



DEPARTMENT OF THE ARMY

MISSISSIPPI VALLEY DIVISION, CORPS OF ENGINEERS

P.O. BOX 80

VICKSBURG, MISSISSIPPI 39181-0080

REPLY TO
ATTENTION

CEMVD-PD-N

7 Oct 2010

MEMORANDUM FOR Commander, New Orleans District

SUBJECT: Review Plan Approval for Southeast Louisiana Urban Flood Control Project, Algiers Subbasin, Orleans Parish, Louisiana, Section 533(d) Report

1. References:

a. Memorandum, CEMVD-DE, 16 Mar 10, subject: Request for Deferral of Independent External Peer Review for Southeast Louisiana Project (SELA), Slidell W-14 Drainage Canal Improvements Section 533(d) Report and Algiers Subbasin Section 533(d) Report.

b. Memorandum, CESPDPDS-P, 9 Aug 10, subject: Southeast Louisiana Urban Flood Control Project, Algiers Subbasin, Orleans Parish, Louisiana, Section 533(d) Report Review Plan.

c. Memorandum, CEMVN-PM-OP, 8 Sep 10, SAB.

d. Memorandum, CECW-MVD, 28 Sep 10, subject: Request for Deferral of Independent External Peer Review for Southeast Louisiana Project (SELA), Slidell W-14 Drainage Canal Improvements Section 533(d) Report and Algiers Subbasin Section 533(d) Report.

2. I hereby approve subject Review Plan (RP) and concur in the conclusion for conducting a modified Type II Independent External Peer Review per guidance in reference 1.a. The proposed RP has been coordinated with the Flood Risk Management Center of Expertise (FRM-PCX), and their concurrence for approval is reference 1.b. The RP has further been coordinated with HQUSACE through the MVD Regional Integration Team, per guidance in reference 1.b, with concurrence provided in reference 1.d.

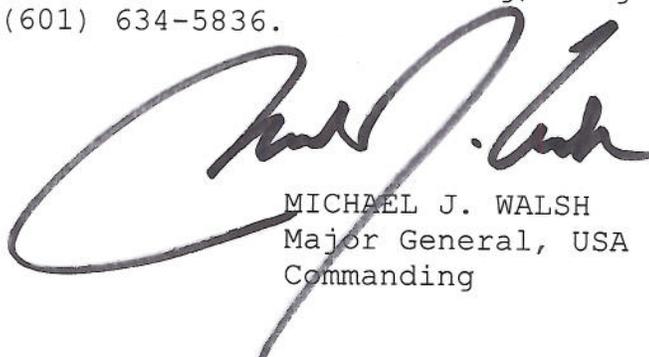
CEMVD-PD-N

SUBJECT: Review Plan Approval for Southeast Louisiana Urban
Flood Control Project, Algiers Subbasin, Orleans Parish,
Louisiana, Section 533(d) Report

3. The District should take steps to post the RP to its website
and to provide a link to the FRM-PCX for their use.

4. Point of contact is Mr. Brian Chewning, Program Manager,
CEMVD-PD-N, at (601) 634-5836.

4 Encls

A large, stylized handwritten signature in black ink, appearing to read "Michael J. Walsh". The signature is written over the typed name and title.

MICHAEL J. WALSH
Major General, USA
Commanding



DEPARTMENT OF THE ARMY
MISSISSIPPI VALLEY DIVISION, CORPS OF ENGINEERS
P.O. BOX 80
VICKSBURG, MISSISSIPPI 39181-0080

REPLY TO
ATTENTION OF:

16 June 2010

CEMVD-DE

MEMORANDUM FOR Commander, New Orleans District

SUBJECT: Request for Deferral of Independent External Peer Review for Southeast Louisiana Project, Slidell W-14 Drainage Canal Improvements Section 533(d) Report and Algiers Subbasin Section 533(d) Report

1. I approve your enclosed request to process subject reports to MVD for approval prior to completion of independent external peer review (IEPR).
2. In reference to EC 1165-2-209, dated 31 January 2010 and taking into consideration WRDA 1996 Section 533(d) authorization, a modified Type II IEPR shall be conducted to focus on safety assurance review and that validates the results of subject reports to ensure the projects are technically sound, environmentally acceptable, and economic, as applicable, and is in accordance with the original reconnaissance reports cited in statute.
3. Any questions should be directed to Mr. Brian Chewning at (601) 634-5836.

Encl

A large, handwritten signature in black ink, appearing to read "Michael J. Walsh".

