



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NORTH ATLANTIC DIVISION, US ARMY CORPS OF ENGINEERS
FORT HAMILTON MILITARY COMMUNITY
BROOKLYN, NEW YORK 11252-6700

JAN 15 2008

CENAD-PSD-P

MEMORANDUM FOR Commander, New York District, ATTN: CENAN-PP

SUBJECT: Review Plan Approval for Saw Mill River at Elmsford and Greenburgh GRR, New York Flood Damage Reduction Study

1. Reference:

- a. EC 1105-2-408, Peer Review of Decision Documents, 31 May 2005.
- b. Memorandum, CECW-CP, 30 March 2007, subject: Peer Review Process.

2. The enclosed Review Plan for the Saw Mill River at Elmsford and Greenburgh GRR, New York Flood Damage Reduction Study has been prepared in accordance with the referenced guidance.

3. The Plan has been made available for public comment, and any comments received have been incorporated. It is being coordinated with the Flood Risk Management Planning Center of Expertise of South Pacific Division, which is the lead office to execute this plan. The Plan currently includes external peer review.

4. I hereby approve this Plan, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Plan or its execution will require new written approval from this office.

Encl

A handwritten signature in black ink, appearing to read "Joseph R. Vietri".

Joseph R. Vietri
Chief, Planning & Policy Community of Practice
Program Support Division
Programs Directorate

QUALITY CONTROL (QC) AND INDEPENDENT TECHNICAL REVIEW (ITR) PLAN

1.0 PURPOSE

This review plan presents the process that assures quality products for the Saw Mill River at Elmsford and Greenburgh GRR, New York Flood Damage Reduction Study. This QC and ITR plan defines the responsibilities and roles of each member on the study and technical review team.

The product to be reviewed by the technical review team is the post-authorization-level Saw Mill River at Elmsford and Greenburgh GRR, New York Flood Damage Reduction Study. Under the provisions of new U.S. Army Corps of Engineers (USACE) policy, as detailed in EC1105-2-408 dated May 31, 2005, the ITR will be conducted by specialists from organizations outside of the district responsible for the study. ITR will be conducted for all decision documents and will be independent of the technical production of the project. This QC and ITR plan is, by reference, a part of the project management plan.

2.0 APPLICABILITY

This document provides the quality control plan for the Saw Mill River at Elmsford and Greenburgh GRR, New York Flood Damage Reduction Study. It identifies quality control processes and independent technical review for all work to be conducted under this study authority, including in-house, sponsor, and contract work.

3.0 REFERENCES

EC 1105-2-408 "Peer Review of Decision Documents" (May 31, 2005)
EC 1105-2-407 "Planning Models Improvement Program: Model Certification" (May 31, 2005)
EC 1105-2-409 "Planning in a Collaborative Environment" (May 31, 2005)
ER 1105-2-100 "Planning Guidance Notebook and Appendices"

4.0 GENERAL PROJECT DESCRIPTION

The Saw Mill River Basin (the Basin) has a drainage area of approximately the Saw Mill River Basin occupies 26.5 square miles in Westchester County, New York.

Recurrent flooding along the Saw Mill River has caused damages to residential structures, commercial businesses, and industries as well municipal infrastructure. The Saw Mill River was broken into five project areas. Construction has been completed on the Yonkers, Ardsley and Chappaqua projects and the Yonkers Tie-in/Nepera Park projects. Recent severe floods occurred in March and April of 1980, April 1984, and September 1999. The 1984 flood caused over \$2,000,000 dollars (Oct 1996 price level) in damages to residential, commercial, and industrial structures in the Elmsford/Greenburgh

area as well as causing traffic and business interruptions. Flooding from Tropical Storm Floyd in September 1999 also caused significant damage.

The Elmsford/Greenburgh project was authorized in the Flood Control Act of 1965. A series of studies were conducted and in 1989 a draft General Design Memorandum was issued with a recommended plan. The recommended project consists of 2.7 miles of channel modification on the Saw Mill River, 713 feet on Mine Brook, and a 1,414-foot diversion channel with low flow weir. Several bridges would require removal; one would be raised, and 210 feet of retaining wall constructed along the Saw Mill River between the Saw Mill Parkway bridges. Aquatic habitat would also be preserved through the use of instream habitat structures and the banks will be landscaped.

5.0 REVIEW REQUIREMENTS

Initial Quality Control (QC) review has been handled within the Branch performing the work. Additional QC will be performed by the Project Delivery Team (PDT) during the course of completing the General Reevaluation (GRR) Study. The detailed checks of computations and methodology should be performed at the District level, and the processes for this level of review are well established. Pursuant to EC 1105-2-408, item 2 c (2), Models used in the preparation of decision documents covered by this Circular will be reviewed in accordance with EC 1105-2-407, Planning Models Improvement Program: Model Certification. For this study, one or more spreadsheet-based economic models will be utilized, which would need to be reviewed consistent with the current certification procedures.

Pursuant to EC 1105-2-408, the GRR and EIS will need a full ITR team coordinated by the Planning Centers of Expertise (PCX) for Flood Risk Management (South Pacific Division). The scope and level of technical complexity currently do not warrant an External Peer Review (EPR), based upon the initial Risk Screening Process conducted by the PDT noted in Section 9. The study is not controversial or precedent setting, nor does it have highly significant national importance so as to warrant risk abatement external peer review. However, as the total project cost is expected to exceed \$45 million, EPR is expected to be performed and will be coordinated with the PCXs.

