



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

REPLY TO
ATTENTION OF:

CEMVD-PD-N

28 September, 2012

MEMORANDUM FOR Commander, New Orleans District

SUBJECT: Review Plan - Modeling Hurricane Isaac Pre- and Post-HSDRRS

1. References:

- a. EC 1165-2-209, Civil Works Review Policy, 31 January 2010.
- b. Email, CEMVD-RB-T, 25 September 2012, subject: Modeling Isaac - Review Plan.

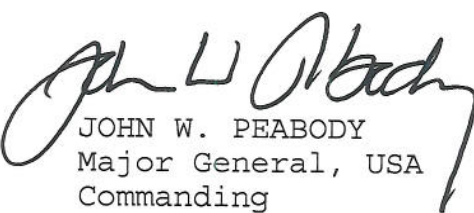
2. I hereby approve subject Review Plan (RP) as enclosed and concur in the conclusion that an independent external peer review of this project is necessary. The proposed RP has been coordinated with the Review Management Organization (RMO) and they concurred with the RP recommending approval. The RP, in accordance with EC 1165-2-209 for "other work products," complies with all applicable policy and provides an adequate independent technical review of the work product. As the RP is a living document, it should be monitored and amended as appropriate to incorporate additional review requirements if the project moves into the implementation phase. Non-substantive changes to this RP do not require further approval.

3. The District should post the RP to its web site and provide a link to the RMO and the CSDR-PCX for their use.

4. The MVD points of contact are: Mr. Allen Perry, CEMVD-RB-T, (601) 634-5883, for technical matters, and Mr. Stephen Stuart, CEMVD-PD-N, (601) 634-5829, for all other matters.

Building Strong!

Encl


JOHN W. PEABODY
Major General, USA
Commanding

CF:

CEMVD-RB-T (Perry)
CEMVN-PM-OP (Holley)

STAFF SUMMARY SHEET

I. FROM: CEMVD-PD-N SUBJECT: Review Plan - Modeling Hurricane Isaac
Pre- and Post-HSDRRS

II. TO: CEMVD-DE CLASSIFICATION: U SUSPENSE: DATE: 25 Sep 12

III. Summary of Action Requiring Coordination:

1. ISSUE: Engineering Circular 1165-2-209 establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). It provides the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision, implementation, and operations and maintenance documents and work products. The EC is applicable to all HQUSACE elements, major subordinate commands (MSC), districts, laboratories, and field operating activities having civil works planning, engineering, design, construction; and operations & maintenance (O&M) responsibilities.

2. DISCUSSION: The Review Plan (RP) for the subject report was reviewed by the Review Management Organization (RMO) as required. The RMO noted that the RP is in compliance with the current peer review policy requirements contained in EC 1165-2-209, entitled "Civil Works Review Policy" and therefore recommended approval via memorandum on. The MSC Commander's approval of the RP is required to assure that the plan is in compliance with the principles of EC 1165-2-209.

3. RESOURCE IMPACT: NA.

4. RECOMMENDATION: Sign letter approving Review Plan.

IV. Action Officer: Stephen M. Stuart
Telephone Number: 601-634-5829

Directorate: PD Chief: Eddie Belk

V. Coordination				VI. Command Section Staffing		
Office	Concur	Non-Concur*	Date	Office	Approval	Disapproval
PD-N	<i>WV</i>		9/25/12	EX		
PD	<i>KIAM</i>		9/25/12	DD	<i>NCD 27 SEP 2012</i>	
RB-T	<i>FHA</i>		9/25/12	MG Peabody DE	<i>[Signature] 9/28</i>	
OC-MVD	<i>[Signature]</i>		9/26/12	Command Section Remarks		
				VII.		

*Non-concurrences require comment

REVIEW PLAN

Modeling Hurricane Isaac Pre- and Post-100-year HSDRRS

US Army Corps of Engineers, New Orleans District

24 September 2012

MSC Approval Date: 28 September 2012

Last Revision Date: 3 October 2012



**US Army Corps
of Engineers®**

REVIEW PLAN

Modeling Hurricane Isaac Pre- and Post-100-year HSDRRS

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1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Modeling Hurricane Isaac Pre- and Post-100-year HSDRRS (Hurricane and Storm Damage Risk Reduction System) Draft Assessment Report.

b. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- (2) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (3) Memorandum, CEMVD-RB-T, 14 Jan 11, subject: MVD Agency Technical Review on Implementation Documents

c. **Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines three general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), and Independent External Peer Review (IEPR).

