

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Water Supply and Wastewater Management

DOCUMENT NUMBER: 381-5511-113

TITLE: Handbook for PENNVEST Wastewater Projects

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Minor edits were made throughout August 15, 2003.

AUTHORITY: The Pennsylvania Sewage Facilities Act (35 P.S. §750.9 *et seq.*).
The Pennsylvania Clean Streams Law (35 P.S. §§691.5 and 691.402 *et seq.*).
The Pennsylvania Infrastructure Investment Authority Act (35 P.S. §751.1 *et seq.*).
Rules and Regulations at 25 Pa. Code Chapter 71, Chapter 91, Chapter 92, Chapter 95, Chapter 103, Chapter 961, Chapter 963 and Chapter 965.

POLICY: Department of Environmental Protection (DEP) staff will follow the guidance and procedures presented in this document to direct and support implementation of PENNVEST funding activities under the wastewater management programs.

PURPOSE: The purpose of this document is to establish a rationale and reasonable basis for staff decisions that promote quality, timely, and consistent service to the public and regulated community.

APPLICABILITY: This guidance will apply to all PENNVEST funding activities for wastewater projects.

DISCLAIMER: The policies and procedures outlined in this guidance are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the rules in these policies that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

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DEFINITIONS: N/A

PART 1 - PROJECT PLANNING AND DESIGN

Table of Contents

	<u>Page</u>
A. Introduction.....	1
Exhibit A - 1 - Checklist of DEP Project Manager Responsibilities	2
Exhibit A - 2 - Checklist of Applicant Responsibilities Involving DEP	3
Exhibit A - 3 - PENNVEST Application Flow Chart.....	5
B. Planning Consultation	6
Exhibit B - 1 - List of Documents to be Provided to Applicants	8
Exhibit B - 2 - Planning Consultation Meeting Agenda	9
Exhibit B - 3 - Federal Cross-Cutters	16
Form Letter B - 1 - Planning Consultation Follow-Up Letter (Construction).....	18
Form Letter B - 2 - Planning Consultation Follow-Up Letter (Design Advance).....	20
C. Project Planning and Public Notification Requirements	22
Exhibit C - Example Public Notice for <i>Pennsylvania Bulletin</i> Act 537 Plan or Update Approval	22
D. Treatment Facility Sizing	23
Exhibit D - Example Calculations for Sizing Based on Reasonable Growth	25
E. Cost-Effectiveness Review	30
Exhibit E - 1 - Applicant Guidance for Cost-Effectiveness Analysis.....	31
Exhibit E - 2 - Example Calculations of Present Worth and Uniform Annual Cost	34
F. State Environmental Review Process (SERP) in Pennsylvania and Uniform Environmental Review (UER) Process	41
Exhibit F - 1 - Uniform Environmental Review Checklist	44
Form Letter F - 1 - Categorical Exclusion Qualification Form Letter	48
Form Letter F - 2 - Categorical Exclusion Approval Form Letter.....	49
G. Second Opinion Project Review	50
Exhibit G - 1 - Checklist for Project Managers for Second Opinion Project Reviews.....	51
Exhibit G - 2 - Checklist for Applicant for Second Opinion Project Reviews	53
H. PENNVEST Priority Rating System and Rating Form	54
Exhibit H - 1 - PENNVEST Priority Rating System	55
Exhibit H - 2 - PENNVEST Project Rating Summary	84
I. Project Evaluation and Recommendation	85
Exhibit I - Project Evaluation and Recommendation Form	86
J. Chapter 103 Rating and the Project Priority List	89
Exhibit J - 1 - Chapter 103 Rating Form Instructions.....	90
Exhibit J - 2 - Chapter 103 Rating Form.....	93
K. Letter of No Prejudice and Pre-Closing Letter	96
L. Or Equal Condition	98
Exhibit L - 1 - PENNVEST "Or Equal" Condition Guidance.....	99
Exhibit L - 2 - Specification Certification	102

PART 2 - PROJECT CONSTRUCTION

Table of Contents

A. Introduction.....104
Exhibit A - 1 - Checklist of Borrower Responsibilities Involving DEP105
Exhibit A - 2 - Checklist of DEP Project Manager Responsibilities107

B. Development of Performance Standards109
Exhibit B - Sample Performance Standards for Wastewater Projects110
Form Letter B - 1 - Letter Notifying Borrower of Loan Approval and Technical
Requirements for Performance Standards114
Form Letter B - 2 - Approval Letter for Performance Standards115

C. Pre-construction Conference Purpose and Procedures.....116
Exhibit C - Pre-Construction Conference Agenda and Handout117

D. Change Order Review Procedures121
Exhibit D - 1 - Borrower Guidance for Contract Change Order Submissions122
Exhibit D - 2 - PENNVEST/DEP Change Order Supplement Form.....123
Exhibit D - 3 - DEP Change Order Eligibility Guidance.....124
Exhibit D - 4 - DEP Change Order Review Checklist.....126

E. Interim Site Visits During Construction127
Exhibit E - DEP Site Visit Report.....129

F. Final Inspection.....131

G. Performance Certification.....132
Exhibit G - Affirmative Project Performance Certification.....134
Form Letter G - 1 - Notifies Borrower of One-Year Performance Period.....135
Form Letter G - 2 - Review Letter for Performance Certification/Corrective Action Report.....137

PART 1 - PROJECT PLANNING AND DESIGN

A. INTRODUCTION

1. This portion of the Handbook provides guidance for the various responsibilities of the DEP Project Manager during the course of the planning and design of a wastewater project funded by PENNVEST. It is intended to cover all responsibilities from the planning consultation that initiates the process, through the time that a project recommendation is made to the PENNVEST Board.
2. Each Section includes specific guidance on the various types of responsibilities. Following the guidance, where applicable, there are various Exhibits and Form Letters relating to the specific activity.
3. Checklists showing responsibilities of both the Applicants and the Project Managers during the planning and design phase are provided. These Checklists summarize DEP's role in project planning and design. Exhibit A-1 is the Checklist of DEP Project Manager Responsibilities and Exhibit A-2 is the Checklist of Applicant Responsibilities that involve DEP in some manner.
4. Unless otherwise noted, references to a numbered chapter, e.g., Chapter 103, refer to a specific chapter in Title 25 of the Pennsylvania Code.

EXHIBIT A - 1

CHECKLIST OF DEP PROJECT MANAGER RESPONSIBILITIES
During Planning and Design of Wastewater Projects Funded by PENNVEST

Note that the items listed below need not be completed in the order in which they appear.

- Participate in a planning consultation meeting with the potential PENNVEST Applicant and the appropriate PENNVEST Project Specialist. Handout and review relevant reference materials (see Exhibit B-1).
- Review the planning consultation meeting minutes and send a letter (see Exhibits B-2 and B-3) to the prospective Applicant confirming that the minutes adequately document the discussion at the meeting and that they highlight important requirements that the Applicant will have to fulfill to obtain funding from PENNVEST.
- If applicable, review the completed Act 537 Official Sewage Facilities Plan, Plan Update, or Planning Module, to ensure that pertinent PENNVEST requirements have been met.
 - Treatment Facilities (if applicable) were sized for reasonable growth (see Section 1.D.).
 - Cost-effectiveness analysis was completed (see Section 1.E.).
 - The Uniform Environmental Review Process (UER) was followed (see Section 1.F.).
 - If applicable, review a request for a Categorical Exclusion (see Section 1.F.).
 - If applicable, review the Environmental Report (ER) (see Section 1.F.).
 - Review Public Notification Procedures, and upon approval of the Act 537 Plan, publish a notice in the *Pennsylvania Bulletin* confirming a finding of no significant impact (see Chapter 71.31(c) and Section 1.F.).
- Complete Chapter 103 Rating and submit it to the Division of Municipal Financial Assistance for placement of the project on the Project Priority List (PPL).
- For projects whose construction costs plus contingency exceed \$10 million, evaluate the Second Opinion Review Report submitted by the Applicant.
- Review PENNVEST Application for project eligibility, including the information related to treatment plan sizing and reasonable growth.
- Complete the PENNVEST Project Rating. Familiarize the Region's Priority Rating Review Committee (PRRC) Representative with the project and the recommended PENNVEST Priority Rating. Discuss the treatment plant sizing issue if necessary.
- Complete the Project Evaluation and Recommendation Form, being sure to establish and document the project's planning and permitting status.
- Prior to loan closing, verify the Applicant's solicitation of Minority and Women's Business Enterprise firms to participate in the project.

EXHIBIT A - 2

CHECKLIST OF APPLICANT RESPONSIBILITIES INVOLVING DEP
During Planning and Design of Wastewater Projects Funded by PENNVEST

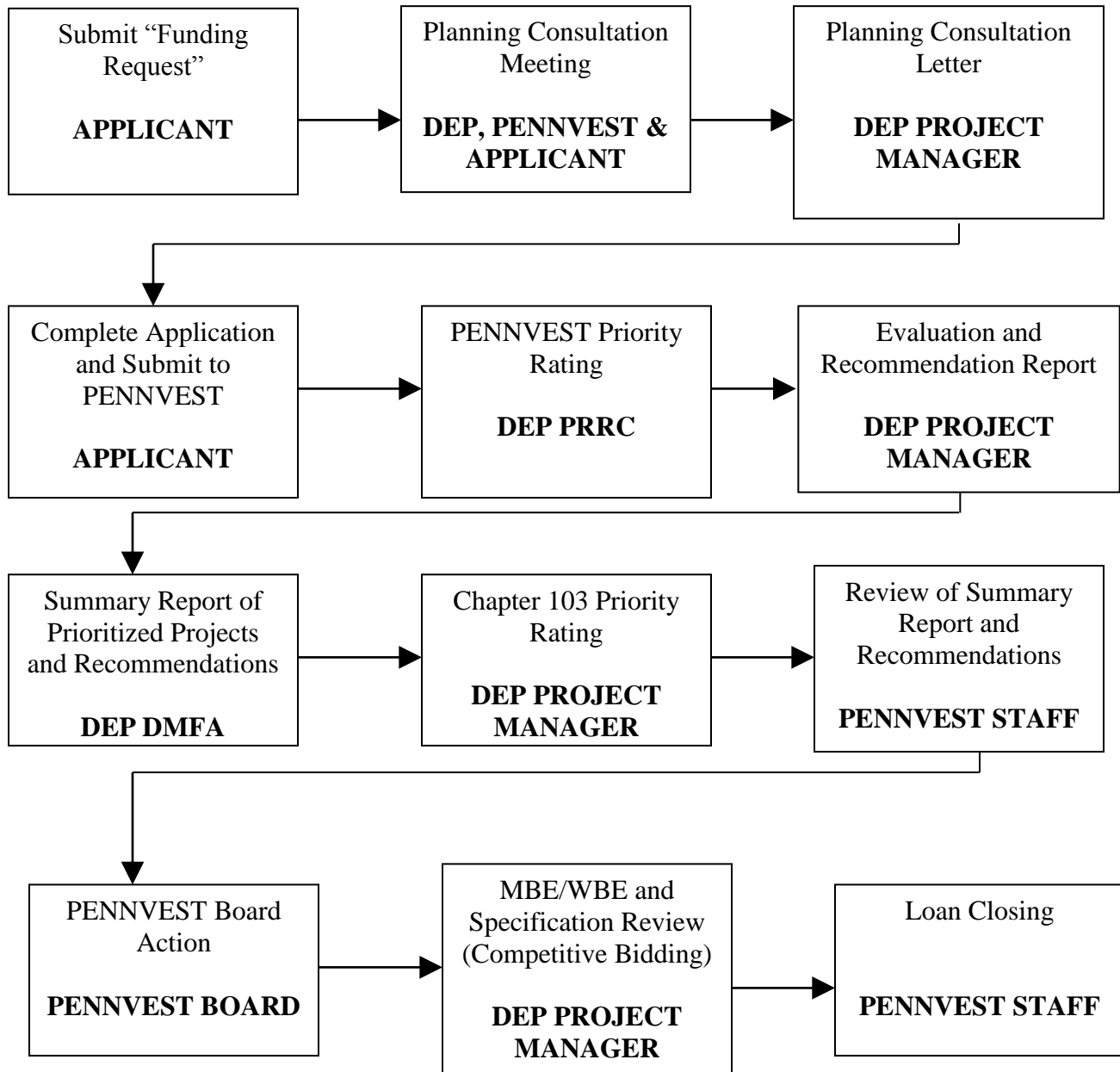
Note that the items listed below need not be completed in the order in which they appear.

- Submit a completed Summary Page of the PENNVEST Application to PENNVEST and the DEP regional office serving your county.
- Participate in a planning consultation meeting with DEP and PENNVEST staff.
- Produce written minutes of the Planning Consultation Meeting and forward to DEP Project Manager.
- Submit a completed Act 537 Sewage Facilities Plan, Plan Update, or Planning Module, if required, addressing:
 - The results of the Planning Consultation Meeting
 - The requirements contained in Chapter 71
 - Cost-Effectiveness and Present Worth Analysis
 - Treatment plant sizing (if applicable) and reasonable growth
 - The Uniform Environmental Review Process (UER)
 - Compliance with the County and Local Land Use and Agricultural Conservation Policies (see Item 7.a. of the Planning Consultation Meeting Agenda, Exhibit B-2)
- Provide a Second Opinion Review for all projects whose estimated construction plus contingency costs are greater than \$10 million.
- Obtain any and all permits necessary for the construction and operation of the proposed project, including but not limited to:
 - NPDES Part I (Authorization to Discharge)
 - WQM Part II (Construction and Operation)
 - Soils and Waterways General Permits and Encroachment Permits (as required)
 - Air Quality Plan Approvals (for odor treatment devices, wet scrubbers, etc.)
 - Storage Tank Registrations (for hazardous and other materials utilized and stored at WWTFs)
- Submit a completed PENNVEST Application, prior to the application cutoff date, to both PENNVEST and the DEP regional office serving your county. A separate application must be submitted for each system requesting financing, and for each type of project (wastewater, drinking water, or stormwater). Note that if an Act 537 Plan, Plan Update, or Planning Module was not required for the project, the application must include the following:
 - A statement of the Project Scope, identifying the problems to be addressed by the project in the affected area.
 - A statement explaining the investigation and availability of alternate funding sources.

- Document that the project specifications and bidding procedures are not restrictive and are in compliance with PENNVEST's "Or Equal" Condition. Sign, seal, and submit the *Specification Certification* form - 3800-FM-WSWM0034 available on DEP's website at www.dep.state.pa.us - to the DEP Project Manager prior to advertising for bids.

- If applicable, request a Letter of No Prejudice from PENNVEST.

PENNVEST APPLICATION FLOW CHART



B. PLANNING CONSULTATION

1. DEP's participation in planning consultation meetings for PENNVEST projects is specified in Section 7(a) of the Chapter 963 Regulations and in the most current Memorandum of Understanding between PENNVEST and DEP. The purpose of the meeting is to:
 - a. Discuss relevant wastewater abatement needs.
 - b. Identify and screen alternate solutions.
 - c. Examine alternate funding sources.
 - d. Discuss procedures and information needed to complete the application and implement the project.
 - e. Identify any federal requirements that may need to be addressed.
2. PENNVEST will notify the appropriate DEP Regional Section Chief when a request for funding assistance is received. The Section Chief will then assign the project to a Project Manager. At that point, the Project Manager will schedule a Planning Consultation Meeting. In scheduling the Planning Consultation Meeting, the Project Manager must consider the following:
 - a. The appropriate PENNVEST Project Specialist must be included in the Planning Consultation Meeting.
 - b. If the proposed project will require permits and approvals from other DEP Regional programs, representatives from these programs should be included in the Planning Consultation Meeting.
3. At the Planning Consultation Meeting provide the Applicant with the handouts and information as listed on Exhibit B-1 - Documents to be Provided to Applicants. Inform the Applicant that they are responsible for preparing written minutes of the Planning Consultation Meeting. Note that Exhibit B-2 is the agenda for the Planning Consultation Meeting.
4. Discuss the entire process with the Applicant. (See Exhibit A-3.) The Planning Consultation Meeting is perhaps the best opportunity that the Project Manager will have to explain DEP's planning and permitting requirements to local officials. The Project Manager should take this opportunity to make sure that the local officials have a clear understanding of what is required by DEP and PENNVEST, and at what stage in the process these requirements need to be addressed.
5. Stress the requirements of the Sewage Facilities Act (Act 537) that are in regulation at Chapter 71. In addition, the federal Clean Water State Revolving Fund (CWSRF) requirements must be discussed. It is important to emphasize that the project will not be recommended to PENNVEST unless all planning and permitting requirements have been met by the date of the PENNVEST Board Meeting.
6. After the Planning Consultation Meeting, the Project Manager is responsible for preparing the Planning Consultation Letter. Form Letter B-1 is an example letter for use by Project Managers. It is important that the Planning Consultation minutes be as

accurate and as thorough as possible so that the proceedings of the Planning Consultation Meeting are well documented. Any misunderstanding on the Applicant's part can lead to unnecessary planning and design costs, and significant project delays.

7. The final Planning Consultation Letter must be sent to the Applicant and copied to PENNVEST, the DEP Regional Project File, the Division of Municipal Financial Assistance, the area-wide Planning Agency with local jurisdiction (if applicable), and any other DEP bureaus (if applicable).

EXHIBIT B - 1

LIST OF DOCUMENTS TO BE PROVIDED TO APPLICANTS

Exhibit B - 2 - Planning Consultation Meeting Agenda

Exhibit B - 3 - Federal Cross-Cutters

Exhibit D - 1 - Example Calculation for Sizing Based on Reasonable Growth

Exhibit E - 1 - Applicant Guidance for Cost-Effectiveness Analysis

Exhibit F - 1 - Uniform Environmental Review checklist

Exhibit G - 2 - Checklist for Applicant concerning Second Opinion Project Review

Exhibit L - 1 - PENNVEST “Or Equal” Condition Guidance

A Guide for Preparing Act 537 Update Revisions, DEP ID: 362-0300-003 (Blue Book)

Policy for Consideration of Local Comprehensive Plans and Zoning Ordinances in DEP Review of Permits for Facilities and Infrastructure, DEP ID: 012-0200-001

Specification Certification Form, 3800-FM-WSWM0034, available on DEP’s website at www.dep.state.pa.us

Guidance on Utilization of Minority and Women’s Business Enterprise Firms, DEP ID: 381-5511-014

PLANNING CONSULTATION MEETING AGENDA

1. PROJECT INFORMATION

- a. What problems does the Applicant expect to alleviate with the project?
- b. What is the scope of the project?
- c. When does the Applicant expect to implement the project?

2. PENNVEST PURPOSE

- a. PENNVEST provides funds for design and construction of wastewater, drinking water, and stormwater facilities in needy Pennsylvania communities.
- b. PENNVEST primarily provides low interest loans at rates ranging from 1 percent to approximately 5 percent based on various factors set forth in the legislation.

3. FUNDING INFORMATION

- a. Application
 - (1) Cutoff dates for submission of applications can be found on the PENNVEST website at www.pennvest.state.pa.us .
 - (2) Five copies of the application are submitted to PENNVEST and one copy with project plans is submitted to the appropriate DEP Regional Project Manager.
- b. Types of Assistance
 - (1) Advance Funding Assistance is for costs associated with design engineering services and, when applicable, Second Opinion Project Review.
 - (2) Advance Funding Guaranty Program is for small systems that serve 250 customers or less. This program guarantees projects construction funding prior to project design.
 - (3) Construction Loan Program is for costs associated with the acquisition, construction, improvement, expansion, or rehabilitation of a facility. Eligible costs include design and construction engineering. Interest rates can be as low as 1 percent and the term is generally 20 years, but can be extended to 30 years under certain circumstances.

- (4) Grants are considered only when the Board determines that an Applicant is unlikely to be able to repay a loan.
- (5) Combinations of low interest loans with partial grants are occasionally offered.
- c. Total Funding Limits
 - (1) \$11,000,000 is the limit for any single municipality project.
 - (2) \$20,000,000 is the limit for any multi-municipal project.
 - (3) \$2,000,000 is the limit for any Advance Funding Assistance.
- d. Alternate Funding Sources

Other funding must be considered if PENNVEST is not awarded (see the PENNVEST Publication titled “*Water, Sewer, and Stormwater Utility’s Guide to Financial and Technical Assistance Programs*”).
- e. Refinancing

PENNVEST cannot refinance a project designed and/or constructed using funds from another source.
- f. Letter of No Prejudice and Pre-closing Letter
 - (1) If construction must begin prior to funding approval, a written request can be made to PENNVEST for a Letter of No Prejudice. If approved, a Letter of No Prejudice will allow construction to proceed without affecting the Applicant’s eligibility for PENNVEST financing. It is up to the Applicant to obtain any bridge financing that may be necessary to start construction. The Applicant must submit a PENNVEST application within 180 days of the date of the Letter of No Prejudice. The applicant must also obtain all necessary permits and meet all other PENNVEST technical requirements prior to construction.
 - (2) If construction must begin after funding approval but before loan closing, a written request for a Pre-closing Letter must similarly be made to and approved by PENNVEST.
- g. Act 339 State Operating Subsidy
 - (1) The Act 339 Subsidy Program is gradually being phased out. In order to be eligible for Act 339 subsidy, construction of a new or modified facility must have begun before December 31, 1999.
 - (2) For projects begun before December 31, 1999, if the construction is 100 percent funded by PENNVEST (loan or grant), the Applicant is not

eligible for Act 339 subsidy for the project (Section 103.26(e)(1) of the DEP regulations). If the construction is not 100 percent funded by PENNVEST (loan or grant), the Applicant is eligible for subsidy, but only to the extent of local contribution toward the construction of any Act 339 eligible facilities.

- (3) Items taken out of service, as the result of a PENNVEST construction project must be reported in a revised Act 339 application for the year in which those facilities were no longer used.

h. Tap Fees

Applicants do not have to use tap fees to reduce the amount of financing requested from PENNVEST.

4. ELIGIBLE COSTS

- a. Eligible costs generally include design and engineering, improvements to or expansion of existing facilities, and new construction. Typical wastewater projects include treatment plants that provide secondary or advanced treatment, interceptor sewers, correction of infiltration/inflow problems, new sewer systems that serve existing homes with wildcat sewers or malfunctioning onlot systems, and rehabilitation or replacement of an existing sewer system.
- b. Ineligible costs generally include Act 537 planning activities, house laterals, litigation cost associated with a State enforcement action, land and right-of-way costs for facilities, and facilities that are already under construction (without a Letter of No Prejudice).

5. PLANNING APPROVAL AND CHAPTER 71 REQUIREMENTS

Funding cannot be received from PENNVEST until an Act 537 Plan, Plan Update, or Planning Module has been approved, if required.

6. PERMITS ISSUED OR PLANS AND SPECIFICATION APPROVED

- a. NPDES Permits (Part I) will be needed if a surface water discharge is involved.
- b. WQM Permit (Part II) will be needed, including approval of an Erosion and Sedimentation Control Plan, any encroachment permit, and a sludge disposal/waste management plan, if applicable.
- c. Act 40 permit exemption applies for sewer extensions serving 250 EDUs or less. Note that plans and specifications are still required to be approved for PENNVEST.
- d. Water Obstruction and Encroachment Permits are required for projects that encroach on wetlands or streams. A separate permit may be required from the U.S. Army Corps of Engineers.

- e. Air Quality Plan Approvals are required for projects involving odor/gaseous emission treatment equipment.
- f. Storage Tank Registration is required for substances that are utilized at WWTFs and stored in bulk quantities in aboveground and/or underground storage tanks.
- g. PA Department of Transportation Highway Occupancy Permit (HOP), if necessary.
- h. DEP will not recommend a project for PENNVEST funding unless all planning and permitting requirements are expected to be met before the date of the PENNVEST Board Meeting.
- i. PENNVEST funding cannot be received until all necessary permits have been obtained.
- j. Construction cannot begin, even with a Letter of No Prejudice, until all necessary permits are obtained.

7. OTHER PENNVEST REQUIREMENTS

- a. Each application must include letters from the local planning agency, the county (or regional) planning agency, the county agricultural preservation office (or conservation district) indicating that the project is consistent with their land use or agricultural conservation policies.
- b. A Second Opinion Review is required for projects exceeding \$10 million in construction and contingency costs. This review must be completed during the design phase of the project.
- c. The sizing of new treatment facilities, or treatment facility expansions to serve growth areas, must be based on the average daily flow from the service area plus an allowance for reasonable growth. PENNVEST considers reasonable growth to be the population growth of the service area expected during a 20-year period, based on the higher of the historical municipal or county growth rate using the latest census data, unless other growth projections can be justified.
- d. The cost-effectiveness of the proposed project must be compared with other alternatives (required for all projects).
- e. Specifications for all construction projects must be non-restrictive and allow “or equal” products except in special circumstances. A specification certification form must be submitted to the DEP Project Manager prior to advertising for bids.
- f. Performance Certification is required for all construction projects. For one year following the initiation of operation, facilities must be operated under the supervision of the prime engineer who was responsible for engineering services during construction. Then, a Basis of Certification Report, based upon the

approved performance standards, must be prepared and submitted to the appropriate DEP regional office. A Corrective Action Report will be needed if the facility is not performing acceptably.