MICHAEL J. WALSH
Brigadier General, USA
Commanding



REPLY TO
ATTENTION OF

CEMVN-PM-OP

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

08 SEP 2010

MEMORANDUM THRU Commander, Mississippi Valley Division (CEMVD-PD-N)

FOR Commander, HQUSACE (CECW-MVD), WASH DC 20314

SUBJECT: Review Plan Approval for Southeast Louisiana Urban Flood Control Project,
Algiers Subbasin, Orleans Parish, Louisiana Section 533(d) Report

1. The enclosed Review Plan for the Southeast Louisiana Urban Flood Control Project, Algiers Subbasin, Orleans Parish, Louisiana Section 533(d) Report (Enclosure 1) has been prepared in accordance with EC 1165-2-209.
2. The Review Plan has been coordinated with the Flood Risk Management Center of Expertise (FRM-PCX). The enclosed FRM-PCX memorandum dated 9 August 2010 (Enclosure 2) recommends approval of the Review Plan.
3. Due to the request for a modified Type II IEPR, the FRM-PCX recommends the Review Plan be submitted to HQUSACE through the MVD RIT for endorsement prior to final approval by the MSC Commander.
4. MVN requests approval of the Review Plan.

2 Encls

EDWARD R. FLEMING
Colonel, EN
Commanding

REVIEW PLAN

Southeast Louisiana Urban Flood Control Project, Algiers Subbasin, Orleans Parish, Louisiana Section 533(d) Report

New Orleans District

July 2010



**US Army Corps
of Engineers®**

Enclosure 1

REVIEW PLAN

Southeast Louisiana Urban Flood Control Project, Algiers Subbasin, Orleans Parish, Louisiana Section 533(d) Report

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1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Southeast Louisiana Flood Control Project, Algiers Subbasin, Orleans Parish, Louisiana, Section 533(d) Report as designated in EC 1165-2-209.

b. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- (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, Hurricane Protection System, Southeast Louisiana Urban Flood Control, Protection and Restoration Office.

c. **Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision documents through independent review. The EC outlines three levels of review: 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 assures that all the parts fit together in a coherent whole. ATR teams will comprise 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 (EISs). 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 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 1165-2-209 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. Appendix E of EC 1165-2-209 addresses 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 1165-2-209 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 address 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.** A Section 533(d) Report has been prepared as the decision document for the Southeast Louisiana Urban Flood Control Project, Algiers Subbasin, Orleans Parish, Louisiana. The Southeast Louisiana Project (SELA) was authorized by the Fiscal Year 1996 Energy and Water Development Appropriations Act, Public Law 104-46 (Section 108), and the Water Resources Development Act (WRDA) of 1996, Public Law 104-303 (Section 533). Section 533 authorized SELA projects for construction without preparation of a feasibility report. Section 533 requires that the plan must be shown to be “technically sound, environmentally acceptable, and economic, as applicable.” The study is a single-purpose flood damage reduction study. The purpose of the study was to investigate rainfall flooding problems in the Algiers Subbasin in Orleans Parish, on the west bank of the Mississippi River; to develop a plan that was consistent with the recommendation of the July 1992 Jefferson and Orleans Parishes, Louisiana, reconnaissance study; and to determine whether the proposed plan met the requirements of Section 533(d) of WRDA 1996. This Section 533(d) report provides the detailed findings of investigations to determine the feasibility of implementing improvements for flood damage reduction in the Algiers Subbasin in Orleans Parish, Louisiana. The report includes the Environmental Assessment, Real Estate Supplement, Engineering Appendix, micro-computer aided cost estimating system (MCACES) cost estimate, and Economics Appendix. The decision document will be approved by MVD or HQUSACE. The decision document does not require Congressional authorization.
- b. **Study Description.** The study area is located in an unincorporated area in Orleans Parish, Louisiana, and lies east of the City of New Orleans on the west descending bank of the Mississippi River, and comprises approximately 6500 acres. It is bounded on the west and north sides by the Mississippi River, on the east by the Algiers Navigation Canal, and on the south by the Donner Outfall Canal/ Orleans-Jefferson Parish boundary. The Algiers Subbasin comprises 6,500 acres of urban development that is under a wide spectrum of drainage facilities. These include open roadside ditches, curbs and gutters, drop-inlets and sub-surface drains, open earthen channels, and concrete lined flume sections. The major canals are the Algiers Outfall Canal, the Donner Canal, the Victory Parkway Canal, the Nolan Canal, the Norman Canal and the Magellan Canal. The Megellan Canal and a major portion of the Norman Canal are concrete lined flumes. Major subsurface reinforced concrete box culverts (RCBC) are in the Huntlee, Eton and Whitney systems. The Algiers, Donner, Nolan and a portion of Norman are grass lined open channels that are the heart of the system. The Victory Parkway channel is stone and earth lined. The Donner Canal is the major collector and discharges at Drainage Pump Station (DPS) No. 13. The Algiers area is subject to heavy rain storms, the effects of hurricanes, and spring floods that periodically threaten homes and businesses, requiring drainage measures to reduce potential damages. The project includes improving approximately 41,000 linear feet of the Algiers Canal, the Donner Canal, and the Nolan Canal, and the extension of the Algiers canal along General Degaulle Boulevard; improving approximately 9,500 linear feet of subsurface drainage to Lang Street, Eton Street culvert, Sandra Drive, Indiana Street, Holiday Drive and Memorial Park Drive, and providing an additional 1800 cfs pumping capacity at DPS No. 13. The subsurface drainage additions are composed of new concrete box culverts and large catchment facilities to assist in the rapid removal of accumulating water and delivery of the water through high banks to open canals. The Algiers, Donner and Nolan canals are open and convey water to the DPS No. 13. The estimated cost for this project is approximately \$300 million. The non-Federal sponsor will be the Coastal Protection and Restoration Authority of Louisiana.
- c. **Factors Affecting the Scope and Level of Review.** Although no EIS was prepared for the proposed project, an IEPR is necessary because the estimated implementation cost exceeds the \$45,000,000 threshold indicated in EC 1165-2-209.

