Non-Point Source

Before After

PROJECT PRIORITY RATING SYSTEM GUIDANCE MANUAL

March 23, 2010

INTRODUCTION

BACKGROUND

The Clean Water Act authorizes the expenditure of funds for the Clean Water State Revolving Loan Fund (CWSRF). This fund can be used to fund a wide variety of water pollution activities. The traditional use is for wastewater treatment works, commonly called "point sources" because they involve discharges from discrete pipes. "Non-point source" pollution (NPS) activities control pollution from less discrete sources, and can also be funded. This document is designed to explain in detail how decisions will be made in the priority ranking of NPS projects.

RATING FACTORS

DEP program staff scores projects using the rating factors below. The Pennsylvania Infrastructure Investment Authority (PENNVEST) adds points from the factors listed below to develop a final list of recommended projects for PENNVEST Board consideration. The PENNVEST Board reviews the applications and approves the list of projects to be funded.

DEP PRIORITY RATING FACTORS-SUMMARY

Priority among eligible projects is established according to the total accumulation of points for the following factors. The maximum points for each factor are noted.

(1)	Water Quality	– 40 points
(2)	Compliance	– 10 points
(3)	Planning	– 25 points
(4)	Benefit-To-Cost	– 20 points
(5)	Safety	– 5 points

PENNVEST ADDITIONAL RATING FACTORS

To develop a final score for each project, PENNVEST adds the following points to the DEP environmental project scores. The total that can be added to each project is 70 points.

(a) Economic Development – The Department of Community and Economic Development (DCED) provides this ranking based on:

(1) High (20 points) – The project has a direct link to job creation or preservation and private investment.
(2) Medium (15 points) – An indirect link to job creation or preservation and private investment exists.
(3) Low (5 points) – Project implementation.

(b) Distressed Community – DCED evaluates communities across the Commonwealth for financial well-being. Communities on the Distressed Communities list are identified in order to have access for consideration for assistance from various state agencies in

order to get the communities back to normal status. If the project is in a community that is considered distressed, 10 points are added to the project.

(c) Infill – PENNVEST adds 10 points to those projects that serve a city, borough or township of the first class. Redevelopment of existing population centers is a priority.

(d) Brownfield – PENNVEST adds 15 points to those projects that serve a designated Brownfield site as identified by DEP.

(e) Community Action Team (CAT) Projects – DCED adds 10 points to those projects that are in a CAT community. The CAT community system is an effort to focus financial and technical resources to specific communities identified by the CAT Team. Members of the CAT Team include DCED, DEP, the Pennsylvania Department of Transportation, the Public Utility Commission and other local and state agencies.

(f) Comprehensive Planning – DCED adds 5 points to those projects that are within communities with a comprehensive plan, where the community plan is consistent with the adopted county comprehensive plan.

INFORMATION COLLECTED IN SUPPORT OF THE EPA CLEAN WATERSHEDS NEEDS SURVEY

The state has the responsibility to update the Clean Watersheds Needs Survey (CWNS) every four years. The data is used by the U. S. Environmental Protection Agency (EPA) to prepare a Report to Congress which describes the amount of money that would be needed to satisfy the current national need.

Needs are assessed as they exist at a point in time. Year 2012 needs, for example, represent those that exist on January 1, 2012. If PENNVEST funding is provided for work after January 1, 2012 then that need existed on January 1, 2012 and is reported to EPA. Records from PENNVEST applications are therefore a useful CWNS information source.

This program provides funding for Stormwater, Agricultural BMP's, Acid Mine Drainage, and Brownfields. The rating form therefore has blocks for NPS costs which are broken out by the appropriate CWNS categories. The total project cost should be reflected even if the project is funded in part with sources other than PENNVEST. Assume a hypothetical example where a series of agricultural BMP's are to be installed on a farm. The project would cost a total of $100,000, involving $50,000 for cover crops (category VIIA Ag-cropland) and $50,000 for improved manure-handling (category VIIB Ag-animals). PENNVEST is being asked to provide $35,000 for each category, and other sources are expected to provide the balance. The DEP reviewer will enter $50,000 in the VIIA and VIIB boxes respectively, as well as the $100,000 total because that is the total project cost.