8. CWSRF/FEDERAL REQUIREMENTS

- a. Uniform Environmental Review (UER) Process
 - (1) Federal Cross-Cutters are laws or Executive Orders that apply to any project constructed using federal funds.
 - (2) An Applicant must demonstrate compliance with these federal requirements, during the planning and design phase of the project, to be eligible for PENNVEST funding. A list of these federal requirements is attached to this agenda.
 - (3) Applicants must follow the UER Procedures when planning and designing projects where PENNVEST assistance may be requested, so that these federal requirements are addressed.
- b. Applicants must comply with the Civil Rights Act by providing that no person shall be subject to discrimination.
- c. Minority and Women's Business Enterprises (MBE/WBE) must be solicited through the bidding of design or construction contracts or subcontracts.
- d. Applicants for the Advance Funding Guaranty Program (for projects that serve 250 customers or less) are exempt from the federal Cross-Cutter requirements and the MBE/WBE requirements because no federal funds are used for this program.

9. PENNVEST APPLICATION REVIEW

- a. In establishing priorities, five criteria are evaluated: Public Health and Safety; Environmental Impacts; Economic Development; Compliance with State and Federal Regulations; and Adequacy, Efficiency and Social Impact.
- b. DEP evaluates all but the Economic Development Criteria, which are evaluated by the Department of Community and Economic Development (DCED).
- c. PENNVEST performs the financial analysis and determines the loan and grant conditions.

10. DEP RECOMMENDATION TO PENNVEST

DEP prepares the rating of non-economic criteria, determines whether the planning and permitting issues are resolved, and forwards a Project Evaluation and Recommendation to PENNVEST. The PENNVEST Board has the final authority to fund or not fund a project.

11. NOTIFICATION OF FUNDING DETERMINATION

- a. PENNVEST will notify applicants of whether or not they receive funding approval.
- b. If funding is not approved at a PENNVEST Board Meeting, an application can remain active for a period of one year. During this time, the Applicant is able to submit additional information and documentation to the DEP Project Manager to help improve the project's priority rating. After the one-year period, a new application must be submitted.

12. ROLE OF PENNVEST THROUGHOUT THE PROCESS

- a. Answer general financial and loan specific questions
- b. Review application, rating, evaluation, and recommendation
- c. Determine type and amount of funding
- d. Perform loan closings and repayment activities
- e. Distribute funds
- f. Evaluate and approve/disapprove Letter of No Prejudice and Pre-Closing Letter requests

13. ROLE OF DEP THROUGHOUT THE PROCESS

- a. Act as technical consultant to the PENNVEST Administrative staff
- b. Conduct planning consultation meetings with potential applicants
- c. Review project plans and specifications
- d. Perform technical reviews, including planning and permit reviews and approvals, cost-effectiveness analysis review, and treatment plan sizing review
- e. Monitor project compliance with federal and state requirements
- f. Prepare environmental rating and recommendation for PENNVEST
- g. Review "or equal" specification certification
- h. Participate in pre-construction conference
- i. Conduct interim and final construction inspections
- j. Perform technical review of change orders

k. Evaluate project performance certification

14. PLANNING CONSULTATION MINUTES

The Applicant should prepare detailed minutes of the Planning Consultation Meeting, including a list of Attendees. These minutes should be reviewed by all Attendees prior to being finalized.

15. PLANNING CONSULTATION LETTER

The DEP Project Manager will prepare a letter that summarizes the planning consultation meeting.

FEDERAL CROSS-CUTTERS

A. Environmental

Archaeological and Historic Preservation Act of 1974, 16 USCS §469a-1 *et seq.*, (P.L. 86-523, as amended)

Protection and Enhancement of Cultural Environment, (Executive Order 11593)

National Historic Preservation Act of 1966, 16 USCS §470, (P.L. 89-665, Section 106, as amended)

Clean Air Act of 1955, USCS §7401 *et seq.*, (P.L. 84-159, as amended)

Coastal Barrier Resources Act, 16 USCS §3501 *et seq.*, (P.L. 97-348)

Coastal Zone Management Act of 1972, 16 USCS §1451 *et seq.*, (P.L. 92-583, as amended)

Endangered Species Act of 1973, 16 USCS §1531 *et seq.*, (P.L. 93-205, as amended)

Fish and Wildlife Coordination Act, (P.L. 85-624, as amended)

Floodplain Management, (Executive Order 11988, as amended by Executive Order 12148)

Environmental Justice, (Executive Order 12898)

Protection of Wetlands, (Executive Order 11990)

Farmland Protection Policy Act, 7 USCS §4201 *et seq.*, (P.L. 97-98)

National Environmental Policy Act of 1969, (P.L. 91-190)

Safe Drinking Water Act of 1974, (P.L. 93-523, Section 1424(e), as amended)

Wild and Scenic Rivers Act of 1968, 16 USCS §1271 *et seq.*, (P.L. 90-542, as amended)

B. Social

Promoting the Use of Women's and Minority Business Enterprise, (Executive Orders 11625, 12138 and 12342)

Civil Rights Act of 1964, Title VI, (P.L. 88-352)

Title IX of the Education Amendments of 1972, as amended, 20 USCS §1681 - 1685 and 1686, Prohibition against Sex Discrimination

Rehabilitation Act of 1973, 29 USCS §794, (P.L. 93-112 Section 504, as amended. Executive Orders 11914 and 11250)

Section 13 of the Federal Water Pollution Control Act Amendments of 1972, (P.L. 92-500), (“Clean Water Act”)

Age Discrimination Act of 1975, 42 USCS §6101-6107. (P.L. 94-135, as amended)

Drug Free Workplace Act of 1988, (P.L. 100-690)

Drug Abuse Office and Treatment Act of 1972, (P.L. 92-255)

Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970, (P.L. 91-616)

Equal Employment Opportunity, (Executive Order 11246, as amended)

Public Health Service Act of 1912, 42 USCS §290 dd-3 and §290 ee-3, §523 and §527

Section 129 of the Small Business Administration Reauthorization and Amendment Act of 1988, (P.L. 100-590)

C. Economic

Procurement Prohibitions under **Clean Air Act**, Section 306; **Clean Water Act**, Section 508; and Executive Order 11738

Debarment and Suspension, (Executive Order 12549)

D. Miscellaneous

Demonstration Cities and Metropolitan Development Act of 1966, (Executive Order 12372, P.L. 89-754, as amended)

Uniform Relocation and Real Property Acquisition Policies Act of 1970, Titles II and III, (P.L. 91-646, as amended)

Anti-Lobbying, 31 USCS §1352, 40 CFR Part 34

Flood Disaster Protection Act of 1973, (Section 102(a), P.L. 93-234)

Single Audit Act of 1984, or OMB Circular No. A-133

FORM LETTER B - 1

(To be used following Planning Consultation Meeting for Construction Projects)

Re: PENNVEST Planning Consultation Meeting

Dear _____:

Enclosed is a copy of the Minutes that summarize the PENNVEST Planning Consultation Meeting held on <DATE> at <LOCATION>. The Attendees are listed in the Minutes. This meeting fulfilled PENNVEST's requirement to conduct a Planning Consultation Meeting, as noted in the application form.

As you know, we discussed the PENNVEST loan program, and the different roles of PENNVEST, DEP, and the Department of Community and Economic Development (DCED). We also talked about federal funding sources available to PENNVEST, specific program requirements and permits for your project, eligible costs, how an application would be processed, and the priority rating system. Other topics included Letters of No Prejudice, Act 537 Planning Approval, land use issues, cost-effectiveness analysis, competitive bidding, MBE/WBE requirements, performance certification and the impact of PENNVEST Funding on Act 339 Subsidies.

In addition to the items described above, we specifically discussed _____

Prior to applying to PENNVEST for funding, it is imperative that you ensure that all DEP planning and permitting requirements, and PENNVEST and federal planning requirements, have been addressed. For your information, the cut-off date for applications for the next PENNVEST Board meeting is <DATE>. The next PENNVEST Board Meeting will be held on <DATE>.

I look forward to working with you to correct wastewater problems within your community. If you have any questions, please call me at <PHONE>.

Sincerely,

Project Manager

Enclosure

cc: <CONSULTANT>
PENNVEST Project Specialist
County or Regional Planning Agency

bcc: File
DMFA
<**PROJECT MANAGER**>

FORM LETTER B - 2

(To be used following Planning Consultation Meeting for Design Advances)

Re: PENNVEST Planning Consultation Meeting

Dear _____:

Enclosed is a copy of the Minutes that summarize the PENNVEST Planning Consultation Meeting held on <DATE> at <LOCATION>. The Attendees are listed in the Minutes. This meeting fulfilled PENNVEST's requirement to conduct a Planning Consultation Meeting, as noted in the application form.

The purpose of the meeting was to inform you of the PENNVEST program requirements as they apply to your project. PENNVEST provides engineering design advance funding, generally in the form of low interest loans, for projects such as yours, provided planning has been completed.

As you know, we discussed the PENNVEST loan program, and the different roles of PENNVEST, DEP, and the Department of Community and Economic Development (DCED). We also talked about federal funding sources available to PENNVEST, specific program requirements and permits for your project, eligible costs, how an application would be processed, and the priority rating system. Other topics included Letters of No Prejudice, Act 537 Planning Approval, land use issues, cost-effectiveness analysis, competitive bidding, performance certification and the impact of PENNVEST Funding on Act 339 Subsidies.

Prior to applying to PENNVEST for funding, it is imperative that you ensure that all DEP, PENNVEST and federal planning requirements have been addressed. For your information, the cut-off date for applications for the next PENNVEST Board meeting is <DATE>. The next PENNVEST Board Meeting will be held on <DATE>.

I look forward to working with you to correct wastewater problems within your community. If you have any questions, please call me at <PHONE>.

Sincerely,

Project Manager

Enclosure

cc: <CONSULTANT>
PENNVEST Project Specialist
County or Regional Planning Agency

bcc: File
DMFA
<**PROJECT MANAGER**>

C. PROJECT PLANNING AND PUBLIC NOTIFICATION REQUIREMENTS

Most wastewater projects are subject to the requirements of Act 537 - The Pennsylvania Sewage Facilities Act. This Act requires that every municipality in the Commonwealth develop and maintain an up-to-date plan for addressing sewage disposal needs and maintaining adequate sewage disposal facilities in the municipality. New projects generally require existing plans to be updated.

Project Managers should review the Guide for Preparing Act 537 Update Revisions (“Bluebook”) for detailed information related to the preparation and approval of these plans. In addition to the requirements referenced in the Bluebook, the Uniform Environmental Review Process (UER) must be followed during the preparation of Act 537 Plan Updates for all PENNVEST projects receiving SRF funding.

One major component of the UER is the public notification requirement. At the request of EPA Region III, DEP has adopted the policy of publishing notification in the Pennsylvania Bulletin when Act 537 Plans are approved, and placing a copy of this notice in the project file. The notice must document the results and the findings of the UER. An example notification is included as Exhibit C. In addition, as is common practice, public notification of all permit actions is also published in the *Pennsylvania Bulletin*.

Finally, in addition to the requirements of Act 537 and Chapter 71, the issues of Treatment Facility Sizing and Cost-Effectiveness Analysis must be addressed during the development of the Sewage Facilities Plan. See Sections 1.D. and 1.E. in the Handbook.

EXHIBIT C

EXAMPLE PUBLIC NOTICE FOR PENNSYLVANIA BULLETIN
Act 537 Plan or Update Approval

Plan Location: _____

Plan Description: _____

DEP’s review of the sewage facilities update revision has not identified any significant environmental impacts resulting from this proposal. Required NPDES Permits or WQM Permits must be obtained in the name of the municipality or authority as appropriate.

D. TREATMENT FACILITY SIZING

1. New treatment facilities should be sized to accommodate the average daily flow from the existing service area plus an allowance for reasonable growth. Reasonable growth should be the expected population increases of the service area during the next 20 years, based upon historic municipal or county growth rates using projections established by planning agencies, the latest census data, or other credible sources. For projects with longer design lives, the reasonable growth number should be adjusted appropriately.
2. At the Planning Consultation Meeting, the Project Manager should advise the Applicant that treatment facility sizing is an issue that must be addressed as part of a PENNVEST application. Even for a project that may already have an approved Act 537 Plan or Update, the size/capacity of the treatment facilities must be reviewed in accordance with the reasonable growth criteria to be considered eligible for PENNVEST funding participation. An Applicant may choose to construct facilities with capacities greater than what PENNVEST will fund. The Applicant is responsible for any costs associated with constructing the capacity in excess of that for reasonable growth.
3. Review the treatment facility sizing and population growth data in the approved Act 537 Plan or Update.
4. Note that “reasonable growth” is not always defined the same way in every municipality. The Project Manager should look at several sources of growth projection data if there are several available.
5. In general, the hierarchy of growth projection data should be:
 - a. County or Regional Planning Agency Projections - These agencies have generally reviewed population growth trends in conjunction with county and local comprehensive plans, zoning ordinances, and housing needs and availability to arrive at their projections. Therefore, these projections should take precedence over those that follow, unless there are obvious inconsistencies in the agencies’ values.
 - b. State Agencies or Universities - These agencies have, in some cases, prepared growth projections for municipalities in the Commonwealth. In most cases, these projections are based upon census data and are adjusted using statistical analysis. However, in most cases, these sources do not consider county and municipal comprehensive planning and zoning. An example of a University source is the Penn State Data Center. Note that DEP’s Population Projections dated January of 1995 should not be used if more current projections are available. These projections were based on data and assumptions from the 1990 Census, which can be shown to be inaccurate by the 2000 Census. Until such time as the Division of Water Use Planning updates these projections, they should be considered suspect.
 - c. Federal Sources - Projections can be developed using U.S. Census data. In general, if this method is used, data from several decades should be considered to “level out” any short-term periods of stagnation or growth related to economic trends. An example of this method is included below.

6. In municipalities that have experienced a negative growth rate over the past several decades, a modest growth rate should be assumed to allow for future economic opportunity that could cause a reversal of the negative growth trend. In these cases, it is not unreasonable to assume a growth rate between 0.5 percent and 1 percent per year, i.e. build in a capacity safety factor of 10 percent to 20 percent for growth that could occur. In general, a 10-20 percent factor should not increase construction or operation and maintenance costs significantly; however, in those cases where a specific municipality may qualify for a 100 percent grant due to user rates (see PENNVEST “Quickpack”), any capacity above and beyond that needed to serve existing users should be limited.
7. Treatment facility sizing information must be completed on the PENNVEST Project Priority Rating Form. Your representative to the Priority Rating Review Committee must be familiar with the basis for the sizing and be prepared to defend it if necessary.
8. Expansions of treatment facilities to serve new service areas shall be sized using a similar approach. The increase in capacity should be based upon the additional service area and its expected reasonable growth.

EXHIBIT D

EXAMPLE CALCULATION #1 FOR SIZING BASED ON REASONABLE GROWTH

New Treatment Facilities

New EDUs: 551

County Planning Agency Projections:

Year	Hillside Borough:	Mountain County:
2010	1,204	8,573
2020	1,159	9,356
2030	1,112	10,105

Penn State Data Center Projections:

Year	Hillside Borough:	Mountain County:
2010	1,301	8,396
2020	1,254	9,177
2030	1,239	9,933

Census Data:

Year	Hillside Borough:	Mountain County:
2000	1,269	7,834
1990	1,323	6,933
1980	1,341	6,199
1970	1,381	5,558
1960	1,264	5,055

Averages 0.2% each 10 years 11.6% for each 10 years

Project Design Life: 20 Years

Hillside Borough: $0.2\%/10 \text{ Years} * (20 \text{ Years}) = 0.4\% \text{ Growth}$

Mountain County: $11.6\%/10 \text{ Years} * (20 \text{ Years}) = 23.2\% \text{ Growth}$

We cannot construct a facility that does not have enough capacity to serve its users, so neither the County Planning projection, nor the PSU Data Center projection should be used. Obviously, using the Census Data from the County population would result in a facility that is oversized and possibly not affordable. Therefore, in this case it appears as though the Census Data Method, using the Municipal population figures, may be the best estimate for Reasonable Growth in this case.

Using 551 new EDUs and 300 gpd/EDU: $(1.04) * (551) * (300) = 171,912 \text{ gpd}$

Round up to 172,000 or 0.172 mgd (reasonable for this case)

Note that the facility could be sized smaller if affordability is an issue. The minimum size of the facility necessary to serve the Borough is $551 * 300 = 165,300 \text{ gpd}$. However, there is probably not any significant difference in cost between the 172,000 gpd facility and the 165,300 gpd facility.

EXAMPLE CALCULATION #2 FOR SIZING BASED ON REASONABLE GROWTH

Treatment Plant Expansion Project

Burgeoning Township, Swelling County

Existing EDUs:	6,136
New EDUs from Needs Areas:	379
Developer-Proposed Industrial Park:	30,000 gpd

Project Design Life: 20 Years

Regional Planning Agency Projections (2000):

Year	Burgeoning Township:	Swelling County:
2000	11,878	154,546
2010	13,700	161,324
2020	15,422	178,965
2030	17,118	194,355

Penn State Data Center Projections (2002):

Year	Burgeoning Township:	Swelling County:
2010	14,748	167,206
2020	16,433	182,825
2030	18,498	198,687

DEP Population Projections (1995)¹:

Year	Burgeoning Township:	Swelling County:
2010	12,990	144,633
2020	14,712	158,144
2030	16,433	171,864

U.S. Census Data:

Year	Burgeoning Township:	Swelling County:
2000	12,939	146,134
1990	10,340	132,433
1980	8,941	117,899
1970	7,521	96,758
1960	5,424	74,555

¹ These are actual municipal projection numbers in this example. Note the significance of the difference in the actual 2000 Census value and the projected 2010 population. The DEP values should not be used.

Averages 24% each 10 years 18.6% for each 10 years

Burgeoning Township: 24.6%/10 Years * (20 Years) = 49.2% Growth = 19,305

Swelling County: 18.6%/10 Years * (20 Years) = 39.2% Growth = 18,011

Comparison:

Source of Projection Data	% Growth Projected	Existing Connections	New Connections From Growth	Treatment Facility Expansion (gpd)
Regional Planning Agency	19.2	6,515	1,251	281,475 + 30,000
Penn State Data Center	27.0	6,515	1,759	395,775 + 30,000
Census Straight Line Estimate Municipal	49.2	6,515	3,205	721,125 + 30,000
Census Straight Line Estimate County	39.2	6,515	2,554	574,650 + 30,000

Using the hierarchy contained in the guidance, the Regional Planning Agency would be considered first. As stated, these agencies have generally reviewed population growth trends in conjunction with County and Local Comprehensive Plans, Zoning Ordinances, and housing needs to arrive at their projections. Therefore, these projections should take precedence over the others, unless there are obvious inconsistencies in this agency's values.

Looking at the Regional Planning agency values, they are dated 2000. This means that they could not have included the U.S. Census results from 2000. Therefore, the second source in the hierarchy is worth considering. The Penn State Data Center projections have used the 2000 Census data. These data result in a projection of 27 percent growth through the year 2020.

For comparison purposes, the straight-line growth projections for the municipal and county numbers are shown above. The projections made from using these numbers are much higher than those made by the Penn State Data Center. The Data Center uses a statistical analysis that incorporates other related variables. It is inherently more accurate than straight-line projections.

Therefore, in this case Reasonable Growth could be determined using the Penn State Data Center projection. The capacity of the treatment plant expansion would be (395,775 + 30,000) gpd, which should be rounded up to 0.426 mgd.

EXAMPLE CALCULATION #3 FOR SIZING BASED ON REASONABLE GROWTH

Treatment Plant Expansion Project

Boondocks Township, Interchange County

Project Qualifies for a 100% grant if total costs exceed \$1.4 million

Existing EDUs: 437
New EDUs from Needs Area: 79
Developer-Proposed Residential EDUs: 645

County Planning Commission Data: None

Penn State Data Center Projections: Incomplete

U. S. Census Data:

Year	Boondocks Township:	Interchange County:
2000	5,876	14,134
1990	5,340	13,433
1980	4,941	11,899
1970	4,521	9,758
1960	4,424	7,555

Averages 7.4% each 10 years 17.3% for each 10 years

Project Design Life: 20 Years

Boondocks Township: $7.4\%/10 \text{ Years} * (20 \text{ Years}) = 14.8\% \text{ Growth}$

Interchange County: $17.3\%/10 \text{ Years} * (20 \text{ Years}) = 34.6\% \text{ Growth}$

Therefore, use 34.6% for Reasonable Growth

Using 437 and 79 existing connections, Reasonable Growth would be: $(1.35) * (516) = 696$, SAY 700 Connections

$700 \text{ EDUs} * 250 \text{ gpd/EDU} = 175,000 \text{ gpd}$ (based on Reasonable Growth)

Estimated cost for 175,000 gpd facility = \$1,485,000

PROJECT EXCEEDS AFFORDABILITY AT 100% GRANT; THEREFORE, use municipal straight-line projection of 14.8% Growth.

Using 437 and 79 existing connections, Reasonable Growth would be: $(1.148) * (516) = 592$, SAY 600 Connections

600 EDUs * 250 gpd/EDU = 150,000 gpd (based on Reasonable Growth)

Estimated cost for 150,000 gpd facility = \$1,350,000 (**OK**)

Proposed EDUs = 516 + 645 = 1161 * 250 gpd/EDU = 290,250 gpd SAY 291,000 gpd

Estimated cost for 291,000 gpd facility = \$2,182,000

$\$1,350,000/\$2,182,000 = 0.619 = 61.9\%$ - PENNVEST will only participate in 61.9% of the eligible project costs.

E. COST-EFFECTIVENESS REVIEW

1. DEP's participation in Cost-Effectiveness Review for PENNVEST funded projects is specified in Section 5(a)(3) of the Chapter 963 regulations and in Section III of the current *Memorandum of Understanding* between PENNVEST and DEP. Cost-effectiveness is one of the criteria used by the PENNVEST Board when considering applications for financial assistance.
2. At the Planning Consultation Meeting, advise the Applicant that a cost-effectiveness analysis of each feasible alternative must be made. The period for this analysis should normally be 20 years for sewage treatment plants and 40 years for collection systems (the expected design life of the project), and the costs to be considered must include the present worth or equivalent annual value of capital costs and operation and maintenance costs. The most cost-effective, environmentally sound alternative that meets federal, state and local requirements must be selected.
3. Guidance on cost-effectiveness analysis is provided here as Exhibit E, which is to be included in the handouts for the applicant at the Planning Consultation Meeting. In addition, the Project Manager should provide the Applicant with the current discount and interest rates to be used in the analysis. Project Managers can contact the Division of Municipal Financial Assistance to obtain the current discount rate.
4. The Project Manager must review the Act 537 Plan or Update to ensure that an acceptable cost-effectiveness analysis has been conducted and that the most cost-effective, environmentally sound solution has been selected and proposed by the plan for implementation.
5. The Project Manager must check to ensure that the proposed project is consistent with the project described in the approved Act 537 Plan or Update.

APPLICANT GUIDANCE FOR COST-EFFECTIVENESS ANALYSIS

Monetary costs shall be presented as present worth values for all capital and operation and maintenance (O&M) costs over the expected design life of the project (normally 20 years for sewage treatment facilities and 40 years for collection systems). The cost-effectiveness analysis does **not** identify the source of funds, but compares costs uniformly for each alternative. The analysis shall include a description of the significance and impact of non-monetary factors, such as environmental effects, implementation capability, operability, performance reliability, and flexibility. Some factors, such as the use and recovery of energy and scarce resources and the recycling of nutrients should be included in both the monetary and non-monetary cost analyses. The most cost-effective alternative is the waste treatment system that has the lowest present worth value, unless non-monetary costs are overriding. This alternative must meet the minimum requirements of applicable effluent limitations, groundwater protection, and other applicable standards. The following cost factors are associated with monetary evaluation:

A. Sunk Costs

Sunk costs are any investments or financial commitments made before or during facilities planning. These are **not** to be included in the cost-effectiveness analysis, since they will be incurred regardless of the alternative selected. Sunk costs typically include the cost of existing facilities and associated land, outstanding bond indebtedness, and the cost of preparing the sewage facilities plan.

B. Present Worth

Present worth is the sum that, if invested now at a given interest (discount) rate, would provide exactly the funds required to pay all present and future costs of the project. Total project cost, used to compare alternatives, is the sum of the initial capital costs plus the present worth of O&M costs, minus the present worth of the salvage value of the system at the end of its useful life (the project design life). The discount rate to be used in computing present worth cost is established by the U. S. Water Resources Council for each fiscal year, and is published in the Federal Register.

Capital construction costs used in a cost-effectiveness analysis shall include all contractor's costs of construction including overhead and profit; costs of land, relocation, and right-of-way and easement acquisition; costs of design engineering, field exploration and engineering services during construction; costs of administrative and legal services including costs of bond sales; startup costs such as operator training; and interest during construction. Capital costs shall also include contingency allowances depending on the cost estimate's level of precision and detail.