- The type of work being completed in this study is routine work for the New Orleans District. The PDT did not encounter any challenging aspects or out of the ordinary work while preparing and completing this study.
 - Preliminary Assessment of Project Risks. St. Paul District is currently working with the PDT in developing a cost and schedule risk analysis of the Algiers Subbasin recommended plan. The PDT identified the following items that have a greater risk of impacting the project cost and schedule: identifying and relocating all underground utilities affected by the project; acquiring necessary property from private land owners; obtaining construction funds; and having labor resources required for design and construction.
 - The study utilized standard methods of analysis to investigate rainfall flooding problems, and construction would employ conventional techniques. The report is not considered to contain influential scientific information or assessments.
 - The project is not likely to have significant economic, environmental, or social effects to the Nation. The project will not require an Environmental Impact Statement. An Environmental Assessment was prepared for the report. The costs and benefits of the project are typical of other flood damage reduction projects, and the environmental effects will be minimized or mitigated. The project does not have any cultural, historical or tribal impacts.
 - The project is not likely to have significant interagency interest. Initial interagency discussions suggest that involvement by other agencies will not be unusually significant.
 - The study investigated means of reducing the risk associated with damages due to rainfall flooding. The threat to human life associated with the events for which the project is designed is minimal, and failure of the project would result in no significant increase in threat to human life.
 - The project is not considered to be controversial. It provides a reduction in flood damages in an area subject to repetitive flooding; negative environmental impacts are relatively small due to the high degree of development in most of the project area, and mitigation will be provided for unavoidable impacts. Some resistance from residents in the immediate vicinity of construction might be anticipated, but such resistance is not considered likely to push the project to a point of being “highly controversial.”
 - As has been noted, the study utilized standard methods of analysis to investigate rainfall flooding problems. The report is not based on novel methods, nor does it contain any precedent-setting methods or present conclusions likely to change prevailing practices.
- d. **In-Kind Contributions.** The local sponsor provided in-kind services for the planning and design of the recommended plan presented in the draft Algiers 533(d) report. Local sponsor efforts included H&H modeling, structural design, development of the relocation plan, and geotechnical investigations. The expected in-kind contributions to be provided by the sponsor during design and construction are those attributed to the lands, easements, relocations, rights-of-way, and disposal (LERRDS), engineering and design, and construction of bridge culverts along the Algiers Canal paralleling General Degaulle Drive. MVN reviewed and approved in-kind contributions for the 533(d) report and will provide peer review, DQC and ATR of in-kind contributions during design and construction. Design and construction in-kind contributions are subject to audit.

3. AGENCY TECHNICAL REVIEW (ATR)

- a. **General.** ATR for decision documents covered by EC 1165-2-209 is 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. The lead PCX is responsible for identifying the ATR team. Candidates will not be nominated by the home district or MSC. 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 to address review concerns.
- b. **Products for Review.** The products that were reviewed through a technical review are portions of the Engineering Appendix. The MCACES cost estimate was prepared by St. Paul District. The technical review of the MCACES cost estimate was performed by the New Orleans District. The Hydraulics and Hydrology and Structural Appendices were prepared by the local sponsor. The technical reviews of the designs were performed by the New Orleans District. These reviews were conducted largely prior to establishment of guidance for an ATR. An ATR is required for the draft 533(d) report.
- c. **Required ATR Team Expertise.**

Economics: Team member should have extensive experience in similar flood damage reduction projects and has a thorough understanding of HEC-FDA

Environmental: Team member should have extensive experience in NEPA requirements, cultural resources, recreational resources, and HTRW.

Project Management: Team member is familiar with watershed level projects, current flood damage reduction planning, and policy guidance and has experience in plan formulation.

Hydraulic Engineering: Team member is an expert in the field of urban hydrology and hydraulics, has a thorough understanding of the dynamics of open channel flow systems and enclosed systems, and has an understanding of computer modeling techniques used for this project.

Cost Engineering: Team member is familiar with cost estimating for similar projects using MCACES.

