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

APR 21 2008

CENAD-PSD-P

MEMORANDUM FOR Commander, New England District, ATTN: CENAE-EP-P

SUBJECT: Review Plan Approval for Blackstone River Watershed Feasibility Study, Massachusetts and Rhode Island Feasibility 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 Blackstone River Watershed Feasibility 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 Ecosystem Restoration Planning Center of Expertise of Mississippi Valley Division, which is the lead office to execute this Plan. The Plan currently does not include external peer review. Furthermore, conversion to the Continuing Authorities Program (CAP) is anticipated.

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

QUALITY CONTROL PLAN
BLACKSTONE RIVER WATERSHED FEASIBILITY STUDY, MASSACHUSETTS AND RHODE ISLAND

INTRODUCTION

Guidance contained in EC 1165-2-203, dated December 1995, states that Quality Control (QC) for all project decision and implementation documents are the function and responsibility of the districts and operating divisions. QC is the process used to ensure that each project/product is in compliance with all Corps of Engineers technical and policy requirements and meets the agreed upon requirements of the customer. The QC process is formalized in the Quality Control Plan (QCP) which is prepared at the start of work to ensure a quality product or service. This document is the QCP for the Blackstone River Watershed Feasibility Study, Massachusetts and Rhode Island.

SCOPE OF THE BLACKSTONE RIVER WATERSHED FEASIBILITY STUDY

Study Description - Authorization for this study is provided in a study resolution of the Committee on Public Works of the United States Senate adopted September 12, 1969. This resolution gives the Army Corps of Engineers the authority to investigate solutions for "flood control, navigation, and related purposes in Southeastern New England ..." The New England District conducted a reconnaissance study of the Blackstone River Watershed to assess its ecological problems and needs. Projects were examined with an emphasis on environmental restoration. The study, completed in August 1997, was conducted at the request of the states of Massachusetts and Rhode Island.

The reconnaissance investigation found significant ecological problems in the 475 square mile Blackstone River watershed including: lost or degraded wetlands, instream, pond and riparian habitat; loss of a historic anadromous fishery; degraded waterfowl habitat; degraded resident fisheries; contaminated sediments; and poor water quality. The study identified a broad array of potential solutions to be implemented by the Corps and others to address the Blackstone River basin's ecological problems, and presented preliminary designs and cost estimates for example projects believed most appropriate for the watershed. The proposed projects, although not representing anywhere near the full extent of work required to restore the ecological health of the watershed, would significantly improve the watershed's ecological health, particularly that of the mainstem river. The construction of similar projects throughout the study area would be required to achieve a dramatic improvement in the watershed's ecological health.

Many of the proposed restoration actions clearly are within the realm of the Corps of Engineers environmental restoration mission. Specific and generic examples of these actions include:

- the "Lonsdale Drive-In" project in Lincoln, Rhode Island, to address wetland habitat deficiencies;
- the conversion of abandoned gravel pits into shallow emergent/open water habitat areas to restore habitat lost at other locations elsewhere in the watershed;
- the Fisherville Pond project in Grafton, Massachusetts to restore both wetlands and open water habitat behind a dam by providing additional waterfowl and open water/emergent wetland habitat;
- the stabilization of unsafe dams whose failure would result in the loss of the habitat behind the dam(s) and the release of contaminated sediments causing habitat loss both downstream of the dam(s) and in Narragansett Bay;
- the evaluation of under-utilized dams throughout the watershed to assess their possible removal to restore river/stream habitat;
- the restoration of anadromous fish to the watershed through the construction of fish passage facilities at several of the lower dams and the development of a phased plan for the restoration of the fish to remaining portions of the watershed.

The total cost of the projects proposed in the Reconnaissance Study totaled $18,400,000, based upon the assumption of relatively benign sediments in the basin. It is likely that the Feasibility Study will identify several more such projects throughout the watershed. Implementation of the recommendations included in the ecological restoration plan would alleviate the significant water resources-related ecological problems in the Blackstone River watershed. The comprehensive plan would be implemented with full cooperation of local, state, and Federal agencies.