- (1) District Quality Control/Quality Assurance (DQC). All work products and reports, evaluations, and assessments shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home Major Subordinate Command (MSC).
- (2) Agency Technical Review (ATR). The ATR will assess whether the analyses presented are technically correct and comply with published US Army Corps of Engineers (USACE) guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by a designated Risk Management Organization (RMO) and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel 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. *Although this document is not a decision or implementation document, USACE MVD deemed ATR appropriate due to the high visibility of the report, the technical data being assessed, and the need for accuracy to address the public's concerns.*
- (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. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. This technical assessment does not fall into the two types of typical IEPR categories. There are two types of typical IEPR categories: Type I is generally for decision documents and Type II is generally for implementation

products. *Even though this technical assessment does not fall into either IEPR category, an IEPR is considered appropriate.*

- (4) National Planning Center of Expertise Coordination (PCX-CSDR). EC 1165-2-209 outlines coordination in conjunction with preparation of the Review Plan. Since this Review Plan is for 'other work products' and not a planning or implementation document it is being coordinated with the RMO/MVD as per EC 1165-2-209. However the PCX-CSDR is responsible for the accomplishment of IEPR for this technical assessment through the LA Water Resources Council as established in Section 7009 in WRDA 2007. The PCX-CSDR will manage the IEPR review to be conducted by others.
- (5) Review Plan Approval and Posting. In order to ensure the Review Plan is in compliance with the principles of EC 1165-2-209 and the MSC's Quality Management Plan, the Review Plan must be endorsed by the RMO and approved by the Commander, Mississippi Valley Division (MVD). Once the Review Plan is approved, the District will post it to its district public website and notify MVD.

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for the peer review effort described in this Review Plan is MVD.

3. STUDY INFORMATION

- a. **Document.** The title of the document to be prepared is "Modeling Hurricane Isaac Pre- and Post-100-year HSDRRS." The purpose of the assessment is to determine if, and to what extent, the HSDRRS system impacted unprotected areas outside of the HSDRRS during Hurricane Isaac. ***This report is neither a decision document nor an implementation document. It is an Other Work Product as described in reference 1.b.(3) above.***
- b. **Study/Project Description.** The Modeling Hurricane Isaac Pre- and Post-100-year HSDRRS assessment includes areas in southeast Louisiana outside of the HSDRRS, including but not limited to the communities of Slidell, Mandeville, Madisonville, Laplace, Braithwaite, Lafitte, and the Mississippi gulf coast. The location of the study area is shown in Figure 3-1.

