda
DCM	Design Criteria Memoranda
DQC	District Quality Control
DRT	Design Review Team
EIS	Environmental Impact Statement
EC	Engineering Circular
EN QMS	Engineering Division Quality Management System
ER	Engineering Regulation
ERDC-CERL	US Army Engineer Research and Development Center – Construction Engineering Research Laboratory
ETL	Engineering Technical Lead
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FFWCC	Florida Fish and Wildlife Conservation Commission
FY	Fiscal Year
GAC	Gulf American Corporation
IEPR	Independent External Peer Review
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
PE	Professional Engineer
PED	Preconstruction Engineering and Design
PIR	Project Implementation Report
PSRP	Picayune Strand Restoration Project
PL	Public Law
PM	Project Manager
QC	Quality Control
RMO	Review Management Organization
RTS	Regional Technical Specialists
SAD	South Atlantic Division

<u>Acronyms</u>	<u>Defined</u>
SAR	Safety Assurance Review (also referred as Type II IEPR)
SFWMD	South Florida Water Management District
SGGD	Southern Golden Gate Estates
SME	Subject Matter Experts
TRB	Technical Review Briefing
USACE	United States Army Corps of Engineers
WRDA	Water Resources Development Act

Attachment C

SFWMD PROJECT QUALITY CONTROL PLAN

The SFWMD currently implements a rigorous Design Review process utilizing the DrChecks system to capture all comments from various disciplines and enable proper closure of technical issues. At the beginning of the project planning or design phase, the SFWMD Project Manager will either establish or reconfirm with the SFWMD's Project Development Section what will be the composition of the Design Review Team (DRT) for the project. The DRT may consist of representatives from the SFWMD, USACE, Florida Department of Environmental Protection (FDEP), US Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), local agencies and in many cases, independent consultants to supplement SFWMD staff.

As part of the Design Work Orders to outside consultants or in accordance with internal Design Section policy, each deliverable shall be reviewed by the Designer's Quality Control (QC) Officer prior to submittal for the DRT review. The QC officer shall be someone not directly involved in the preparation of the plans and specifications nor the project management responsibilities. The Consultant or SFWMD Project QC officer shall be charged with the responsibility of the Plan's implementation and documentation of current QC activities. The Design Submittal shall include a signed copy of the SFWMD's Quality Certificate of Compliance (see example on next page) with each Deliverable signifying that the internal QC was followed.

For this project, SFWMD will utilize internal staff for design and technical review. SFWMD staff performs review activities associated with electrical, I&C, geotechnical, hydraulics, hydrology, HVAC, plumbing, fire, mechanical, and structural disciplines, checking deliverables for compliance with SFWMD engineering guidelines, level of risk associated with the work, and operations and maintenance considerations. Project modeling tasks and deliverables will be reviewed and coordinated by the SFWMD's Project Development Section and the Hydrologic and Environmental Systems Modeling Section. The primary objectives of the DRT are to confirm that:

1. The engineering concepts are valid.
2. The recommended plan is feasible and will be safe and functional.
3. A reasonable opinion of probable construction cost estimate has been developed in accordance with Operation, Maintenance and Construction Engineering Bureau Procedures for Development of Opinions of Construction Costs (see Design Criteria Memorandum 7).
4. The approach to the engineering analysis is sound.
5. The submittal complies with SFWMD engineering submittal requirements.
6. The submittal complies with accepted engineering practice within the SFWMD and applicable Operation, Maintenance and Construction Engineering Bureau Design Criteria Memoranda (DCM) and Comprehensive Everglades Restoration Plan (CERP) Guidance Memoranda (CGM).