Geotechnical Engineering: Team member should have a thorough understanding of soils and soils analysis.

Civil Engineering: Team member should have experience in utility relocations, internal drainage construction, projects engineering, and operations.

Mechanical Engineering: Team member is familiar with pump station and closure structure design.

Real Estate: Team member should have extensive experience in acquisition and leasing, including right-of-way issues and appraisals.

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 and 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. A sample certification is included in ER 1165-2-209.

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 1165-2-209) 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 Outside Eligible 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 planning, safety assurance, 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.

- b. **Decision on IEPR.** Although no EIS was prepared for the proposed project, an IEPR is necessary because the estimated implementation cost exceeds the \$45,000,000 threshold for the IEPR requirement as indicated in EC 1165-2-209. Per CEMVD Memorandum dated March 16, 2010, Subject: Request for Deferral of Independent External Peer Review for Southeast Louisiana Project, Slidell W-14 Drainage Canal Improvements Section 533(d) Report and Algiers Subbasin Section 533(d) Report, a modified Type II IEPR shall be conducted to focus on safety assurance review and that validates the results of subject reports to ensure that projects are technically sound, environmentally acceptable, and economic, as applicable, and is in accordance with the original reconnaissance reports cited in statute.
- c. **Products for Review.** The products to be reviewed are the Design Document Reports (DDR) for the seven contracts listed in the Algiers Subbasin 533(d) report (1. General Degaulle Canal, Wall Blvd to Algiers Outfall; 2. General Degaulle Canal, Algiers Outfall to Nolan; 3. Donner Canal, DPS 13 to Algiers Outfall; 4. Donner Canal, Algiers Outfall to Magellan; 5. DPS#13; 6. Nolan Canal; and 7. Algiers Outfall Canal). The 533(d) report will be provided as a reference for review of the DDRs.
- d. **Required IEPR Panel Expertise.** The IEPR Panel will consist of three reviewers. The District will not nominate IEPR candidates. There will not be public nominations of IEPR reviewers. Reviewers will be required for the following disciplines:

Engineering. Team member should have experience in: urban hydrology and hydraulics, with an understanding of open channel flow systems and relevant computer modeling techniques; geotechnical engineering; design of features such as pump stations and water control structures; cost estimating techniques; and safety assurance.

Economics. Team member should have extensive experience in related flood damage reduction projects, and have a thorough understanding of HEC-FDA

Environmental. Team member should have extensive experience in NEPA requirements and be familiar with issues concerning cultural resources, recreational resources, and HTRW.

- e. **Documentation of IEPR.** DrChecks review software will be used to document IEPR comments and aid in the preparation of the Review Report. Comments shall be conducted to focus on safety assurance review and validate the result of the decision document to ensure the project is technically sound, environmentally acceptable, and economic, as applicable, as in accordance with the original reconnaissance report cited in statute. 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 one week after the final briefing. The report will be considered and documentation prepared on how issues were resolved or will be resolved by the District Commander. IEPR comments and responses pertaining to the design and construction activities shall be summarized in a report, posted on the home district website for review prior to approval by the MSC.

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 were used:

Economic Damage Models

The Hydrologic Engineering Center Flood Damage Analysis (HEC-FDA 1.2.4b) computer program was utilized to evaluate flood damages using risk-based methods. This program is used to quantify the uncertainty in discharge-exceedance probability, stage-discharge, and stage-damage functions and assimilates that uncertainty into the economic and engineering performance analyses of alternatives. Monte Carlo simulation is used to compute the expected value of damage while explicitly accounting for the uncertainty in economic and hydraulic parameters used to determine flood inundation damages. The analysis considered a range of possible values, with a maximum and a minimum value for each economic variable used to calculate the elevation- or stage-damage curves, and for each hydrologic/hydraulic variable used to calculate the stage-frequency curves. It also considered a probability distribution for the likely occurrence of any given outcome within the specified range. The HEC-FDA program used Monte Carlo simulation to derive the possible occurrences of each variable. Randomly generated numbers were used to simulate the occurrences of selected variables from within the established ranges and distributions. In order to use this program the inherent uncertainty associated with each of the key hydrologic/hydraulic and economic variables in the analysis was quantified.

Environmental Models for Habitat Evaluation or Mitigation Planning

Wetland Value Assessment for Bottomland Hardwoods – The Wetland Value Assessment (WVA) was used to address the positive and negative impacts of the area as a result of the project and to identify mitigation actions to compensate for unavoidable project impacts. The WVA is a modification of the Habitat Evaluation Procedures (HEP) developed by the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 1980). Habitat quality and quantity are

measured for baseline conditions and predicted for future without-project and future with-project conditions.

c. Engineering Models. The following engineering models were used:

Micro Computer Aided Cost Estimating System (MCACES). MCACES MII 3.0 was used to prepare the cost estimate for the project. MII provides an integrated cost estimating system (software and databases) that meets the USACE requirements for preparing cost estimates.

