



REPLY TO
ATTENTION OF
CESAD-PDS-P

DEPARTMENT OF THE ARMY
SOUTH ATLANTIC DIVISION, CORPS OF ENGINEERS
ROOM 9M15, 60 FORSYTH ST., S.W.
ATLANTA, GEORGIA 30303-8801

24 JUL 2009

MEMORANDUM FOR Commander, Jacksonville District (CESAJ-PD/Rebecca Griffith)

SUBJECT: Approval of Peer Review Plan (PRP) for St. Lucie County, Florida, Hurricane and Storm Damage Reduction Study

1. References:

- a. Memorandum, CESAJ-PD, 6 Jul 2009, Subject: Approval of Peer Review Plan (PRP) for the St. Lucie County, Florida, Hurricane and Storm Damage Reduction Study Feasibility Report and EIS
- b. EC 1165-2-209 dated 1 July 2009 (DRAFT), Civil Works Review Policy
- b. EC 1105-2-410 Review of Decision Documents, 22 August 2008.
- c. CECW-CP Memorandum, 30 March 2007, subject: Peer Review Process.
- d. Supplemental information for the "Peer Review Process" Memo, dated March 2007.

2. In accordance with EC 1105-2-410, "Review of Decision Documents," the subject PRP for St Lucie County, Florida, Hurricane and Storm Damage Reduction Study Feasibility Report and Environmental Impact Statement (EIS), have been coordinated with and concurred on by National Hurricane and Storm Damage Reduction Planning Center of Expertise (HSDR-PCX). The plan (enclosure) has been reviewed by this office and is approved.

3. We concur with the conclusion that independent external peer review (IEPR) of this project is required due project cost in excess of \$45,000,000 and due to potential environmental impacts as documented by the need for and Environmental Impact Statement. Other requirements that could lead to a report requiring IEPR are: (1) novel subject matter likely be produced by the report, (2) the report or project deals with controversial subject matter to include but not limited to environmental impacts associated with improvements in the project area, (3) subject matter in the report or on the project would be considered precedent-setting, (4) interagency interest is significant, and (5) there are significant environmental or social effects to the nation. In addition to the cost threshold over \$45,000,000 this study, and potential project, will likely require IEPR in compliance with item number 2) as an Environmental Impact Statement is being required for this study. The PRP complies with all applicable policy and provides for adequate agency technical review (ATR) of the plan formulation, engineering, and environmental analyses, and

24 JUL 2009

CESAD-PDS-P

SUBJECT: Approval of Peer Review Plan (PRP) for St. Lucie County, Florida, Hurricane and Storm Damage Reduction Study

other aspects of the plan development. Non-substantive changes to this PRP do not require further approval.

4. The district should take steps to post the PRP to its web site and provide a link to the HISDR-PCX for their use. Before posting to the web site the names of Corps/Army employees should be removed in accordance with reference I.d. above.

5. The SAD point of contact is Mr. Terry Stratton, CESAD-PDS-P.

FOR THE COMMANDER:



WILBERT V. PAYNES
Chief, Planning and Policy
Community of Practice

CF:
CENAD-PSD-P



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

REPLY TO
ATTENTION OF

CESAJ-PD

JUL 06 2009

MEMORANDUM FOR CHIEF, PLANNING DIVISION, SOUTH ATLANTIC DIVISION

SUBJECT: Approval of the Review Plan (RP) for the St. Lucie County, Florida, Hurricane and Storm Damage Reduction Study Feasibility Report and EIS

1. Reference: EC 1105-2-410, Review of Decision documents, 22 August 2008.
2. I hereby request approval of the enclosed subject Review Plan and concurrence with the conclusion that external peer review of this project is necessary because it triggers criteria provided in the above reference. The RP has been coordinated with and concurred by the National Planning Center of Expertise for Coastal Storm Damage Reduction (PCX-CSDR). The RP complies with all applicable policies and provides an adequate agency technical review of the plan formulation, engineering, environmental analyses, other aspects of the plan development and also for independent external peer review. It is our understanding that non-substantive changes to this RP, should they become necessary, are authorized by CESAD.
3. The District will post the CESAD-approved Final RP to its web site and provide a link to the PCX for their use.
4. The SAJ point of contact is James M. Baker, CESAJ Review Coordinator, Planning Division, CESAJ-PD-PW, (904) 232-2698.