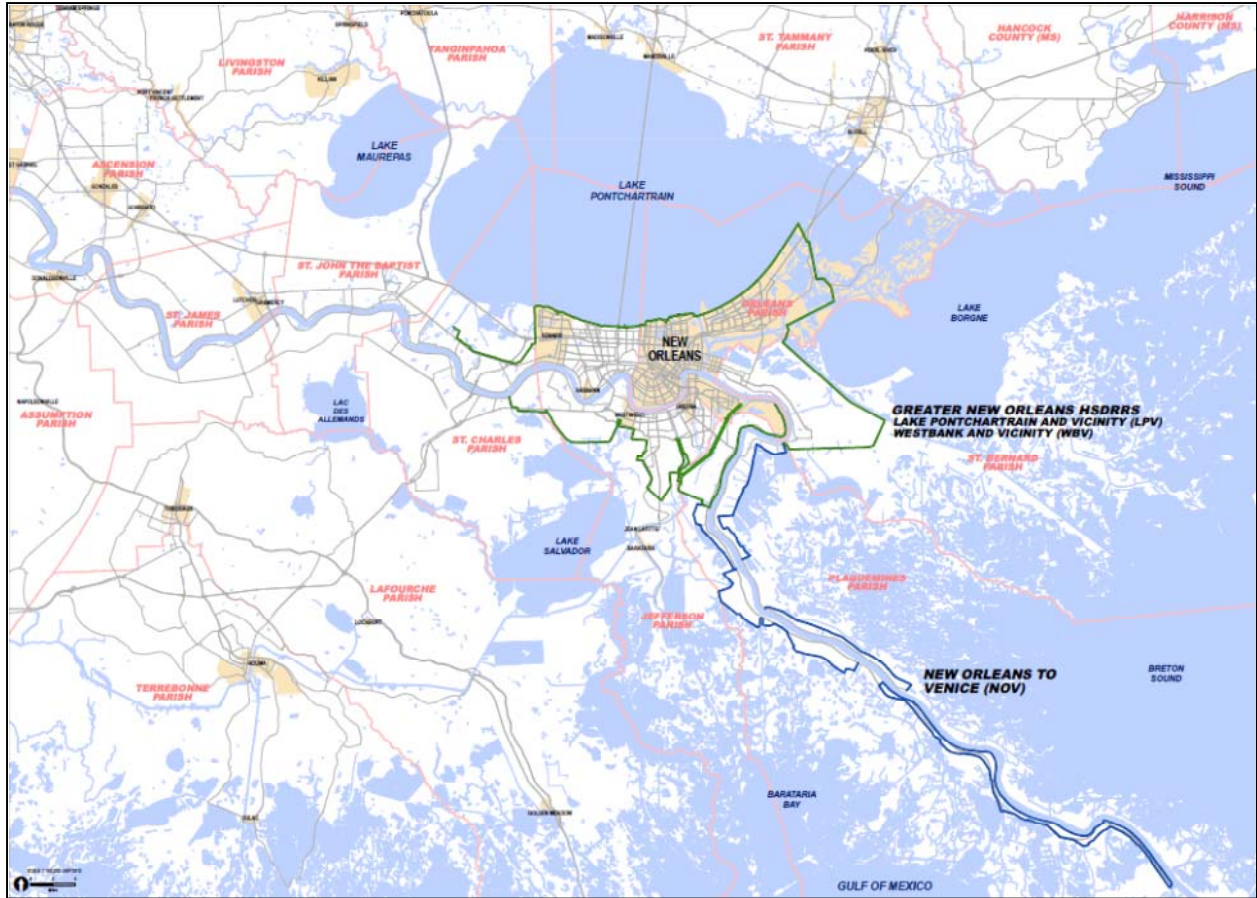


Figure 3.1. Study Area Location

Hurricane Isaac’s impacts to the coastal Louisiana area, including New Orleans and surrounding communities were considerable. While the HSDRRS prevented the storm surge from inundating the areas within its system, major flooding occurred in areas without federal levee systems. As this was the first major test of the HSDRRS, some have raised concerns that the HSDRRS also resulted in unintended induced flooding to some of the unprotected areas. Local and state officials have requested an analysis or review to determine if, and to what extent, the HSDRRS impacted these unprotected areas.

Extensive modeling and analysis was performed during the design phase of the HSDRRS to determine what effect, if any, the HSDRRS could have on other areas. Public meetings were held across the area at which the modeling and analyses were discussed. Environmental documentation included discussions on effects of the HSDRRS on adjacent areas. The Modeling Hurricane Isaac Pre- and Post-HSDRRS report will integrate the previous work with an assessment and modeling of Hurricane Isaac.

The report will include, but is not limited to, the following items: an overview of Hurricane Isaac (meteorological, hydrological, and hydraulic); HSDRRS system performance during Hurricane Isaac; a review of prior evaluations of expected HSDRRS performance; a summary of hydrodynamic

modeling conducted for Hurricane Isaac for both the Pre- and Post-HDRRS conditions; and evaluations of storm surge impacts, rainfall and hydrodynamic modeling for specific communities which sustained flooding during Hurricane Isaac.

- c. **Factors Affecting the Scope and Level of Review.** The results of this analysis will be briefed to government officials at the local, state and Federal level, and will be used to respond to congressional inquiries regarding concerns about potential induced flooding. The findings will be publicly released through public meetings, and will likely garner significant media and public attention.

The aggressive timeline associated with this report necessitates concentrated quality control to ensure that reliable information is release to the public. See schedules at paragraph 7.a & 7.b.

- d. **In-Kind Contributions.** No in-kind products and analyses are anticipated to be provided by the non-Federal sponsor for this effort.