The cost-effectiveness analysis includes the present worth of the annual O&M (including routine replacement of equipment parts). These costs shall be adequate to ensure effective and dependable operation during the project design life. Annual O&M costs shall be divided between fixed annual costs and variable costs that would depend on the annual quantity of wastewater collected and treatment. Annual revenues generated by the waste treatment management system through energy recovery, crop production, or other outputs shall be deducted from the annual O&M costs.

C. Expected Useful Life

The expected useful life in a cost-effective analysis is normally 20 years. At the end of this period, portions of the project's structures or equipment, including land used as part of the treatment process or for ultimate disposal of residues, may be assumed to have a salvage value. The salvage value is determined using straight-line depreciation. The present worth of the salvage value is then computed using the discount rate (see Item B above). The useful life of various project components to be used in a cost-effectiveness analysis should fall within the following ranges:

- Land - permanent.
- Wastewater Conveyance Structures (collection systems, outfalls, interceptors, force mains, tunnels, etc.) - 50 years.
- Other Structures (plant buildings, concrete tanks, basins, lift station structures, etc.) - 30 to 50 years.
- Process Equipment - 15 to 20 years.
- Auxiliary Equipment - 10 to 15 years.

Where the borrower assigns a useful life of less than 20 years (the expected design life), the cost effectiveness analysis must show the present worth of the replacement cost at the end of the useful life, and the present worth of the salvage value of the replacement component at the end of 20 years.

D. Escalation

Only energy costs and land value may be escalated in the cost-effectiveness analysis. The cost of labor, equipment, and materials is not escalated, since it is assumed that any increase in these areas will apply equally to all alternatives. Different alternatives, on the other hand, may use different fuel supplies, or one alternative may use land application and another may not. Escalation of energy costs is to be based on data published by EPA, or historical data for the area, if available. Natural gas process shall be escalated at a compound rate of 4 percent annually over the expected design life, unless justification is provided for the use of a different value. Said justification must be based on regional differentials between historical natural gas price escalation and construction cost escalation. Land prices should be escalated at a uniform rate of 3 percent per year, except for right-of-way and easements. These escalated values should then be converted to present worth values for use in the cost analysis.

E. Interest During Construction

If interest during construction is anticipated to be significant, and if it may influence the choice of alternatives, it may be included in the cost-effectiveness analysis using one of the following methods:

- If expenditures are uniform and the construction period is less than 4 years, interest is calculated as the product of the construction period (in years), the total capital expenditures (in dollars), and the discount rate (see B above).
- Where expenditures will not be uniform, or where the construction period will be greater than 4 years, interest during construction shall be calculated on a year-by-year basis.

F. Staging of Construction

The planning period used in the cost-effective analysis is 20 years. However, in some circumstances the design life may be for a lesser period. If the borrower proposes a design life of less than 10 years, the project must be carefully scrutinized, since the actual design life (assuming that several years elapse between facilities planning and the initiation of operation) may be considerably shorter. This situation could possibly result in problems, such as the need for future expansion soon after the project completion. Nonetheless, staging of construction may be cost effective, or the financial and managerial capability analysis may indicate that staging of construction is preferable. Other conditions that may suggest staging of construction include uncertainties surrounding future population and economic growth, future treatment requirements that are more stringent than secondary, or existing facilities that are to be used for an interim period and later phased out.

While the cost-effectiveness analysis does not consider the source of funding, staging of construction may be a realistic consideration that may affect the community's ability to afford the project. As a guideline, the staging period should be based on the following (where Q_f is the flow at the end of the 20-year planning period and Q_i is the flow at the initiation operation):

Q_f/Q_i Ratio	Staging Period (years)
Less than 1.3	20
1.3 to 1.8	15
greater than 1.8	10

where Q_f is the production at the end of the 20-year planning period and Q_i is the production at the initiation operation.

EXHIBIT E - 2

PRESENT WORTH AND EQUIVALENT ANNUAL COST EXAMPLES

Example 1: Varying O&M Cost, Stage Construction, and Salvage Value

Background: The alternative being considered is a new sewage treatment facility to be designed with a capacity of 5 MGD for years 1 through 10 of its life and 10 MGD for years 10 through 20.

Given:

- The estimated salvage value at the end of 20 years is \$750,000.
- The estimated costs for constructing the 5 MGD plant are \$2,000,000 and the estimated cost of the expansion to 10 MGD in year 11 is \$1,500,000.
- The estimated annual fixed O&M costs for years 1 through 10 are \$84,000/year.
- The estimated annual fixed O&M costs for years 11 through 20 are \$165,000/year.
- The estimated variable O&M costs for years 1 through 10 are \$0 in year 1 to \$29,000 in year 10, increasing linearly.
- The estimated variable O&M costs for years 11 through 20 are \$0 in year 1 to \$29,000 in year 10, increasing linearly.
- The Discount Rate is 7.625 percent.

Determine: Present Worth and Equivalent Annual Cost of this plant over the 20-year life.

Method: Present Worth equals the initial capital cost plus present worth of operating and maintenance costs. Calculate O&M costs for years 10 and O&M cost for years 11 through 20 separately. Add the present worth of the expansion. Subtract the present worth of the salvage value. Equivalent Annual Cost equals the present worth time the appropriate capital recovery factor.

Step 1:

Initial Capital Cost\$2,000,000

Step 2:

Present Worth Of Constant Operating and Maintenance Costs

A. Present Worth of constant annual cost for years 1 through 10 equals given cost times the uniform series present worth factor for 7.625 percent for 10 years (6.825). Therefore,

\$84,000 (6.825)\$ 573,300

B. Present Worth of constant annual cost for years 11 through 20 equals given cost times the uniform series present worth factor for 7.625 percent for 10 years (6.825). However, this yields the present worth in year 11, which must be converted to the present worth in year 1. This is accomplished by multiplying the present worth in year 11 by a single payment present worth factor at 7.625 percent for 10 years. Therefore,

\$165,000 (6.825) (0.48)\$ 540,100

Step 3:

Present Worth Of Variable Operating and Maintenance Costs

- a. Present Worth of the variable O&M costs for years 1 through 10 is calculated using a gradient series (\$2,900). The gradient factor is multiplied by the present worth factor for a gradient series for 7.625 percent and 10 years. Thus,

$$\$2,900 (26.612) \dots\dots\dots \$ 77,200$$

- b. Present Worth of variable annual cost for years 11 through 20 equals gradient cost times the gradient series present worth factor for 7.675 percent for 10 years (26.612). However, this yields the present worth in year 11, which must be converted to the present worth in year 1. This is accomplished by multiplying the present worth in year 11 by a single payment present worth factor at 7.625 percent for 10 years. Therefore,

$$\$2,900 (26.612) (0.48) \dots\dots\dots \$ 37,000$$

Step 4:

Present Worth of the expansion cost that occurs at year 10 must be multiplied times a single payment present worth factor for 7.625 percent for 10 years to calculate present worth of the expansion in year 1. Thus,

$$\text{Present Worth of expansion } (\$1,500,000) (0.48) \dots\dots\dots \$ 719,000$$

Step 5:

Present Worth of the salvage value at the end of 20 years equals that value times the single payment present worth factor for 7.625 percent and 20 years (0.230). Therefore,

$$\$750,000 (0.230) \dots\dots\dots \$ 172,500$$

Step 6:

The sum of the values obtained in steps 1 through 4 minus the value obtained in step 5 is equal to the present worth of the plant. Thus,

Initial Capital Cost

Present Worth of constant O&M years 1 - 10:	\$2,000,000
Present Worth of constant O&M years 11 - 20:	\$ 719,000
Present Worth of variable O&M years 1 - 10:	\$ 77,200
Present Worth of variable O&M years 1: - 20:	\$ 573,000
Present Worth of expansion at year 10:	\$ 37,000
Subtotal	\$3,947,500
Minus present worth of salvage value:	\$ 172,500

Present Worth of Plant\$3,774,500

Step 7:

Multiply present worth of plant from Step 6 by the capital recovery factor for 7.625 percent and 20 years (0.099) to get:

Uniform Annual Cost = \$3,774,500 (0.099)\$ 373,700

PRESENT WORTH AND EQUIVALENT ANNUAL COST EXAMPLES

Example 2: Present Worth Analysis of Onsite System Alternative

Background: A community is evaluating the present worth of an alternative that includes onlot system management and replacement. In this example, the municipality has determined that it will be necessary to undertake the rehabilitation, upgrade and/or replacement of the existing 200 single-family onlot systems immediately. In addition, major rehabilitation and replacement will be needed for 200 more systems over the next 20 years, and they have decided to address 10 of these systems per year. Finally, over the next 20 years, the municipality anticipates constructing 100 new onlot systems.

The following information is given:

- Planning Period: 20 years
- Salvage value after 20 years: \$120,000
- Initial capital cost for rehabilitation, upgrade and/or replacement of the existing 200: \$400,000
- Major rehabilitation/replacement of 10 systems per year: \$20,000 per year
- Construction of 100 new onlot systems (5 per year for 20 years): \$13,000 per year
- Average annual O&M Costs (onlot management for 500 systems): \$25,000
- Discount Rate: 7.625 percent

Determine the present worth and equivalent annual cost of this alternative over 20 years.

Method: Present worth equals the initial capital cost plus the present worth of future capital costs plus the present worth of the operation and maintenance costs, minus the present worth of the salvage value. The equivalent uniform annual cost equals the present worth times the appropriate capital recovery factor.

Step 1:

Initial capital cost\$ 400,000

Step 2:

Calculate the present worth of the annual capital costs as follows:

- a. Annual capital costs equal \$20,000 (major rehabilitation) plus \$13,000 (new systems) or \$33,000.
- b. Present worth of the annual capital costs equals the cost multiplied by a uniform series present worth factor for 7.625 percent and 20 years as follows:

\$33,000 (10.098).....\$ 333,200

Step 3:

The present worth of the annual O&M costs is equal to the cost times a uniform series present worth factor for 7.625 percent and 20 years:

\$25,000 (10.098).....\$ 252,450

Step 4:

The present worth of the salvage value at the end of 20 years equals the salvage value multiplied by a single payment present worth factor for 7.625 percent and 20 years:

\$120,000 (0.23).....\$ 27,600

Step 5:

The present worth is the sum of the values obtained in Steps 1 through 3, minus the value obtained in Step 4.

Initial capital cost.....\$ 400,000

Present worth of future capital cost\$ 333,200

Present worth of O&M costs.....\$ 252,450

Subtotal\$ 985,650

Present worth of salvage value\$ 27,600

PRESENT WORTH OF ALTERNATIVE\$ 958,050

Step 6:

The uniform annual cost is the present worth just derived times the appropriate capital recovery factor for 7.625 percent and 20 years (0.099):

UNIFORM ANNUAL COST: \$985,050 (0.099)\$ 97,520

PRESENT WORTH AND EQUIVALENT ANNUAL COST EXAMPLES

Example 3: Present Worth Analysis of Land Application

Background: A community is evaluating a land application alternative for new treatment facility. The following information is given:

Treatment plant capacity: 4 MGD
Planning Period: 20 years
Initial capital cost: \$7.3 million (includes the cost of the land of \$137,000)

Average annual O&M costs: \$246,200
Average annual crop yield: \$ 20,000
Discount rate: 7.625 percent

Salvage value (excluding land): \$2,236,000

Determine the present worth and the uniform annual cost for the alternative.

Method: Present worth equals the initial capital cost plus the present worth of future capital costs plus the present worth of the operation and maintenance costs, minus the present worth of the salvage value and the present worth of the crop yield. The equivalent uniform annual cost equals the present worth times the appropriate capital recovery factor. Note that land values must be appreciated at 3 percent/year before the present worth of the salvage value is calculated.

Step 1:

Initial capital cost.....\$7,300,000

Step 2:

The present worth of a uniform annual cost equals the cost times a uniform series present worth factor at 7.625 percent for 20 years:

O&M costs: \$246,200 (10.098).....	\$2,486,100
Crops: \$20,000 (10.098).....	\$ 201,960
Present Worth of Annual Costs	\$2,284,140

Step 3:

The future value of the land is calculated using the present value of the land by the compound amount factor for 3 percent for 20 years:

\$137,000 (1.806).....\$ 247,400

Step 4:

The present worth of the salvage value is the salvage value of the land plus the salvage value of the treatment facilities multiplied by a single payment present worth factor for 7.625 percent and 20 years:

Treatment plant: \$2,236,000 (0.23)	\$ 514,300
Land: \$247,400 (0.23).....	\$ 56,900
SALVAGE VALUE	\$ 571,200

Step 5:

The present worth of the alternative is calculated using the sum of the values from Steps 1 and 2 minus the value obtained in Step 4.

Initial capital cost:.....	\$7,300,000
Present worth of annual costs:	\$2,284,140
Salvage value:	\$ 571,200

TOTAL PRESENT WORTH OF ALTERNATIVE\$9,012,940

The uniform annual cost is the present worth just derived times the appropriate capital recovery factor for 7.625 percent and 20 years (0.099):

UNIFORM ANNUAL COST: \$9,012,940 (0.099)\$ 892,280

F. STATE ENVIRONMENTAL REVIEW PROCESS (SERP) IN PENNSYLVANIA AND UNIFORM ENVIRONMENTAL REVIEW (UER) PROCESS

All PENNVEST projects funded from the Clean Water State Revolving Fund (CWSRF) must comply with certain federal requirements, because federal funds are used to capitalize the fund. The most significant federal requirement for all projects funded from the CWSRF is the completion of the environmental review. A review process conforming with, or similar to, the process contained in the National Environmental Policy Act (NEPA) is a statutory requirement for all projects funded using these capitalized funds. To receive capitalization funds, a state must have an approved environmental review process in place.

Pennsylvania's State Environmental Review Process (SERP) is an environmental review process similar to that required by NEPA. This NEPA-like process was approved by EPA Region III in 1991.

As stated, Pennsylvania's SERP was developed to comply with the federal requirements associated with the CWSRF program. There are, however, many federal funding programs for wastewater projects. Each of these programs, although subject to the requirements of NEPA, had different review procedures. This inconsistency in review procedures was troublesome when a project had several sources of funding. Conflicting procedures delayed many construction projects that were aimed at improving the environment.

As a result, DEP, PENNVEST, and the federal agencies responsible for administering other federal grant funds worked together to develop *Guidelines for the Uniform Environmental Review Process (UER)*, DEP ID: 381-5511-111. The purpose of the UER is to standardize the process for documenting the environmental impacts of proposed drinking water and wastewater projects that request funding assistance from federal funding programs. Applicants are to follow the UER process so that the various federal agencies are able to review the environmental information in the same format.

The UER Process must be followed for all projects that anticipate funding from federal programs. The Project Manager is responsible for reviewing the Act 537 Plans or Updates for all PENNVEST projects to ensure that the UER Process has been followed during the development of the plan. A checklist (see Exhibit F-1) has been provided for the Applicant and the Project Manager. For projects not eligible for a Categorical Exclusion (see below), the checklist summarizes those items that must be addressed in the Environmental Report for each of the 13 environmental aspects.

1. Categorical Exclusions

- a. Categorical Exclusions are projects that are exempt from the environmental review process. These exclusions are authorized by NEPA, and the SERP. Sponsors of projects that are given the exclusion may apply for funding from the Clean Water State Revolving Fund without conducting a detailed environmental review.
- b. At the planning consultation meeting, the Project Manager should advise the Applicant that a detailed environmental review is required except if the project is

qualified for a categorical exclusion. The Project Manager should discuss various common examples of projects that may qualify for categorical exclusion.

- c. Projects that qualify (consistent with 40 CFR Part 6.107 and 40 CFR Part 6.505) include, but may not be limited to, minor rehabilitation of existing facilities, infiltration and inflow correction, minor upgrading and/or expansion of existing treatment works, functional replacement of equipment, construction of auxiliary facilities adjacent to or appurtenant to existing facilities, on-site systems construction, and new land development planning uses. Projects that qualify for use of a Planning Module Component 3M generally qualify for categorical exclusions.
 - d. If the Applicant submits a request for a categorical exclusion, including a description of the proposed project, the Project Manager should review it to determine if the project qualifies for an exclusion from the UER.
 - e. If the project is qualified for a categorical exclusion, the Project Manager then sends a letter to the Applicant (see Form Letter F-1) informing them of the proposal's public notification requirements. The Project Manager advises the project sponsor to publish a notice in a newspaper of general circulation in the project area. The notice must include the name and type of project, location, any impact on user fees, the location where the supporting documents are available for review, and where the public can submit any written comments during the 30-day comment period.
 - f. After the comment period is over, the Project Manager then reviews the submitted Public Notice with the written public comments and responses. If no significant adverse comments are received, and the review of the proposal confirms that the project will not individually, cumulatively over time, or in conjunction with other federal, state, local or private actions have a significant effect on the environment, the Project Manager notifies the Applicant that the project has been categorically excluded from the environmental review process (see Form Letter F-2). A notice of approval of the Categorical Exclusion must be published in the *Pennsylvania Bulletin* to comply with the Commonwealth's approved SERP.
 - g. If significant adverse comments are received, the Project Manager then asks the sponsor to address these concerns. If any legitimate concerns cannot be properly mitigated, the Project Manager advises the sponsor to prepare an official plan revision and an Environmental Report (ER).
2. Environmental Assessments
- a. For projects that are not eligible for a categorical exclusion, the Applicant must complete an Environment Assessment (EA) and prepare an Environmental Report (ER) in accordance with the UER. This report is to be a stand-alone document such that it can be reviewed by other federal agencies in a standardized format.
 - b. The Project Manager must review the ER for compliance with the UER. A review checklist is provided in the Handbook as Exhibit F-1.

- c. Once the ER is approved by the appropriate funding agency or agencies, it will constitute the EA for the project.
- d. The Project Manager should be aware of the potential for recommending an Environmental Impact Statement (EIS) should significant adverse environmental impacts be predicted by the ER.

EXHIBIT F - 1

UNIFORM ENVIRONMENTAL REVIEW CHECKLIST

UER SECTION REFERENCE	BACKGROUND RESEARCH AND AGENCY CONTACT NEEDED FOR ASSESSMENT	ITEMS TO BE INCLUDED IN UER REPORT	√
1.1 Purpose	The Act 537 Plan or Update	A narrative description of the purpose and the need for the project	
1.2 Project Description	The Act 537 Plan or Update	A narrative description of the project including a copy of the 7.5-minute USGS topographical map.	
2.1 Alternatives Considered	The Act 537 Plan or Update	A narrative discussion of all reasonable alternatives considered including the “no action” alternative.	
2.2 Comparison of Alternatives	The Act 537 Plan or Update & Cost-Effectiveness Analysis	A summary of the comparison of all reasonable alternatives considered.	
3.1 Land Use	Local and County Comprehensive Planning and Zoning Requirements	<ul style="list-style-type: none"> • A narrative discussion of the consistency of the project with local zoning and land use planning. • Copies of comments received from County or Regional and Local Planning Commissions. 	
3.1 Important Farmland	County Planning Commission and Agricultural Preservation Board, Local Agricultural Security Committee, etc.	<ul style="list-style-type: none"> • A narrative describing consistency with agricultural preservation interests. • Copies of all comments received from agricultural preservation interests. • NRCS soils map showing locations of proposed facilities and prime agricultural soils. 	
3.1 Formally Classified Lands - national or state parks, forests and trails	Determine if any of these resources are within 1 mile of the proposed project area. If so, identify them on a USGS topographic map, and request comments from the appropriate state or federal agency.	<ul style="list-style-type: none"> • Narrative describing location of these lands. • Narrative describing the impact of the project on these lands. • Copy of response(s) received from agencies, if applicable. 	
3.1 Formally Classified Lands - national monuments or landmarks	Determine if any of these resources are within 1 mile of the proposed project area. If so, identify them on a USGS topographic map, and request comments from the National Park Service.	<ul style="list-style-type: none"> • Narrative describing location of these lands. • Narrative describing the impact of the project on these lands. • Copy of response(s) received from National Park Service, if applicable. 	

UER SECTION REFERENCE	BACKGROUND RESEARCH AND AGENCY CONTACT NEEDED FOR ASSESSMENT	ITEMS TO BE INCLUDED IN UER REPORT	√
3.2 Floodplains	Determine whether any portion of the project is located within the 100-year flood plain or floodway using FEMA FIS Maps. If, yes, compliance with local ordinances is mandatory. Contact DEP for a determination on Chapter 105 requirements.	<ul style="list-style-type: none"> • Narrative describing the relationship of the project to the 100-year flood plain and the floodway, and compliance with local ordinances. Identify any DEP permits needed. • Include appropriate FEMA FIS map if applicable. 	
3.3 Wetlands	Identify the project scope and location with respect to any wetlands. Contact DEP for a determination on Chapter 105 requirements. Determine if any structures are to be constructed on hydric soils with hydric inclusions. If necessary, delineate wetlands using a qualified expert.	<ul style="list-style-type: none"> • Copy of the USGS topographic map showing the project in relation to any wetland resources. • A copy of the National Wetlands Inventory Map for the project area showing the project location. • Identify any DEP or USACE permits required. • Narrative describing any impacts on wetland resources, and any mitigation measures proposed. 	
3.4 Historical Resources	A Cultural Resources Notification Form must be forward to the Pennsylvania Historical and Museum Commission (PHMC) with the location of the project shown on a 7.5 minute USGS map.	<ul style="list-style-type: none"> • Copy of all responses received from the PHMC, addressing Section 106 requirements. • Identify any further surveys that have been or are being required by PHMC. • Copy of any approval from the PHMC for studies or surveys completed during the planning for the project. • Narrative describing any impacts on historical or archeological resources and any mitigation measures proposed. 	
3.5 Sensitive Biological Resources	Request an evaluation of the project by the PA Natural Diversity Inventory by completing a Request for PNDI Search Form. Contact the U.S. Fish and Wildlife Service via letter, with the location of the project shown on a 7.5-minute USGS map, requesting comments.	<ul style="list-style-type: none"> • Copy of response received from PNDI. • Copy of response received from Fish and Wildlife Service • Narrative describing any impacts on rare, endangered, threatened, and biologically sensitive resources and any mitigation measures proposed. 	

UER SECTION REFERENCE	BACKGROUND RESEARCH AND AGENCY CONTACT NEEDED FOR ASSESSMENT	ITEMS TO BE INCLUDED IN UER REPORT	√
3.6 Water Quality Issues	If a discharge to a stream is proposed, identify the receiving stream use designation from Chapter 93. Non-discharge alternatives must be evaluated for HQ and EV streams. If the project is located within a sole source aquifer recharge area (Seven Valleys area in York County, or within 2 miles of the Delaware River), comments must be solicited from EPA Region III.	<ul style="list-style-type: none"> • Copy of response received from EPA Region III, if applicable. • Describe any effects on sole source aquifer recharge areas. • Narrative discussing potential effects of the project on groundwater and surface water, including any compliance issues. • Narrative describing the receiving stream and its protected uses, including a discussion of the effects of the proposed discharge on the water quality and these protected uses. • If applicable, describe the evaluation of non-discharge alternatives. 	
3.7 Coastal Resources	Determine if the project is located within a coastal zone management area within Erie, Delaware, Bucks or Philadelphia Counties. If so, submit a request for comments, with the location of the project shown on a 7.5-minute USGS map, from DEP's Coastal Zone Management program.	<ul style="list-style-type: none"> • Copy of response from DEP's Coastal Zone Management program, if applicable. • Narrative describing the effects on coastal zone management areas and the mitigation measures proposed. 	
3.8 Socio-Economic Issues	Review data and demographics from Census Bureau, County Planning, Local Government, and Civic Organizations.	<ul style="list-style-type: none"> • Narrative describing impacts of the project on: <ul style="list-style-type: none"> - Minority and disadvantaged populations; - Future users and/or residents; - Township, County, and School District revenues that the project may generate versus the Township, County, and School District costs it may create. 	
3.9 Air Quality	Analyze the impacts on air quality. Submit a request for comments on the project, with the location of the project shown on a 7.5-minute USGS map, to DEP's Air Quality program.	<ul style="list-style-type: none"> • Copy of response from DEP's Air Quality program, if applicable. • Narrative describing the effects on air quality and the mitigation measures proposed. 	

UER SECTION REFERENCE	BACKGROUND RESEARCH AND AGENCY CONTACT NEEDED FOR ASSESSMENT	ITEMS TO BE INCLUDED IN UER REPORT	√
3.10 Transportation	Evaluate the effects of the project (primary and secondary) on the transportation infrastructure in the project area. Contact County Planning and Metropolitan Planning Organization (MPO) regarding transportation improvement plans.	<ul style="list-style-type: none"> • Narrative describing the effects of the project on the transportation infrastructure in the project area, and any mitigation measures to be undertaken. 	
3.11 Noise Abatement and Control	Identify and analyze any increase in noise level that may occur as a result of the project.	<ul style="list-style-type: none"> • Narrative describing impacts from noise levels caused by construction and operation of the project. 	
3.12 Wild and Scenic Rivers	Determine if the project is located within 1 mile of any river in the National Wild and Scenic Rivers System, and any river within the "Nationwide Rivers Inventory," or an American Heritage River. If so, identify the project on a USGS topographic map and request comments from the National Park service and the PA Department of Conservation and Natural Resources.	<ul style="list-style-type: none"> • Copy of all comments received from the National Park Service, if applicable. • Copy of all comments received from the PA Department of Conservation and Natural Resources, if applicable. • Narrative describing the impacts of the project on these designated rivers, and any mitigation measures proposed. 	
3.13 Miscellaneous Environmental Considerations	Analyze the impacts of biosolids generation, treatment and disposal, and any impacts on or from local landfills or Superfund/HSCA sites.	<ul style="list-style-type: none"> • Narrative describing these impacts and any mitigation measures proposed. 	