Encl


REBECCA S. GRIFFITH, Ph.D, PMP
Chief, Planning Division

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DEPARTMENT OF THE ARMY
NORTH ATLANTIC DIVISION, CORPS OF ENGINEERS
FORT HAMILTON MILITARY COMMUNITY
BROOKLYN, NY 11222-8700

REPLY TO
ATTENTION OF

CEPCX-CSDR

20 Jul 2009

MEMORANDUM FOR: Chief, CESAJ-PD-PW, Attention: Mr. Jim Baker

SUBJECT: St. Lucie County, FLA Feasibility Study Review Plan

1. The National Planning Center of Expertise for Coastal Storm Damage Reduction (PCX-CSDR) has reviewed the Review Plan (RP) for the subject study and concurs that the RP complies with current peer review policy requirements contained in EC 1165-2-410, entitled "Review of Decision Documents", dated 22 August 2008.
2. The review was performed by Mr. J B Smith, CENAP-PL-PC.
3. PCX-CSDR recommends the RP for approval by the Commander, South Atlantic Division. Upon approval of the RP, please provide a copy of the approved RP, a copy of the SAD Commander Approval memorandum and the link to where the RP is posted on the SAJ or SAD website to Mr. Smith.
4. Thank you for the opportunity to assist in the preparation of the RP. PCX-CSDR is prepared to continue coordinating with the PDT. For further information, please contact me at (917) 613-3873 or Mr. Larry Cocchiarri at 718-765-7071.

Encl

JOSEPH R. VIETRI
Director, National Planning Center of
Expertise for Coastal Storm Damage
Reduction

REVIEW PLAN

ST. LUCIE COUNTY, FLORIDA, HURRICANE AND STORM DAMAGE REDUCTION STUDY

Feasibility Report and EIS

U.S. ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT

July 2009

THE INFORMATION CONTAINED IN THIS REVIEW PLAN IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PREDISSEMINATION 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** ®

REVIEW PLAN

**ST. LUCIE COUNTY, FLORIDA,
HURRICANE AND STORM DAMAGE REDUCTION
STUDY
Feasibility Report and EIS**

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This stand-alone Review Plan defines the scope and level of peer review for the St. Lucie County, Florida, Hurricane and Storm Damage Reduction Study Feasibility Report.

b. References

- (1) Engineering Circular (EC) 1105-2-410, Review of Decision Documents, 22 Aug 2008
- (2) EC 1105-2-407, Planning Models Improvement Program: Model Certification, 31 May 2005
- (3) Engineering Regulation (ER) 1110-2-12, Quality Management, 30 Sep 2006
- (4) Project Management Plan, ST. Lucie County, Florida, Hurricane and Storm Damage Reduction Study
- (5) EC 1165-2-209 dated 1 Jul 2009, CIVIL WORKS REVIEW POLICY
- (6) OMB Bulletin M-05-03 dated December 16, 2004

c. Requirements. This review plan was developed in accordance with ECs 1105-2-410 and 1165-2-209, which establish the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) projects, through independent review. The ECs outline three levels of review for planning studies: District Quality Control, Agency Technical Review, and Independent External Peer Review. In addition to these three levels of review, decision documents are subject to policy and legal compliance review and, if applicable, safety assurance review and model certification/approval.

- (1) District Quality Control (DQC). DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the study, including contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices and the recommendations before approval by the District Commander. The Major Subordinate Command (MSC)/District quality management plans address the conduct and documentation of this fundamental level of review; DQC is not addressed further in this review plan.
- (2) Agency Technical Review (ATR). ATR is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of the project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assure that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC.
- (3) Independent External Peer Review (IEPR). IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. IEPR is generally for feasibility and reevaluation studies and modification reports with Environmental Impact Statements (EIS). IEPR is managed by an outside

eligible organization (OEO) that is described in Internal Revenue Code Section 501(c) (3), is exempt from Federal tax under section 501(a), of the Internal Revenue Code of 1986; is independent; is free from conflicts of interest; does not carry out or advocate for or against Federal water resources projects; and has experience in establishing and administering IEPR panels. The scope of review will address all the underlying planning, engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the project.