SOUTH FLORIDA WATER MANAGEMENT DISTRICT
Quality Certificate of Compliance

Project Name	Contract No./Work Order No.	Date
Deliverable Description		

_____ has completed preparation of the above referenced
 Consultant Name

deliverable and herein submits it to the South Florida Water Management District (SFWMD) in accordance with the requirements of the referenced Work Order. It has been verified that this submittal includes all required components of the deliverable. Where required components are not submitted, an explanation and schedule for submitting the missing component(s) has been provided. Notice is hereby given that all quality control activities, appropriate to the level of risk and complexity inherent in the Project, have been completed. Compliance with established procedures as documented in the Project's Quality Control Plan submitted to the SFWMD has been verified.

This certification in no way relieves/replaces/changes/impacts/mitigates the contractual requirements to follow the consultant's own Quality Assurance/Quality Control (QA/QC) processes and procedures.

Consultant Quality Manager (Print)	Consultant Quality Manager (Signature)	Date
Consultant Project Manager (Print)	Consultant Project Manager (Signature)	Date

The reviews performed by the DRT shall be based on:

- SFWMD Standards for Construction of Water Resource Facilities – Design Details and Design Guidelines
- SFWMD Major Pumping Station Engineering Guidelines
- Operation, Maintenance and Construction Engineering Bureau Design Criteria Memoranda
- Operation, Maintenance and Construction Engineering Bureau Submittal Requirements
- CERP Guidance Memoranda
- Applicable US Army Corps of Engineers requirements
- Applicable Florida Department of Transportation (FDOT) Standards
- Other Applicable National and Industry Design Codes

The intent of each Technical Review is to identify fatal flaws to the design or items that are in conflict with SFWMD or other applicable standards and guidelines. The DRT members are discouraged from commenting on items that are “designer preference” in nature. The Technical Review shall include an evaluation of the level of completion for the respective submittal according to the Detailed Description of Plan Submittal Requirements (see Operation, Maintenance and Construction Engineering Bureau Submittal Requirements).

Following completion of the Technical Review process, a Technical Review Briefing (TRB) is conducted where the project submittal is summarized to SFWMD and USACE Management staff. The SFWMD Project Manager presents the project, including any changes from the previous submittal, results of the Technical Review and how issues were resolved, cost estimate and estimated construction schedule, procurement strategy and planned path forward. Once all reviews TRBs are completed, a Certificate of Technical Review Completion form is prepared and signed by the appropriate parties signifying that the reviews were done appropriate to the level of risk and complexity inherent in the Project. During the Technical Review, compliance with established policy, principles and procedures, utilizing justified and valid assumptions, were verified including a review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; constructability and operability; reasonableness of the results, including whether the product meets the customer’s needs; and consistency with law and existing SFWMD and USACE policies. The Certificate includes a statement that the Technical Review was accomplished by an independent team made up of personnel from the SFWMD, USACE, other agencies and/or external consultant staff.

Attachment D

“Draft” ATR Report Format

Picayune Strand Restoration Manatee Mitigation

Collier County, Florida

Review of Plans and Specifications (P&S), and Design Documentation Report (DDR)

ATR REPORT FORMAT

1. Introduction:
2. ATR Team Members:
 - ATR Team Leader.
 - Civil Engineering.
 - Geotechnical Engineering.
 - NEPA Compliance.
 - Structural Engineering.
3. ATR Objective:
4. Documents Reviewed:
5. Findings and Conclusions:
6. Unresolved Issues:

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Picayune Strand Restoration Manatee Mitigation Project Review of Plans and Specifications (P&S), and Design Documentation Report (DDR). The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-214 and ER 1110-1-12. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks.

[NAME]
ATR Team Leader

Date

[NAME]
Project Manager – CERP

Date

[NAME]
Director of Risk Management

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

[NAME]
Chief, Engineering Division Chief
SAJEN

Date

Attachment E

SFWMD Engineering and Construction Design Review Process

This section summarizes the Engineering and Construction review process, review phases, and timeframes for review by the Design Review Team (DRT) which may include participants from a Full Service Engineering Consultant for large project engineering activities. Each project may have one planning and one or more design phases associated with project plan and technical specification development. The Technical Review process begins with the submittal of each planning or design phase deliverable as presented below, including Engineering During Construction.