FORM LETTER F - 1

(Project Qualifies for Categorical Exclusion)

RE: Public Notification Requirements

_____ (Applicant)
_____ (Municipality, County)

Dear _____:

I have received and reviewed _____ (Consultant's) _____ (date) correspondence requesting a categorical exclusion on behalf of the _____ (Applicant). This proposed _____ (Type of Project) project, as described in the request, appears to be eligible for a categorical exclusion from the State Environmental Review Process (SERP).

Based on this determination, the _____ (Applicant) is required to publish a notice in a newspaper of general circulation in the project area which includes the name and type of project, location, any impact on user fees, the location where the supporting documents are available for review, and where the public can submit any written comments.

After the comment period is over, the sponsor must submit a copy of the Public Notice, along with any written public comments received and responses to these comments, to me.

Please call me at _____ (phone) if there are any questions regarding this process.

Sincerely,

Project Manager
Water Management

cc: (Consultant)
(PENNVEST Project Specialist)
(DMFA)
(Project Manager)
Project File

FORM LETTER F - 2

(Categorical Exclusion Approval)

RE: Categorical Exclusion Approval

_____ (Applicant)
_____ (Municipality, County)

Dear _____:

I have received and reviewed _____ (Consultant) _____ (date) correspondence submitted on behalf of the _____ (Applicant), containing the proof of public notification and a statement that (no written comments were received/all written comments have been mitigated). We had previously indicated to the _____ (Applicant) and PENNVEST, in a letter dated _____ (date), that the project appeared to qualify to be categorically excluded from the State Environmental Review Process (SERP).

The Public Notice contained the appropriate notification information that would permit the public to comment on the project for a 30-day period. (There appear to have been no written public comments/All written comments appear to have been mitigated) as attested to by _____ (Consultant).

Due to the nature of the project and the information contained in the _____ (date), correspondence, it appears that this project will not individually, cumulatively over time, or in conjunction with other federal, state, local or private actions, have a significant effect on the quality of the environment.

With the preceding facts in mind, DEP hereby categorically excludes the proposed _____ (Type of Project) project from the State Environmental Review Process. Please call me at _____ (phone) if there are any questions regarding this decision.

Sincerely,

_____ (name)
Project Manager
Water Management

cc: (Consultant)
(PENNVEST Project Specialist)
(DMFA)
(Project Manager)
Project File

G. SECOND OPINION PROJECT REVIEW

1. The current Memorandum of Understanding between PENNVEST and DEP requires DEP to review all applications to insure that planning and permitting requirements have been satisfied. Section 963.20 and Section 965.7 of the PENNVEST regulations contain the requirements for second opinion reviews.
2. Second opinion project review is defined as a review and evaluation of a project engineering design which shall include the analysis of the basic functions of a facility, system, or process and shall identify alternatives, if any, for achieving these basic functions at lower costs or increased revenues. The evaluation shall be conducted by a licensed professional engineer, licensed in the Commonwealth of Pennsylvania, and chosen by the Applicant. The engineer can be independent of the design firm or another qualified engineer within the design firm.
3. During the planning process, the Project Manager should inform the applicant to make plans for a second opinion project review, if the total estimated construction cost including contingency is greater than \$10 million. The Project Manager should also explain the purpose and procedure to conduct this review. Exhibit G-2 is a suggested checklist for the Applicant.
4. Once the need for the second opinion project review is established, the Project Manager should ask the applicant to provide a time frame indicating the anticipated beginning and ending dates of the second opinion project review. The Project Manager should inform the applicant that the second opinion project review must be completed by the time the project is 20 percent to 40 percent complete. Any exceptions to this requirement must be approved in writing by PENNVEST.
5. The Project Manager should inform the applicant that the second opinion project review should include an analysis of the total project design with emphasis on the treatment facilities.
6. The Project Manager should review the report within 30 days from the receipt. A second copy of the report should be forwarded to DMFA for comments.
7. The Project Manager should fill out the checklist for the second opinion project review (see Exhibit G-1) and forward it with your recommendations to PENNVEST. The comments received from DMFA should be considered when you prepare your recommendations.
8. If an Applicant with project construction costs including contingencies over \$10 million decides to pursue PENNVEST funding after design completion has reached 40 percent, they must contact PENNVEST immediately. They must obtain approval in writing from PENNVEST to conduct a second opinion project review at a later stage than required by regulations.

EXHIBIT G - 1

CHECKLIST FOR PROJECT MANAGERS

Second Opinion Project Reviews

Project Name and Location: _____

Project Reviewer(s): _____
Consulting Firm Doing Review: _____
Telephone: _____

Design Engineer: _____
Telephone: _____

	<u>Yes</u>	<u>No</u> *
Was the design reviewed by a professional engineer licensed by the Commonwealth?	<input type="checkbox"/>	<input type="checkbox"/>
Was the review done when the design was 20 percent to 40 percent complete?	<input type="checkbox"/>	<input type="checkbox"/>
Were all alternatives thoroughly investigated?	<input type="checkbox"/>	<input type="checkbox"/>
Were recommended alternatives described concisely with cost benefits?	<input type="checkbox"/>	<input type="checkbox"/>
Were life cycle costs derived for proposed recommendations?	<input type="checkbox"/>	<input type="checkbox"/>
Were cost estimates used for recommendations reasonable, in the opinion of the designer?	<input type="checkbox"/>	<input type="checkbox"/>
Was detailed justification provided for each of the rejected recommendations?	<input type="checkbox"/>	<input type="checkbox"/>

* Explain all "no" answers in the comment section on the next page.

Summary of Present Worth Cost Savings for Accepted Recommendations

1. Number of Accepted Recommendations: _____
2. Original Construction Cost: _____
3. Proposed Construction Cost for Accepted Recommendations: _____
4. Initial Construction Cost Savings (2-3): _____
5. Present Worth O&M for Original Design: _____
6. Present Worth O&M for Accepted Recommendations: _____
7. Present Worth O&M Cost Savings (5-6): _____
8. Total Present Worth Cost Savings (4+7): _____
9. Project Redesign Cost: _____

Comments:

Reviewed By: _____ Date: _____
Project Manager

EXHIBIT G - 2

CHECKLIST FOR APPLICANT
Second Opinion Project Reviews

- 1. Establish that your project warrants a second opinion project review, i.e., the estimated construction cost plus contingency is greater than \$10 million.
- 2. Early in the design process, identify and hire a design engineer or design engineering firm who is independent of the project engineer and capable of conducting the second opinion project review. This engineer must be a registered professional engineer licensed by the Commonwealth. All aspects of the project design (process, structural, electrical, etc.) must be reviewed by qualified individuals.
- 3. Have the independent engineer conduct the second opinion review when the project design is 20 percent to 40 percent complete. Any exceptions to this time frame must be requested of and approved by PENNVEST.
- 4. Be sure the engineer's review includes an analysis of the basic functions of the proposed facility, system, or process. Emphasis should be placed on the design of the treatment facilities, but the review should also look at collection systems, pump stations, interceptors, and other appurtenant features. It should identify alternatives, if any, for achieving these basic functions at lower cost or increased revenue. In addition to cost factors, the analysis should identify impacts of the various alternatives on the community. The result should be a report that is submitted to you, the Applicant, for your consideration.
- 5. Where possible, implement the recommendations of the independent reviewer. Develop a proposal for incorporating these recommendations into the project design. This proposal must also include clear reasons for rejecting any of the independent engineer's recommendations.
- 6. Within 90 days of the completion of the engineer's report, you must submit the report, along with your implementation proposal to PENNVEST (1 copy) and to the DEP Project Manager (2 copies).
- 7. Be aware that PENNVEST has the right to not fund portions of your project, where you reject cost saving or revenue enhancing recommendations without sound reasons for doing so.

H. PENNVEST Priority Rating System and Rating Form

1. All projects that are to be recommended for PENNVEST funding must be rated in accordance with the PENNVEST Priority Rating System (see Exhibit H-1).
2. Using the Priority Rating System instructions, the Project Manager is to prepare a PENNVEST rating for the project. Complete the PENNVEST Rating Form (see Exhibit H-2), including treatment facility sizing data if applicable. Sign the completed form and have it reviewed and signed by the Regional Representative of the Priority Rating Review Committee (PRRC), the Regional Section Chief and the Regional Manager. The Project Manager should keep a copy of the rating form in the regional project file and submit the original to the PRRC at its regular rating meeting preceding the PENNVEST Board meeting.
3. The DMFA PRRC Coordinator reviews and signs the PENNVEST Rating Form. The form is kept on file in DEP's central office, in the DMFA project file.

EXHIBIT H - 1

PENNVEST PRIORITY RATING SYSTEM

PRIORITY RATING FACTORS FOR ELIGIBLE SEWERAGE PROJECTS

- A. Priority among eligible projects shall be established according to the applicant's accumulation of points for each of the following factors weighted as shown below:
1. Public Health and Safety - 45%
 2. Environmental Impact - 25%
 3. Economic Development - 15%
 4. Compliance - 10%
 5. Adequacy, Efficiency and Social Impact - 5%
- B. A project's total priority points shall be the sum of the points assigned in each of the individual rating factors.

PUBLIC HEALTH AND SAFETY

- A. The number of points for public health and safety shall be based on the extent to which project implementation will eliminate detrimental effects of public health hazards from existing discharges of untreated or inadequately treated sewage, and the severity of safety hazards caused by deteriorated facilities.
- B. The following point values shall be used to determine rating points for this factor:
1. **Community Environment and Aesthetics** - Use matrix and Tables I and II in assigning points.

Category A - 20 Points Maximum - Documented evidence or technical evaluation conducted or approved by DEP confirming that a majority (>50%) of onlot disposal systems in the rated area are malfunctioning (confirmed malfunctions) with numerous instances of untreated or inadequately treated sewage found in publicly accessible places. This category also includes documented evidence, in the project area, of untreated or inadequately treated sewage discharged from collection and conveyance facilities in dry weather. **NOTE:** Problems associated with treatment plants are **not** to be considered in Category A. Refer to Table #'s I and II below.

Category B - 12 Points Maximum - Documented evidence or technical evaluation conducted or approved by DEP confirming that >25% AND <or=50% of the onlot disposal systems in the rated area are malfunctioning (confirmed malfunctions). This category also includes documented evidence of intermittent discharges to surface streams from sewers, storm drains, or overloaded sewage conveyance facilities during dry

weather; or documented evidence of discharges of inadequately treated sewage from treatment plants discharging to stream segments where water quality based effluent limits are required. **NOTE:** Refer to Table #'s I & II below. See Note #'s 7, 8 and 9 below Table I.

Category C - 6 Points Maximum - Documented evidence or technical evaluation conducted or approved by DEP confirming that $\geq 10\%$ AND $\leq 25\%$ of the onlot disposal systems in the rated area are malfunctioning (confirmed malfunctions). This category also includes visual evidence in the project area of discharges of untreated or inadequately treated sewage from sewage collection and conveyance facilities primarily in wet-weather; or documented evidence of discharges of inadequately treated sewage from treatment plants discharging to stream segments where technology-based effluent limits are required. **NOTE:** Refer to Table #'s I & II below. See Note #'s 7, 8 and 9 below Table I.

This sub-category also includes Combined Sewer Overflow (CSO) needs where a DEP Order is issued AND construction, NOT O&M, is required for correction. CSO projects proposing construction activities to facilitate compliance with Part C Conditions relating to CSO management controls found in an applicable permit are covered in this sub-category. Refer to Table #1 and Note #6 below.

This sub-category also includes projects proposing an upgrade to a WWTF required by the issuance of more stringent effluent limitations in a revised AND issued NPDES permit. Refer to Table #1 and Note #6 below.

Category D - 3 Points Maximum - Discharges of sewage receiving at least secondary treatment but less than NPDES requirements prior to discharge. **NOTE:** Refer to Table #'s I & II below. See Note #'s 7, 8 and 9 below Table I.

This sub-category also includes ALL other collection system rating scenarios NOT covered in sub-categories A, B, C or E.

Category E - 0 Points Maximum - Present sewerage facilities are adequate or there is a lack of adequate documentation to award priority rating points in Categories A through D. **NOTE:** Refer to Table #'s I & II below.

TABLE I

COMMUNITY ENVIRONMENT & AESTHETICS

		Rating Category				
		A	B	C	D	E
	ONLOT (See Note #'s 1, 2 & 3 Below)	>50% of Systems Are Confirmed Malfunctions	> 25% AND <or= 50% of Systems Are Confirmed Malfunctions	>or=10% AND <or= 25% of Systems Are Confirmed Malfunctions	< 10% of Systems Are Confirmed Malfunctions See Note #4	Systems Are Adequate
Disposal System	COLLECTION	Raw Sewage Discharging on Public Property During Dry Weather - See Note #10 Below	Raw Sewage Intermittently Discharging on Remote or Public Property- See Note #10 Below	Evidence of Raw Sewage Discharging During Wet Weather - See Notes #'s 5 & 10 Below OR CSO's Where Department Order is Issued & <u>Construction</u> , NOT O&M, is Required for Correction - See Note #6 Below OR <u>CSO Construction Project (NOT O&M)</u> proposed to Facilitate Compliance with the Part C Conditions Relating to CSO Management Controls Found in an Applicable Permit - See Note #6 Below	This Category Includes <u>ALL</u> Other Collection System Rating Scenarios <u>NOT</u> Covered in Categories A, B, C OR E	Collection System is Adequate
	TREATMENT FACILITY (See Note #'s 7, 8 & 9 Below)	Category A is NOT Applicable to Treatment Facilities	Less Than Secondary Treatment in a Water Quality Limited Stream Segment	Less Than Secondary Treatment in a Technology-Based Effluent Limited Stream Segment or Acid Mine Stream Segment OR Projects Proposing an Upgrade to a WWTF Required By the Issuance of More Stringent Effluent Limits [TSS, (C)BOD ₅ , Ammonia-Nitrogen or Phosphorus] in a Revised <u>AND</u> Issued NPDES Permit	Treatment > or = to Secondary but < NPDES Requirements	Treatment Facility is Adequate

NOTE #1 - Documentation used to award points under this subcategory should be obtained and presented in accordance with the guidelines presented in DEP's *Sewage Disposal Needs Identification*, 3800-BK-DEP1949.

NOTE #2 - Onlot disposal systems that do not meet current DEP rules and regulations are **not** to be considered malfunctions by definition. A sub-standard system must be shown to be a confirmed malfunction as defined in DEP's *Sewage Disposal Needs Identification*. However, a Best Technical Guidance Repair Permit, issued for an onlot wastewater disposal system is considered a confirmed malfunction.

NOTE #3 - Also, if private well water contamination caused by onlot systems malfunctioning occurs, then the following explanation applies:

Situation:

- a. Soil conditions for the area are known to have high permeability rates unacceptable for onlot disposal.
- b. Onlot disposal systems are the primary means of sewage disposal in the area.
- c. Private wells or a public well in the area and in the problem soil zone are the primary water supply for the area.

Documentation:

Well water contamination is documented to the extent that 10 Points under the Domestic Water Supply Category are justified. This condition is demonstrated by a combination of the following types of supporting data:

- a. Community Survey Reports
- b. Private Sample Results
- c. Knowledge of physical conditions and locations of sewage disposal systems and water supply systems, or
- d. History of waterborne health problems

Rating Solution:

- a. Assign 10 or 15 Points under Domestic Water Supply, depending on the extent of documented contamination.
- b. Assign a maximum of 6 Points under Category C in the Community Environment & Aesthetics Category

Rationale:

To assign zero points under CE&A because documenting the actual extent of malfunctions is difficult, and then to award points under Domestic Water Supply because malfunctioning onlot systems are polluting private wells was felt to be incongruous and untenable in terms of dealing with a municipality. Therefore, a consensus was reached

for assigning points through Category C, if in our professional judgment, subsurface malfunctions are indeed the likely source of groundwater pollution and that the problem is generalized. The resulting point structure comparing surface and subsurface malfunctioning problems impacting water supplies is more equitable. Also, the more serious problem of surface malfunctions and contaminated water supplies still has the potential for a higher rating.

NOTE #4 - Points awarded under Category D for malfunctioning onlot systems have been dropped. The rationale for this is as follows:

- a. There is too great a potential for municipalities to abuse this type of need and get an easy 3 Points. (i.e. It is certain that in any area you can find one malfunctioning system which is less than 10 percent of the systems in the project area.)
- b. A small number of malfunctioning systems is not as serious as a secondary treatment facility in need of an upgrade.

NOTE #5 - This category includes the awarding of priority rating points for a project with hydraulic overloading which results in sewage backing up into the basements of structures. A project can qualify for a maximum of 6 Points, under Category C of the CE&A Rating Factor, when the sewage backups are supported by documentation. Valid types of documentation are Chapter 94 Reports, evidence of public outcry, newspaper articles, or evidence that shows field staff has verified that the backup problem(s) has occurred.

NOTE #6 - Combined Sewer Overflow Needs:

Combined Sewer Overflow (CSO) projects must propose construction activities that will lessen the impact of the affected CSOs on the receiving watercourse. The project (correction) must be of a construction nature and not just operation and maintenance. Points values in Category C can be assigned for CSO projects under the Community Environment & Aesthetics Subcategory as specified in Table I, since DEP and other regulatory agencies have identified CSO impacts and “environmental priority.”

NOTE #7 - For PENNVEST Priority Rating purposes, an existing secondary wastewater treatment facility is considered to be providing > or = to secondary treatment.

NOTE #8 - Treatment needs in the CE&A Category have been interpreted differently by various regions. Less than secondary treatment in Categories B and C refers to treatment facilities that are permitted with a degree of treatment less than secondary (Ex.-Primary Treatment), **NOT** secondary facilities that are not meeting effluent criteria due to I/I problems or other forms of mismanagement. Existing secondary facilities not maintaining secondary treatment would receive points under Category D only. Our rationale is that it is only fair that primary plants be given higher priority than mismanaged secondary plants. Another associated problem is how to rate primary plants that discharge to acid mine drainage impacted stream segments. There is no specific place for this need in the PENNVEST Priority Rating System. Therefore, a consensus was reached to include these type of needs in Category C of the CE&A Rating Factor.

NOTE #9 - In conjunction with the information in NOTE #8, the issue of selecting a category in the CE&A Rating Factor, for projects proposing a treatment facility upgrade, due to the facility's inability to meet its NPDES effluent requirements, was resolved. These types of projects will be eligible for a maximum of 3 Points under Category D of the CE&A Rating Factor.

NOTE #10 - Collection/Conveyance System Needs:

If the problem is of an operation and maintenance nature, it should not be rated. The correction must be of a construction nature and not operation/maintenance. Rating points may only be awarded under this subcategory when collection/conveyance system deficiencies which cause improper discharges to the ground surface, etc., are caused by structural deficiencies.

TABLE II

COMMUNITY ENVIRONMENT & AESTHETICS

**POINTS BASED ON COMMUNITY PUBLIC HEALTH EFFECT AND ADEQUACY OF
CURRENT SEWAGE FACILITIES**

% OF PROJECT EQUIVALENT POPULATION CATEGORY	0	1-30	31 - 70	71 - 100
A	0	6	12	20
B	0	4	8	12
C	0	2	4	6
D	0	1	2	3
E	0	0	0	0

MAXIMUM TOTAL POINTS FOR THE CE&A CATEGORY = 20

USE OF TABLE II FOR COMMUNITY ENVIRONMENT & AESTHETICS

Purpose: To avoid double counting of population and comply with the maximum point assignments allowable in each PENNVEST Priority Rating Category

- Rules:
- a. Independent of the actual percent project population equivalent being rated, the percent population for rating purposes will be the upper limits of either 30, 70 or 100 percent.
 - Ex. a) 75 percent of the population commits 100 percent of the population
 - b) 5 percent of the population commits 30 percent of the population
 - b. If points are assigned under the 71 - 100 percent population column, no other needs may be awarded points since 100 percent of the population is committed for rating purposes.
 - c. Possible maximum combinations of point assignments from Table II
 - 3 in the 1-30 Column
 - 1 in the 1-30 Column and 1 in the 31-70 Column
 - 1 in the 71-100 Column
 - d. When the analysis area is totally composed of onlot systems, the project area being rated should only be divided into more than one CE&A Category only if there is a very good reason.

Examples: ***Method #1***

Sixty percent of Population is served by a wastewater treatment facility providing secondary treatment that is not meeting its NPDES Permit's Discharge Effluent Limits.

∴ Use 31-70 Column (Representing 60 percent of the Population) in Table II and Assign Category D, 2 Points

Through a representative survey, a 35 percent malfunction rate has been established for those structures utilizing onlot wastewater disposal systems, which represents the remaining **40** percent of the project area's population.

∴ Use 1-30 Column (Representing 40% of the Population) in Table II and Assign Category B, 4 Points

Total Allowable Points Are Only = 2+4 = 6 Points

Method #2

Sixty percent of Population is served by a wastewater treatment facility providing secondary treatment that is not meeting its NPDES Permit's Discharge Effluent Limits.

∴ Use 1-30 Column (Representing 60 percent of the Population) in Table II and Assign Category D, 1 Point

Through a representative survey, a 35 percent malfunction rate has been established for those structures utilizing onlot wastewater disposal systems, which represents the remaining **40** percent of the project area's population.

∴ Use 31-70 Column (Representing 40 percent of the Population) in Table II and Assign Category B, 8 Points

Total Allowable Points Are Only = 1+8 = 9 Points

The correct point assignment would be 9 Points under Method #2 since this would yield the greatest number of points.

NOTE #1- If the entire project area is in Category A (even if there are different types of needs), assign 20 Points.

Example: 1/3 community or wildcat sewers, 2/3 community with onlot systems greater than 50 percent malfunctions.

2. **Domestic Water Supply**

15 Points - Documented evidence provided by laboratory analysis that public drinking water sources or a significant number of private drinking water sources are contaminated by malfunctioning onlot disposal systems or that downstream drinking water sources are subject to water quality standards' violations due to discharges of untreated or

inadequately treated sewage which would be eliminated or upgraded by project implementation.

10 Points - Documented contamination of public or private groundwater drinking water sources supported by known sub-surface soil and hydrogeologic conditions and evidence of periodic water source contamination or documentation that downstream drinking water sources are periodically subject to contamination (i.e. water quality standards violations) by existing discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation, based on water quality analyses or evaluation of the stream's physical characteristics, or both.

5 Points - Suspected contamination of public or private groundwater drinking water sources based on knowledge of sub-surface soil and hydrogeologic conditions or a downstream drinking water source is shown to be affected by periodic water quality standards violations from discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation based on evaluation of the stream's physical characteristics.

0 Points - No downstream drinking water sources or no documentation or evidence that drinking water sources are affected by the sewage treatment need which would be eliminated or upgraded by project implementation.

TABLE III

DOMESTIC WATER SUPPLY RATING

DRINKING WATER SOURCE

	15 POINTS	10 POINTS	5 POINTS	0 POINTS
PRIVATE WELLS	> 25% of “Representative Sample” Contaminated	> 10% AND <or= 25% of “Representative Sample” Contaminated	>or= 5% AND <or= 10% of “Representative Sample” Contaminated	< 5% of “Representative Sample” Contaminated
PUBLIC SOURCES	Water Supply Intake Subject to Water Quality Standards Violations Which Occurs Frequently	Water Supply Intake Subject to Water Quality Standards Violations Which Occur Depending on Critical Source Conditions (Q7-10 Low Stream Flow Conditions)	Water Supply Intake Subject to Water Quality Standards Violations Which Could Occur Depending on Critical Source Conditions (Q7-10 Low Stream Flow Conditions)	Water Supply Intake Subject to Water Quality Standards Violations Which Are Remote

TABLE IV

DOMESTIC WATER SUPPLY RATING

NOTES FOR USE WITH TABLE III

NOTE #1 - When considering multiple sources of water supply within a needs analysis area, use the following example:

If a very small percentage of an area has greater than 25 percent of their “representative sample” contaminated, the rating for the entire area would not be 15 Points. The rating would be based on the population affected.

Ex. Total Area - 200 Homes
- 188 Homes on Public Water Supply That is NOT Contaminated
- 12 Homes with Private Wells Contaminated by Sewage

Therefore, 6 percent of the homes would be affected and 5 Points would be assigned.

NOTE #2 - If 10 or 15 Points are awarded for Domestic Water Supply, up to 6 Points should also be awarded in the Community Environment & Aesthetics Category. Also, see NOTE #3 below.

NOTE #3 - See NOTE #3 under the Community Environment & Aesthetics Subcategory of this guidance.

NOTE #4 - Clarification on the Use of Total and Fecal Coliform Testing for Well Contamination:

Primary contamination indicator is total coliform where fecal coliform is also present in 20 percent of the samples testing positive for total coliform and/or evidence of contamination through dye testing.