4. DISTRICT QUALITY CONTROL (DQC)

- a. **Documentation of DQC.** District Quality Control will be conducted by the New Orleans District for this report. In accordance with District Quality Management Plans, this internal review will constitute quality control for the report. It is the responsibility of the supervisor or section chief for each discipline involved in DQC to ensure that a qualified DCQ Reviewer that has not been involved with the preparation of the technical product under review is selected and conducts a review of their product prior to the start of ATR.

A Certification of District Quality Control will be prepared and shall be submitted concurrently with the report.

- b. **Products to Undergo DQC.** District Quality Reviews will evaluate the sufficiency of the Draft Assessment Report. Specific technical portions of the report to be reviewed include, but are not limited to, the following: initial hydrodynamic modeling grid selection and modification; Pre- and Post-HSDRRS condition hydrodynamic simulations; 2012 Hurricane Isaac simulation; evaluations of community level impacts; and summary and findings. It is important to note that this report is in part a compilation of existing analyses that have previously undergone DQC. Additionally, the PDT will be responsible for a complete reading of the report to assure the overall integrity of the report and technical appendices.

- c. **Required DQC Expertise.** The DQC reviewers will be individuals who are familiar with hydrodynamic modeling but were not involved in the Isaac modeling or report development. Additionally, if at all possible the DQC reviewers should not have been involved with previous induced flooding investigations concerning HSDRRS. The QC process will be structured to maintain the principle of one level of technical review, with the number and type of Review Team members actually used dependent upon the level of detail in the report, the focus of the product, the consequence of errors, the overall technical complexity of the report, and the project risk.

The DQC Team will be comprised of individuals from the and Hydrology and Hydraulics (H&H) Branch and ERDC who have experience in the type of analysis in which they are responsible for reviewing. Each DQC Reviewer will be senior or equal in experience to the analyst or production

person.

5. AGENCY TECHNICAL REVIEW (ATR)

- a. **Products to Undergo ATR.** The Draft Assessment Report will undergo ATR. Specific technical portions of the report to be reviewed include, but are not limited to, the items listed in 4.b.
- b. **Required ATR Team Expertise.**

ATR Team Members/Disciplines	Expertise Required
ATR Lead	<p>The ATR Lead reviewer should be a senior professional with extensive water resource experience in preparing Civil Works documents and conducting ATR. The ATR Lead/Reviewer should also have the necessary skills and experience to lead a virtual team through the ATR process.</p> <p>The ATR Lead/Reviewer should have 10 – 15 years experience. Preferably this experience will be in planning, H&H, and/or numerical modeling.</p>
Hydrology, Hydraulics, and Coastal (HH&C) Engineering	<p>The HH&C Engineering reviewer should have 10 years HH&C experience or equivalent education. Should have extensive HH&C experience on a design or construction team that worked on Hurricane Protection projects including levees, floodwalls, retaining walls, pump stations, gate well structures, utility penetrations, stop log and sandbag gaps and other closure structures, interior drainage, drainage structures, etc. Must be experienced in computer modeling techniques for storm surge and wave analysis modeling and interior hydraulic modeling such as ADCIRC, HEC-RAS, etc.</p>

- c. **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 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 be properly followed;
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the modeling, analysis, assessment, 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 order 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 team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in EC 1165-2-209 and ER 1110-1-12. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of the ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their 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;
- Identify and summarize each unresolved issue (if any); 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 the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, and the draft report. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

- a. Decision on IEPR.** Although this technical assessment does not fall into the two types of typical IEPR categories for planning and implementation, an IEPR is considered appropriate.
- b. Products to Undergo IEPR.** The Draft Technical Assessment Report will undergo IEPR. The ADCIRC model has previously undergone IEPR. Therefore, the IEPR of information pertaining to the model will be limited to review of the simulations of Hurricane Isaac on the Pre and Post-100-year HSDRRS. The IEPR should review all components of the report (Isaac simulations, previous pre/post HSDRRS, pre/post HSDRRS footprint comparisons with HWMs, and the storm discussion). However, as the previous work modeling has been reviewed before, this IEPR should be limited to how this analysis reviews the induced flooding issues.
- c. Required IEPR Panel Expertise.** Additional team members for expertise in other disciplines may be added by the RMO as the review progresses.