Establishment of Project Design Technical Review Team

At the beginning of the project planning or design phase, the Project Manager will either establish or reconfirm with the Project Development Section Representative the composition of the Design Review Team (DRT) for the project. The DRT may consist of representatives from the South Florida Water Management District (District), US Army Corps of Engineers (USACE) (member for all USACE projects), Florida Department of Environmental Protection (FDEP), US Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), local agencies and in many cases, independent consultants to supplement District staff.

The District has utilized full service consulting firms to provide engineering discipline expertise to augment the District staff review efforts for technical design deliverables. These services are typically specific to the fields of architecture, electrical, I&C, geology, geotechnical, hydraulics, hydrology, HVAC, plumbing, fire, mechanical, and structures and involve reviewing the design for conformance to industry standards, checking the calculations, etc. District staff performs review activities associated with checking deliverables for compliance with District engineering guidelines, risk analysis and operations and maintenance considerations. Project modeling tasks and deliverables will be reviewed and coordinated by Project Development and the Hydrologic and Environmental Systems Modeling Section. A modeling request form should be filled out by the Project Manager to request reviews of modeling tasks and these types of deliverables.

The District has established Points of Contact within each Bureau for the various resource areas who provide membership on the Project Design Review Teams. These Points of Contact are able to provide staff members who will represent their Bureau during review of the project deliverables. The Project Development Section Representative will utilize the District Points of Contact to request membership on each Project Design Review Team. Replacement team members will be requested for ineffective team member participation.

The Project Development Section Representative will manage all aspects of the DRT from contract management of auxiliary staff, to logistics involved with delivery of copies of each deliverable to be reviewed, to issue resolution of lingering, unresolved review comments. As services are difficult to actually predict, general budgetary guidelines have been developed based on deliverable type, scale of project, and review time duration for both external (\$) and internal (hours) review assistance. This guidance is updated periodically. The Project Manager should utilize these guidelines in development of the project budget to ensure that sufficient funds are available to perform the

expected deliverable reviews. Project schedule should also be discussed with the Project Development Section Representative. The Project Manager is encouraged to schedule the project deliverables as soon as the expected delivery dates are known. The Project Development Section will make every effort to schedule reviews to avoid impacting project schedules. There may be instances, however, when District priorities may require adjustment of review schedules.

The primary objectives of the DRT are to confirm that:

The engineering concepts are valid.

The recommended plan is feasible and will be safe and functional.

A reasonable opinion of probable construction cost estimate has been developed in accordance with Engineering and Construction Bureau Procedures for Development of Opinions of Construction Costs (see Design Criteria Memorandum 7).

The approach to the engineering analysis is sound.

The submittal complies with District engineering submittal requirements.

The submittal complies with accepted engineering practice within the District and applicable Engineering and Construction Bureau Design Criteria Memoranda (DCM) and Comprehensive Everglades Restoration Plan (CERP) Guidance Memoranda (CGM).

Technical Review Documents

The type of documents intended to be reviewed under the Technical Review process includes but is not limited to the following:

Feasibility Study

Reconnaissance Study

Conceptual Design Study

Project Implementation Report (PIR)

Geotechnical Report

Hydraulic and Hydrologic Report

Water Budget Report

Survey

Design Documentation Report (DDR)

Preliminary Design

Intermediate Design

Final Design

Corrected Final Design (Issued for Bid)

Technical Memorandum

Opinion of Probable Construction Cost (OPCC)

Construction Schedule

Project Operations Manual (POM)

Water Control Plan (WCP)

Operation, Maintenance, Repair, Rehabilitation and Replacement (OMRR&R) Manual

Monitoring Plan

Permit Supporting Documentation

Response to Construction Submittal

For federal projects that the SFWMD is designing, it is especially important to have the USACE – Jacksonville District participate in the technical review of the design deliverables in order to provide feedback on the following:

Technical design is in conformance with federal guidelines (e.g. Engineering Manuals, Engineering Regulations, etc.)