DEFINITIONS OF TERMS

For the purpose of this rating system, the following terms are defined as follows:

Abandoned Mine Drainage (AMD): Acid mine drainage from locations where there is no existing entity with continuing responsibility for the discharge.

Animal equivalent unit (AEU): One thousand pounds live weight of livestock or poultry animals, regardless of the actual number of individual animals comprising the unit.

Best management practices (BMP): Practice, or combination of practices, which is an effective and practicable (given technological, economic and institutional considerations) method to protect surface and groundwater from non-point source impacts.

Exceptional Value Water (EV): This highest level of protection requires that "water quality … be maintained and protected." To be compatible with the federal regulation, Pennsylvania's EV waters classification includes "Outstanding National Resource Waters." In addition, outstanding state, regional, and local waters are also protected at this level. Thus, the Pennsylvania anti-degradation regulation provides multiple routes for these waters to qualify for EV protection. At this highest level, no lowering of water quality is allowed. A water qualifies for EV if it is an HQ water which meets one or more of the following attributes: (1) it flows in a national wildlife refuge or a state game propagation and protection area; (2) it flows in a designated state park natural area, state forest natural area, national natural landmark, federal or state wild river, federal wilderness area, or national recreation area; (3) it is an outstanding national, state, regional, or local resource water as defined in regulation; (4) it is a surface water of exceptional recreational significance as defined in regulation; (5) the water achieves a biological test score of 92 percent or greater using the modified Rapid Bio-assessment Protocol; or (6) the water is designated a wilderness trout stream by Pennsylvania Fish and Boat Commission following public notice and comment. An additional pathway is available for waters that possess "*exceptional ecological significance*." Water quality better than the criteria set forth in DEP regulations is not needed to qualify as EV waters for surface waters of exceptional ecological significance. These waters include, but are not limited to, EV wetlands and thermal springs.

High Quality Water (HQ): DEP regulations specifying how a waterbody may qualify as HQ waters provide that such qualification may occur by demonstration of suitable chemical or biological conditions. Under the chemical test, a surface water is HQ if long-term water quality (at least one year of data) for 12 chemical parameters is better than levels necessary to support propagation of fish, shellfish, and wildlife and recreation in or on the water. Under the biological test, a water is HQ if it meets either of the following: (a) in comparison to a reference stream, the water shows a macroinvertebrate community score of 83 percent or greater using a protocol based on EPA's Rapid Bio-assessment Protocol, or (b) the water is a Class A wild trout stream designated by the Pennsylvania Fish and Boat Commission following public notice and comment.

Non-Point Source (NPS): A pollution source which is not a point source discharge. Stormwater projects that are not required by MS4 permits are Non-Point Source.

Manure Acre: A pasture acre having the equivalent of 145 Animal Equivalent Units (AEUs) of manure applied. The number of manure acres treated by an Animal Waste Management system is defined as the AEUs that the system services divided by 145. For example, a dairy operation with 218 AEU's of livestock would be credited with 218/145 = 1.5 manure acres effectively treated

Municipal Separate Separate Stormwater System (MS4): A conveyance or system of conveyances owned by a state, city, town, village, or other public entity that discharges to waters of the Commonwealth that is designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.); not a combined sewer; and not part of a Publicly Owned Treatment Works (sewage treatment plant).

Operation and Maintenance (O&M): Actions taken after construction is complete and project is fully operational that ensure that facilities constructed will continue to function as intended.

Point Source (PS): Any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, Combined Animal Feedlot Operation (CAFO), landfill leachate collection system, or vessel or other floating craft, from which pollutants are or may be discharged. Projects related to achieving and/or retaining compliance with an MS4 permit are point source projects.