IEPR Panel Members/Disciplines	Expertise Required
Hydrology, Hydraulic, and Coastal (HH&C) Engineering (Panel should include 2 HH&C reviewers)	The HH&C Engineering panel members should have 15 years demonstrated experience or combined equivalent of education and experience assessing Hurricane Protection projects. Members should be a Registered Professional Engineer from academia, a public agency, or an Architect-Engineer or Consulting Firm with at least a Bachelors Degree. Should have direct HH&C design experience with regard to levees, floodwalls, retaining walls, pump stations, gate well structures, utility penetrations, stop log and sandbag gaps and other closure structures, interior drainage, drainage structures, etc. Should also have 5-10 years experience working with numerical modeling applications for storm surge and wave analysis modeling and interior hydraulic modeling. Should be familiar with USACE applications of risk and uncertainty analysis in hurricane storm damage risk reduction studies. Active participation in related professional societies is encouraged.

- d. Documentation of IEPR.** The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the Assessment Report. IEPR comments should generally include the same four key parts as described for ATR comments in Section 5.c above.

In accordance with EC 1165-2-209, the IEPR panel must be provided with a statement of work and charge questions. Below are the charge questions which need to be answered.

- (1) What areas of the system would or would not have been hydraulically overtopped during Isaac in their Pre-HSDRRS condition?
- (2) What HSDRRS impacts to areas outside of the system have been documented through previous evaluations?
- (3) What were the meteorological statistics and surge propagation associated with Isaac, and how did they contribute to flooding outside the HSDRRS?
- (4) What, if any, differences in surge conditions (i.e., inundation) throughout the area exist between the Pre- and Post-100-year HSDRRS conditions specifically for Isaac?

The OEO will prepare an interim Review Report on the draft document. The interim Review Report 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.

If the OEO agrees, DrChecks review software will be used to document all IEPR 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 USACE draft responses may be conveyed back to the OEO informally (orally) to facilitate discussion but will ultimately be conveyed in writing. Upon conveyance of the USACE draft responses to the OEO, a conference will be held, modifications made to the draft response document as necessary, and then finalized in a final interim Review Report.

The OEO will prepare a final Review Report that will accompany the publication of the final document 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 OEO no later than 60 days following the start of IEPR. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

7. REVIEW SCHEDULES AND COSTS

- a. **ATR Schedule and Cost.** ATR is currently estimated to be \$10,000. The current schedule for the ATR milestone is shown below.

Product	Start Date	Finish Date
Draft Assessment Report	1 October 2012	12 October 2012

The ATR schedule and milestones represent the actual ATR review beginning on 1 Oct and submitting comments on 5 Oct. The PDT will resolve comments with the ATR Team through 11 Oct and the ATR Certification will be completed NLT 12 Oct.

- b. IEPR Schedule and Cost.** The cost of IEPR is currently estimated to be \$150,000. IEPR is a 100% federally-funded project cost. The current estimated schedule for the IEPR is shown below.

Product	Start Date	Finish Date
Draft Technical Assessment Report	October 2012	April 2013

The IEPR schedule and milestones will be reviewed by the PDT team and the PCX-CSDR Lead after the IEPR team has been established. Scheduled milestone will be reviewed on a regular basis to accurately determine study progress.

Additionally, the IEPR budget will be reviewed by the PDT team and PCX-CSDR Lead and reviewed regularly for progress reporting.

8. PUBLIC PARTICIPATION

Public communication of the report findings and assessment results will begin after 15 October 2012. The results of the Hurricane Isaac Pre- and Post-HSDRRS modeling will be provided to the Corps’ federal, state and local stakeholders, as well as to the media and general public. A series of public meetings will be held in areas impacted by Hurricane Isaac to provide the opportunity to address any concerns the public may have regarding the modeling and its results.

9. REVIEW PLAN APPROVAL AND UPDATES

The Mississippi Valley Division Commander is responsible for approving this Review Plan. The Commander’s approval reflects vertical team input (involving district, MSC/RMO, and HQUFACE members) as to the appropriate scope and level of review for the document. The Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders’ approval memorandum, should be posted on the Home District’s webpage. The latest Review Plan should also be provided to the RMO/MVD.