- (4) Policy and Legal Compliance Review. Decision documents will be reviewed throughout the study process for their compliance with law and policy. These reviews culminate in Washington-level determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the Chief of Engineers. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100, Planning Guidance Notebook. When policy and/or legal concerns arise during DQC or ATR that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from the MSC and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1105-2-100. IEPR teams are not expected to be knowledgeable of Army and administration policies, nor are they expected to address such concerns. The home district Office of Counsel is responsible for the legal review of each decision document and signing a certification of legal sufficiency.
- (5) Safety Assurance Review. In accordance with Section 2035 of Water Resources Development Act (WRDA) of 2007, EC 1105-2-410 requires that all projects addressing flooding or storm damage reduction undergo a safety assurance review of the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring public health, safety, and welfare. A future circular will provide a more comprehensive Civil Works Review Policy that will address the review process for the entire life cycle of a Civil Works project. That document will address the requirements for a safety assurance review for the Pre-Construction Engineering Phase, the Construction Phase, and the Operations Phase. The decision document phase is the initial design phase; therefore, EC 1105-2-410 requires that safety assurance factors be considered in all reviews for decision document phase studies.
- (6) Model Certification/Approval. EC 1105-2-407 requires certification (for Corps models) or approval (for non-Corps models) of planning models used for all planning activities. The EC defines planning models as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision-making. The EC does not cover engineering models used in planning. Engineering software is being addressed under the Engineering and Construction (E&C) Science and Engineering Technology (SET) initiative. Until an appropriate process that documents the quality of commonly used engineering software is developed through the SET initiative, engineering activities in support of planning studies shall proceed as in the past. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed.

2. STUDY INFORMATION

- a. **Decision Document.** The purpose of this feasibility study is to evaluate the feasibility of a project that provides shoreline protection and reduces storm damages in St. Lucie County, Florida. The study area encompasses approximately 5 miles of Atlantic Ocean shoreline in Southern St. Lucie County, Florida. An Environmental Impact Statement (EIS) will be required. The decision document will require approval from the Assistant Secretary of the Army, Civil Works (ASACW)), and congressional authorization.
- b. **Study Description.** The study area is located along the Atlantic Ocean coastal shoreline of St. Lucie County, Florida. St. Lucie County is located on the east coast of Florida, approximately 225 miles south of Jacksonville and 100 miles north of Miami. The St. Lucie County, Florida shoreline consists of a 25-mile long narrow barrier island, Hutchinson Island. The general project area is comprised of sandy coastal beach with multifamily homes, condominium complexes, associated public and private service facilities, and impervious substrates such as roads and beach access parking lots. The historic dune and beach system, where still intact, supplies some protection to upland development.

This single-purpose coastal storm damage reduction study will consist of reviewing the erosion problems along the Atlantic Ocean shoreline of St. Lucie County, Florida; identifying problem areas; defining specific alternative solutions to problems based on identified needs and physical constraints; identifying environmental, fish and wildlife, and cultural resources in the study area; defining and evaluating alternatives to address problems, preparing construction, operation and maintenance cost estimates for the considered alternatives; computing annual costs and annual benefits (inclusive of incidental recreation benefits) for the various alternatives; evaluating the engineering and economic feasibility of each alternative; assessing environmental impacts of the selected alternative(s) including impacts on biological resources, socioeconomic resources, cultural resources, and land use; determining possible environmental mitigation measures; developing costs for the recommended alternative; and preparing the required documentation to present studies, findings and recommendations.

An initial matrix of alternatives designed to solve the erosion problems in the study area will be developed. The alternatives are to include the no action plan, structural, and non-structural. Structural alternatives may include breakwaters, seawalls, and revetments while non-structural alternatives may include beach renourishment and nearshore disposal of beach quality material. Intermediate Alternatives shall include measures to mitigate effects on environmental resources, if necessary.

- c. **Study Authority.** Resolution Docket 2634 St. Lucie County, Florida Shore Protection dated 11 April 2000 states: “Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That the Secretary of the Army is requested to review the report of the Chief of Engineers for Fort Pierce Beach, Florida, published as House Document 84, 89th Congress, 1st Session, and other pertinent reports with a view to determining if modifications to the recommendations contained therein are advisable at the present time, with particular reference to providing improvements in the interest of shore protection and hurricane and storm damage reduction to the shoreline areas in St. Lucie County in the area north of the Ft. Pierce Inlet, the southern five miles of St. Lucie County, and adjacent shorelines.”