The ITR will focus on:

- 1 Review of the planning process and criteria applied.
- 2 Review of the methods of preliminary analysis and design.
- 3 Compliance with authority and NEPA requirements.
- 4 Completeness of preliminary support documents.
- 5 Spot checks for interdisciplinary coordination.

6.0 REVIEW PROCESS

The ITR review process has not commenced; as stated above, the PCXs for Flood Risk Management will coordinate this process. The review will cover key formulation and benefit and cost assessment areas. Following completion of the GRR, which will be no

earlier than the end of 2008, the major review process milestones will be those listed below:

- 1 Draft Report Review
- 2 Final Report Review

7.0 REVIEW COST

The final cost of the ITR is to be determined between the PDT and the PCX. It is assumed that any remaining documents to be reviewed will be transmitted electronically. Comments will be made and addressed in Dr. Checks. It is also assumed that the external ITR team will be working virtually. Only under extreme circumstances should the external ITR team, or a representative of that team, be required to travel to physically attend PDT or milestone meetings. The external ITR team should, with this constraint, participate in all remaining milestone meetings.

8.0 REVIEW SCHEDULE

The review schedule is as follows:

<u>TASK</u> <u>DATE</u>	<u>START DATE</u>	<u>FINISH</u>
Develop ITR Plan and post to Web Site, PCX	August 2007	August 2007
Identify Regional ITR resources and Recommend ITR Plan to PCX	TBD	
Sponsor Approves ITR Plan	TBD	
Review of Models	indefinite	
	N/A - standard	
Alternative Formulation Briefing		
Review of Draft Report	TBD	
Review of Final Report	TBD	

9.0 PROJECT RISK

The PDT has completed an initial risk assessment associated with this project based upon five factors and rated the project quantitatively among five levels of project risk of failure ranging from low to high (risk score class). The PDT scored each Project Risk Item in the Review Plan Score Guide (Table 9.1) and calculated an overall Average Project Risk Assessment Score. The exact values of the scores were not as important as compared to what risk score class (low, medium, or high). Based upon the PDT analysis, the project is high in risk because it did receive an overall high risk score.

The PDT considered previous District project experience when making this analysis. No attempt was made to tie this to a national scale of rating. The Project Schedule and Cost were assessed as a medium degree of risk if they both remained flexible and a high degree of risk if the Project schedule and cost was fixed. Staff Technical Experience was

assessed as a low degree of risk if the staff had a high level of fluvial flood damage reduction experience and a high degree of risk if the staff had a low level of experience. The results of the evaluation are tabulated as follows:

Table 9.1 Review Plan Score Guide

Project Risk Item	Risk Assessment Score (Low Degree to High Degree)					Score
	Low		Medium		High	
Project Complexity	1	2	3	4	5	4
Customer Expectations	1	2	3	4	5	5
Product Schedule/Cost	1	2	3	4	5	4
Staff Technical Experience	1	2	3	4	5	2
Failure Impact and Consequences	1	2	3	4	5	3
Average Project Risk Assessment Score						3.6 (Medium)

10.0 REVIEW PLAN

The components of the review plan were developed pursuant to the requirements of EC1105-2-408.

10.1 Team Information

The decision document that will be the ultimate focus of the review process is the Saw Mill River at Elmsford and Greenburgh GRR, New York Flood Damage Reduction Study. The purpose of this post-authorization feasibility-level study and associated EIS will be to guide the Corps' efforts to prevent flood damage in the Saw Mill River Basin at Elmsford and Greenburgh, NY. This list provides the points of contact of NAN team members who are available to answer specific technical questions as part of the review process. The list also provides the names and organization of participating outside entities.

District Project Team Members:

MAIN REPORT PRODUCT	STUDY TEAM MEMBERS	REVIEW TEAM MEMBER
Feasibility Report Main Text	Project Planner CENAN-PL-F	All review team members will review this document internally External ITR: TBD
NEPA Documentation	CENAN-PL-E	All review team members will review this document internally External ITR: TBD

Sections	STUDY TEAM MEMBER	REVIEW TEAM MEMBER
Plan Formulation		TBD thru PCX
Economics		TBD thru PCX
Environmental		TBD thru PCX
Cultural Resources		TBD thru PCX
Real Estate		TBD thru PCX
Hydrology and Hydraulics		TBD thru PCX
Geotechnical/Structural	TBD	TBD thru PCX

10.2 Scientific Information

Based upon the self evaluation by the PDT, it is unlikely that the USACE study to be disseminated will contain influential scientific information. Influential scientific information is defined by the Office of Management and Budget as scientific information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions.

10.3 Timing

The ITR process will start upon coordination with the PCX--dependent on the completion of the draft feasibility study, which will be no earlier than the end of 2008.

10.4 External Peer Review Process

It is anticipated that external peer review will be required as the cost of the project will likely exceed the WRDA 2007 threshold. PCX and vertical team concurrence is required.

10.5 Public Comment

Public involvement is anticipated during the outreach phase between the draft and final feasibility studies. As these will not be completed until at least 2008, further public

involvement activities have, therefore, not been scheduled at this time.

10.6 ITR Reviewers [This will be updated accordingly based on PDT and NAD negotiations.]

It is anticipated that four to five reviewers total should be available in the following disciplines: fluvial hydraulics and design, economics, geotechnical, planning, environmental, cultural resources, and cost estimating. The reviewer contact information should be stated in Section 10.1 of this review plan. Cost estimating, as required by HQUSACE, review will be conducted by Cost Estimating Center of Expertise (NWW).

10.7 External Peer Review Selection

This will be determined conclusively in conjunction with the PCX and vertical team, if necessary.