Cost and Schedule Risk Analysis (CSRA). In compliance with Memorandum CECW-CE(1110), dated 3 July 2007, from Major General Don T. Riley, a formal risk analysis study was conducted for the development of contingency on the total project cost. The purpose of the risk analysis study was to establish project contingencies by identifying and measuring the cost and schedule impact of project uncertainties with respect to the estimated total project cost. The risk analysis process uses *Monte Carlo* techniques to determine probabilities and contingency. The *Monte Carlo* techniques are facilitated computationally by a commercially available risk analysis software package (Crystal Ball) that is an add-in to Microsoft Excel. The cost estimates were developed in an MII 3.0 (MCACES) format, and information was extracted into Microsoft Excel for cost risk analysis purposes.

XP-SWMM. The eXPert Stormwater Management Model (XP-SWMM) computer software program, Version 1.44, July 1995, as developed by XP Software Inc., was used for the Hydrologic and Hydraulic investigation. Hydrologic and hydraulic data was converted from the original Stormwater Management Model (SWMM), as set up for the Master Plan for Orleans Parish Drainage Improvements, into the XP-SWMM program. The comprehensive version of SWMM uses a digital computer to simulate actual or hypothetical storm events on the basis of rainfall inputs, catchment characterization, and conveyance system characterization to predict results in the form of quantity hydrographs. In addition to the SWMM capabilities, the XP-SWMM program can quantify the amount of surcharge and/or above ground flooding. The XP-SWMM simulates the complete hydrologic cycle in urban watersheds. Beginning with single or multiple rainfall events and dry weather flows, it models flows through collection, conveyance and treatment systems to the final outfalls. The program was used for unsteady flow analysis to evaluate the future without- and with-project conditions for the Algiers Subbasin.

6. REVIEW SCHEDULES AND COSTS

- a. ATR Schedule and Cost.** An Agency Technical Review is required for the draft 533(d) report. An ATR team was established in February 2010 to review the draft report, including Engineering, Economic, and Environmental Appendices. The estimated cost for the review is \$65,000.

| Task | Duration | Estimated Completion |
|--|-----------------|-----------------------------|
| Submit Draft Report to PCX for ATR | | Feb 10 |
| ATR performed on Draft Report | 2 months | Apr 10 |
| Resolve ATR Comments and backcheck Comments | 2 months | Jul 10 |

b. IEPR Schedule and Cost. The estimated cost for the IEPR is \$200,000. A Type II IEPR will be conducted for each contract.

1. PED/Design Phase. The Safety Assurance Review will focus on unique features and confirmation of the assumptions and conditions that formed the basis for the design during the decision document phase.

2. Construction Phase. The Construction Phase Type II IEPR will be initiated at the start of each contract and will have an additional review near the construction midpoint.

The Type II SAR shall address the following questions:

(a) Do the assumptions made during the decision document phase for hazards remain valid through the completion of design as additional knowledge is gained and the state-of-the art evolves?

(b) Do the project features adequately address redundancy, resiliency, or robustness with an emphasis on interfaces between structures, materials, members, and project phases?

(c) Do the project features and/or components effectively work as a system?

| Task | Duration | Estimated Completion |
|---|-----------------|-----------------------------|
| Develop SOW & Award Contract | 3 months | Oct 2011 |
| IEPR Panel Convenes | 3 months | Jan 2012 |
| Resolve IEPR Comments | 2 months | Mar 2012 |

c. Model Certification/Approval Schedule and Cost.

The Wetland Value Assessment was used to calculate mitigation credits. The WVA is not an approved planning model. The model is currently in the being reviewed for approval for use through the ecosystem restoration PCX.

7. PUBLIC PARTICIPATION

A public review of the Environmental Assessment was conducted in April 2004. Comments were received and addressed. CEMVN did not receive any letters of objection. A FONSI was signed May 26, 2004. An updated Threatened and Endangered (T&E) Species concurrence was received in March 2008.

The final decision document and resolution of IEPR comments will be posted to the SELA, Orleans Parish project website (http://www.mvn.usace.army.mil/pd/pd_peerreview.asp). Any significant and relevant comments received from public review will be provided to subsequent ATR/IEPR review teams.

8. PCX COORDINATION

Review plans for decision documents and supporting analyses outlined in EC 1165-2-209 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 Flood Risk Management PCX.