The project is in accordance with the Project Implementation Report (PIR)

Obvious areas that may not qualify for work-in-kind crediting are identified

Prior to submittal of a project deliverable to Project Development, the Project Manager is requested to complete the Technical Review Release form. By completing the Review Release form, the Project Manager certifies that the project deliverable meets the task requirements, is complete, has the correct number of copies, is in the correct format, identifies the Documentum location of stored project files, identifies the project charge codes, includes the designers quality assurance/quality certification form, explains any unusual circumstances, and is ready to be sent to the DRT.

Technical Review Summary

The reviews performed by the DRT shall be based on:

District Standards for Construction of Water Resource Facilities – Design Details and Design Guidelines

District Major Pumping Station Engineering Guidelines

Engineering and Construction Bureau Design Criteria Memoranda

Engineering and Construction Bureau Submittal Requirements

CERP Guidance Memoranda

Applicable US Army Corps of Engineers requirements

Applicable Florida Department of Transportation (FDOT) Standards

Other Applicable National and Industry Design Codes

The intent of each Technical Review is to identify fatal flaws to the design or items that are in conflict with District or other applicable standards and guidelines. The DRT members are discouraged from commenting on items that are “designer preference” in nature. The Technical Review shall include an evaluation of the level of completion for the respective submittal according to the Detailed Description of Plan Submittal Requirements (see Engineering and Construction Bureau Submittal Requirements). The comment and response forum for each Technical Review shall be through the Design Review and Checking System (DrChecks). DrChecks is available through PROject extraNet (ProjNet) which is a web based service that allows the secure exchange of design and construction information among authorized business partners in the context of specific business processes.

Technical Review Process

In general, the Design Engineer will submit a deliverable to the District. The District will send copies of the deliverable to the DRT as well as a link to the District’s Documentum database site where the information can be found electronically. Depending on the deliverable, the DRT will have either ten (10) or fifteen (15) business days from the time the link is transmitted to perform the review. The Project Manager and Design Engineer will have ten (10) or fifteen (15) business days to respond to

the comments in DrChecks. The DRT shall backcheck the responses and assist the District in resolving non-concurred issues within another ten (10) business days. The DRT shall adhere to the review and backcheck times given for each deliverable. In the event of extenuating circumstances, the DRT shall notify the District Project Development Section Representative for resolution.

The District will provide all DRT members with a 3-month look ahead schedule each month to assist the DRT with planning of staff availability. This schedule is a continuously changing document. As such, it is intended as a guide only and the DRT members should be prepared for any last minute changes that may arise due to circumstances beyond the District's control.

As each deliverable is submitted by the Design Engineer, the District will have a predetermined time to review the submittal and provide comments back to the Design Team using the DrChecks review tool. The DRT shall participate in the reviews and assist the District as needed. The DRT may be required to perform, but not be limited to, the following general functions:

Attend meetings with the District and Design Engineer to review the Project and establish criteria
Perform a technical review of the project plans, technical specifications, reports and calculations by senior level engineering staff with the appropriate experience in the fields required for the project
Review and become familiar with District Standards, including updates, and other applicable design standards

The DRT is responsible for obtaining updates of, and keeping current with the following documents:
District Standards for Construction of Water Resource Facilities – Design Details and Design Guidelines (latest edition, including updates),
District Major Pumping Station Engineering Guidelines (latest edition, including updates),
Engineering and Construction Bureau Design Criteria Memoranda (latest edition, including updates),
Engineering and Construction Bureau Submittal Requirements (latest edition, including updates),
CERP Guidance Memorandums (latest edition, including updates), and
Other guidelines and standards as applicable.