10. REVIEW PLAN POINTS OF CONTACT

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

- Soheila Holley
Senior Project Manager
U.S. Army Corps of Engineers, New Orleans District
(504) 862-1007

- Tutashinda Salaam
Project Manager
U.S. Army Corps of Engineers, New Orleans District
(504) 862-2430

- Stephen Stuart
U.S. Army Corps of Engineers, Mississippi Valley Division
(601) 634-5829

ATTACHMENT 1: TEAM ROSTERS

Project Delivery Team Members			
Name	Discipline	Phone	Email
	Project Management		
Soheila Holley	Senior Project Manager	(504) 862-1007	Soheila.N.Holley@usace.army.mil
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Lee Walker	PM Support Contractor	(504) 862-1444	Lee.Z.Walker@usace.army.mil

Planning Division			
Timothy Axtman	Senior Planner	(504)-862-1921	Timothy.J.Axtman@usace.army.mil

Engineering Division			
Nancy Powell	Hydraulics and Hydrologic Branch Chief	(504) 862-2449	Nancy.J.Powell@usace.army.mil
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Bill Frederick	Meteorologist, NWS	(601) 634-5101	Bill.J.Frederick@usace.army.mil

Public Affairs			
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Rachel Rodi	Public Affairs Specialist	(504) 862-2587	Rachel.C.Rodi@usace.army.mil
Robert Anderson	Public Affairs Officer	(601) 634-5760	Robert.T.Anderson@usace.army.mil

Vertical Team Members			
Name	Discipline	Phone	Email
Barbara Kleiss	Environmental Scientist	(601) 634-5520	Barbara.A.Kleiss@usace.army.mil
Charles Shadie	Hydraulic Engineer	(601) 634-5917	Charles.E.Shadie@usace.army.mil
Stephan Roth	Office of Counsel	(601) 634-5770	Stephan.C.Roth@usace.army.mil
Gary Young	Program Manager	(601) 631-7156	Gary.L.Young@usace.army.mil

Stephen Stuart	LWRC Liaison (IEPR)	(601) 634-5829	Stephen.M.Stuart@usace.army.mil
Joe Redican	RIT Program Manager	(202) 761-4523	Joseph.H.Redican@usace.army.mil
Robert Fitzgerald	Civil Engineer	(601) 634-5922	Robert.H.Fitzgerald@usace.army.mil

District Quality Control Team Reviewers			
Name	Discipline	Phone	Email

Agency Technical Review Team Members			
Name	Discipline	Phone	Email
Tom Martin - SAJ	HH&C	(904) 232-2428	Tom.R.Martin@usace.army.mil
Elizabeth Godsey - SAJ	HH&C	(954) 436-9517	Elizabeth.S.Godsey@usace.army.mil

Independent External Peer Review Panel Members		
Name	Discipline	Education & Experience

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the [Draft Assessment Report](#) for [Modeling Hurricane Isaac Pre- and Post-100-year HSDRRS](#). 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 _____ Date _____
[Name](#)
ATR Team Leader
[Office Symbol/Company](#)

SIGNATURE _____ Date _____
[Name](#)
Project Manager
[Office Symbol](#)

SIGNATURE _____ Date _____
[Name](#)
Architect Engineer Project Manager¹
[Company, location](#)

SIGNATURE _____ Date _____
[Name](#)
Review Management Office Representative
[Office Symbol](#)

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: [Describe any major technical concerns and their resolution as applicable.](#)

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

SIGNATURE _____ Date _____
[Name](#)
Chief, Engineering Division
[Office Symbol](#)

SIGNATURE

Name

Chief, Planning Division

Office Symbol

Date

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

Term	Definition
ADCIRC	Advanced Circulation Model
ATR	Agency Technical Review
CSDR	Coastal Storm Damage Reduction
DQC	District Quality Control/Quality Assurance
EC	Engineering Circular
ER	Engineering Regulation
HH&C	Hydrology, Hydraulics, and Coastal Engineering
HEC-RAS	Hydrologic Engineering Centers River Analysis System
HSDRRS	Hurricane and Storm Damage Risk Reduction
HWM	High Water Mark
IEPR	Independent External Peer Review
ITR	Independent Technical Review
MSC	Major Subordinate Command
MVD	Mississippi Valley Division
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
OEO	Outside Eligible Organization
PCX	Planning Center of Expertise
PDT	Project Delivery Team
QMP	Quality Management Plan
RMC	Risk Management Center
RMO	Review Management Organization
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources Development Act