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

1.0 PURPOSE

This review plan presents the process that assures quality products for the Bronx River Basin, New York, ecosystem restoration feasibility 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 Bronx River Basin Feasibility Report. 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 for this master plan.

2.0 APPLICABILITY

This document provides the quality control plan for the Bronx River Basin feasibility report. 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 Bronx River, located in Bronx and Westchester Counties, is one of the principal tributaries to the East River, a tidal strait linking New York Harbor to the Long Island Sound. Intense urbanization and development over the past centuries have led to the degradation of the Bronx River Basin ecosystem, in the form of loss of wetland riparian corridor acreage, increased sedimentation, excessive nutrient and pollutant-loading impacts on water quality, and channel instability. Other adverse effect due to urban development are increased velocities and volumes of storm water run-off, reduced groundwater recharge leading to decreased base flows in the Bronx River, and increased water temperatures. Development has also resulted in losses of native vegetation and increase of invasive species. In effect, water resources problems focus on potential threats to human health and loss of sustainable ecosystem services, and these overarching problems manifest themselves through the aforementioned degradation factors.

A reconnaissance study was authorized by a resolution of the Committee on Transportation and Infrastructure of the United States House of Representatives adopted 24 March 1998 to determine the feasibility of measures to address flood control, environmental restoration and protection, and other related purposes. Engineering solutions are available to meet ecosystem restoration goals and objectives, such as improvements in fish and wildlife habitat values. Valuable ecosystem services to attain environmental quality, social well being and economic benefits are being assessed.

A Feasibility Study Cost-Sharing Agreement (FCSA) was executed between the Corps of Engineers, New York City Department of Environmental Protection, and Westchester County in November 2003. A programmatic assessment of the entire Bronx River watershed must be developed to evaluate spin-off or fast-track sites, in order to demonstrate that projects are being implemented in a logical manner. The focus of the Feasibility Study for this fiscal year includes the completion of an existing conditions report for the Bronx River watershed (Fall 2007).

Currently, the Corps and the non-Federal sponsors, the NYC Department of Environmental Protection (NYCDEP) and the Westchester County Department of Planning (WCDOP), are working with resource agencies, local governments and stakeholders, particularly the Bronx River Alliance, to identify the problems, needs and opportunities and restoration measures for the Bronx River Basin.

5.0 REVIEW REQUIREMENTS

Initial Quality Control (QC) review will be handled within the Section or Branch performing the work. Additional QC will be performed by the Project Delivery Team (PDT) during the course of completing the integrated 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. 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. At this point the environmental assessment tools being contemplated are standard previously used methods (ie: IBI, HEP, HGM, etc).

Pursuant to EC 1105-2-408, the Feasibility Report and EIS will need an ITR team endorsed by the Planning Center of Expertise (PCX) for Environmental Restoration (National Ecosystem Planning) Projects. On October 5, 2006, the District held a conference call with MVD for the purpose of starting the formation of the ITR team. Dr. David Vigh (CEMVD-RB-T) and Dr. Hank Jarboe (CELRD-PDS-P) will validate the individual assignments of this team. It is recommended that the ITR be handled entirely within USACE, as the scope and level of technical complexity 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 will not be challenging, controversial or precedent setting, nor does it have highly 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 support documents.
- Spot checks for interdisciplinary coordination.

6.0 REVIEW PROCESS

It is anticipated that the ITR review process will begin after the ITR team has been fully assigned, and will cover key formulation, benefit and cost assessment areas as well as other allied disciplines bearing on formulation. Major review process milestones are listed below:

- Existing Conditions Report
- Selection of Assessment Tool
- Preliminary Alternatives
- Alternative Formulation Briefing
- Draft Report Review
- Final Report Review

7.0 REVIEW COST

The cost of the ITR is to be determined between the team and the PCX. It is assumed that documents to be reviewed will be transmitted electronically via the ftp site. 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 physically attend team or milestone meetings. The team should participate in all remaining milestone meetings; however, via conference call or video teleconference as warranted to improve efficiency.

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 is tailored to work remaining to be completed:

TASK	START DATE	FINISH DATE
Develop ITR Plan and post to Web Site, PCX	June 2007	June 2007
Identify Regional ITR resources and Recommend ITR Plan to PCX	July 2007	
PCX Approves or Assigns ITR Team	July 2007	
Sponsor Approves ITR Plan	Sep 2007	
Existing Conditions Report	Sep 2007	
Selection of Assessment Tool	TBD	
Preliminary Alternatives	TBD	
Alternative Formulation Briefing	TBD	
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 value of the scores were not as important as compared to what risk score class (low, medium or high) the Average Project Risk Assessment Score was classified. Based upon the PDT analysis, the project is low to moderate in risk because it did not 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 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 ecosystem restoration experience and a high degree of risk if the staff had a low level of ecosystem restoration 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	3
Customer Expectations	1	2	3	4	5	4
Product Schedule/Cost	1	2	3	4	5	2
Staff Technical Experience	1	2	3	4	5	3
Failure Impact and Consequences	1	2	3	4	5	2
Average Project Risk Assessment Score						**2.8 (Low-Medium)**

10.0 REVIEW PLAN

The components of the review plan (ITR only not external peer review) 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 peer review process is the Bronx River Basin, New York, Feasibility Report. The purpose of the decision document and associated EIS will be to guide the Corps' efforts to restore riverine and associated habitat within the Bronx River Basin. The project team is listed below. 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	CENAN-PL-F	TBD – PCX
Economics	CENAN-PL-F	TBD – PCX
Environmental (WQ/BST)	CENAN-PL-E	TBD – PCX
Cultural Resources	CENAN-PL-E	TBD – PCX
Real Estate	CENAN-RE	TBD – PCX
Hydrology and Hydraulics	CENAN-EN	TBD – PCX
Geotechnical/Structural	CENAN-EN	TBD – PCX
HTRW	CENAN-PL-E	TBD – PCX
Sediment Impact Assessment	ERDC	TBD – PCX

10.2 Scientific Information

Based upon the self evaluation by the project team, it is unlikely that the USACE report to be disseminated will contain influential scientific information. Influential scientific information is defined by the Office of Management 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. The environmental restoration measures that were identified will be evaluated using standard biological and economic processes.

10.3 Timing

The ITR process will begin with an assessment of the existing conditions. It is anticipated that work would start upon sponsor approval.

10.4 External Peer Review Process

It is not anticipated that external peer review would be required. Concurrence needed from PCX and vertical team.

10.5 Public Comment

Public involvement is anticipated during the outreach phase between the draft and final feasibility reports, and with annual newsletter updates. Further public involvement activities have not been scheduled at this time.

10.6 ITR Reviewers [This will be updated based on project team and MVD negotiations.]

It is anticipated that four to five reviewers total should be available in the following disciplines: hydraulics, economics, ecology, planning, and cost estimating. The reviewer contact information should be stated in Section 10.1 of this review plan. Cost Estimating - as required by HQUSACE, the review will be conducted by Cost Estimating Center of Expertise (NWW). Based upon preliminary coordination with the PCX, the following individuals are being considered in ITR team formation: Gary Young – MVK, Larry Kilgo – MVK, Douglas Radley – LRN, Hank Jarboe – LRD, Dorene Bollman – MVR, and John Nestler – ERDC.

10.7 External Peer Review Selection

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