DDR Technical Review

Following submittal of the DDR by the Design Engineer, the District will provide the DRT with electronic and hard copies of the DDR as agreed upon by each member. The District will also provide a link to the Documentum site containing the DDR. The DRT shall provide review comments in DrChecks on the DDR within ten (10) business days following receipt of the Documentum link. The review of the DDR shall look for and identify conflicts with design standards or fatal flaws, if any, to the approach, calculations, evaluations, conceptual plans, and any other design information provided in the DDR. Typically, the review performed by the Consultant DRT will not include the Opinion of Probable Construction Costs (OPCC), operations plan, modeling, or survey. These items will typically be reviewed by District members of the DRT.

Development of the Basis of Design Report will generally consist of the following activities:

Site Investigations.

Design Criteria Development.

Hydrology and Hydraulic Analysis.

Project Layout and Evaluation of Options.

Project Feature Design Development.

Opinion of Probable Construction Cost Based on Conceptual Designs.
Engineering Analyses to Support Designs.

A more detailed description of the DDR requirements for the Design Engineer can be found in the Engineering and Construction Bureau Submittal Requirements.

Once the comment period is closed, the Design Engineer will have ten (10) business days to respond to the comments generated by the DRT. During this time, the DRT shall be available to answer any questions from the Design Engineer regarding the comments and work closely with the District to resolve outstanding issues. At the completion of the ten (10) day response period, the DRT members shall backcheck the responses provided by the Design Engineer in DrChecks. If the Design Engineer properly addressed the comment, the DRT member shall close the comment. If the comment was not properly addressed, the DRT member shall work with the Design Engineer through the District Project Manager to resolve the issue within ten (10) business days. The District reserves the right to close a comment on behalf of the DRT if the comment is not closed in a timely fashion. Upon closure of all comments, the Project Manager shall conduct a Technical Review Briefing for District Management to discuss the Project Features, issues resolved during the review and path forward.

Following the end of the backcheck period, the Consultant DRT Manager shall submit to the District within five (5) business days a brief summary of the main issues encountered and resulting resolution.

Preliminary Design Technical Review

Following submittal of the Preliminary Design by the Design Engineer, the District will provide the DRT with electronic and hard copies of the Preliminary Design Report as agreed upon by each member. The Preliminary Design Report will typically include a narrative, design calculations, plans, list of proposed specifications, opinion of construction costs and construction schedule for the Project and related work prepared by the Design Engineer and submitted to the District for review. The District will also provide a link to the Documentum site containing the Preliminary Design Report. The DRT shall provide review comments in DrChecks on the Preliminary Design Report within ten (10) business days following receipt of the Documentum link. The review of the Preliminary Design Report shall look for and identify conflicts with design standards or fatal flaws, if any, to the approach, calculations, evaluations, conceptual plans, and any other design information provided in the Preliminary Design Report. Typically, the review performed by the Consultant DRT will not include the Opinion of Probable Construction Costs (OPCC), operations plan, modeling, or survey. These items will typically be reviewed by District members of the DRT. The DRT shall not comment on items that are "designer preference" in nature.

The Preliminary Design will generally consist of the following activities:

- Supplemental Site Investigations
- Finalize Modeling
- Preparation of Project Layout and Features
- Preliminary Design of Project Features
- Preliminary Design Calculations
- Develop Draft Project Operations Manual (POM)

Preparation of Preliminary Plans
Preparation of Technical Specification Outline
Updated Opinion of Probable Construction Cost
Updated Construction Schedule
Updated Engineering Report to reflect Preliminary Design