Example: 25 wells out of 100 (25 percent) have positive readings of total coliform. Five of the 25 wells (20 percent) also show fecal coliform. Therefore, 25 percent of the representative sample (which is the 100 well figure) is considered contaminated.

NOTE #5 - A representative sample is defined as follows:

- a. New Surveys -
 - Up to 50 Homes (Wells) Approximately 50%
 - 50 to 100 Homes (Wells) Approximately 35%
 - 100 to 500 Homes (Wells) Approximately 25%
 - 500 to 1,000 Homes (Wells) Approximately 20%
 - > 1,000 Homes (Wells) Approximately 15%
- b. Existing Surveys - Surveys conducted or previously approved by DEP.

NOTE #6 - Well Construction Considerations:

It is important to know that wells are properly constructed and that the wells are not being contaminated by sources other than existing sewerage facilities. If the area being rated is served by onlot disposal systems and water supplies are predominantly dug wells, we can generally disregard construction. If the area being rated is partially served by dug wells and these are the only wells contaminated, we should assess proper construction practices and the role they play in preventing contamination of groundwater supplies before awarding any priority rating points.

NOTE #7 - Additional Fecal Coliform Testing Guidance:

The testing of drinking water samples for the presence of fecal coliform bacteria may be carried out using several different established methods. The Colilert Test using Quantitary Technology is to be considered an adequate method for the testing of drinking water samples **ONLY**. The Colilert Test may **NOT** be used for surface water sampling. The testing of surface waters should be done through the traditional plate count using the incubation or fermentation tube methods. Surface waters include streams, rivers, lakes, etc.

TABLE V

**DOMESTIC WATER SUPPLY RATING FOR MULTIPLE SOURCES OF WATER SUPPLY
WITHIN A NEEDS ANALYSIS AREA**

		PERCENTAGE OF PROJECT POPULATION			
		0%	1% - 30 %	31% - 70%	71% - 100%
TYPE AND/OR DEGREE OF CONTAMINATION	<p>> 25% of “Representative Sample” Contaminated OR Water Supply Intake Subject to Water Quality Standards Violations Which Occurs Frequently</p>	0	5	10	15
	<p>>10% AND <or=25% of “Representative Sample” Contaminated OR Water Supply Intake Subject to Water Quality Standards Violations Which Occur Depending on Critical Source Conditions (Q₇₋₁₀ Low Stream Flow Conditions)</p>	0	3	6	10
	<p>>or= 5% AND <or= 10% of “Representative Sample” Contaminated OR Water Supply Intake Subject to Water Quality Standards Violations Which Could Occur Depending on Critical Source Conditions (Q₇₋₁₀ Low Stream Flow Conditions)</p>	0	1	3	5
	<p>< 5% of “Representative Sample” Contaminated OR No Evidence of Contamination OR Water Supply Intake Subject to Water Quality Standards Violations That Are Remote</p>	0	0	0	0

NOTE #1 - Table V should be used when rating multiple sources of water supply within a needs area.

NOTE #2 - **Discussion:**

When determining a PENNVEST Rating for a project area that is served by more than one water supply type, previous guidance only discussed a situation where a “very small percentage” of the project area was affected. The logic of this example seems to be that if only a small area of the total project is affected, the data should be appropriately weighted and not ignored. The guidance does not address a situation when the affected water supply’s ratio approaches or exceeds 50 percent of the project area. It would stand to reason, that as the relative size of the affected area increases, the greater that area’s sewage needs should be weighted when determining a rating.

Solution:

Table V should be used to award PENNVEST Priority Rating Points for the impact of contaminated water supplies, when the contaminated water supply serves a significant portion of the project, but not the entire project. Determine what the percentage rate is for contaminated water supplies using standard procedures [Representative Sample (RS), Total Coliform (TC), Fecal Coliform (FC)/Total Coliform (TC)]. Enter the table from the left, at the appropriate contamination percentage rate, and follow it to the column that represents the population affected percentage rate. The intersection will determine the appropriate number of Domestic Water Supply (DWS) points that should be awarded for a project.

3. **Public Bathing**

5 Points - A downstream, permitted public bathing beach has been closed due to contamination as a result of water quality standards violations due to discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation.

3 Points - A downstream, permitted public bathing beach is shown, through water quality analysis and an evaluation of stream and bathing area’s physical characteristics, to be subject to contamination by untreated or inadequately treated sewage discharges which would be eliminated or upgraded by implementation.

1 Point - A public bathing place permit has been denied because of violations of water quality standards resulting from discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation.

0 Points - No downstream public bathing uses are documented or there is no documented effect of discharges of untreated or inadequately treated sewage on downstream public bathing uses which would be eliminated or upgraded by project implementation.

TABLE VI

PUBLIC BATHING RATING

	5 POINTS	3 POINTS	1 POINT	0 POINTS
DOCUMENTATION	Public Bathing Beach Closed Due to Water Quality Standards Violations	Chemical & Physical Analysis Indicate Potential Contamination	Permit Denied Due to Water Quality Standards Violations	No Use or Effect

NOTE #1 - Information on popular “swimming holes” (unpermitted beaches) will be considered by the PRRC on a case-by-case basis.

4. **Public Safety**

5 Points - Documentation demonstrates that a critical or chronic safety hazard exists due to a structurally or physically deteriorated facility, such as:

- Situation where trickling filter wall may fall apart at any time
- Aeration tank/holding tank is ready to fall at any moment, etc.
- Chlorine Contact Facilities are deteriorated or non-functional to the extent that they are a safety hazard to employees or the public. Points should be awarded in this category if the chlorine contact facilities’ improvements are the primary purpose of the project.

In addition, the applicant must have requested and been issued a Letter of No Prejudice by PENNVEST to be eligible to receive 5 Points under this subcategory.

3 Points - Documentation demonstrates that a periodic or potential safety hazard exists due to a structurally or physically deteriorated facility, such as:

- Structure is in the condition that it can become a chronic safety hazard in certain situations such as peak flow periods, rain events, etc.
- Manhole is unsafe for periodic sewer inspection and during sewer cleanup, manhole walls may fall apart or a large sewer line may collapse at any time which may potentially cause a fatal auto or pedestrian accident
- Chlorine Contact Facilities are deteriorated or non-functional to the extent that they are a safety hazard to employees or the public. Points should be awarded in this category if the chlorine contact facilities’ improvements are only part of an overall project.

1 Point - Documentation demonstrates that protection against a potential safety hazard will be provided by the implementation of the project, such as:

0 Points - No documentation of existing or potential safety hazards exists.

ENVIRONMENTAL IMPACT

A. The number of points for Environmental Impact shall be based on the extent to which project implementation enhances the aquatic environment and water uses.

B. The following point values shall be used to determine rating points for this factor:

1. **Fish and Aquatic Life -**

12 Points - Surface waters are capable of supporting a cold or warm water fishery, but documented evidence shows that they are not because of pollution caused by discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation.

6 Points - Surface waters are currently supporting a depressed cold or warm water fishery, shown through documentation to be caused by discharges of untreated or inadequately treated sewage that would be eliminated or upgraded by project implementation.

3 Points - Surface waters are currently supporting a cold or warm water fishery, documented to be periodically affected or threatened by the discharge of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation based upon evaluation of the stream's physical characteristics.

0 Points - No documentation or evidence that fish and aquatic life are affected by untreated or inadequately treated sewage that would be eliminated or upgraded by project implementation.

TABLE VII

FISH AND AQUATIC LIFE RATING

	12 POINTS	6 POINTS	3 POINTS	0 POINTS
DOCUMENTATION (See NOTE #4 Below Table VII)	Aquatic Biologist Survey As Performed or Approved by DEP - See Note #1 Below Table VII	Aquatic Biologist Survey As Performed or Approved by DEP - See Note #2 Below Table VII OR Past Evidence of Fish Kills	Calculated Impact Based on Discharge and Stream's Physical Characteristics OR Isolated Fish Kill Reported During Drought Conditions - See Note #'s 5 & 6 Below Table VII	No Evidence or Potential Impact - See Note #3 Below Table VII
CRITERIA	Fishery Not Being Supported	Fishery Depressed	Fishery Affected or Threatened	

NOTE #1 - Approved surveys include those done by the Pennsylvania Fish & Boat Commission. Survey data will generally characterize Benthic macroinvertebrates composed of greater than 90 percent facultative or pollution tolerant forms and less than 10 percent pollution sensitive forms; or fish community non-existent or dominated by rough or forage forms with absence or near absence of game or pan fish.

NOTE #2 - Survey data will generally characterize Benthic macroinvertebrates of greater than 50 percent facultative or pollution tolerant forms and less than 50 percent pollution sensitive forms; or fish community dominated by rough and forage species and depression of game or pan fish; or documented fish kills have occurred throughout the year.

NOTE #3 - This would also include sterile stream conditions due to acid mine drainage.

NOTE #4 - The following documentation is required for *lake* application in the rating category:

1. **Great Effect - 12 Points**

Field survey, impact analysis of point/non-point source contribution (National Lake Eutrophication Program) required.

2. **Moderate Effect - 6 Points**

Impact from sewage sources is documented by macroinvertebrate survey.

3. **Slight Effect - 3 Points**

Desktop evaluation of the relative significance of sewage sources versus non-sewage, non-point-source impact on lake degradation. Points would be awarded only if it can be judged that the impact related to sewage sources is significant. DEP or municipal data is required.

NOTE #5 - Onlot disposal systems **cannot** be the basis for a calculated impact. Points for potential impacts should **not** be awarded unless the proper documentation is provided to support the hypothesis that the onlot disposal systems may be the cause of the problem. However, wildcat sewer systems are another story. Points for a potential impact can be awarded if an impact can be calculated.

NOTE #6 - NH₃-N upgrade due to ammonia toxicity (modeling) warrants 3 Points. Phosphorus upgrade does **not** warrant any points.

2. **Boating and Recreation -**

4 Points - Documentation shows that discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation prevent the use of a stream or impoundment for boating and other non-swimming and non-fishing recreational purposes due to excessive aquatic growth or other material posing a danger to the user or his equipment.

2 Points - Discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation are shown to adversely affect, but not prevent, the use of the stream or impoundment for boating and other non-swimming and non-fishing, recreational purposes.

1 Point - Discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation are shown to potentially affect the use of the stream or impoundment for boating or other non-swimming and non-fishing, recreational purposes. The project will also qualify for 1 Point if documentation shows a wildcat sewer discharging into a creek, intermittent stream or roadside or other drainage ditch and/or mechanical failure or inadequacy causes untreated or inadequately treated wastewater to discharge into a creek, intermittent stream or other drainage conveyance which is readily accessible to the public.

0 Points - No downstream boating and recreation uses are documented or there is no documented effect of untreated or inadequately treated sewage discharges which would be eliminated or upgraded by project implementation on downstream boating or other non-swimming and non-fishing recreational purposes.

TABLE VIII

BOATING AND RECREATION RATING

	4 POINTS	2 POINTS	1 POINT	0 POINTS
DOCUMENTATION	DEP or Other Reputable Observations	DEP or Other Reputable Observations - See Note #1	DEP or Other Reputable Observations - See Note #'s 1 & 3	No Use or Effect
CRITERIA	Aquatic Growth, Foam, Sludge, Odor, Etc. <u>Prevent</u> Use	Aquatic Growth, Foam, Sludge, Odor, Etc. <u>Inhibit</u> Use	Potential Impact on Use	-----

NOTE #1 - Either 1 or 2 Points may be assigned based on severity, documentation and public outcry against surface water containing inadequately treated sewage accessible to playing children or other non-swimming or non-fishing human contact. The project will only be eligible for the 2 Point Category if the municipal entity shows pressure from citizen's complaints or otherwise indicates a desire to correct the situation. Maximum points are not considered appropriate for this type of need.

NOTE #2 - If the receiving stream is large and no effect can be shown on Boating and Recreation because of the dilution factor involved, even under low flow conditions, 0 Points are assigned.

NOTE #3 - Septic system discharges to streams with significant non-fishing, non-swimming human use(s) qualify for at least one point if significant increases in downstream versus upstream fecal coliform counts are documented.

3. **Industrial Water Supply** -

3 Points - Documentation which demonstrates that water supply intakes for industries which process foods or make fine papers are shown to be directly affected as a result of water quality standards violations due to untreated or inadequately treated sewage discharges which would be eliminated or upgraded by project implementation.

2 Points - The use of water supplies for industries which use water in a way that persons are exposed to untreated water is shown to be limited or restricted as a result of water quality standards violations due to untreated or inadequately treated sewage discharges which would be eliminated or upgraded by project implementation.

1 Point - Industrial water supply intakes are shown to be adversely affected by discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation based on evaluation of the stream's physical characteristics.

0 Points - No downstream industrial water supply intakes are documented or there is no documented effect on downstream industrial water supply uses caused by untreated or inadequately treated sewage discharges which would be eliminated or upgraded by project implementation.

TABLE IX

INDUSTRIAL WATER SUPPLY RATING

	3 POINTS	2 POINTS	1 POINT	0 POINTS
DOCUMENTATION	Chemical Analysis Shows Water Quality Standards Violation(s)	Chemical Analysis Shows Water Quality Standards Violation(s)	Calculated Impact	No Use or Effect
CRITERIA	Food Processing or Fine Paper Making	Processing, Washing or Cooling Water that Does Not Require High Water Quality	All Industries	-----

4. **Irrigation -**

3 Points - Irrigation water sources for crops grown or prepared for human consumption are shown to be adversely affected as a result of water quality standards violations due to discharges of untreated or inadequately treated sewage that would be eliminated or upgraded by project implementation.

2 Points - Irrigation water sources for crops other than those grown or prepared for human consumption are shown to be adversely affected as a result of water quality standards violations due to discharges of untreated or inadequately treated sewage which would be eliminated or upgraded by project implementation.

1 Point - Irrigation sources are shown to be affected by untreated or inadequately treated sewage discharges that would be eliminated or upgraded by project implementation based upon evaluation of the stream's physical characteristics.

0 Points - No downstream irrigation uses are documented or there is no documented effect on downstream irrigation uses by untreated or inadequately treated sewage discharges which would be eliminated or upgraded by project implementation.

TABLE X
IRRIGATION RATING

	3 POINTS	2 POINTS	1 POINT	0 POINTS
DOCUMENTATION	Chemical AND/OR Bacteriological Analyses Shows Water Quality Standards Violation(s)	Chemical AND/OR Bacteriological Analyses Shows Water Quality Standards Violation(s) and/or Municipal Data	Calculated Impact	No Use or Effect
CRITERIA	Crops Grown / Prepared for Human Consumption	Crops Grown / Prepared for Other Than Human Consumption	All Crops	-----

5. **Stock Watering -**

3 Points - Water sources used to wash and water dairy animals are documented to be adversely affected as a result of water quality standards violations due to discharges of untreated or inadequately treated sewage that would be eliminated or upgraded by project implementation.

2 Points - Water sources used to wash and water livestock other than dairy animals are documented to be adversely affected as a result of water quality standards violations due to discharges of untreated or inadequately treated sewage that would be eliminated or upgraded by project implementation.

1 Point - Water sources used to wash and water livestock are shown to be contaminated by untreated or inadequately treated sewage from discharges which would be eliminated or upgraded by project implementation based on evaluation of the stream's physical characteristics.

0 Points - No downstream stock watering is documented or there is no documented effect on downstream stock watering uses caused by untreated or inadequately treated sewage discharges which would be eliminated or upgraded by project implementation.

TABLE XI

STOCK WATERING RATING

	3 POINTS	2 POINTS	1 POINT	0 POINTS
DOCUMENTATION	Chemical AND/OR Bacteriological Analysis Shows Water Quality Standards Violation(s)	Chemical AND/OR Bacteriological Analysis Shows Water Quality Standards Violation(s) and/or Municipal Data	Calculated Impact - See NOTE #1	No Use or Effect
CRITERIA	Dairy Livestock	Other Than Dairy Livestock	All Livestock	-----

NOTE #1 - The calculated impact (1 Point) must be based on modeling (Water Quality Standards violated or calculated to be violated using Water Quality Modeling, Fecal Coliform Die-Off Model), **AND** stock must be known to exist along the affected stream.

ECONOMIC DEVELOPMENT

This rating category is evaluated by the Pennsylvania Department of Community and Economic Development for PENNVEST.

COMPLIANCE

1. The number of points for Compliance shall be based on the extent to which project implementation improves a community’s ability to comply with the state and federal statutes, regulations and standards.
2. The following point values shall be used to determine rating points for this factor:

a. **Enforcement Status & Overload Conditions -**

10 Points - The project provides compliance with an order ISSUED by DEP under the Clean Streams Law, the Federal Government, or the Courts, which directs a municipal entity to address problems with onlot wastewater disposal systems or a wastewater treatment facility.

This point category also includes projects that provide compliance with Consent Order and Agreements negotiated and executed by DEP and the affected party or parties, and Consent Order and Adjudications executed by DEP, the affected party or parties and the appropriate court of jurisdiction. The Consent Order’s primary goal must be to address malfunctioning onlot wastewater disposal systems, a

wastewater treatment facility or wastewater collection or conveyance facilities concerns.

7 Points - DEP has evaluated the pollution or public health problems in the municipality and gathered sufficient data to support the issuance of an order for corrective action, or has adopted revised water quality standards which cannot be met by the existing treatment facilities, but an upgrade order has not been issued.

This point category includes projects designed to address the resolution of onlot wastewater disposal system problems where the municipality involved is currently NOT under an order from DEP or any other agency or court with jurisdiction. The project must be able to meet the YES-NO-YES criteria outlined in Note #1 below AND be designed to eliminate an onlot wastewater disposal system malfunction rate that is currently greater than 25 percent. Non-municipal project applicants are not eligible to receive points in the sub-category using the YES-NO-YES criteria.

This point category also includes projects that enable the permittee of an NPDES-permitted wastewater treatment facility to bring its facility into compliance with more stringent effluent limitations contained in a revised and re-issued NPDES Permit.

5 Points - The project is part of an APPROVED Corrective Action Plan and Schedule (CAP/CP&S) designed to allow the permittee of an NPDES-permitted wastewater treatment facility to bring its facility into compliance with the discharge parameters contained in the facility's NPDES permit. Points under this sub-category may not be awarded until such time as the CAP/CP&S is APPROVED by DEP.

This point category also includes projects where DEP has evaluated the pollution or public health problems in the municipality and gathered sufficient data to support the issuance of an order for corrective action, but an upgrade order has not been issued. The project has been designed to address the resolution of onlot wastewater disposal system problems where the municipality involved is currently NOT under an order from DEP or any other agency or court with jurisdiction. The project must be able to meet the YES-NO-YES criteria outlined in Note #1 below AND be designed to eliminate an onlot wastewater disposal system malfunction rate that is currently $\geq 10\%$ and $\leq 25\%$.

This point category also includes wastewater collection or conveyance system construction projects that are part of an APPROVED CAP/CP&S or an approved Act 537 Plan. Points under this sub-category may not be awarded until such time as the plan is APPROVED by DEP. There also must be a sewer connection prohibition in place.

This point category also includes CSO construction projects (not O&M) proposed to facilitate compliance with the Part C Condition relating to CSO management controls found in an applicable permit. See Note #2 under this category.

2 Points - A sewer connection ban or connection prohibition is imposed in the project area but no Corrective Action Plan and Schedule (CP&S) has been approved by DEP. The project is NOT currently part of an APPROVED CAP/CP&S designed to allow the permittee of an NPDES-permitted wastewater treatment facility, to bring its facility into compliance with the discharge parameters contained in the facility's NPDES permit. Points under this category should be awarded when an NPDES-permitted facility is hydraulically or organically overloaded OR when a wastewater collection or conveyance system component or structure is hydraulically overloaded, but a CAP/CP&S has not been APPROVED by DEP.

0 Points - No state or federal order is outstanding nor should one be issued.

This sub-category also includes projects where no sewer connection ban or connection prohibition has been imposed by DEP in the project area.

NOTE #1 - There was significant debate over the intent of the second clause in the Enforcement Status Component of the Compliance Rating Factor. When the regulations were initially developed, it was recognized that it would appear that some municipalities were being rewarded for recalcitrant conduct (reference Clause #1). Enforcement Status was also generally viewed as an overall indicator of DEP's measure of project importance or priority. The problem with this logic occurs where there is a project of greater or equal importance to DEP, but because of desire, initiative, or cooperation on the municipality's/authority's part, an order to correct the problem or to establish an enforceable schedule is unnecessary. Given this scenario, DEP believed it would be encouraging the wrong perception by awarding 10 Points in priority to those municipalities to which DEP needed to issue orders.

Some regional interpretation of this rating component has resulted in assigning Enforcement Status Points to nearly all projects. DEP "could" issue an order in practically all situations. To remedy this misinterpretation, the following direction is provided:

General

Where an order has **NOT** been issued, answer the following three questions in conjunction with the proposed project:

- (1) Is there a DEP-approved schedule for correction or project implementation (Act 537 Plan Implementation Schedule, Corrective Action Plan with Implementation Schedule, etc.)?
- (2) Will an order be necessary, in all likelihood, to ensure correction or project implementation?
- (3) Upon evaluating the supporting documentation, has it been determined that DEP **would** devote the necessary staff time to issue an order to ensure correction or project implementation? For onlot malfunction correction projects, this question

CANNOT be answered “**YES**” unless at least a 10 percent onlot disposal system malfunction rate has been documented.

The answers to these three questions must be as follows: Question #1-Yes, Question #2-No, and Question #3-Yes, in order to award the seven Enforcement Status Points where there is currently not an order in place. If the history of the project suggests that an order will be necessary, do **NOT** award the seven Points until such time as the order is issued.

Documentation

NO enforcement points are to be awarded for projects where the documented septic system malfunction rate is less than 10 percent. However, where sufficient documentation is provided to enable DEP’S staff to determine that the project area’s onlot wastewater disposal systems are malfunctioning downward and contaminating water supplies, then enforcement points may be awarded even where the documented surface malfunction rate is less than 10 percent. In such a case, water supply survey data and soils and hydrogeological information would show that the potential for groundwater contamination is high and that, indeed, at least 10 percent of the representative sample well tests are contaminated (10 percent positive for total coliform, and 20 percent of those samples also positive for fecal coliform with no well-construction bias).

NOTE #2 - Combined Sewer Overflow (CSO) projects must propose construction activities that will lessen the impact of the affected CSOs on the receiving water course. The project (correction) must be of a construction nature and not just operation and maintenance. Points may be assigned in this sub-category since DEP and other regulatory agencies have identified CSO impacts as and “environmental priority.”

TABLE XII

COMPLIANCE RATING

	10 POINTS	7 POINTS	5 POINTS	2 POINTS	0 POINTS
ONLOT PROBLEMS	Order or Consent Order Issued to Require Correction of Onlot Problem(s)	“Yes-No-Yes” Scenario in Note #1. Applies where the onlot malfunction rate is >25%	“Yes-No-Yes” Scenario in Note #1. Applies where the onlot malfunction rate is >= 10% and <= 25%	Not Applicable	No Order or Consent Order is Currently in Place
TREATMENT FACILITY PROBLEMS	Order or Consent Order Issued to Require Correction of a Problem(s) at a WWTF	WWTF That Cannot Meet Revised and Upgraded NPDES Effluent Limits (NO Order Issued)	CAP/CP&S APPROVED to Address Hydraulic Or Organic Overload at WWTF OR Yes-No-Yes” Scenario in Note #1. Applies	Sewer Connection Prohibition Imposed But CAP/CP&S NOT Approved	No Order, Consent Order, Connection Ban or Prohibition is Currently in Place
COLLECTION OR CONVEYANCE PROBLEMS	Order or Consent Order Issued to Require Correction of Problem(s) Related to Wastewater Collection or Conveyance System	NOT APPLICABLE	Sewer Connection Prohibition Imposed with a CAP/CP&S or Act 537 Plan Approved OR CSO Construction Project (Not O&M) Proposed to Facilitate Compliance with the Part C Conditions in an Applicable Permit - See Note #2 Under this Category	Sewer Connection Prohibition Imposed But CAP/CP&S NOT Approved	No Order, Consent Order, Connection Ban or Prohibition is Currently in Place

ADEQUACY, EFFICIENCY AND SOCIAL IMPACT

1. The number of points for Adequacy, Efficiency and Social Impact shall be based upon the extent to which project implementation will encourage or accomplish regionalization or consolidation of facilities, the population of the project area and the median household income of the affected municipalities.

2. The following point values shall be used to determine rating points for this factor:

a. **Encouragement of Regionalization and Consolidation -**

2 Points - Project implementation will result in the elimination of one or more existing discharges from facilities constructed and operated under DEP-issued NPDES or Water Quality Management Permits.

In addition, elimination of ALL NPDES-permitted Combined Sewer Overflow (CSO) points in a combined wastewater collection/conveyance system, by the proposed project, is justification for two points under this subcategory.

OR

1 Point - Project implementation will result in consolidation or regionalization of operational, maintenance or monitoring functions with other dischargers.