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

10. REVIEW PLAN POINTS OF CONTACT

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

Home District (MVN)

Senior Project Manager, 504-862-1486

Project Manager, 504-862-1285

Home MSC (MVD)

New Orleans District Support Team, Deputy Chief, 601-634-5928

PCX POC

Program Manager, FRM-PCX

ATTACHMENT 1: TEAM ROSTERS

| SELA, Orleans Parish, Algiers Subbasin Project Delivery Team | | | |
|---|--------------------------|---------------|---------------------|
| Name | Function | Office | Phone Number |
| Stan Green | Sr. Project Manager | CEMVN-PM-OP | 504-862-1486 |
| Lori Wingate | Project Manager | CEMVN-PM-OP | 504-862-1285 |
| Brett Herr | Chief, Regional Proj Br | CEMVN-PM-OP | 504-862-2495 |
| Pamela Deloach | Engr Team Leader | CEMVN-ED-E | 504-862-2621 |
| Ron Taylor | Hydraulic Engineer | CEMVN-ED-HC | 504-862-2440 |
| Denis Hoerner | Structural Engineer | CEMVN-ED-T | 504-862-2659 |
| Rob Dauenhauer | Structural Engineer | CEMVN-ED-T | 504-862-1840 |
| Edward McDonald | Geotechnical Engineer | CEMVN-ED-F | 504-862-1350 |
| Richel Green | Relocations Specialist | CEMVN-ED-S | 504-862-1602 |
| John Petitbon | Cost Engineer | CEMVN-ED-SC | 504-862-2732 |
| Elizabeth McCasland | Biologist | CEMVN-PM-RS | 504-862-2021 |
| Christopher Brown | Biologist/HTRW | CEMVN-PM-RP | 504-862-2508 |
| Gary Demarcay | Archeologist | CEMVN-PM-RN | 504-862-2039 |
| Richard Radford | Landscape Architect | CEMVN-PM-RN | 504-862-1927 |
| Allan Hebert | Economist | CEMVN-PM-AW | 504-862-1916 |
| Judi Gutierrez | Chief, Appr. & Plang. Br | CEMVN-RE-E | 504-862-2575 |
| Gary Smith | Cost Engineer | CEMVP-EC-D | 651-290-5518 |

| SELA, Orleans Parish, Algiers Subbasin Agency Technical Review Team (Team member qualifications follow) | | | |
|--|---------------------|---------------|--------------|
| Name | Function | Office | Phone |
| Johnny Grandison | ATR Lead | CESAM-PD-FP | 251-694-3804 |
| Dennis Mekkers | Hydraulics | CESAM-EN-HH | 251-690-3055 |
| Michael Thompson | Structural Engineer | CESAM-EN-DA | 251-690-2623 |
| Jim Neubauer | Cost Engineering | CENWW-EC-X | 509-527-7332 |
| Mike McKown | Geotechnical | CESAM-EN-GG | 251-690-2681 |
| Dan Peck | Economics | CESAJ-PD-D | 904-232-2784 |
| Linda Brown | Environmental | CESAM-PD-EC | 251-694-3786 |
| Russell Blount | Real Estate | CESAM-RE-P | 251-694-3675 |
| Robert Heinly | Plan Formulator | CESWG-PE-PL | 409-766-3992 |

| SELA, Orleans Parish, Algiers Subbasin Vertical Team | | | |
|---|---------------------------|---------------|--------------|
| Name | Function | Office | Phone |
| Brian Chewning | | | |
| Greg Ruff | Dpt Chief, NOD Suppt Team | CEMVD-PD-N | 601-634-5928 |

| SELA, Orleans Parish, Algiers Subbasin PCX Points of Contact | | | |
|---|---------------------|---------------|--------------|
| Name | Function | Office | Phone |
| Eric Thaut | FRM PCX coordinator | CESPD-PDS-P | 415-503-6852 |

| SELA, Orleans Parish, Algiers Subbasin IEPR Panel Members | | | |
|--|-----------------|---------------|--------------|
| Name TBD | Function | Office | Phone |