Resolution Docket 2757 St. Lucie County, Florida Shore Protection dated 23 July, 1998 states: “Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That the Secretary of the Army is requested to review the report of the Chief of Engineers for Fort Pierce Beach, Florida, published as House Document 84, 89th Congress, 1st Session, and other pertinent reports with a view to determining if modifications to the

recommendations contained therein are advisable at the present time, with particular reference to providing improvements in the interest of shore protection and hurricane and storm damage reduction to the shoreline areas in St. Lucie County from the current project for Ft. Pierce Beach, Florida southward to the Martin County Line.”

d. The Project Deliver Team (PDT). The Jacksonville District PDT consists of the following:

Technical Discipline
Plan Formulation
Environmental Analysis
Economics
Project Management
Coastal Engineering
Geotechnical
Engineering Design
Cost Engineering
Real Estate

e. Study Sponsor. The non-Federal sponsor for the feasibility phase of the study is St. Lucie County, Florida. St. Lucie County officials understand the requirements of the study including cost-sharing of study costs at 50% Federal and 50% non-Federal. The sponsor will provide their entire share of the study costs as in-kind services. For example, the sponsor will be contracting out a majority of the environmental work, such as environmental surveys and writing the EIS.

f. Coordination and Public Involvement. A minimum of two public information sessions will be held, one near the beginning of the study to inform the general public of study initiation and study goals, and the other near the end of the study to formally present the results of the study. The Government and the Sponsor will conduct the meetings jointly. The Government and/or the Sponsor will prepare fact sheets and information papers as needed. Public information sessions will be designed in a manner, which best provides information to interested and affected publics.

g. In-Kind Contributions. The non-Federal sponsor will be doing in-kind work, including contracting out a majority of the environmental work to a private consulting firm. In-kind contributions to the feasibility report, in addition to Sponsor quality assurance and control, will be treated the same as government-prepared content, subject to the same review processes, described, herein.

3. AGENCY TECHNICAL REVIEW (ATR)

a. General. ATR for decision documents covered by EC 1105-2-410 are managed by the appropriate Planning Center of Expertise (PCX) with appropriate consultation with the allied Communities of Practice such as engineering and real estate. The ATR shall ensure that the product is consistent with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and the results in a reasonably clear manner for the public and decision makers. Members of the ATR team will be from outside the home district. The ATR lead will be from outside the home MSC. The leader of the ATR team will participate in milestone conferences and the Civil Works Review Board (CWRB) to address review concerns.

b. Products for Review.

- (1) FSM Materials
- (2) AFB
- (3) Draft Report/Draft EIS Materials
- (4) Final Feasibility Report/EIS

- c. Required ATR Team Expertise.** The relevant National Planning Center of Expertise, in this case for Coastal Storm Damage Reduction (PCX-CSDR), has ultimate responsibility for accomplishing ATR. The PCX-CSDR is requested to establish an ATR team from outside the District with ATR lead from outside the Division and provide Agency Technical Review of the FSM Materials, AFB Materials, Draft and Final report.

Eight (8) technical disciplines were determined to be appropriate for review of the report including: plan formulation, economics, environmental/NEPA compliance, coastal engineering, design, geotechnical, cost, and real estate. And all should be well-versed in conduct of coastal storm damage reduction studies. Selection and detailed definition of team member qualifications and scope of review will be developed prior to each review.

Also, a Cost Estimating Directory of Expertise (Cost Dx) has been established, at the Corps Walla Walla District (NWW). The draft report cost estimate is also to be reviewed by the Cost Dx. The review team will acquire cost estimation review by the Cost Dx. Cost Dx quality assurance of the MCACES cost estimate review is part of the scope of ATR. Subsequent review of risk analysis, schedule and total project cost, leading to cost certification follows on its own path, concurrent to the Corps report approval process.

- d. Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

- (1) The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not been properly followed;
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in or to then assess whether further specific concerns may exist. The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical coordination, and lastly the agreed upon resolution. The ATR team will prepare a Review Report which includes a summary of each unresolved issue; each unresolved issue will be raised to the vertical team for resolution. Review Reports will be considered an integral part of the ATR documentation and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to HQUSACE for resolution and the ATR documentation is complete. Certification of ATR should be completed, based on work reviewed to date, for the AFB/draft report, and final report.

4. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

a. General. IEPR is conducted for decision documents if there is a vertical team decision (involving the district, MSC, PCX, and HQUSACE members) that the covered subject matter meets certain criteria (described in EC 1105-2-410) where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside the USACE is warranted. IEPR is coordinated by the appropriate PCX and managed by an Eligible Outside Organization (OEO) external to the USACE. IEPR panels shall evaluate whether the interpretations of analysis and conclusions based on analysis are reasonable. To provide effective review, in terms of both usefulness of results and credibility, the review panels should be given the flexibility to bring important issues to the attention of decision makers; however, review panels should be instructed to not make a recommendation on whether a particular alternative should be implemented, as the Chief of Engineers is ultimately responsible for the final decision on a planning or reoperations study. IEPR panels will accomplish a concurrent review that covers the entire decision document and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study. Whenever feasible and appropriate, the office producing the document shall make the draft decision document available to the public for comment at the same time it is submitted for review (or during the review process) and sponsor a public meeting where oral presentations on scientific issues can be made to the reviewers by interested members of the public. An IEPR panel or OEO representative will participate in the CWRB.

b. Factors Affecting Scope and Level of Review.

In order to determine if independent external peer review (IEPR) is warranted for this particular project, an evaluation was conducted of the following triggering factors (primarily from EC 410, Appendix D). Evaluations of individual decision criteria are provided below:

- Is an Environmental Impact Statement required for this study?
An EIS will be required. There is environmentally significant hard bottom habitat in the area. As well, about half of the study area is located in a CBRA zone - Coastal Barrier Resource Area. These areas are designated by US Fish and Wildlife Service to promote the following 3 goals: 1) minimize loss of human life by discouraging development in high risk areas; 2) reduce wasteful expenditure of Federal resources, 3) protect the natural resources associated with coastal barriers. USFWS is the overseeing authority and stated that the Corps can consider nourishment alternatives in the “excluded areas”, but not the CBRA zones.

- Is the report likely to contain influential scientific information or be a highly influential scientific assessment?
No.
- Would a selected plan be likely to pose a significant threat to human life?
Not expected, however: EC 1105-2-410 requires that safety assurance factors be considered for coastal storm damage reduction projects.
- Is total project cost estimated to exceed \$45M. –
It is likely that the estimate, including renourishments, would exceed the cost threshold.
- Requested by affected State Governor?
Not at this time.
- Request by head of a reviewing Federal Agency, if determined likely to have an adverse impact on environmental, cultural, or other resources under his/her jurisdiction (after implementation of proposed mitigation plans)?
No. No unusually significant interagency interest.
- Significant public dispute as to size, nature or effects?
No.
- Significant public dispute as to the economic or environmental cost or benefit?
No, none anticipated at this time.
- Plan based on novel methods, presents complex challenges for interpretation, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices?
No.
- Any other circumstances where the Chief of Engineers determined IEPR is warranted?
No.

c. Decision on IEPR.

As indicated in the above considerations, IEPR is warranted because total project cost is projected to exceed \$45M, and because an EIS is required, both of which trigger the requirement for IEPR.

d. Products for Review. The draft feasibility report and EIS will be subjected to IEPR concurrently with public review of the draft report/EIS that occurs as part of NEPA compliance.

e. IEPR Panel. IEPR will be conducted by a panel of reviewers that will be selected by an outside eligible organization (OEO) as defined in Section 2035(l) Definitions of WRDA 2007. The IEPR will address all the underlying planning, safety assurance, engineering, economic, and environmental analyses. Sponsor in-kind contributions will be integrated into the report and will be treated the same as government-prepared content. It is initially envisioned the panel will be composed of 5 members. It is anticipated that the IEPR team will be comprised of individuals from technical disciplines that were significant in the preparation of the report. Technical disciplines determined to be appropriate for this review include: Plan Formulation, Economics, Coastal Ecology/Biology, Coastal Engineering, and Geotechnical Engineering. The IEPR will address both government and sponsor prepared content. Any public input by the time of the review will be provided. The Jacksonville

