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

REPLY TO
ATTENTION OF

FEB 15 2008

CENAD-PSD-P

MEMORANDUM FOR Commander, Philadelphia District, ATTN: CENAP-PL

SUBJECT: Review Plan Approval for Delaware River Basin Comprehensive NY, NJ, PA, MD and DE, Interim Feasibility Study for New Jersey

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 Delaware River Basin Comprehensive NY, NJ, PA, MD and DE, Interim Feasibility Study for New Jersey 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 does not include 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

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

DELAWARE RIVER BASIN COMPREHENSIVE
NEW YORK, NEW JERSEY, PENNSYLVANIA, MARYLAND AND DELAWARE

INTERIM FEASIBILITY STUDY FOR NEW JERSEY

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

(Note: Coordination of this PRP with the Flooding Center of Expertise is ongoing.)

1.0 PURPOSE

This Review Plan presents the process that assures quality products for the New Jersey Interim Feasibility Study, General Investigation (GI). This QC and ITR Plan define 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 integrated Feasibility Report. Under the provisions of new U.S. Army Corps of Engineers (USACE) policy, the ITR will be conducted by specialists from organizations outside of the district responsible for the study. Independent Technical Review will be conducted for all decision documents and will be independent of the technical production of this project. This QC and ITR Plan is, by reference, a part of the Project Management Plan (PMP) for this Feasibility Study.

2.0 APPLICABILITY

This document provides the Quality Control Plan for the Feasibility 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

EC1105-2-408 "Peer Review of Decision Documents" dated 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 & Appendices"

4.0 GENERAL PROJECT DESCRIPTION

The Corps of Engineers has been given the authority under Section 729 of the Water Resources Development Act (WRDA) of 1986, as amended by Section 202 of WRDA 2000, to conduct a reconnaissance study and any ensuing feasibility level investigations in the Delaware River Basin. The Delaware River Basin was listed as a priority river basin and the authority provides that:

> "The Secretary may assess the water resources needs of river basins and watershed of the Unites States, including needs relating to: (1) ecosystem protection and restoration; (2)

flood damage reduction; (3) navigation and ports; (4) watershed protection; (5) water supply; and (6) drought preparedness."

In addition, on July 20, 2005 the United States Senate Committee on Environment and Public Works requested that the Secretary of the Army review the report of the Chief of Engineers on the Delaware River and its tributaries, Pennsylvania, New Jersey, and New York, published as House Document 179, Seventy Third Congress, Second Session, with a view to determining whether any modifications of the recommendations contained therein are advisable in the interest of ecosystem restoration, flood plain management, flood control, water quality control, groundwater and subsidence management, comprehensive watershed management, recreation and other allied purposes.

The purpose of the feasibility study is to consider problems associated with flooding and associated ecosystem degradation, and other allied water resource problems in the New Jersey portion of the Delaware River watershed; to formulate and evaluate potential solutions to these problems; and to recommend a series of actions and projects that have a Federal interest and are supported by a local entity willing to provide the necessary items of local cooperation. The recommended plan(s) must significantly contribute to the identified objectives of reducing flood damages and restoring ecosystems.

5.0 REVIEW REQUIREMENTS

Initial Quality Control (QC) review will be handled within the Section or Branch performing the work or by staff in the corresponding Sponsor Department when it involves In-Kind Services. Additional QC will be performed by the Project Development Team (PDT) during the course of completing the Feasibility 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, and are not subject to the requirements of this Circular. The uses and applications of models in individual studies that lead to the preparation of decision documents covered by this Circular will be reviewed in accordance with the requirements of this Circular. It is anticipated that this Feasibility Study will include, at a minimum, use of the following models, all of which are pre-existing and do not require certification:

Pursuant to EC 1105-2-408, due to the nature of this project the Feasibility Report will need an ITR team assigned by the PCX for Flood Damage Reduction Projects. Coordination is ongoing. CESPD-PD-TP will assign this team. It is recommended that the ITR be handled entirely within USACE, as the scope and technical complexity do not warrant an External Peer Review (EPR), based upon the initial Risk Screening Process conducted by the PDT [and approved by North Atlantic Division(NAD)] noted in Section 9. It is anticipated that while this study will be

challenging and beneficial, it will not be novel, controversial or precedent setting, nor have significant national importance. As a result, the ITR will focus on:

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

6.0 REVIEW PROCESS

It is anticipated that the ITR Team Review Process will begin after the ITR Team has been assigned, and will cover the feasibility study and associated products. The Review Process will focus on data, assumptions and the engineering, scientific and economic analysis process. Major Review Process milestones are listed below:

- Approval of Review Plan by NAD
- ITR team assigned by Planning Center of Expertise (PCX)
- Draft Report Review
- Final Report Review

7.0 REVIEW COST

The cost of the ITR is estimated to be determined. It is anticipated that documents to be reviewed will be transmitted electronically. Comments will be made and addressed in Dr. Checks, a computer program used to aggregate comments. It is also assumed that the ITR team will be working virtually. The ITR team, or a representative of that team, will attend significant team or milestone meetings. The team should participate in all P milestone meetings; however, via conference call or video tele-conference.

8.0 REVIEW SCHEDULE

Note that since the commencement of this study preceded the requirement for PCX involvement and development of this Review Plan, the review schedule below does not match the major review process milestone list above.