| SELA, Orleans Parish, Algiers Subbasin Agency Technical Review Team | | | | | |
|--|-------------------|---------------------------------------|-----------------------|---|---|
| Reviewer | Discipline | Credentials | Job Experience | Prior ATR Reviews | |
| McKown | Michael | Lead Civil Engineer | PE | 35 years geotechnical design and construction oversight for navigation, flood control, and environmental restoration projects, Senior Geotechnical Engineer for the Mobile District. | SWFF Flood Control, New Orleans W90 floodwalls, Galveston Channel, HNC Channel Deepening |
| Mekkers | Dennis | Hydraulic Engineer | PE | SAD H&H Regional Technical Specialist for Flood Protection and Ecosystem Restoration since 2007. Experience beginning 1995 includes floodplain management and flood damage reduction studies; design and evaluation of hydraulic structures; and dam removal. | Sabine-Neches Waterway for SWG; Kissimmee River Restoration Project-River Acres Mitigation Project for SAJ; Wilmington Harbor GRR- AFB for SAW. |
| Thompson | Michael | Structural Eng | BS, Civil Eng | 31 years' experience in civil works and military structural design. Design of various flood control structures | Everglades Pumping Station, FL; Ramapo River Flood Control, NJ; Three Mile Creek, AL |
| Grandison | Johnny | Planning | BS, MCP, MPA, PA | 28 years Study Manager, Senior Planner, Project Manager, and CAP Manager of water resources projects covering navigation, hurricane storm damage reduction, flood control, and ecosystem restoration. | Freeport Harbor Feasibility Study, TX; Inner Harbor Lock Replacement, LA; Jacksonville (Milepoint) Harbor, FL; Calcasieu River DMMP, LA; and Sacramento River Ship Channel, CA. |
| Brown | Linda | Environmental and Landscape Architect | BLA | 9 years' experience with master plan design at Corps recreation lake projects; 10 years experience with environmental clearances for Regulatory Permits and Corps Civil Works Projects | MsCIP Interim Project Development and Comprehensive Plan; Harrison County FCCE Beach Nourishment Project |
| Heinly | Robert | Plan Formulation | MS | 10 years' exp in planning. Regional Tech Specialist for Plan Formulation. Planning Associate graduate. | Savannah Harbor, Louisiana Coastal Authority Beneficial Use of Dredged Material Program |
| Blount | Russell | Real Estate | BS, MPA | 5 years as Realty Specialist / 3 years' experience in Real Estate Planning | PIR (Gulfport Harbor, MS); Houma Nav. Channel (HNC) ATR |
| Neubauer Peck | James Dan | Cost Estimating Economist | | | |

ATTACHMENT 2: ATR CERTIFICATION TEMPLATE

EC 1165-2-209
31 Jan 10

Attachment C-1

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the [product type & short description of item] for [project name and location]. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. 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 DrCheckssm.

SIGNATURE

[Name]
ATR Team Leader
[Office Symbol or Name of AE Firm]

Date

SIGNATURE

[Name]
Project Manager (home district)
[Office Symbol]

Date

SIGNATURE

[Name]
Architect Engineer Project Manager¹
[Company, location]

Date

SIGNATURE

[Name]
Review Management Office Representative
[Office Symbol]

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.

SIGNATURE

[Name]
Chief, Engineering Division (home district)
[Office Symbol]

Date

SIGNATURE

[Name]
Chief, Planning Division² (home district)
[Office Symbol]

Date

Add appropriate additional signatures (Operations, Construction, AE principal for ATR solely conducted by AE, etc).

¹ Only needed if some portion of the ATR was contracted ²Decision Documents Only.

ATTACHMENT 3: ACRONYMS AND ABBREVIATIONS

| <u>Term</u> | <u>Definition</u> | <u>Term</u> | <u>Definition</u> |
|-------------|---|-------------|--|
| AFB | Alternative Formulation Briefing | NED | National Economic Development |
| ASA(CW) | Assistant Secretary of the Army for Civil Works | NER | National Ecosystem Restoration |
| ATR | Agency Technical Review | NEPA | National Environmental Policy Act |
| CSDR | Coastal Storm Damage Reduction | O&M | Operation and maintenance |
| CWRB | Civil Works Review Board | OMB | Office of Management and Budget |
| DPR | Detailed Project Report | OMRR&R | Operation, Maintenance, Repair, Replacement and Rehabilitation |
| DQC | District Quality Control | OEO | Outside Eligible Organization |
| DX | Directory of Expertise | OSE | Other Social Effects |
| EA | Environmental Assessment | PCX | Planning Center of Expertise |
| EC | Engineer Circular | PDT | Project Delivery Team |
| EIS | Environmental Impact Statement | PAC | Post Authorization Change |
| EO | Executive Order | PMP | Project Management Plan |
| ER | Ecosystem Restoration | PL | Public Law |
| FDR | Flood Damage Reduction | QMP | Quality Management Plan |
| FEMA | Federal Emergency Management Agency | QA | Quality Assurance |
| FRM | Flood Risk Management | QC | Quality Control |
| FSM | Feasibility Scoping Meeting | RED | Regional Economic Development |
| GRR | General Reevaluation Report | RTS | Regional Technical Specialist |
| HQUSACE | Headquarters, U.S. Army Corps of Engineers | USACE | U.S. Army Corps of Engineers |
| IEPR | Independent External Peer Review | WRDA | Water Resources Development Act |
| ITR | Independent Technical Review | | |
| LRR | Limited Reevaluation Report | | |
| MSC | Major Subordinate Command | | |
| | | | |

MEMORANDUM FOR Lori Wingate, New Orleans District

SUBJECT: Southeast Louisiana Flood Control Project, Algiers Subbasin, Orleans Parish, Louisiana, Section 533(d) Report Review Plan