The Feasibility Study area will be the same as for the reconnaissance study. The Feasibility Report will build upon the information contained in this reconnaissance report and will include:

1. A detailed examination of the Blackstone River watershed.
2. A detailed examination of the ecological and human health risks posed by contaminated sediments.
3. A detailed examination of environmental restoration opportunities, including the restoration and/or creation of wetlands, riparian, and riverine and pond habitat.
4. An examination of the role of the Corps of Engineers in implementing fish passage facilities at hydropower dams licensed by the Federal Energy Regulatory Commission, and in stabilizing non-Federal dams for purposes related to ecosystem restoration.
5. A detailed examination of recreation opportunities.
6. Detailed investigation of site characteristics, including topographic and bathymetric mapping and subsurface exploration.
7. Hydraulic modeling where projects are proposed.
8. Water quality modeling to indicate the impacts of proposed projects.
9. Data collection and sampling to be used for modeling efforts.

10. Formulation of practical alternatives, considering the nature of the problem, site characteristics, and area resources.
11. A thorough consideration of the multiple purpose potential of environmental restoration projects.
12. Assessment of the environmental effects of the possible solutions, and preparation of an Environmental Impact Statement or Environmental Assessment as applicable.
13. Investigation of possible impacts to cultural resources with results and determination of effects coordinated in accordance with Section 106 (Public Law 89-665, as amended) responsibilities.
14. Coordination with the USFWS including receipt of a Fish and Wildlife Coordination Act Report.
15. Preparation of typical design drawings and quantity estimates. Drawings shall be prepared for a wide array of projects, including bank stabilization, small dam removal, small dam repair, instream habitat improvements, riparian restoration, dredging of small ponds, and wetlands restoration.
16. Estimation of project costs and benefits. At a minimum, costs and benefits shall be identified for projects to be formulated at Fisherville and Singing Ponds, at Beaver Brook, at the former Rockdale Pond impoundment, and at the Rhode Island dams where fish passage facilities are proposed. These sites have been selected primarily through public input. It is believed that the types of projects proposed for these areas will be potentially applicable elsewhere in the basin.
17. Evaluation and ranking of feasible solutions.
18. Identification of the National Economic Development (NED) plan or Locally Preferred Plan as applicable.
19. Identification of the National Environmental Restoration (NER) Plan;
20. Preparation of a preliminary hazardous, toxic, and radioactive waste assessment or chemical analyses of dredged material in accordance with the Clean Water Act.
21. Compliance with other environmental laws and regulations as appropriate.
22. A public involvement program to ensure that the public's concerns are addressed and that the public is kept apprised during the conduct of the Feasibility Study.
23. Analysis of project implementation arrangements, including construction cost-sharing requirements and an ability-to-pay analysis of the non-Federal sponsor's project financing plan.
24. Preparation of a Project Management Plan (PMP) which describes the tasks required during the Preconstruction Engineering and Design (PED) phase and associated costs.
25. Recommendation for authorization and construction, if a project(s) is economically justified and supported by non-Federal sponsors.
26. A review of the Feasibility Study efforts by an Independent Technical Review (ITR) team, which this Quality Management Plan addresses.

Expectations of the Study Sponsors - The Commonwealth of Massachusetts has requested that all actions recommended in the Reconnaissance Investigation be performed, with the sole exception of the study of options at Rice City Pond. Actions proposed at Rice City Pond were dropped from further consideration in order to reduce study costs. The State of Rhode

Island, although not providing matching Feasibility Study funds at this time, agrees that the actions recommended in the Reconnaissance Investigation are appropriate and should all be performed.

STUDY AND ITR TEAMS

In general, the inter-disciplinary study team participating in the Reconnaissance Investigation shall be the team members in the Feasibility Study. This team consists of personnel from the appropriate technical disciplines necessary to conduct and complete the study. The team members have been heavily involved in determining Feasibility Study tasks, and estimating their durations and costs.

The Independent Technical Review (ITR) team members used for the Feasibility Study shall be virually the same as those that conducted the ITR of the reconnaissance study. Since the New England District has technical specialists with the necessary knowledge, skills and experience, and personnel with no affiliation to the study are available, the decision was made, again, to conduct the independent review at the district office. Dr. Raimo Liias shall be the ITR team leader based on his management ability and extensive experience in all types of planning studies. All ITR team members have extensive experience and are considered senior staff specialists.

The Study and ITR teams are shown on the attached listing.