TASK	START DATE	FINISH DATE
Develop ITR Plan & post to Web Site, PCX		Aug 07
Identify Regional ITR resources & Recommend ITR Plan to PCX		Aug 07
PCX Approves or Assigns ITR Team	TBD	
Formulation Meeting	TBD	
Feasibility Review Conference	TBD	
Review of Draft Feasibility Report	TBD	
Review Final Feasibility Report	TBD Based on HQ comments and Public review	

9.0 PROJECT RISK

The PDT members were asked to rate their assessment of the risk associated with this project based upon several factors and rate the project quantitatively among the defined levels of project risk of failure ranging from low to high. Based upon this analysis by the PDT, the project is projected to be low to medium in risk. The PDT considered previous District project experience when making this analysis. No attempt was made to tie this to a national scale of rating, so it is likely that the risk level would have been lower if the team were to have compared the risk of this project to a large flood damage reduction project.

The PDT scored each item in the Quality Control Plan (QCP) Score Guide (Table 9.1) to get an average score. The Project schedule and cost were assessed as a low 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 flood damage reduction experience and a high degree of risk if the staff had a low level of flood damage reduction experience. The score for the risk items were summed and the average value of the Assessment Score was used to determine the overall level of project risk. The results of the evaluation are tabulated as follows:

Table 9.1 Quality Control/Review Plan Score Guide

Project Risk Item	**Assessment Score (Low Degree to High Degree)**					**Score**
	Low		Medium		High	
Potential for Failure	1	2	3	4	5	3
Uncertainties of Predictions	1	2	3	4	5	4
Long Term Cumulative Effects/Customer Expectations	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						**3.2**
Project Magnitude Item						
Product Schedule/Cost	1	2	3	4	5	4
Project Complexity	1	2	3	4	5	4
Project Benefits	1	2	3	4	5	4
Project Scale	1	2	3	4	5	3
Average Project Magnitude Assessment						**3.75**

Score						

10.0 REVIEW PLAN

The components of the Review Plan (external ITR only) were developed pursuant to the requirements of EC1105-2-408.

10.1 Team Information

The decision documents that will be the ultimate focus of the peer review process are the Integrated Feasibility Report, the Division Commander's Public Notice, and the Environmental Record of Decision (ROD) for the Delaware River Basin Comprehensive New York, New Jersey, Pennsylvania, Maryland and Delaware Interim Feasibility Study for New Jersey. The purpose of the decision document will be to begin the approval process leading to the authorization to begin Plans & Specifications.

The PDT list provides the organizations of the NAP team and participating outside entities.

District PDT Members:

Project Manager – Theresa Fowler (215-656-6575)	Real Estate
Environmental Resources	Hydrology & Hydraulics
Cultural Resources	Construction
Floodplains/GIS	Geotechnical
Economics	Civil & Structural
Cost Engineering	Resource Management
Safety	Counsel
Contracting	Public Affairs

Non-District PDT Members:

New Jersey Department of Environmental Protection (NJDEP)

Independent Technical Review Team:

FRM PCX Manager, South Pacific Division, 415-503-6852 (Eric Thaut)	Cost Engineering
FRM PCX Technical Point of Contact, Sacramento District, 916-557-7440 (Miki Fujitsubo)	Civil and Structural

Review Team Leader	Hydrology & Hydraulics
Plan Formulation	Real Estate
Economics	Environmental Resources
Cultural Resources	Geotechnical

10.2 Scientific Information
Based upon the self-evaluation by the PDT, it is unlikely that the USACE report to be disseminated will contain influential scientific information. The flood damage reduction measures that were identified within the 905 (b) analysis will be evaluated using standard hydrologic, hydraulic, geotechnical and economic processes.

Economic and planning processes will additionally consider the Collaborative Planning Engineering Circular (EC 1105-2-409). This EC describes all the economic accounts that can be used to describe economic benefits. The four main economic accounts are national economic development (NED), national ecosystem restoration (NER), regional economic development (RED), and the other social effects (OSE).

10.3 Timing Quarter FY08 with an assessment of key models to be used in the evaluation and comparison of alternative plans in this feasibility study. The estimated schedule is noted in Part 8 of this Review Plan.

10.4 External Peer Review Process
No External Peer Review process is envisioned at this time. This assessment is supported by the evaluation of the PDT in August 2007 and tabulated as shown in Section 9 of this Review Plan.

10.5 Public Comment
Public involvement is anticipated throughout the Feasibility Study. The Public Involvement meeting dates have not been scheduled at this time.

It is anticipated that minutes of Public Involvement Meetings will be disseminated to the Peer Review Team following the meetings. This will allow the public response to be available to the ITR team.

10.6 ITR Reviewers
It is anticipated that reviewers should be available in the following disciplines: 1) Planning, 2) Economics, 3) Hydraulic Engineering 4) Cost Engineering, 5) Civil and Structural, 6) Real Estate, 7) Environmental Resources, 8) Cultural Resources, and 9) Geotechnical. The reviewer contact information should be stated in Section 10.1 of this Review Plan.

The expertise that should be brought to the review team includes the following:

1) Planning – The reviewer should have recent experience in reviewing Plan Formulation processes for flood damage reduction and some ecosystem restoration.

2) Economics – The reviewer should have a solid understanding of Economic Models, including Structure Inventory for Damage Analysis (SID) and Expected Annual Damages (EAD).
3) Engineering –The reviewers should have recent experience in flood damage reduction models and methods, as well as Hazardous, Toxic, Radioactive Waste (HTRW) issues.
4) Environmental – The reviewer should have a background in water quality, wetlands, endangered & threatened species, and natural stream restoration techniques.
5) Real Estate – The reviewer should have a solid background in real estate requirements and the use of easements.
6) Cultural – The reviewer should be familiar with cultural issues and assessments back to Colonial and pre-Colonial times.

10.7 External Peer Review Selection

Because an External Peer Review (EPR) is not anticipated for this study, there is no EPR selection.