In addition to those projects where existing NPDES facilities are eliminated and replaced by regional facilities, one point may be awarded under this category where a second municipality, or part thereof, is brought into an existing system via interceptor and/or collector sewers. This one point award may be awarded only once to a project in the “second” municipality. Additional future projects which propose the extension of sewers after the “second” municipality is already discharging wastewater to its neighboring municipality’s treatment facility are not qualified for the one point award.

One point is also justified when less than ALL NPDES-permitted Combined Sewer Overflow (CSO) points in a combined wastewater collection/conveyance system are eliminated by the proposed project.

0 Points - Project implementation will result in no regionalization or consolidation of wastewater treatment facilities or operational functions. Also, an upgrade to an existing treatment facility warrants no points.

b. **Population Affected -**

2 Points - Project equivalent population greater than 50,000 persons or project serves a small municipality. See NOTE #'s 1 - 4 below.

1 Point - Project equivalent population is 5,001 persons to 50,000 persons. See NOTE #'s 1 - 4 below.

0 Points - Project equivalent population is 1 person to 5,000 persons. See NOTE #'s 1 - 4 below.

NOTE #1 - A small municipality is defined as a municipality having a total population of 3,500 persons or less based on the most recent United States Bureau of the Census figures.

NOTE #2 - Where a project will serve more than one municipality, the project shall qualify as a “small municipality project” if **EACH** municipality involved conforms to the definition of a small municipality.

NOTE #3 - Non-Municipal projects do **NOT** qualify for “small municipality” points. The project may, however, be awarded points based on the project’s equivalent population.

NOTE #4 - For projects proposing industrial discharges, assign points for “Population Affected” based on an equivalent organic strength of the discharge using 0.17 lbs. of BOD₅ per person per day in addition to the municipal population figures.

c. **Median Household Income -**

1 Point - Project’s Municipal Median Household Income, as per the most recent United States Bureau of the Census figures, is below the Pennsylvania Statewide Municipal Median Household Income of \$29,069. See NOTE #’s 1 and 2 below.

0 Points - Project’s Municipal Median Household Income, as per the most recent United States Bureau of the Census figures, is above the Pennsylvania Statewide Municipal Median Household Income of \$29,069. See NOTE #’s 1 and 2 below.

NOTE #1 - Where a project will serve more than one municipality, the median household income used will be that associated with the municipality contributing the **greatest number** of users to the project.

NOTE #2 - Non-Municipal projects do **NOT** qualify for any points under the Municipal Median Household Income Category.

EXHIBIT H - 2

PENNVEST PROJECT RATING SUMMARY
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PROJECT INFORMATION

1. **Name and Address of Applicant**

2. **Rating Type**

- New Rating**
- Revised Rating - Old Project**
- Revised Rating - Scope Change**

3. **Project Location - Service Area**

County (ies): _____ Municipality(ies): _____
 Village or Area: _____ DEP Regional Office: _____

4. **Project Description: (Circle all applicable: STP, STPMOD, PS, INT, SS, SREH, CSO, I/I)**

(Brief problem description and project narrative)

STP Data:

Capacity (gpd): _____
 Existing EDUs _____
 Proposed EDUs: _____
 Gal/EDU (proposed): _____

SUMMARY

TOTAL RATING POINTS: _____

_____ Public Health & Safety (0 - 45 points)	_____ Environmental Impact (0 - 25 points)	_____ Compliance (0 - 10 points)
_____ Community, Environment & Aesthetics	_____ Fish & Aquatic Life	_____ Adequacy, Efficiency & Social Impact (0 - 5 points)
_____ Domestic Water Supply	_____ Boating & Recreation	_____ Regionalization
_____ Public Bathing	_____ Industrial Water Supply	_____ Population Affected
_____ Public Safety	_____ Irrigation	_____ Median Household Income
	_____ Stock Watering	

SIGNATURES:

Project Manager

Date

PRRC Member

Date

Section Chief

Date

Regional Water Quality Manager

Date

DMFA PRRC Coordinator

Date

I. PROJECT EVALUATION AND RECOMMENDATION

1. DEP's participation in Project Evaluation and Recommendation for PENNVEST-funded projects is specified in Section 7(n) and Section 8 of the Chapter 963 regulations and in the current Memorandum of Understanding between PENNVEST and DEP under *General Project Management Responsibilities & Functions/DEP Responsibility # 1*. The Project Evaluation and Recommendation Form (Exhibit I) provides PENNVEST with brief descriptions of the proposed project, the problem to be solved, the major benefits of the project for each evaluation criteria, and the Project Manager's recommendation for the project.
2. The Project Manager must complete a Project Evaluation and Recommendation Form for any project anticipated for presentation at a PENNVEST Board Meeting. This form must be completed and signed by both the Project Manager and Regional Water Quality Manager. The Project Manager should keep a copy of the recommendation for the regional files and submit the original form to the PRRC at its regular meeting prior to the PENNVEST Board meeting.
3. The DMFA PRRC Coordinator reviews the Project Evaluation and Recommendation Form. The Coordinator then signs off, keeps a copy for the DMFA project file, and submits the form to PENNVEST.

EXHIBIT I

PROJECT EVALUATION AND RECOMMENDATION FORM
PENNVEST WASTEWATER PROJECTS
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

- Construction Funding
 Advance Funding for Design and Engineering Assistance

Name and Address of Applicant:

Project Name:

Project Description:

RECOMMENDED PROJECTS

- CWSRF eligible not CWSRF eligible
 In accordance with the inter-agency agreement between DEP and PENNVEST, we have completed the review of the project and hereby confirm that this project will not cause any significant negative environmental impacts. We recommend PENNVEST give this project consideration for funding.

Status of Planning:

- Requirements were satisfied on _____
 Requirements are expected to be satisfied by _____

Status of Permitting:

- Requirements were satisfied on _____
 Requirements are expected to be satisfied by _____

NOT RECOMMENDED PROJECTS

- The project is not recommended for funding because:

Date: _____

Signed: _____
Project Manager

Date: _____

Signed: _____
Regional Water Quality Manager

Date: _____

Signed: _____
Central Office PRRC Coordinator

APPLICANT NAME _____

PROJECT NAME _____

Public Health and Safety **Total Points** _____

Where the PENNVEST priority rating is higher than “NO IMPACT,” provide a detailed description of Public Health and Safety Impacts. Highlight specific items in those categories where priority points were justified. These categories include community environment & aesthetics, domestic water supply, public bathing, and public safety.

Environmental Impact **Total Points** _____

Where the PENNVEST priority rating is higher than “NO IMPACT,” provide a detailed description of Environmental Impact. Highlight specific items in those categories where priority points were justified. These categories include fish and aquatic life, boating and recreation, industrial water supply, irrigation and stock watering.

Compliance **Total Points** _____

Where the PENNVEST priority rating is higher than “NO IMPACT,” provide a detailed description of Compliance Issues. Highlight specific items in those categories where priority points were justified. These categories include enforcement status and overload condition.

Adequacy, Efficiency, and Social Impact

Total Points _____

Where the PENNVEST priority rating is higher than “NO IMPACT,” provide a detailed description of the Adequacy, Efficiency, and Social Impacts. Highlight specific items in those categories where priority points were justified. These categories include encouragement of regionalization/consolidation, population affected, and median household income.

J. CHAPTER 103 RATING AND THE PROJECT PRIORITY LIST

1. All public wastewater projects that may be financed by PENNVEST loan funds must be rated using the procedures specified in the Chapter 103 regulations. This is in accordance with the requirements for the use of federal grants that capitalize the Clean Water State Revolving Fund (CWSRF). To be eligible for a PENNVEST wastewater loan, a project is ranked using its Chapter 103 rating and published on the Commonwealth's Project Priority List (PPL).
2. The entire PPL is revised and published every two years. The intent is to include on the PPL all potential wastewater projects for which a PENNVEST loan application may be submitted in the future. Projects funded by PENNVEST remain on the PPL until the loan has been closed. The Project Manager should identify projects for inclusion on the PPL either through the Act 537 planning process or the Planning Consultation Meetings that are required by PENNVEST prior to loan applications.
3. To complete a Chapter 103 rating of a project, you should use the Chapter 103 Rating Form Instructions (see Exhibit J-1) and the Chapter 103 Rating Form (see Exhibit J-2). The rating should be done whenever you become aware of (1) a new project for which PENNVEST funding is planned, (2) the need for revising a Chapter 103 rating for a project based on additional information not considered in the original rating, or (3) a change in scope for a project which was previously rated. You should complete the rating form and have it signed by the Section Chief responsible for the work, and by your Regional Water Quality Manager. You should keep the completed rating form on file in your regional office, and send a copy of each rating to Central Office, Division of Municipal Financial Assistance (DMFA). The DMFA will assign a Project Number and include the project in the next revision of the PPL.
4. You should submit ratings to the DMFA as they are completed so that the PPL list can be continuously updated. Revisions to PPL will be published as needed when there are PENNVEST applications which have not been previously included on the PPL. Then all of these new ratings can be included in these periodic revisions.
5. You should also report to the DMFA when a project proceeds to construction using financing other than a PENNVEST loan. These projects can then be removed from the PPL.

CHAPTER 103 RATING FORM INSTRUCTIONS

Page 1

PROJECT INFORMATION

1. Applicant Name and Address: This is the municipality or authority that is expected to construct the proposed project. The agency name and address are needed for the PPL.
2. Rating Type (Check One): The type of rating is required to assure that a single project number properly designates each project. This information is necessary to avoid assigning the same number to two different projects proposed by one agency, and to avoid assigning two different numbers to the same project when a rating is revised.
3. Project Location/Service Area: Indicate the county and municipality in which the project is located. The service area (e.g. Village) is needed to distinguish the project in municipalities where projects may be proposed for more than one service area. Attach a location map if available. Indicate the DEP regional office.
4. Project Description: The Codes that are used for different types of wastewater projects are described below. Circle all of the applicable codes and provide a narrative description as required below.

STP - Construction of a new sewage treatment plant.

STPMOD - The modification of an existing sewage treatment plant, including increases in capacity, additional treatment processes, and rehabilitation or replacement of various components of the plant.

PS - Construction of a pump station.

INT - Construction of an interceptor sewer to convey sewage from collection system(s) to a sewage treatment plant.

SS - Construction of a new sanitary sewer collection system.

SSREH - Replacement and/or rehabilitation of an existing sanitary sewer system.

CSO - Construction for the purpose of reducing occurrences of combined sewer overflows.

I/I - Construction to reduce the quantity of inflow and infiltration in a sanitary sewer collection system.

A short narrative description of the problem and project are needed to distinguish it from other projects, and also to provide backup information for the codes that designate the type of project.

5. Estimated eligible assistance amount by needs category: The total estimated costs for a project should be distributed among the different needs categories listed. The sum of all categories must match the total assistance amount. This information is included when the PPL is published and it is required by the EPA to assess needs and to monitor how the revolving fund money is being used. The rater should note that some of the needs categories are similar but different than the project types and codes that are listed above. For example, both STP and STPMOD projects could be placed in Category I and/or Category II, depending on the level of treatment that is provided.

SUMMARY - This section of the form provides the total rating points and a summary of category ratings that are documented in detail on pages 2 and 3 of the form. Pages 2 and 3 of the rating form should be completed prior to this Summary section. This section also includes the signatures of the DEP regional staff members, including the rater, the Section Chief, and the Regional Water Quality Manager.

NOTE: All information needed by the Division of Municipal Financial Assistance to either add a project to the PPL or to check the accuracy of the project data on the PPL is included on Page 1.

Page 2

RATING FOR WATER POLLUTION CONTROL NEEDS - The Priority Rating Category Table and the Matrix for CE&A are taken directly from Chapter 103, Section 103.8. You should refer to this section of the regulations for additional information on the rating categories and the rating tables. You can document your rating by circling the applicable points for each category in the two tables. Use the lower portion of Page 2 to record your comments on each category, and enter the points assigned for each category in boxes provided along the right margin. Add the total points for the eight categories and enter this total for Water Pollution Control Needs in the box at the lower right corner of Page 2. Also enter the total points for this rating in the summary section on Page 1.

Page 3

RATING FOR STREAM SEGMENT PRIORITY - Stream categories are defined in Chapter 103, Section 103.7. You should determine the stream category based on the regulations and circle your determination of priority points on the Stream Category/Priority Points Table. To document your determination of the stream category, use the space provided to describe the stream. Enter the number of points assigned for Stream Segment Priority in the box provided on Page 3, and also in the Summary section on Page 1.

RATING FOR POPULATION AFFECTED - Refer to Section 103.9 for an explanation of this rating category. Determine the "Project Equivalent Population" for the project by adding (1) the project's initial population served and (2) the initial population equivalent of commercial and industrial wastes to be served by the project. Enter these population numbers in the appropriate blanks (items 1, 2 and 3 on the form). Use the latest U.S. Census and record the population of the municipality (item 4). If this population is less than 3,500 residents, it is defined as a small

municipality by the Chapter 103 Regulations, Section 103.1. Assign 9 points to this rating category if it is a small municipality; otherwise use the “Project Equivalent Population” Table to assign the rating points. Enter the number of points for Population Affected in the box provided at the bottom of Page 3, and again in the Summary section on Page 1.

CHAPTER 103 RATING FORM
 COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION

PROJECT INFORMATION

1. **Name and Address of Applicant**

2. **Rating Type**

- New Rating**
 Revised Rating - Old Project
 Revised Rating - Scope

Change

3. **Project Location - Service Area**

County (ies): _____ Municipality(ies): _____
 Village or Area: _____ DEP Regional Office: _____

4. **Project Description: (Circle all applicable: STP, STPMOD, PS, INT, SS, SREH, CSO, I/I)**

(Brief problem description and project narrative)

STP Data:

Capacity (gpd): _____
 Existing EDUs _____
 Proposed EDUs: _____
 Gal/EDU (proposed): _____

5. **Estimated eligible assistance amount by needs category:**

Category I	Secondary Treatment	\$ _____
Category II	Treatment > Secondary	\$ _____
Category IIIA	Infiltration/Inflow Correction	\$ _____
Category IIIB	Major Sewer System Rehabilitation	\$ _____
Category IVA	New Collector Sewers & Appurtenances	\$ _____
Category IVB	New Interceptors & Appurtenances	\$ _____
Category V	Combined Sewer Overflows	\$ _____
TOTAL ESTIMATED ASSISTANCE AMOUNT		\$ _____

SUMMARY

TOTAL POINTS ASSIGNED: _____

SIGNATURES:

RATING CATEGORY:

Points

Water Pollution Control: _____

Stream Segment Priority: _____

Population Affected: _____

Rater

Date

Section Chief

Date

Regional Water Quality Manager

Date

RATING FOR WATER POLLUTION CONTROL NEEDS

Section 103.8

Priority Rating Category:	No Effect	Slight Effect	Moderate Effect	Great Effect
1. Community Environment & Aesthetics	0	(see matrix below)		24
2. Domestic Water Supply	0	5	10	18
3. Fish & Aquatic Life	0	5	8	14
4. Public Bathing	0	1	3	8
5. Boating & Recreation	0	1	3	5
6. Industrial Water Supply	0	1	3	5
7. Irrigation	0	1	2	3
8. Stock Watering	0	1	2	3

Matrix for CE&A	Percent of Total Population Equivalent			
Rating Category	0	1 - 30	31 - 70	71 - 100
A	0	6	12	24
B	0	4	8	16
C	0	2	4	10
D	0	1	3	6
E	0	0	0	0

1.	Community Environment & Aesthetics	Rating Points
	_____	<input type="text"/>

2.	Domestic Water Supply	
	_____	<input type="text"/>

3.	Fish & Aquatic Life	
	_____	<input type="text"/>

4.	Public Bathing	
	_____	<input type="text"/>

5.	Boating & Recreation	
	_____	<input type="text"/>

6.	Industrial Water Supply	
	_____	<input type="text"/>

7.	Irrigation	
	_____	<input type="text"/>

8.	Stock Watering	
	_____	<input type="text"/>

RATING FOR STREAM SEGMENT PRIORITY

Section 103.7

<u>Stream Category</u>	<u>Priority Points</u>
Category I	10 Points
Category II	7 Points
Category III	4 Points
Category IV	1 Point

Stream Category Description: _____

POINTS ASSIGNED FOR STREAM SEGMENT PRIORITY

RATING FOR POPULATION AFFECTED

Section 103.9

<u>Project Equivalent Population</u>	<u>Priority Points</u>
1 - 3,500	6
3,501 - 5,000	7
5,001 - 10,000	8
10,001 - 50,000	9
Over 50,000	10

1.	What is the initial domestic population to be served by the project?	
2.	What is the initial population equivalent of commercial and industrial wastes to be served by the project, based on organic strength, where applicable?	
3.	Project Equivalent Population (Sum of 1 and 2)	
4.	What is the population of the municipality in the most recent census?	
5.	Is the project within a small municipality as defined by Section 103.1?	
	If Yes, assign 9 points per Section 103.1	
	If no, assign points according to the table above.	

POINTS ASSIGNED FOR POPULATION AFFECTED

K. LETTER OF NO PREJUDICE AND PRE-CLOSING LETTER

1. Because PENNVEST funds are intended for new construction, there is a financing limitation that prohibits the initiation of project construction prior to PENNVEST Board approval of funding. Recognizing that certain situations require the start of construction prior to Board approval, PENNVEST has developed a Letter of No Prejudice (LONP) procedure as a means to make exceptions to the refinancing limitation.
2. PENNVEST will issue a Letter of No Prejudice under the following conditions:
 - a. Completion of a Planning Consultation Meeting
 - b. Submission of a LONP Request Form to PENNVEST, which includes a detailed project description, cost estimates, a project budget and timeline, and an interim financing plan.
 - c. PENNVEST approval of the interim financing plan.
3. The LONP maintains an Applicant's future eligibility for PENNVEST funding, but only under the following conditions:
 - a. The Applicant is required to submit the funding application to PENNVEST within 180 days of the date of issuance of the LONP.
 - b. The Applicant must obtain all planning approvals and necessary permits prior to initiation of construction.
 - c. The Applicant must have a pre-construction conference with the DEP regional staff responsible for monitoring construction of PENNVEST projects.
 - d. The State Environmental Review Process (SERP) must be completed by DEP prior to construction to maintain eligibility for federal funding under the Clean Water State Revolving Fund (CWSRF).
 - e. During project bidding and construction, the Applicant must follow *Guidance on Utilization of Minority and Women's Business Enterprise Firms* to maintain eligibility for federal funding under the Clean Water State Revolving Fund (CWSRF).
4. In some cases, there may be a need to begin construction of a project after funding approval but prior to loan closing. The potential borrower must not begin construction without written consent from PENNVEST. This written approval is called a Pre-closing Letter. The Pre-closing Letter is requested in the same manner as a LONP. However, PENNVEST also requires a compelling reason for this early start of construction, because it is PENNVEST's position that approved projects should close their loans as soon as possible after Board approval. Compelling reasons would include a public health or safety emergency, a lost economic development opportunity, another funding source having a construction schedule that is incompatible with the PENNVEST loan closing, or compliance with the schedule of a federal or state requirement.

5. PENNVEST will notify the regional offices when a LONP or Pre-closing Letter is approved. Projects receiving these approval letters should be assigned to a DEP Project Manager. Prior to initiation of construction and later during construction, the Project Manager should assist the potential Applicant or Borrower in satisfying the PENNVEST and DEP requirements in the same manner as other projects that have submitted funding applications or have had PENNVEST Board approval of funding.

L. OR EQUAL CONDITION

1. The Or Equal Condition (see Exhibit L-1) was developed by PENNVEST to promote competitive bidding on PENNVEST-funded projects. The project specifications are to be written to allow “or equal” substitution of products for those specified in the bidding documents in all but special circumstances.
2. The Applicant and its Consulting Engineer are required to sign, seal, and submit a Specification Certification Form (see Exhibit L-2) to the Project Manager prior to advertising for bids for the project.
3. Failure to adhere to the “or equal” requirements when writing bid specifications could result in the lack of participation by PENNVEST, or the requirement to re-bid the project. The Project Manager should make the Applicant aware of this consequence at the Planning Consultation Meeting.
4. The Project Manager reviews the referenced certification form to ensure that it is properly signed and sealed, and to verify which of the three specification conditions have been used:
 - Use of Brand Names followed by the words “or equal”
 - Sole Source Specifications
 - Base Bid Alternate Add/Deduct

Note that the Sole Source and Base Bid Alternate Add/Deduct methods are authorized only under certain conditions. These conditions are shown on Exhibit L-1. The Design Engineer must justify selection of one or both of these methods.

5. Keep a copy of the Certification Statement in the project files.

PENNVEST “OR EQUAL” CONDITION GUIDANCE

Background:

Project specifications shall, to the extent practicable, provide for maximum use of products, materials, and equipment that are readily available through competitive procurement, or through standard or proven production techniques, methods, and processes.

The “or equal” condition and the *Specification Certification* form, 3800-FM-WSWM0034 available on DEP’s website, have been adopted by PENNVEST to promote competitive bidding. All Borrowers are required to take the appropriate actions necessary to develop nonrestrictive specifications and avoid sole-source restrictions. This condition requires Borrowers to certify that bid specifications will allow “or equal” products except in special circumstances. It is the Borrower’s responsibility to ensure that bid specifications meet the intent of this condition. The *Specification Certification* is to be provided to DEP prior to advertising for bids.

When the “or equal” clause applies:

The “or equal” clause should be used in all cases where the product, material, or equipment is specified using brand or trade names. In these cases, the specified item requires standard performance criteria, can be supplied by more than one manufacturer, and is not unique or special. Examples of such items are conventional pumping, filtering, screening and grit removal equipment, clarifiers, and belt presses.

When the “or equal” clause does not apply:

The “or equal” clause may be omitted when unique or special circumstances are involved such as:

1. Sole Source Specifications

Sole source products, materials, or equipment are specified from a single manufacturer for such reasons as:

- Only known item that will meet the required performance requirements.
- The item is patented and no known substitute will meet the requirement.
- Compatibility with existing equipment is required due to operation and maintenance reasons such as: the operation of other existing equipment/systems requires this item, the interchangeability of spare parts, or the need for uniform maintenance and uniform performance.
- Physical restrictions such as dimensional limitations for installation in existing facilities.

2. Process or Special Product Specifications

The “or equal” clause may be omitted for projects where a process or special product is being specified for which there may not be a true “or equal” in terms of type or system components. There may be alternate processes or products that meet the performance requirements but they utilize different components to achieve the required result. In these cases, Base Bid with Add/Deduct Alternates may be used. The Base Bid is the specified and named process or special product around which the design has been prepared. The Alternate manufacturer(s) may be named or unnamed in the bid specifications. If unnamed, the bidder shall be required to name the manufacturer prior to award. The Alternate may require some degree of redesign from that shown for the Base Bid process or product to fit the project conditions. The redesign is the responsibility of the Bidder and occurs after contract award. The Alternate(s) may cost more or less than the Base Bid and the difference (add or deduct) is determined by the bidding process.

BID ALTERNATES MUST BE CONSIDERED PRIOR TO CONTRACT AWARD.

NOTE: ANY BASE BID FORMAT OF SOLICITATION FOR PRODUCTS, MATERIALS, OR EQUIPMENT THAT REQUIRES ALTERNATES TO BE “DEDUCTS ONLY” DOES NOT CONFORM TO THE PENNVEST “OR EQUAL” CONDITION AND SHALL NOT BE USED.

Justification required when the “or equal” clause is not used:

For any item where a brand or trade name(s) is specified without the “or equal” clause, the Borrower must be prepared to provide written justification, if requested. This justification must clearly explain the circumstances that led to the necessity for a non-competitive procurement. It must also include a full cost review. NOTE: It remains the Borrower’s responsibility to defend the specifications and bidding format against any protests that may arise during the bidding process.

Consequence of non-compliance with “or equal” condition:

PENNVEST will not participate in the funding of any product, material, or equipment that is not procured in accordance with this guidance.

Contract Awards:

In awarding the project, the Borrower reserves the right to reject any and all bids, to waive any and all informalities, and the right to disregard all nonconforming, non-responsive, or conditional bids. PENNVEST and DEP assume no liability regarding the award of contract, or the quality or performance of equipment. The Borrower should award to the lowest responsible bidder whose evaluation by Borrower indicates to the Borrower that the award will be in the best interests of the project.

PENNVEST “Or Equal” Condition (February 5, 2002):

Borrower agrees that no specifications for bids in connection with any project financed by PENNVEST (Authority) shall be written in such a manner as to contain proprietary, exclusionary, or discriminatory requirements other than those based upon performance, unless such requirements are necessary to satisfy physical restrictions of the site or to provide for necessary interchangeability of parts and equipment.

When brand or trade names appear in specifications, Borrower shall include two manufacturers/suppliers of comparable quality or utility (if available) followed by the words “or equal.”



EXHIBIT L-2
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

SPECIFICATION CERTIFICATION

Section I - Instructions

All Borrowers that receive PENNVEST Financial Assistance must sign this form. This form must be submitted to the appropriate DEP Regional Office prior to advertising for bids. A list of regional DEP addresses is provided with this form.