A more detailed description of the Preliminary Design Report requirements for the Design Engineer can be found in the Engineering and Construction Bureau Submittal Requirements. The response and backcheck process will follow the same procedures as identified in the DDR Technical Review above. Additionally, the Design Engineer will receive from the District five (5) business days after the comment period has closed a set of consolidated, red line marked up Plans and Specifications as applicable compiled by the Project Development Quality Control Engineer. Each plan sheet with mark ups is stamped with lines to identify the comment initiator and date of comment. The stamp also includes lines to be filled out by the Design Engineer with corrections by. These supplemental mark ups will be returned by the Design Engineer with the next submittal with indications of how each mark up was addressed (changes highlighted in yellow and exceptions to the comments noted in another ink color other than red). As part of the next deliverable review, the Quality Control Engineer will revisit the previous submittal's mark ups and the corrections made or notes provided by the design engineer. Once the drawing is checked, the Quality Control Engineer or his delegate will initial and date the checked by line of the stamp area. Upon closure of all comments, the Project Manager shall conduct a Technical Review Briefing for District Management to discuss the Project Features, issues resolved during the review and path forward.

Following the end of the backcheck period, the Consultant DRT Manager shall submit to the District within five (5) business days a brief summary of the main issues encountered and resulting resolution.

Intermediate Design Technical Review

Following submittal of the Intermediate Design by the Design Engineer, the District will provide the DRT with electronic and hard copies of the Intermediate Design Report as agreed upon by each member. The Intermediate Design Report will include a narrative, design calculations, plans, list of proposed specifications, opinion of construction costs and construction schedule for the project and related work prepared by the Design Engineer and submitted to the District for review. The District will also provide a link to the Documentum site containing the Intermediate Design Report. The DRT shall provide review comments in Dr Checks on the Intermediate Design Report within fifteen (15) business days following receipt of the Documentum link. The review of the Intermediate Design Report shall look for and identify conflicts with design standards or fatal flaws, if any, to the approach, calculations, evaluations, conceptual plans, and any other design information provided in the Intermediate Design Report. Typically, the review performed by the Consultant DRT will not include the Opinion of Probable Construction Costs (OPCC), operations plan, modeling, or survey. These items will typically be reviewed by District members of the DRT. The DRT shall not comment on items that are "designer preference" in nature.

The Intermediate Design Plans and Specifications shall generally consist of the following activities:
Finalize Site Investigations
Finalize Project Layout and Features

Detailed Design of Project Features
Updated Draft Project Operations Manual
Draft Geotechnical and Hydro-meteorologic Monitoring Plan Template
Summary of DCM Compliance and Results
Preparation of Plans and Specifications for Bidding/Construction
Updated Opinion of Probable Construction Cost
Updated Construction Schedule
Design Calculations (civil, electrical, mechanical, structural)
Updated Engineering Report to reflect Intermediate Design

A more detailed description of the Intermediate Design Report requirements for the Design Engineer can be found in the Engineering and Construction Bureau Submittal Requirements. The response and backcheck process will follow the same procedures as identified in the DDR Technical Review above except the time allowed for both providing comments and responding to comments is fifteen (15) business days. Additionally, the Design Engineer will receive from the District five (5) business days after the comment period has closed a set of consolidated, red line marked up Plans and Specifications from the Project Development Quality Control Engineer as described previously in the Preliminary Design Phase. These mark ups will be returned by the Design Engineer during the backcheck period with indications of how each mark up was addressed.

Following the end of the backcheck period, the Consultant DRT Manager shall submit to the District within five (5) business days a brief summary of the main issues encountered and resulting resolution.

Final Design Technical Review

Following submittal of the Final Design by the Design Engineer, the District will provide the DRT with electronic and hard copies of the Final Design Report as agreed upon by each member. The Final Design Report will include a narrative, design calculations, plans, list of proposed specifications, opinion of construction costs and construction schedule for the Project and related work prepared by the Design Engineer and submitted to the District for review. The District will also provide a link to the Documentum site containing the Final Design Report. The DRT shall provide review comments on the Final Design Report within fifteen (15) business days following receipt of the Documentum link. The review of the Final Design Report shall look for and identify conflicts with design standards or fatal flaws, if any, to the approach, calculations, evaluations, conceptual plans, and any other design information provided in the Final Design Report. Typically the review performed by the Consultant DRT will not include the Opinion of Probable Construction Costs (OPCC), operations plan, modeling, or survey. These items will typically be reviewed by District members of the DRT. The DRT shall not comment on items that are "designer preference" in nature.