ACTIVITIES AND SCHEDULE

The following are major activities developed to assure a quality product:

Activity	Completion Date
District Execution FCSA	February 1999
Initial Feasibility Study Coordination Meeting	May 1999
Formulation Meeting/Briefing	April 2000
Draft Feasibility Report and Feas. Review Conference	January 2004
Final Feasibility Study Report	April 2004
Division Engineer's Public Notice	October 2004

RESPONSIBILITY FOR IMPLEMENTATION OF THE QCP

The study manager and the review team leader developed and implemented this QCP. Each received input from their respective teams. The scope of the QCP was developed commensurate with the level of risk and complexity for this feasibility level study. Both technical and policy considerations will be addressed to ensure a quality product. Technical review will confirm the proper selection and application of clearly established criteria, regulations, laws, codes, principles, and professional procedures. Technical review will also

confirm the utilization of clearly justified and valid assumptions. Policy compliance review will examine the development and application of decision factors and assumptions used to determine the extent and nature of Federal interest and related issues. It will also ensure the uniform application of clearly established policy and procedures nationwide, and that the proposed action is consistent with the overall goals and objectives of the Civil Works program.

- Responsibilities of the Study Manager
  - develop the QCP with the Technical Review Team Leader
  - keep the review team leader informed concerning study progress and the availability of items and findings to be reviewed
  - ensure that review team comments are addressed in a timely manner by the appropriate study team member
  - elevate unresolved comments up the chain of command to the Chief for resolution
  - maintain a documented record of comment resolution

- Study Team Responsibilities
  - develop and evaluate alternative plans
  - address ITR review comments in a timely manner
  - assist in the development of the QCP

- Responsibilities of the Technical Review Team Leader
  - develop the QCP with the Study Manager
  - facilitate requests for review team members through the functional chiefs
  - verify the expertise and experience of the review team nominees and assure that they have no connection to the study
  - evaluate review team comments before forwarding to the study manager to ensure that they are: clearly stated; based on guidance, regulation, or scientific/engineering principles; significant; and contain specific action to resolve the concern
  - ensure that reviews are promptly completed and forwarded to the study manager in a timely manner
  - cooperate with the study manager in the resolution of comments that have been elevated up the chain of command

- Responsibilities of the Functional Branch Chiefs
  - selects technical review team members
  - assists in the resolution of review comments elevated by the study manager

- Responsibilities of the Chief of Engineering/Planning Division
  - approves selection of technical review team members
  - final arbiter of unresolved issues between the study and review teams

- certifies District Engineer's Statement of Technical Review

☐ Responsibility of the District Commander
- certifies District Engineer's Statement of Technical Review

STUDY AND ITR TEAMS
BLACKSTONE RIVER WATERSHED FEASIBILITY STUDY

New England District	Sponsors
Study Manager	Commonwealth of Massachusetts Executive Office of Environmental Affairs

Study Team	ITR Team
Environmental Resources	Planning ITR Team Leader
Water Quality	Evaluation Branch
Hydrology/Hydraulics	Design Branch
Cultural Resources	Evaluation Branch
Recreation/Econ.	Water Mgt. Section
Cost Engineering	Design Br.
Structural Eng.	Geotech. Eng.
Civil Eng. Section (surveys)	
Civil Eng. Section (general)	
Geotechnical Engineering	
Real Estate	

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STUDY REVIEW CERTIFICATION
BLACKSTONE RIVER WATERSHED FEASIBILITY STUDY

I certify that a study review was completed and all comments resulting from the Independent Technical Review have been resolved and are on file at the New England District.

_____ Date

Independent Technical Review Team Leader

_____

Evaluation Branch

_____

Design Branch

_____

Evaluation Branch

_____

Water Mgt. Section

_____

Design Br.

_____

Geotech. Eng.

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NEW ENGLAND DISTRICT
DISTRICT ENGINEER'S STATEMENT OF TECHNICAL REVIEW

COMPLETION OF TECHNICAL REVIEW

The New England District has completed the Blackstone River Watershed Feasibility Study. Certification is hereby given that the study has been given an independent technical review appropriate to the level of risk and complexity inherent in the study and potential project, as defined in the Quality Control Plan. The technical review was accomplished by an independent technical review team at the District.

FINDINGS AND RESPONSE

During the technical review, it was verified that this study was conducted in compliance with clearly established policy principles and procedures and that all assumptions were clearly justified and valid. The following study elements were included in the review: assumptions, projections, methods, procedures, data, and information used in the analyses; formulation and evaluation of alternatives; the appropriateness and level of detail of data collected and analysis performed; and the reasonableness of results, to include whether the product meets the customer's needs consistent with law and existing Corps of Engineers policy. Significant concerns and their resolution are as follows:

CERTIFICATION OF TECHNICAL REVIEW

As noted above, all concerns resulting from technical review of this study have been resolved. The study may proceed to the Plans and Specifications phase.

_____ _____
Date

Chief, Engineering/Planning Division

_____
Date

COL, EN
Commanding