Section II - Certification

Project Name: _____

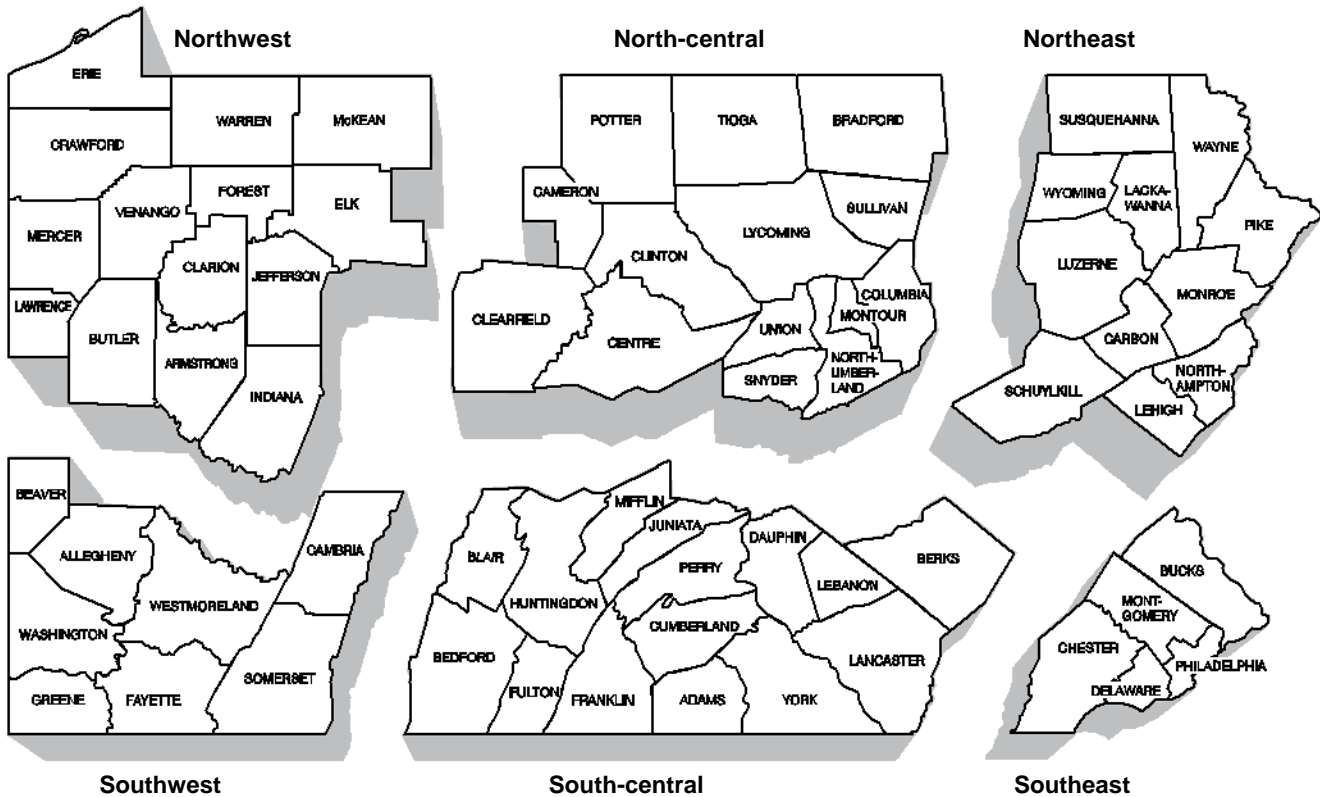
County: _____

Indicate which of the following conditions have been used in the specifications for your project by placing a checkmark in the pertinent block(s). Your signature below certifies that you understand and have complied with the conditions that you used for your project.

- For products, materials, or equipment that require standard performance criteria and are not unique or special, two manufacturers/suppliers of comparable quality or utility (if available) have been named, followed by the words "or equal".
- Sole source specifications have only been used when:
 - Only one item will meet the required performance requirements.
 - An item is patented and no known substitute will meet the requirement.
 - Compatibility with existing equipment is required due to operation and maintenance considerations.
 - Physical restrictions of the site dictate the use of a certain item.
- The Base Bid with Add/Deduct Alternates format has only been used where a process or special product was specified for which there may not be a true "or equal". Alternates are either named in the specification or must be identified by the Bidder prior to bid award. Redesign costs associated with the alternate are the Bidder's responsibility. Alternates may cost more or less than the Base Bid, as determined by the bidding process, and **bid alternates will be considered prior to contract award.**

Name of the Borrower's Authorized Representative	Signature	Date
P.E. Stamp	Name of Professional Engineer	
	Firm represented	
	Signature	Date

For more information,
call the DEP regional office in your area or contact:



Northwest Region

230 Chestnut St.
Meadville, PA 16335-3481
Main Telephone: 814-332-6945
24-Hour Emergency: 800-373-3398

Counties: *Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, and Warren*

Southwest Region

400 Waterfront Drive
Pittsburgh, PA 15222-4745
Main Telephone: 412-442-4000
24-Hour Emergency: 412-442-4000

Counties: *Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, and Westmoreland*

North-central Region

208 W. Third St., Suite 101
Williamsport, PA 17701-6448
Main Telephone: 570-327-3636
24-Hour Emergency: 570-327-3636

Counties: *Bradford, Cameron, Clearfield, Centre, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, and Union*

South-central Region

909 Elmerton Ave.
Harrisburg, PA 17110-8200
Main Telephone: 717-705-4700
24-Hour Emergency: 866-825-0208

Counties: *Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, and York*

Northeast Region

2 Public Square
Wilkes-Barre, PA 18701-1915
Main Telephone: 570-826-2511
24-Hour Emergency: 570-826-2511

Counties: *Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, and Wyoming*

Southeast Region

2 E. Main St.
Norristown, PA 19401-4915
Main Telephone: 484-250-5900
24-Hour Emergency: 484-250-5900

Counties: *Bucks, Chester, Delaware, Montgomery, and Philadelphia*

PART 2 - PROJECT CONSTRUCTION

A. INTRODUCTION

1. This portion of the Handbook provides guidance for the various responsibilities of the DEP project manager during the course of the construction of a wastewater project funded by PENNVEST. It is intended to cover all responsibilities from the time at which the PENNVEST Board approves a loan until the project can be “closed out” following approval of the Performance Certification.
2. Each section includes specific guidance on the various types of responsibilities such as change order review and interim inspections. Following the guidance on each type of responsibility, there are various exhibits that are related to the specific activity. These exhibits include such items as the Borrower’s change order supplement form and the PENNVEST/DEP Inspection Report form.
3. Checklists of responsibilities during construction are for both the Borrower and the DEP Project Manager. These checklists summarize DEP’s role in project construction follow this section of the Handbook. Exhibit A-1 is the Checklist of Borrower Responsibilities and Exhibit A-2 is the Checklist of DEP Project Manager Responsibilities.

EXHIBIT A - 1

CHECKLIST OF BORROWER RESPONSIBILITIES INVOLVING DEP
Construction of Wastewater Projects Funded by PENNVEST

1. Submit **MBE/WBE** Documentation to Project Manager for review. For information on **MBE/WBE** requirements, please refer to *Guidance on Utilization of Minority and Women's Business Enterprise Firms*, DEP ID: #381-5511-014 for more information. This document is available on the web at www.dep.state.pa.us .
2. Develop **PERFORMANCE STANDARDS** for the project and submit them to the DEP Project Manager for review and approval, prior to loan closing.
3. Include the DEP Project Manager in the **PRE-CONSTRUCTION CONFERENCE** with the contractor.
4. Prior to the start of construction, review the conditions of all **DEP PERMITS** with the contractor and, if required, notify the Conservation District and PA Fish and Boat Commission.
5. Implement and maintain the **EROSION CONTROL PLAN** for the project.
6. Submit the **MBE/WBE QUARTERLY REPORTS** to the DEP Project Manager.
7. Authorize the Borrower's engineer or the resident inspector to assist the DEP Project Manager during the required **INTERIM SITE VISITS** of the construction site. This includes providing access to the project site, discussing details of the construction, and allowing review of inspection records and test results.
8. **KEEP THE DEP PROJECT MANAGER INFORMED** (by telephone, fax, letter) of construction issues which arise such as schedule changes, unforeseen field conditions, pending change orders, etc.
9. Submit **TWO COPIES OF ALL CHANGE ORDERS**, *with the change order supplement form attached*, to the DEP Project Manager for DEP and PENNVEST approval.
10. **OBTAIN PRIOR WRITTEN APPROVAL** from DEP and PENNVEST for any change order that involves:
 - A change in the scope of the project as defined by PENNVEST regulations.
 - A cost greater than \$25,000 or 2 percent of the original construction cost, whichever is smaller.
 - A total cost of all change orders exceeding 10 percent of the original construction cost
11. **NOTIFY** the DEP Project Manager **IN WRITING** when the project is substantially complete and placed in operation. This is the date of **INITIATION OF OPERATION**.

- 12. Accompany the DEP Project Manager, if needed, to conduct a **FINAL INSPECTION** of your project.
- 13. Retain the design or construction engineer for a **ONE-YEAR PERIOD FOLLOWING THE INITIATION OF OPERATION**, to monitor the performance of the project.
- 14. Following one year of operation, submit to DEP either (1) a **PERFORMANCE CERTIFICATION** showing that the project's Performance Standards are being met, **OR** (2) a **CORRECTIVE ACTION REPORT** with a plan to correct any deficiencies.

EXHIBIT A - 2

CHECKLIST OF DEP PROJECT MANAGER RESPONSIBILITIES
Construction of Wastewater Projects Funded by PENNVEST

- 1. Following approval of a PENNVEST loan, the Project Manager should send the Borrower a letter (*Form Letter B - 1*) including:
 - **MBE/WBE** Information
 - Information and examples of **PERFORMANCE STANDARDS** (Exhibit B)
 - The Borrower Checklist of Actions involving DEP (see Exhibit A-2)

- 2. The Project Manager should review submitted **MBE/WBE Information**, request changes if needed, and provide an approval letter (Form Letter B-1) to the Borrower prior to loan closing.

- 3. The Project Manager should review submitted **PERFORMANCE STANDARDS**, request changes if needed, and provide an approval letter (Form Letter B-2) to the Borrower prior to loan closing.

- 4. The Project Manager should **monitor the PENNVEST loan-closing schedule**. When a project approaches the loan closing date, the Project Manager should advise the Borrower by telephone or letter that DEP is required to participate in a **PRE-CONSTRUCTION CONFERENCE**.

- 5. The Project Manager should participate in the **PRE-CONSTRUCTION CONFERENCE** and present detailed information regarding DEP involvement during construction. The Project Manager should provide and explain handouts including:
 - Pre-construction Conference Agenda and Handout (Exhibit C)
 - Borrower Guidance for Change Order Submissions (Exhibit D-1)
 - PENNVEST/DEP Change Order Supplement Form (Exhibit D-2)
 - The Borrower Checklist of Responsibilities Involving DEP (Exhibit A-2)

- 6. The Project Manager should conduct **INTERIM SITE VISITS** on a schedule that is appropriate for the specific project. The Project Manager should report on Interim Site Visits using the DEP Site Visit Report form (see Exhibit E). Completed forms are submitted to PENNVEST.

- 7. The Project Manager will receive two copies of all **CHANGE ORDERS** and should provide technical review on behalf of PENNVEST as follows:
 - Caution the Borrower to wait for prior written approval if costs exceed limits in Chapter 963.18.
 - Use Exhibit D-3 to determine eligibility.
 - Complete Exhibit D-4 form to document the review.
 - Attempt to resolve technical problems with Borrower's engineer prior to disapproval.

- Indicate DEP objection or no objection and forward one copy of the change order to PENNVEST for their financial review.
8. The Project Manager should conduct the **FINAL INSPECTION** using Exhibit E, within 30 days following request by PENNVEST or notification by the Borrower of Initiation of Operation. The Project Manager should forward Final Inspection report to PENNVEST with copies to the Borrower and DMFA. The final inspection shall document that:
- Completed construction appears to be in accordance with plans and specifications.
 - All change orders are submitted.
 - Project is operational.
9. When the Project Manager receives the Borrower's notification that the project is in operation, the Project Manager should write a letter (see Form Letter G-1) to advise the Borrower of the date of **INITIATION OF OPERATION** and the One-Year Performance Period.
10. During the **ONE-YEAR PERFORMANCE PERIOD**, the Project Manager should monitor the project and advise the Borrower of the need to prepare the **PERFORMANCE CERTIFICATION** or **CORRECTIVE ACTION REPORT (CAR)**.
11. The Project Manager should review the submitted **PERFORMANCE CERTIFICATION** or **CORRECTIVE ACTION REPORT** with the compliance/operations staff and advise the Borrower on approval/disapproval (see Form Letter G-2).

B. DEVELOPMENT OF PERFORMANCE STANDARDS

1. Performance Certification is required for all projects funded by the CWSRF in accordance with Chapter 965 Regulations, Section 8(c). Performance Standards are developed for a project prior to construction as a basis for Performance Certification of a completed project.
2. The Project Manager should provide the Borrower with written information and instructions regarding performance standards. Following approval of a PENNVEST loan application, the Project Manager should use Form Letter B-1 to send the Borrower copies of (1) Exhibit A-2, the Checklist of Borrower Responsibilities involving DEP and (2) Exhibit B, Sample Performance Standards for Wastewater Projects. For some permitted projects, the regional office may determine that the permit conditions and construction specifications may be adequate for performance standards. This should be documented in a letter to the applicant.
3. The regional office staff reviews the proposed performance standards submitted by the Borrower. The Borrower is informed in writing of any changes or additions to the standards that are required for the specific project. The regional office may recommend additional project specific performance standards as listed in Exhibit B.
4. Upon receipt of acceptable performance standards, the regional office provides a letter of approval (see Form Letter B-2) to the Borrower. This approval letter is required at the PENNVEST loan closing.
5. The performance standards can be changed or updated throughout the project if necessary. Any approved changes should be documented in a letter to the Borrower.

EXHIBIT B

SAMPLE PERFORMANCE STANDARDS FOR WASTEWATER PROJECTS

Gravity Sewers

1. Required infiltration/exfiltration tests are acceptable.
2. Inspected for construction per plans and specifications.
3. No excess accumulation of grit/debris in lines and manholes.
4. All lines are free flowing. No surcharging.
5. Placement of watertight manhole covers where required.
6. Flows entering plant are not excessive for dry or wet weather conditions.

Pressure Sewers

1. Adequate and operating pressure and vacuum release valves.
2. Maximum line pressure tests are adequate.
3. All grinder pumps are located for ease of service.
4. Sufficient spare pumps are located for ease of service.
5. Grinder pump maintenance agreements are provided.
6. All grinder pumps are operable.

Sewer Rehabilitation

1. Quantity of excess I/I proposed to be eliminated was achieved.
2. Final SSES report was submitted and accepted.

Pump Stations

1. Specified pump rate capacities are verified by field tests.
2. Maximum line pressure tests are adequate.
3. Alarm systems are adequate and operable.
4. Sewage bypass at stations are monitored and not used excessively.
5. Peak flows are adequately handled.
6. Pump level controls are properly set for the design rates of flow.
7. Ventilation system is meeting the design air changes per hour.

Treatment Plant - Overall

1. All process units are functioning as designed and within expected efficiencies.
2. Hydraulic and organic loadings are within expected ranges.
3. Required NPDES effluent limits are being met.
4. Each process unit is capable of handling the design minimum, average and maximum flows and loadings.
5. Plant is capable of handling the type and quantity of acceptable industrial waste.
6. All pumps, blowers and other equipment are performing at rated capacities.
7. Laboratory is adequately stocked to perform the required process control and effluent tests.
8. Laboratory tests are being properly run.
9. Required staff has been hired and meets the operator certification requirement.
10. Plant personnel are adequately trained to operate and maintain all process units, equipment and collection system.
11. Wastewater treatment budget is adequate for salaries and to provide adequate revenues for the operation, maintenance and replacement of equipment.
12. Plant record keeping and report training are adequate.
13. Emergency operations training is adequate.
14. Safety equipment is adequate with proper training.
15. Adequate ventilation for safety is provided where required.
16. O&M manual is available at plant and is being used.
17. Chemicals for pH control, sludge conditioning and nutrient removals are being added in proper amounts.

Headworks

1. Screenings are adequately removed and disposed.
2. Grit removal facilities do not remove excessive organics and are properly disposed.
3. Flow meter has been calibrated and can record minimum and high flows as specified.
4. Flows are properly divided between multiple units.

Clarifiers

1. Even distribution of inflow across width of tank.
2. Scum and sludge scrapers perform as designed.
3. Overflow weirs are set for even discharge.
4. Volume of sludge withdrawal is adequate.

Trickling Filters

1. Even distribution of inflow over the filter.
2. Recirculation is adequate.

RBC

1. All units are operable.
2. The heavier biological mass on the first stage units is acceptable.
3. A minimum required DO is maintained at all stages.

Aeration Tanks

1. Adequate air is applied to maintain required minimum DO level in the mixed liquor.
2. Required number of aerators and/or diffusers are operable.
3. DO probes are properly located and operable.
4. Volume of return activated sludge is adequate.
5. Volume of waste activated sludge is adequate.
6. Mixed Liquor Suspended Solids (MLSS) is maintained within acceptable range.
7. Food to Mass (F/M) Ratio is maintained within acceptable range.

Lagoons

1. The bottom and sidewalls are essentially watertight.
2. Monitoring wells are properly located and functioning.

Disinfection

1. Required chlorine residual is being maintained.
2. Chlorinator capacity can handle the maximum expected flow.
3. Chlorine-use safety training is completed.
4. Chlorine room exhaust fan is located properly and operable.

Sludge Processing

1. Satisfactory gas production and utilization.
2. Production of a well-stabilized and not highly malodorous sludge.
3. Supernatant from dewatering facilities returned to treatment process with no upsets.
4. Adequate heating and mixing of sludge.
5. Sludge pH is properly maintained.
6. Required reduction in volatile solids is achieved.
7. Dewatered sludge meets required percent solids content.
8. Drying bed sludge easily removed.
9. Sludge stored on site does not create problems or odors.

Sludge Disposal

1. Sludge disposal on agricultural lands or to landfills have required permits from DEP.
2. Permitted land application rate is being met.
3. Required testing for heavy metals is conducted.
4. Sludge is properly hauled from plant site for ultimate disposal.

FORM LETTER B - 1

**Letter Notifying Borrower of Loan Approval and
Technical Requirements for Performance Standards**

(Borrower)

Re: DEP File No. _____

Dear _____:

This letter is in reference to the recent approval of your PENNVEST loan application for funding to construct _____. As you have been informed during the loan application process, the Department of Environmental Protection (DEP) works with PENNVEST to provide technical assistance during construction of wastewater projects. For this purpose I will serve as the Project Manager for the construction of your project. I will monitor the technical aspects of your project on behalf of PENNVEST. My duties will include periodic site visits and the technical review and approval of any change orders. For your information, I have enclosed a checklist of your responsibilities involving DEP, during project construction.

There are several requirements that will have to be met prior to starting construction. They are compliance with MBE/WBE guidelines and the development of performance standards for your project. These performance standards, required by PENNVEST regulations, will be used to assess the performance of the project during the first year of operation. For your assistance in preparing specific performance standards for your project, I have enclosed Exhibit B that provides examples of performance standards for various types of projects. You should review these example performance standards with your engineering consultant.

Please submit your proposed performance standards to me within the next thirty (30) days. Staff from this office will review your proposed performance standards and I will inform you of any changes or additions that may be required. Upon acceptance of your performance standards, I will provide an approval letter that you will have to present to PENNVEST at loan closing.

If you have any questions, please call.

Sincerely,

Project Manager

Enclosures

bcc: Regional Water Quality Manager
PENNVEST File

FORM LETTER B - 2

Approval Letter for Performance Standards

(Borrower)

Re: DEP File No. _____

Dear _____:

This letter is in reference to your wastewater construction project that will be funded by a loan from PENNVEST. This office has reviewed the performance standards that you submitted for the project on _____.

You hereby advised that DEP has approved your performance standards. The standards are adequate for assessing the project performance during the first year of operation.

Please retain this letter to document our approval of your performance standards. You will need a copy of this approval letter to provide to PENNVEST at your loan closing.

If you have any questions, please call.

Sincerely,

Project Manager

bcc: PENNVEST Project Specialist
DMFA
Project File

C. PRE-CONSTRUCTION CONFERENCE PURPOSE AND PROCEDURES

1. DEP's participation in pre-construction conferences for PENNVEST-funded projects is specified in Section 18(b) of the Chapter 963 Regulations and in the current Memorandum of Understanding between PENNVEST and DEP. The purpose is to "confirm the scope and schedule of the project and schedule periodic inspections by the Department."
2. On a weekly basis, PENNVEST provides DEP with updated Loan Closing Schedules. (A Borrower is required to begin construction of a project within 12 months of approval at a PENNVEST Board Meeting, unless PENNVEST approves an extension.) The Project Manager should monitor these schedules to determine when assigned projects are approaching the start of construction. Just prior to the scheduled closing date, the Project Manager should notify the Borrower's engineer of the need to discuss DEP's role and the Borrower's responsibilities during the construction phase. For potential Applicants who are granted a Letter of No Prejudice (LONP), the Project Manager should contact the Borrower's engineer immediately upon issuance of the LONP to insure that he/she will be included in the pre-construction conference. (The LONP directs the applicant to contact the Project Manager.)
3. The Project Manager should participate in the customary pre-construction conference involving the Borrower's engineer, the contractor, utility representatives, etc. If this is not possible, the Project Manager may schedule a separate pre-construction meeting with the Borrower and/or the Borrower's Engineer. If the regional office determines that the pre-construction conference may be waived, it is the Project Manager's responsibility to communicate, by some other means, the same information that would have presented at a pre-construction conference.
4. Exhibit C has been developed as both a handout for the Borrower and as a guide for the presentation at the pre-construction conference. The Project Manager should also provide the Borrower with copies of (1) Exhibit A-2, the Checklist of Borrower Responsibilities Involving DEP, (2) Exhibit D-3, DEP Change Order Eligibility Guidance, (3) Exhibit D-2, the PENNVEST/DEP Change Order Supplement Form, and (4) Exhibit D-1, the Borrower Guidance for Change Order Submission.
5. As a representative of DEP, the Project Manager should advise the Borrower and Contractor to review the conditions on all DEP permits and to make any required notifications to other agencies, such as the PA Fish and Boat Commission and the County Conservation District.
6. The Project Manager should explain any specific plans for scheduling and conducting interim site visits. The Project Manager may choose to set the date of the first interim site visit following review of the construction schedule.
7. The Project Manager should use the pre-construction conference as an opportunity to become familiar with the construction schedule and Contractor, to obtain any plans and specifications that may not have been received, to meet the Resident Inspector, and to check as-bid plans and specifications against those received with the permit application. The information obtained at the pre-construction conference will be helpful for completing other project duties including the site visits and the review of change orders. Also, by clearly identifying the Borrower's responsibilities, the Project Manager should minimize future misunderstandings and problems.

EXHIBIT C

PRE-CONSTRUCTION CONFERENCE AGENDA AND HANDOUT

- A. Role of DEP:** DEP and PENNVEST have entered into a Memorandum of Understanding whereby certain responsibilities and functions have been identified for each agency regarding the implementation and administration of the PENNVEST funding program. A role of DEP is to provide technical assistance by conducting site visits and reviewing change orders during construction.
- B. Scope of Work:** DEP will monitor the construction progress by the Borrower and its engineer by conducting site visits to assure the following:
1. The project is on schedule.
 2. The project is being constructed in general conformance with the approved plans and specifications.
 3. The project has resident inspection.
 4. Notify PENNVEST promptly of any problems noted during the site visit.
- C. DEP Authority:** DEP has no direct authority over the work of the Contractor, unless that Contractor violates DEP regulations regarding the environment, (e.g., NPDES permit violation due to a stormwater discharge from a construction activity). Construction deficiencies found during the site visit will be discussed with the Resident Inspector or Project Engineer if possible before leaving the site. All deficiencies will be reported by DEP to PENNVEST and the Borrower promptly. The Borrower must address all deficiencies through corrective action to assure that they are rectified. Uncorrected deficiencies may warrant withholding of payments by PENNVEST.
- D. Federal Regulations and Compliance:** For CWSRF projects, federal regulations apply. The federal regulations applicable to the work of the Contractor(s) should be included as part of the contract documents under the section entitled "Specifications and Contract Provisions for Work under the Federal Water Pollution Control Act, as amended."
- E. Access:** The Borrower and its Contractor(s) and their Subcontractor(s) shall provide access to any authorized DEP personnel or other personnel authorized by PENNVEST to all related project facilities, premises, and records.
- F. Site Inspection:** DEP will monitor the construction activities through periodic site visits and a final construction inspection. The extent and frequency of the site visits will depend on the size and the complexity of the project, capability and performance of the Borrower, Resident Project Engineer, Inspectors, the Construction Contractors, and availability of DEP Staff.

DEP does not have the primary responsibility to ensure that the construction proceeds in accordance with the approved plans and specifications. The DEP site visits only supplement the daily inspections and project management by the Borrower's consulting engineers. The

consulting engineer's signature on the Construction Applications for Payment Form, submitted to PENNVEST, certifies satisfactory construction.