The Final Plans and Specifications shall generally consist of the following activities:

Final Design of Project Features
Updated Engineering report to reflect Final Design
Completed Draft Project Operating Manual
Final Geotechnical and Hydro-meteorologic Monitoring Plan Template
Final Design Calculations
Final Plans and Specifications for Bidding/Construction, subject to Technical Review comments

Final Opinion of Probable Construction Cost Final Construction Schedule

A more detailed description of the Final Design Report requirements for the Design Engineer can be found in the Engineering and Construction Bureau Submittal Requirements. The response and backcheck process will follow the same procedures as identified in the DDR Technical Review above except the time allowed for both providing comments and responding to comments is fifteen (15) business days. Additionally, the Design Engineer will receive from the District five (5) business days after the comment period has closed a set of consolidated red line marked up Plans and Specifications from the Project Development Quality Control Engineer as described previously in the Intermediate Design Phase. These mark ups will be returned by the Design Engineer during the backcheck period with indications of how each mark up was addressed. Upon closure of all comments, the Project Manager shall conduct a Technical Review Briefing for District Management to discuss the Project Features, issues resolved during the review and path forward.

Following the end of the backcheck period, the Consultant DRT Manager shall submit a brief summary to the District within five (5) business days of the main issues encountered and resulting resolution.

Corrected Final Design Technical Review

Prior to submittal of the Corrected Final Design Report, the Design Engineer will submit complete sets of plans and technical specifications for review by the DRT. The District may hold a review workshop to verify that the Corrected Final Plans and Technical Specifications have been properly addressed based on the Final comments. The review workshop may be one day or multiple days depending on the size of the project and volume of the deliverables. Two or three key members of the Consultant DRT team (i.e. Structural, Geotechnical, and/or Site/Civil) shall attend the final review workshop. Following the workshop and resolution of all outstanding issues, the Consultant DRT Manager shall submit to the District within five (5) business days a brief statement that all comments have been addressed.

Miscellaneous Deliverables Technical Review

Following submittal of any other deliverables by the Design Engineer as identified in the Technical Review Documents section above and not already addressed, the District will provide the DRT with electronic and hardcopies of the deliverable. The deliverable may include a narrative, design calculations, plans, list of proposed specifications, opinion of construction costs and construction schedule, study findings, recommendations, modeling results or other engineering related data for the Project and related work prepared by the Design Engineer and submitted to the District for review. The District will also provide a link to the Documentum site containing the deliverable. The DRT shall provide review comments on the deliverable within ten (10) business days following receipt of the Documentum link. The review of the deliverable shall look for and identify conflicts with design standards, applicable codes, standard practice, or fatal flaws, if any, to the approach, findings, calculations, evaluations, conceptual plans, and any other information provided in the deliverable. The DRT shall not comment on items that are "designer preference" in nature.

The response and backcheck process will follow the same procedures as identified in the DDR Technical Review above.

Following the end of the backcheck period, the Consultant DRT Manager shall submit a brief summary to the District within five (5) business days of the main issues encountered and resulting resolution.

Continuity of Design Review Team Members

It is imperative that there be continuity in all of the Design Review Team members for both Consultant and District DRT members. Once assigned to a project, the same Design Review Team shall be utilized throughout the length of the project. If there needs to be a change in the staff involved, the District Point of Contact for that resource area or Consultant DRT Manager shall contact the District Project Development Section Representative for resolution.

Conclusion of Design Phase and Transfer to Procurement and Construction

At the conclusion of the Design Phase for the Project, one last Technical Review Briefing will be held. The Project Development Section Representative will prepare and sign the Completion of and the Certification of Independent Technical Review forms and provide them to the Project Manager for inclusion in the project file.