DEFINITION OF DEP RATING FACTORS

WATER QUALITY RATING (40 Points)

(40 Points) The highest rating is earned if the receiving stream is listed as impaired on the PA Integrated Water Quality and Assessment Report with causes that are linked to the benefits of the project. The same rating is earned for projects with benefits that are linked to causes for the failure of groundwater to meet drinking water standards.

(30 Points) The second level rating is earned by projects whose receiving water body is not listed as impaired on the PA Integrated Water Quality and Assessment Report, but are identified as high quality (HQ) or exceptional value (EV) by DEP, and a pollutant(s) to be controlled by the project is documented as a threat to the DEP-recognized existing use.

(20 Points) A third level rating is provided where the receiving water body is not listed as impaired on the PA Integrated Water Quality and Assessment Report, or recognized by DEP as HQ/EV, but the project will have direct and substantial benefits to waters (including groundwater), and the applicant has provided documentation (previously-conducted assessment/water quality data) which identifies water quality issues that are addressed by the project.

(10 Points) A fourth level rating is provided if the receiving water body is not listed as impaired on the PA Integrated Water Quality and Assessment Report, or recognized by DEP as EV/HQ, and specific documentation is not provided, but the project is reasonably expected to have direct and substantial benefits to waters (including groundwater). This rating is also earned if the project has extended pollutant-reducing benefits. Extended benefits are those that occur in downstream segments. For example, projects earn this rating if they reduce nitrogen discharges anywhere in the Chesapeake Bay drainage basin regardless of whether or not the discharge is to a segment with nitrogen-related issues.

The impaired listing can be accessed at:

http://www.portal.state.pa.us/portal/server.pt/community/water_quality_standards/10556/integrated_water_quality_report_-_2008/554008

HQ/EV status available at:

http://www.portal.state.pa.us/portal/server.pt/community/stream_redesignations/10558

COMPLIANCE RATING (10 Points)

(10 Points) The highest rating is provided for projects which represent a voluntary effort to resolve violations, thus encouraging proactive efforts and timely environmental improvement. Regional Offices will assign this rating only if the enforcement order or Notice of Violation would have been issued within a year if the subject project was not pursued.

(5 Points) A reduced level of points is assigned if a formal enforcement action has been issued which requires the project or if there is an approved Total Maximum Daily Load which requires reductions in the pollutant to be controlled by the project.

PLANNING RATING (25 Points)

1. Capability to Manage

(0 to 10 Points) Points are assigned if the applicant has demonstrated the capability to manage its project. This is important to all funding actions, but is of particular concern with NPS projects because the PENNVEST NPS funding program allows a wide variety of potential applicants, some of which may have difficulty meeting the state and federal requirements associated with this funding. Indicators of capability are:

a. Applications which are clear on project goals, objectives, methods and timing.
b. Applications which describe experience in dealing with PENNVEST-funded program requirements.

A reduced point total will be assigned if the application provides some indicators but not all.

2. Planning Coordination

(15 Points) The highest rating is provided for projects that are a component of an adopted or accepted Local, County, State, watershed, total maximum daily load (TMDL) implementation, or other similar water quality plan. This factor recognizes the value in completing established water quality plans.

(10 Points) Points are also provided for projects whose specific proposal is not described as part of a larger approved or accepted plan, but the project is comprised of accepted BMP's that are endorsed by the County Conservation District, a local planning office, or watershed group. Such practices may be recommended as part of a Chesapeake Bay County or Watershed Implementation Plan, a Conservation Plan, or similar water quality improvement plan. Projects with that documentation are clearly valuable, but do not have as much formal support as is required for the highest rating.

(5 Points) Points are provided if the project is expected to result in DEP-approved nutrient trading credits. Documentation can be in the form of an application for credit approval.