The interim site visits by DEP will include only inspection of the construction progress, verification that records (e.g. daily logs, shop drawings, laboratory testing results, etc.) are being kept, and verification that the work is within the project scope.

The Borrower shall notify the DEP Project Manager when the construction is substantially complete. The Project Manager will then conduct a final inspection to verify the following:

- The project has been completed in accordance with all applicable DEP permits and conditions thereof.
- The project has initiated operation and is operable.

A written report of the final inspection, including a listing of any deficiencies and recommended follow-up actions, will be prepared by the Project Manager and forwarded to the Borrower and PENNVEST.

G. Safety Requirements: Each Contractor is completely responsible to observe and comply with all laws, rules and regulations of all regulatory bodies. The Contractor's work is subject to OSHA inspections and fines for violations.

H. Change Orders: The Borrower will submit two copies of each change order, with supporting documentation to justify that change to the appropriate DEP Project Manager for technical review and recommendation. The DEP Project Manager will stamp the change order to indicate that there are no objections to the change order by DEP. DEP then forwards the change order to PENNVEST for fiscal review.

The Borrower is responsible for negotiation of construction change orders. Borrowers are cautioned concerning the PENNVEST regulation that requires prior written approval for change orders in excess of \$25,000 or 2 percent of the project construction costs (Chapter 963, §963.18(c)).

The DEP Guidance for Change Order Submission and PENNVEST/DEP Change Order Supplement Form shall be complete and attached to all change order submissions (see Exhibits D-1 and D-2.)

I. Time Extensions: Time extensions will be submitted as a change order. They should be adequately justified to stand on their own merit. An extension of time request to complete miscellaneous or seasonal work (i.e., landscaping or paving that is incomplete at the time of substantial completion) must be accompanied by a listing of all items of work remaining.

J. Operation and Maintenance (O&M) Manual: An O&M Manual is recommended for new or major plant additions/modifications that increase capacity and/or degree of treatment.

K. Performance Certification: The performance standards for the project should have been submitted by the design engineer and approved by the DEP Project Manager prior to loan closing. The standards can be changed or updated throughout the project if deemed necessary.

The Borrower shall notify the DEP Project Manager in writing within 30 days of the actual date of initiation of operation. Immediately following the one-year performance period, the Borrower shall submit to the DEP Project Manager an Affirmative Project Performance Certification (Exhibit G) indicating that the project is being used for the purposes that it was planned, designed and constructed and is meeting its NPDES and WQM permit requirements. If this Certification cannot be given, a Corrective Action Report (CAR) shall be submitted to the DEP Project Manager within 30 days following the end of the one-year performance period. The CAR shall contain an analysis of the causes of the inability to meet the required performance standards, a schedule for corrective action necessary to achieve certification in a timely manner, and a date for final certification of the project.

L. DEP Contact (Project Manager):

PA Department of Environmental Protection
_____ Regional Office

Attention: _____, Project Manager

Telephone Number: (____) _____ - _____

E-mail: _____

M. PENNVEST Contact (Project Specialist):

_____, Project Specialist

PENNVEST

Keystone Building - 4th Floor

22 South Third Street

Harrisburg, PA 17101

Telephone Number: (717) 787-8137

E-mail: _____

D. CHANGE ORDER REVIEW PROCEDURES

1. There is no PENNVEST regulatory reference for change order review. The authority is contained in the *Memorandum of Understanding* between the Department of Environmental Protection (DEP) and the Pennsylvania Infrastructure Investment Authority (PENNVEST), DEP ID: 381-5511-012, available on DEP's website at www.dep.state.pa.us. This guidance was developed from previous guidance that was used successfully in the EPA Construction Grants program. The purpose of change order review is to ensure that changes to the original contract documents are reasonable and managed in such a way as to maintain the project's integrity, schedule, and costs.
2. The Project Manager is to provide technical reviews of all change orders and provide recommendations to PENNVEST. The Project Manager's review must consider whether each contract change order falls within applicable state and federal regulations and DEP permit conditions, whether the proposed change is within the scope of the project, and whether the proposed change is a reasonable change to the approved plans and specifications.
3. The Borrower must submit two copies of change orders directly to the Project Manager for technical review. Both the Borrower and the applicable Contractor must sign all change orders. The PENNVEST/DEP Change Order Supplement (Exhibit D-2) is to be completed by the Borrower and attached to each change order that is submitted for review. If the documentation is incomplete, the Project Manager should contact the Borrower directly for the additional data.
4. The Project Manager should review change orders using (a) the eligibility guidance in Exhibit D-3 and (b) the DEP Change Order Review Checklist in Exhibit D-4.
5. Change orders that involve a change in project scope shall be reviewed under the Chapter 963 Regulations. Section 963.18(c)(1) provides a definition for a change in scope and specifies the limited circumstances under which a change in scope may be approved.
6. For change orders that exceed \$25,000 or 2 percent of the construction cost, prior written approval must be obtained before the work proceeds. Prior written approval must also be obtained when the total of all change orders exceeds 10 percent of construction costs. See Chapter 963, §963.18(c).
7. If the proposed work is ineligible or unacceptable for technical reasons, the Project Manager should first contact the Borrower, to determine if the technical issues can be resolved, prior to recommending disapproval to PENNVEST.
8. Upon completion of the technical review, the Project Manager must sign and date the review form indicating whether there is an objection to the technical aspects of the change order. One copy of the change order is sent to PENNVEST. A cover memo to PENNVEST may be used to explain the technical basis for the objection, if applicable.
9. The Project Manager should also inform PENNVEST of contract change orders that are ineligible, when the Borrower decides to proceed with alternate funding.

EXHIBIT D - 1

BORROWER GUIDANCE FOR CONTRACT CHANGE ORDER SUBMISSIONS

After loan approval, any changes to the originally contemplated work must be addressed through the contract change order process. Any changes that result in additional costs should be necessary, reasonable and within the scope of the project. Change orders must be submitted to DEP for technical review. In submitting change orders, you should pay particular attention to the following items:

1. **IMPORTANT!** Borrowers must obtain prior written approval from PENNVEST and DEP for change orders that exceed \$25,000 or 2 percent of the total construction costs whichever is less. Borrowers must also obtain such approval once the aggregate of all change orders exceeds 10 percent of the total construction costs.
2. Borrowers must submit two copies of each change order with supporting documentation to the appropriate DEP regional office.
3. The Contractor, Consulting Engineer, and the Borrower must all sign (execute) all change orders before they are submitted to DEP.
4. Borrowers should review the cost and pricing data submitted by the contractor and negotiate with the contractor to arrive at a fair and reasonable price. Borrowers should include all evidence of these negotiations.
5. The level of documentation required for a change order depends on the dollar amount and complexity of the change.
6. The exact format of documentation is at the Borrower's discretion, depending on the cost and complexity of the change. However, the documentation must contain adequate evidence to assure that the work was necessary and the costs reasonable. The basic elements that constitute adequate documentation include at least the following items:
 - a. A description of the changed work.
 - b. A statement of the necessity for the changed work.
 - c. The contractor's proposal of the cost and time to complete the changed work.
 - d. Your independent engineer's estimate of the cost and time to complete the changed work.
 - e. Proof of negotiations of the cost and time difference between the estimate and the contractor's proposal, if required.
 - f. Resolution of the cost and time conditions to complete the work defined in the change order.
7. The submission should indicate whether the work covered in the change order is completed or not, the reason(s) for the change, any redesign and/or construction rework necessitated by the change, whether the change relates to or is a result of another change order(s), and whether the change directly relates to work eligible under the contract or not. A PENNVEST/DEP Change Order Supplement form must accompany all submissions.
8. All time extension change orders must have documentation to support the validity and reasonableness of the time extension in order to be approved. The type of supporting documentation will depend upon the reason(s) for time extensions.
9. Final quantity adjustments must be processed as a final summary change order.

PENNVEST/DEP CHANGE ORDER SUPPLEMENT FORM
(to accompany all change orders)

PENNVEST Loan No.: _____
Borrower: _____
Municipality: _____

County: _____
Engineer: _____

Contract No.: _____
Contractor: _____
Change Order No.: _____

Change Order Amount (+/-): _____
Time Extension: _____ days

1. Brief description of change: _____

2. Who initiated the change? _____
Has it been completed? Yes No If yes, date completed _____

3. a. Reason for change: Time extension Errors and Omissions
 Design Improvement Unforeseen site conditions
 Relocation of facilities
 Other: _____
- b. Explain necessity of change in detail: _____

- c. Does the change directly relate to work eligible under the Contract? Yes No
If yes, reference: Plan Sheet(s) _____
Specification Section(s) _____

- d. Does this change relate to or is it a result of any other change orders? Yes No
If yes, list related change order(s) _____

4. a. Has an itemized price breakdown been included? Yes No
b. How was the price determined? Unit price Lump sum Cost Reimbursement
c. Contractor's Cost Estimate _____ Engineer's Cost Estimate _____
d. How was the final cost for the change order agreed upon? _____
e. Has the cost of all ineligible work been separated? Yes No Amount ineligible _____

5. What other alternatives were considered for this change? _____

Why were the alternatives rejected? _____

6. Is there any redesign or rework involved with the change? Yes No
If yes, describe _____
Cost of redesign or rework: _____

DEP CHANGE ORDER ELIGIBILITY GUIDANCE

Examples of Eligible Change Orders

Errors and Omissions - Errors and omissions in the plans and specifications, detected prior to construction and needed to facilitate proper operation of the facility and which normally would have been included in accurate bid documents, are allowable.

If an error or omission is detected prior to its incorporation into construction, the cost of constructing the facility in accordance with a proper new design is generally allowable.

Design Improvements or Modifications - Changes to allow a more efficient operation of an existing adequate design, if approved, are allowable. Adequate justification should be provided as to why the original design did not provide the most cost-effective solution.

Deletions - Deletions that alter the scope, capacity, or treatment process of the project require prior written approval.

Unforeseen Site Conditions - These are defined as either (1) unknown subsurface or latent physical conditions at the site of the work differing substantially from those identified in the bid documents or (2) unusual physical conditions at the site of the work differing substantially from those ordinarily encountered.

Pre-design site investigations by the engineer may show different substructure conditions than actually encountered in the field during construction. Additional costs necessary to perform under unforeseen site conditions, including studies and additional costs of construction which would have been included had the conditions been accurately described in the bid documents, are considered allowable, provided that such requests are accompanied by a written discussion demonstrating that the conditions could not have been determined through reasonable pre-bid investigation by the contractor.

The cost of re-planning, redesign, and time delay should be allowable.

Premium Wages - Where premium wages are payable under the construction contract and the Borrower can demonstrate a critical need for payment of premium wages, they may be allowable.

Time Extensions - Time extensions may be approved only if documentation is submitted to support the validity and the reasonableness of the time extension. The supporting documentation will depend on the reason(s) for the time extension.

Temporary Facility - Where construction is undertaken at the site of an existing facility, the installation of a temporary facility to prevent the disruption of normal operation may be allowable, as it should have been included in the contract documents.

Overruns and Underruns - Bids for materials are often based on estimated quantities and unit prices. Actual quantities will usually differ. The adjusted costs are usually allowable, and the quantities should be continually monitored to avoid significant overruns.

Examples of Ineligible Change Orders

Errors and Omissions - When construction has proceeded to the point that the errors and omissions cannot be corrected without removing, remodeling or adding to a portion of the facility, the additional cost attributable to the errors or omissions is not eligible. The cost of any redesign or additional time necessitated by errors and omissions is generally not allowable.

Substitution - The substitution of a non-bid item of material or equipment by the Borrower or contractor because they prefer the substitute is not allowable if there is a cost reduction that conflicts with the purpose of the state and federal competitive bidding laws.

The additional cost of the substitution of non-bid items based on non-availability or delayed availability is generally the responsibility of the contractor or its supplier and is not allowable.

Contracted items which cannot be successfully demonstrated to the Borrower as “equal” to those named in the specifications cannot be used in lieu of the named items or another equal. Under these circumstances, the contractor shall utilize the named item at the bid price.

Time Extensions - Time extensions should not be granted which create conflicts with schedules contained in permits and/or orders of DEP.

Operation and Maintenance - The operation, maintenance, and routine repair of any existing facilities or equipment during construction is the responsibility of the Borrower and is not allowable either as a part of the original contract or by change order.

Paving - Cost for paving in excess of the trench width plus two feet are not eligible except when required by state or federal requirements. (For example: PA Department of Transportation full width paving for state highways.)

Changes in Scope - Change orders, which involve a change in project scope that does not meet the requirements specified in Section 963.18 of the PENNVEST regulations, are not eligible.

Miscellaneous - Costs associated with those items specified in Section 963.18 of the PENNVEST regulations are not eligible.

Damages - The costs for losses such as damage to equipment or completed work or personal injury are not fundable by change order and should be handled in accordance with the original contract and general legal principles.

DEP CHANGE ORDER REVIEW CHECKLIST

Loan No.: _____ **Change Order No.:** _____

Change Order Amount: _____

Borrower: _____

Time Extension: _____ **days**

Municipality: _____

Contractor: _____

County: _____

Engineer: _____

DEP Project No.: _____

Contract No.: _____

	Yes	No	N/A
Needed for integrity of the project			
Within scope of project			

Submittal Includes:	Yes	No	N/A
Change Order Request Form			
Change Order Supplement			
Necessity for changed work			
Contractor's cost and time to complete work			
Borrower's independent engineering estimate of cost and time required			
Negotiations of cost and time of differences			

DETERMINATION:

Recommended Amount Approved: \$ _____ **Denied:** \$ _____

Recommended Time Extension Approved: _____ **days** **Denied:** _____ **days**

REASON (S) FOR DENIAL: _____

ADDITIONAL COMMENTS: _____

REVIEWED BY: _____

Project Manager

Date

E. INTERIM SITE VISITS DURING CONSTRUCTION

1. Periodic inspections during construction are to be conducted by DEP in accordance with (1) 63 Regulations, Section 18(b), and (2) the *Memorandum of Understanding* between DEP and PENNVEST. DEP Project Managers accomplish these inspections through site visits. The purpose of the interim site visits is to:
 - a. Verify project progress/schedule.
 - b. Assure that the project is being constructed in general conformance with approved plans and specifications.
 - c. Report any problems with the project to PENNVEST as soon as possible.
2. The Project Manager is expected to use these site visits only to monitor the work of the resident inspector(s) and the contractors. The Project Manager should determine whether:
 - a. The project appears to be progressing in a timely manner according to the schedule.
 - b. The work to date appears to be in general accordance with the plans and specifications, permits, and applicable regulations.
 - c. Change orders are being submitted in a timely manner.
 - d. There is on-site inspection and record keeping.
3. The Project Manager should check as-bid plans and specifications against those received with the permit application.
4. The Project Manager is to determine the frequency of interim site visits based on the size, complexity, and construction schedule of the project, or in response to a special request by PENNVEST. The frequency of these site visits may be changed during the course of construction due to issues or problems that may arise. At minimum, site visits are recommended when construction progress reaches 33 percent complete, 67 percent complete, and 100 percent complete; however, where construction is progressing well and a Borrower has demonstrated adequate project management capability, less-frequent site visitation may be sufficient.
5. Because projects are subject to audit, the Project Manager must document all interim site visits in writing. Exhibit E is the PENNVEST/DEP Site Visit Report Form to be completed during an interim site visit. Pages 1 and 2 of this form are applicable to all projects. Page 3 is an attachment that may be used for construction projects involving more than one contract. A written report or memorandum may be used to supplement the site visit form.
6. It is recommended that the site visit form (Exhibit E) be completed on the job site and signed by the Project Manager, the Borrower's resident inspector, or the Borrower's

engineer. The Project Manager must promptly report any problems to the resident engineer and note them on the inspection report. A copy of the report should be mailed or faxed to the Borrower's engineer as soon as possible. Additional copies are to be sent to PENNVEST and the Borrower. Where there are significant problems associated with the inspection, copies of the inspection report and associated correspondence shall also be sent to the Division of Municipal Financial Assistance.

7. The Project Manager must notify PENNVEST immediately of any problems that require PENNVEST action or which may affect the scope of the project.

EXHIBIT E

DEP SITE VISIT REPORT

Loan No.: _____ Date: _____
 Type of Project: _____ Wastewater _____ Drinking Water _____ Stormwater

Borrower:	Municipality:	County:
Project Engineer:		Construction Manager:
Project Description:		

Contract Information & Construction Status (attach additional sheets for other contracts)

Contract No.: _____ Contractor: _____	
Contract Description:	
<p><u>Schedule:</u> Length of Contract: _____ Days Dates: Notice to Proceed: _____ Length of Time Extensions: _____ Days Construction Start: _____ Is Contract on Schedule: Yes ___ No ___ Scheduled Completion: _____ Revised Completion: _____</p>	
Remarks:	
<p><u>Change Orders:</u> Do any changes constitute a change in project scope? Yes ___ No ___ Are change orders being submitted for DEP review in a timely manner? Yes ___ No ___</p>	
Remarks:	
<p><u>Status of Construction:</u> Estimated Percent Complete: _____ Describe work completed and in progress at the time of site visit: _____ See attachment _____</p>	
Are shop drawings current? Yes ___ No ___	
Does the resident inspector keep a project log? Yes ___ No ___	
Are materials and performance test records kept? Yes ___ No ___	

Does the construction to date appear to be in general conformance with the plans, specifications, and DEP permits? Yes ___ No ___	
Remarks:	
See attachment ___	

Loan No.: _____ Date: _____
 Type of Project: _____ Wastewater _____ Drinking Water _____ Stormwater

Final Inspection Data (if applicable):

Date Construction Started: _____ Date of Substantial Completion: _____
Constructed in accordance with plans and specs? Yes ___ No ___
Have all change orders been submitted to DEP for Technical Review? Yes ___ No ___
Date of Initiation of Operation: _____ Project is Operable? Yes ___ No ___
Recommended for Final Payment? Yes ___ No ___
Remarks:

Signatures:

 Resident Inspector
 Or
 Agent for Borrower

 DEP Project Manager

 Date

- Copies to:
- _____ PENNVEST
 - _____ Borrower
 - _____ Borrower's Engineering Consultant
 - _____ DMFA (final inspections only)
 - _____ DEP File (_____)

F. FINAL INSPECTION

1. The Project Manager will be notified by PENNVEST that a final inspection is due after the Borrower submits a payment request that indicates 100 percent of the project construction has been completed. The Project Manager should generally conduct the final inspection following this notification. The final inspection may be conducted earlier, following a direct request by the Borrower to DEP, or following notification of Initiation of Operation.
2. The Project Manager should conduct the final inspection and submit an inspection report (Exhibit E) to PENNVEST. If possible, a copy of the report should be left with the Borrower's engineer at the time of inspection (or sent by fax or mail in the next few days). Copies of the final inspection must also be sent to the Borrower and the Division of Municipal Financial Assistance.
3. The final inspection report shall, as a minimum, state whether:
 - Construction appears to be generally in accordance with the approved plans and specifications.
 - All change orders have been submitted and reviewed.
 - The project is operable.
 - Final payment is recommended.
4. A Regional Operations Section Representative may participate in the final inspection for familiarization with the new facility and compliance status.

G. PERFORMANCE CERTIFICATION

1. Performance Certification is required for all projects funded by the CWSRF in accordance with Chapter 965 Regulations, Section 8(c).
2. Performance Standards for a project shall be developed and approved prior to start of construction. The procedure for developing Performance Standards is described in Part 2, Section B.
3. At the pre-construction conference, the Project Manager should inform the Borrower and the Borrower's engineer regarding their responsibility to provide Performance Certification after project construction. Information regarding Performance Certification that is to be presented at the pre-construction conference is included in Exhibit C. The Project Manager should emphasize the requirement that the Borrower must notify DEP in writing within 30 days of the actual date of initiation of operation.
4. The Project manager must acknowledge by letter (Form Letter G-1) when notified by the Borrower of the initiation of operation. This letter confirms the date for Initiation of Operation (IOP) and advises that this IOP date is the start of the one-year performance period. Exhibit G, the Affirmative Project Performance Certification Form, is sent to the Borrower as an enclosure with Form Letter G-1.
5. Following the Initiation of Operation, the regional office reviews the previously established project performance standards. The Borrower is notified if any changes or additions are applicable.
6. The Project Manager should conduct a final inspection upon notification by PENNVEST or within 30 days of notification of IOP. A Regional Operations Section representative may participate in the inspection for familiarization with the new facility and the performance standards.
7. If applicable to the project, the regional office should review the monthly Discharge Monitoring Reports (DMR) to monitor compliance during the performance period. The Borrower is advised in writing should any problems be found that would affect an affirmative certification.
8. Upon submission, the Project Manager should review the Affirmative Performance Certification or Corrective Action Report (CAR) with the compliance/operations staff and advise the Borrower on acceptance/rejection using Form Letter G-2. The Project Manager must notify the Borrower in writing to submit a CAR if the certification is rejected.
9. If the required performance certification or corrective action report is not submitted within 60 days of the end of the one-year performance period, the Project Manager must contact the Borrower in writing. Copies of this correspondence should be sent to PENNVEST and the Division of Municipal Financial Assistance.

10. The regional office may initiate an enforcement action if there is a violation of the Borrower's NPDES permit and/or if an acceptable CAR has not been provided within 90 days of the end of the one-year performance period.

EXHIBIT G

AFFIRMATIVE PROJECT PERFORMANCE CERTIFICATION

I. As required by Chapter 965, Section 965.9(d) of the Pennsylvania Infrastructure Investment Authority's (PIIA) Clean Water State Revolving Fund (CWSRF) regulations, _____, hereinafter referred to as "Borrower," does hereby certify that the project constructed under the PIIA Loan No. _____ is in full compliance with Section 965.9(c) of the PIIA CWSRF regulations in that it has:

- A. Provided to the Pennsylvania Department of Environmental Protection written notification of the actual date of initiation of operation. The date of initiation of operation was _____.
- B. Utilized the services of _____, hereinafter referred to as "Engineer," who:

____ Supervised the project throughout construction; or,
____ Provided architectural and engineering services during construction.

For a period of twelve months following initiation of operation the Engineer provided the following services:

Check all that apply.

- 1. Directed the operation and maintenance of the project.
- 2. Trained the operating personnel.
- 3. Advised the Borrower on Certification through the preparation and submission to the Borrower a Basis of Certification Report.

II. The Borrower, having access to and control of the necessary data, and having monitored the construction of this project, hereby, in accordance with Section 965.9(d) of the PIIA CWSRF regulations certifies that the project built under Loan No. _____ meets:

Check all that apply.

- A. The performance standards developed for the project.
- B. The requirements listed in the approved design plans and specifications for which the project was planned, designed and built to achieve.
- C. The standards and conditions set forth in the NPDES Permit No. _____ dated _____.

This certification is substantiated by the data included in the attached Basis of Certification Report prepared by the Engineer.

Authorized Representative & Title (please print)

Agency/Borrower Name

Authorized Representative's Signature

Date

FORM LETTER G - 1

Notifies Borrower of One-Year Performance Period

Re: DEP File No. _____

Dear _____:

This is to acknowledge your letter of _____ in which you notified DEP that you initiated operation of your wastewater project funded by PENNVEST Loan No. _____. Please be advised that _____ shall be the official date for Initiation of Operation (I of O) for your project.

As a condition of your PENNVEST loan, you are required to retain your primary project engineer to monitor the operation and performance of your project for a one-year period following the date of initiation of operation. The performance standards for this project, approved prior to construction, shall be used in assessing the project operation during this one-year period.

Within ten (10) days following the one-year performance period, you are required to submit to DEP either an Affirmative Project Certification or a Corrective Action Report.

An Affirmative Project Certification confirms that the project operates in conformance with the project performance standards that were approved prior to construction. This certification must be submitted with a Basis of Certification Report that provides a detailed explanation describing how your engineer determined that each of the performance standards was achieved. An Affirmative Project Certification Form has been enclosed for your use.

If it is not possible to certify that the project is not meeting its performance standards, a Corrective Action Report (CAR) must be submitted, also within ten (10) days of the conclusion of the one-year performance period. The CAR must provide an analysis of the project's failure to meet its performance standards and a schedule for corrective action including a date for providing an affirmative Project Certification.

Performance Certification is an important final step in implementing your wastewater project. This is a requirement for all projects funded through PENNVEST with CWSRF funds. Your cooperation and timely submissions in completing the final portion of your project is appreciated. If you have any questions, please call.

Sincerely,

Project Manager

Enclosure (Performance Certification Form)

cc: PENNVEST
DMFA
Monitoring and Compliance Section
Project File

FORM LETTER G - 2

Review Letter for Performance Certification/Corrective Action Report

Re: DEP File No. _____

Dear _____:

This is in reference to your wastewater project funded with PENNVEST Loan No. _____. We received your Affirmative Project Certification and your Basis of Certification Report on _____. Please be advised that we have reviewed and accepted your Affirmative Performance Certification.

This completes the final step in the construction of your PENNVEST wastewater project. If you have any questions, or if you need any additional information, please call.

Sincerely,

Project Manager

bcc: PENNVEST
DMFA
Monitoring and Compliance Section
Project File