District and Sponsor may nominate 1-2 persons to be considered for inclusion on the IEPR panel. At this time it is not anticipated that the public will be asked to nominate potential peer reviewers. The PCX will use contracting instruments to determine IEPR members and manage the IEPR process. The PCX will manage the IEPR contract. The contracted organization will accomplish the IEPR for the PCX. Contractor management tasks will include identifying, contacting, and selecting reviewers; preparing scopes of work and procuring contracts with reviewers; compiling review comments, compiling District/Sponsor response to comments and compiling comments and responses into an IEPR Report. The PCX will follow EC-1105-2-410 in managing the IEPR contract. DrChecks will be employed to document comments and responses. The review will be documented in a review report. Additionally, the PCX is directed to consider, relative to panel selection, that scientific assessments in this report are not considered “highly influential”, according to definition in OMB Bulletin M-05-03 dated December 16, 2004. This may be taken into consideration when consideration in determining the number and level of expertise of the reviewers.

- f. Documentation of IEPR.** DrChecks review software will be used to document IEPR comments and aid in the preparation of the Review Report. Comments should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 3. The OEO will be responsible for compiling and entering comments into DrChecks. The IEPR team will prepare a Review Report that will accompany the publication of the final report for the project and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the IEPR panel no later than 60 days following the close of the public comment period for the draft decision document. The report will be considered and documentation prepared on how issues were resolved or will be resolved by the District Commander before the district report is signed. The recommendations and responses will be presented to the CWRB by the District Commander with an IEPR panel or OEO representative participating, preferable in person.

5. MODEL CERTIFICATION AND APPROVAL

- a. General.** The use of certified or approved models for all planning activities is required by EC 1105-2-407. This policy is applicable to all planning models currently in use, models under development and new models. The appropriate PCX will be responsible for model certification/approval. The goal of certification/approval is to establish that planning products are theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. The use of a certified or approved model does not constitute technical review of the planning product. Independent review of the selection and application of the model and the input data and results is still required through conduct of DQC, ATR, and, if appropriate, IEPR. Independent review is applicable to all models, not just planning models. Both the planning models (including the certification/approval status of each model) and engineering models used in the development of the decision document are described below:

b. Planning Models. The following planning models are anticipated to be used:

- **Beach-*fx*– Certified - Beach-*fx*** is a data driven economics model which will assist in evaluating and analyzing the benefits and life cycle costs of hurricane protection and storm damage reduction projects. It is a Corps-developed national model that does not require certification specific to this individual project.
- **IWR Plan – Certified - The US Army Corps of Engineers Institute for Water Resources** has developed IWR Planning Suite Decision Support Software to assist with the formulation and comparison of alternative plans. IWR Planning Suite will assist with plan formulation by combining solutions to planning problems and calculating the additive effects of each combination, or “plan.” IWR Planning Suite will also assist with plan comparison by conducting cost effectiveness and incremental cost analyses (CE/ICA), identifying the plans which are the best financial investments, and displaying the effects of each on a range of decision variables.
- **Mitigation models – UMAM and/or HEA - The Habitat Equivalency Analysis (HEA) Model** produced by NOAA. The Florida state required Uniform Mitigation Assessment Method (UMAM). One, or both, will require approval for use. This should be incorporated into the scope of ATR of the draft report.

c. Engineering Models. The following engineering models are anticipated to be used:

- **GENESIS modeling - The GENERALized Model for SIMulating Shoreline Change (GENESIS)** model (Hanson and Kraus, 1989) will be used to model the shoreline changes and sediment transport quantities and with and without project improvements, for this study. GENESIS provides a numerical method for determining long term shoreline change on an open coast in response to spatial and temporal differences in longshore sediment transport. The model can be calibrated to site specific conditions which are defined by shoreline surveys, sediment budget analyses, wave conditions, offshore bathymetry, coastal armoring, beach fills, and offshore breakwaters.
- **STWAVE - The STWAVE** model is a two dimensional numerical wave transformation model that will be used to evaluate the wave climate in and around the project area, including the borrow site. Model runs will include both with and without project conditions. Model results will be used in the assessment of nearshore sediment processes associated with project fill alternatives and in the evaluation of nearshore impacts due to borrow site excavation.
- **SBeach - SBEACH** is a geomorphic-based numerical simulation model for predicting beach, berm and dune erosion due to storm waves and water levels. SBEACH will be applied to this coastal projects to: determine storm-induced beach response as a function of storm intensity for existing profile conditions; evaluate beach fill design alternatives; and, in conjunction with a site-specific runoff and overtopping module, predict dune/seawall/revetment overtopping rates.