1. The Flood Risk Management Planning Center of Expertise (FRM-PCX) has reviewed the updated Review Plan (RP) for the subject study and concurs that the RP satisfies peer review policy requirements outlined in Engineering Circular (EC) 1165-2-209 Civil Works Review Policy, dated 31 January 2010.
2. The review plan recognizes that both Type I and Type II IEPR are appropriate for the subject study; however, it recommends that a modified Type II IEPR be conducted during detailed design to address the requirements of Type I and Type II IEPR. This recommendation is in accordance with a memorandum dated March 16, 2010, Subject: Request for Deferral of Independent External Peer Review for Southeast Louisiana Project, Slidell W-14 Drainage Canal Improvements Section 533(d) Report and Algiers Subbasin Section 533(d) Report, signed by the MSC Commander. Per the memorandum, a modified Type II IEPR shall be conducted to focus on safety assurance review and that validates the results of subject reports to ensure that projects are technically sound, environmentally acceptable, and economic, as applicable, and is in accordance with the original reconnaissance reports cited in statute.
3. The FRM-PCX recommends the RP for approval by the MSC and, due to the request for a modified Type II IEPR, further recommends the RP be submitted to HQUSACE through the MVD RIT for endorsement. Upon approval of the RP, please provide a copy of the approved RP, a copy of the MSC Commander approval memorandum, a copy of any HQUSACE endorsement, and the link to where the RP is posted on the District website to Eric Thaut, FRM-PCX National Program Manager (eric.w.thaut@usace.army.mil) and Michelle Kniep, FRM-PCX Regional Manager for MVD (michelle.r.kniep@usace.army.mil).
4. Thank you for the opportunity to assist in the preparation of the RP. If there are any questions, please contact Michelle Kniep or myself.

Encl

Eric W. Thaut
Eric Thaut
Program Manager, FRM-PCX

Digitally signed by
THAUT.ERIC.WILLIAM.1231631824
DN: c=US, o=U.S. Government,
ou=DoD, ou=PKI, ou=USA,
cn=THAUT.ERIC.WILLIAM.1231631824
Date: 2010.08.09 09:36:21 -0700

Enclosure 2



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
WASHINGTON, D.C. 20314-1000

Reply to
Attention of:

SEP 28 2010

CECW-MVD (1105-2-10a)

MEMORANDUM FOR Commander, Mississippi Valley Division (CEMVD-PD-N)

SUBJECT: Request for Deferral of Independent External Peer Review for Southeast Louisiana Project (SELA), Slidell W-14 Drainage Canal Improvements Section 533(d) Report and Algiers Subbasin Section 533 (d) Report

1. Reference is made to the following:

a. CEMVD-DE memorandum, dated 16 March 2010, Subject: Request for Deferral of Independent External Peer Review for Southeast Louisiana Project, Slidell W-14 Drainage Canal Improvements Section 533(d) Report and Algiers Subbasin Section 533(d) Report, and

b. CEMVN-PM-OP memorandum, dated 6 July 2010, Subject: Review Plan Approval for Southeast Louisiana Urban Flood Control Project, W-14 Canal, St. Tammany Parish, Louisiana Section 533(d) Report which transmitted the review plan for the W-14 Canal for concurrence.

c. CEMVN-PM-OP memorandum, dated 8 September 2010: Subject: Review Plan Approval for Southeast Louisiana Urban Flood Control Project, Algiers Subbasin, Orleans Parish, Louisiana Section 533(d) Report which transmitted the review plan for the Algiers Subbasin for concurrence.

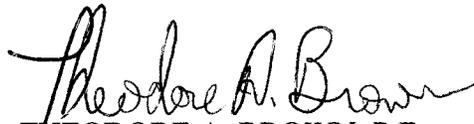
2. We have reviewed the Mississippi Valley Division's direction to the New Orleans District related to conduct of a modified Type II Independent External Peer Review (IEPR) for the Slidell W-14 Canal and Algiers Subbasin provided in reference 1.a., and the District's June 2010 Review Plan for Slidell W-14 Canal provided in reference 1.b and September 2010 Review Plan for Algiers Subbasin provided in reference 1.c. Headquarters concurs in the direction provided in reference 1.a., taking into consideration the authorization for the SELA project, that a modified Type II IEPR be conducted to focus on safety assurance review while validating the results of the section 533(d) reports to ensure the projects are technically sound, environmentally acceptable, and economic as applicable, and are in accordance with the original reconnaissance reports cited in the authorization. The review plans for Slidell W-14 Canal and Algiers Subbasin is consistent with this direction.

CECW-MVD (1105-2-10a)

SUBJECT: Request for Deferral of Independent External Peer Review for Southeast Louisiana Project (SELA), Slidell W-14 Drainage Canal Improvements Section 533(d) Report and Algiers Subbasin Section 533 (d) Report

3. Please direct any questions to CECW-MVD, Mr. John Lucyshyn, at 202-761-4515.

FOR THE COMMANDER:

A handwritten signature in black ink, appearing to read "Theodore A. Brown". The signature is fluid and cursive, with the first name being the most prominent.

THEODORE A. BROWN, P.E.

Chief, MVD Regional Integration Team
Directorate of Civil Works