6. REVIEW SCHEDULES AND COSTS

a. ATR Schedule and Cost.

(1) ATR Schedule

- (a) FSM Materials ATR - Aug 2010
- (b) AFB Materials ATR– Aug 2011
- (c) Draft Feasibility Report &EIS ATR - Jan 2012
- (d) Final Feasibility Report & EIS ATR - Dec 2012

(2) ATR Cost - See Section 10, below.

- b. IEPR Schedule and Cost.** IEPR will be conducted concurrently with public review of the draft report. It is currently scheduled for January, 2012 and expected to cost approximately \$150K, in rough order of magnitude.
- c. Model Certification/Approval Schedule and Cost.** Mitigation models, UMAM and HEA will be evaluated, by the PCX, for approval for use as part of ATR of the draft report. For cost estimate, see section 10, below. The models will be reviewed for of technical soundness, theory, computational correctness, technical quality, useability and system quality, in compliance with EC 1105-2-407. The review will be performed by a team outside of the Jacksonville District, and the team leader will be outside of the South Atlantic Division, to insure independence of the team. This is being done as part of the Corps of Engineers Planning Models Improvement Program, established in 2003, that is intended to assure that high quality methods and tools are utilized in planning studies.

7. PUBLIC PARTICIPATION

A minimum of two public information sessions will be held, one near the beginning of the study to inform the general public of study initiation and study goals, and the other near the end of the study to formally present the results of the study. The Government and the Sponsor will conduct the meetings jointly. The Government and/or the Sponsor will prepare fact sheets and information papers as needed. Public information sessions will be designed in a manner, which best provides information to interested and affected publics. Significant and relevant public comments, as they become available, will be incorporated into report iterations and provided to ATR IEPR reviewers

8. CONSOLIDATED SCHEDULE

- FSM Materials ATR – Aug 2010
- AFB Materials ATR – Aug 2011
- Mitigation Models Approval for use – Aug 2011
- Draft Feasibility Report/EIS Public/Agency Review – Jan 2012
- Draft Feasibility Report/EIS IEPR – (concurrent with public review) Jan 2012
- Final Feasibility Report/EIS ATR – Dec 2012

9. CONSOLIDATED COSTS

- FSM Materials ATR – \$25K
- AFB Materials ATR - \$30K
- Draft Feasibility Report & EIS ATR – \$40K
- Mitigation Models Approval for Use (cost included in item above)
- Draft Report/EIS IEPR – \$150K
- Final Report/EIS ATR – \$25K

10. PCX COORDINATION

Review plans for decision documents and supporting analyses outlined in EC 1105-2-410 are coordinated with the appropriate Planning Center(s) of Expertise (PCXs) based on the primary purpose of the basic decision document to be reviewed. The lead PCX for this study is the Planning Center of Expertise for Coastal Storm Damage Reduction, PCX-CSDR.

Also, a Cost Estimating Directory of Expertise (Cost Dx) has been established, at the Corps Walla Walla District (NWW). The draft report cost estimate is also to be reviewed by the Cost DX. The PCX-CSDR is responsible for coordination with the Cost DX.

11. CORPS DIVISION/MSC APPROVAL

The MSC that oversees the home district is responsible for approving the review plan. Approval is provided by the MSC Commander. The commander's approval should reflect vertical team input (involving district, MSC, PCX, and HQUSACE members) as to the appropriate scope and level of review for the decision document. The Corps South Atlantic Division (SAD) is the MSC-level approving authority for this review plan.

Like the PMP, the RP is a living document and may change as the study progresses. Changes to the RP should be approved by following the process used for initially approving the RP. In all cases the MSC will review the decision on the level of review and any changes made in updates to the project.

12. REVIEW PLAN POINTS OF CONTACT

Questions and/or comments on this review plan can be directed to the following points of contact:

- Jacksonville District Review Manager, 904-232-2698
- Jacksonville District Project Manager, 904-232-3618
- South Atlantic Division Point of Contact, 404-562-5228
- Coastal Storm Damage Reduction National Center of Expertise (PCX-CSDR), 718-765-7071