BENEFIT TO COST COMPARISON (20 Points)

General Discussion:

The purpose of this factor is to encourage the funding of practices that provide the most benefit per dollar. Some practices tend to be more expensive than others. However, it would be inappropriate to arbitrarily restrict the use of any particular technology, because in a given project its use might have extraordinary benefits. Projects may also need to use an expensive type of technology to only a limited extent. Case-by-case consideration is therefore needed.

Benefit/Cost is the correct measure because NPS projects do not always have an outcome fixed by mandate. Traditional drinking water and wastewater projects usually are motivated to satisfy a predetermined requirement. A wastewater plant may for example require a reduction in the concentration of nitrogen in its effluent to 3 mg/l. In such a case the applicant does a cost-effectiveness analysis of various alternatives to accomplish that specific result. In NPS the outcome is usually less specified. Lacking a specific mandated outcome, NPS projects must nevertheless reflect best-use of taxpayer funds, and the appropriate analysis involves an assessment of relative benefits and costs.

Detailed calculations of estimated costs and benefits are not assumed to be available, which means that the outcome of the rating will rely heavily on the experience and judgment of the reviewer. *Examples* are provided below, but the wide variety of potential NPS projects makes it impossible for this guidance to offer a detailed decision methodology that can be directly applied to all projects. The logic behind each rating must be described by the reviewer and is subject to analysis by the Central Office rating coordinator to promote consistency between Regional Offices.

The nature of the practices applied in the different types of NPS projects (stormwater, brownfields, acid mine drainage and agriculture) are vastly different. It is for that reason that the examples below are separated by type.

Some projects will include a mix of different BMP's. If that is the case the reviewer will make a judgment on the overall benefits and costs of the project.

Reviewers should consider not only the construction cost of the project but also the operations & maintenance (O&M) cost over the design life of the project.

Ratings:

(20 Points) High: The nature of the project, considering the examples below, is that it has large benefits and uses low cost methods.

(12 Points) Medium: The nature of the project, considering the examples below, is that it has a mix of benefits and costs which do not fit either the High rating or the Low rating.

(5 Points) Low: The nature of the project, considering the examples below, is that it has low benefits and uses high cost methods.

The above ratings are outlined in the following table:

	High Cost	**Medium Cost**	**Low Cost**
High Benefit	Medium Rating	Medium Rating	High Rating
Medium Benefit	Medium Rating	Medium Rating	Medium Rating
Low Benefit	Low Rating	Medium Rating	Medium Rating

Benefit/Cost Indicators:

Stormwater Examples

Benefit Range	Benefit
High	High hydrologic performance; captures >70% of the stormwater in the project area; or captures >1" rain
Medium	Good hydrologic performance; capture of 40-70% of the stormwater in the project area; or captures ½ - 1" rain
Low	Low hydrologic performance; capture of 0-39% of the stormwater in the project area; or captures <½"rain

Cost Range	Cost
High	New structural construction; or large trees (>2 1/2" diameter); or green roofs
Medium	Major retrofit of structural BMP; pervious pavement; limited piping; medium-sized trees (1-2½"); rain barrels; or French drains
Low	Minor retrofit of structural BMP; roof downspout disconnection; small trees (<1"); or vegetated swale

Projects intended to control sediment should be measured in terms of tons/year.

The above benefits and costs are subject to interpretation based on content of the Pennsylvania Stormwater Best Management Practices Manual.

Brownfields Examples

Benefit Range	Benefit
High	High hydrologic performance; captures >70% of the stormwater in the project area or 1" rain; the majority of stormwater is reused or the practice eliminates a pollutant source
Medium	Good hydrologic performance; capture of 40-70% of the stormwater in the project area or ½ - 1" rain and some stormwater reused (<50% of volume); or reduces pollutant source
Low	Low hydrologic performance; captures 0-39% of the stormwater in the project area or <½"rain; project includes capping the whole site, Monitored Natural Attenuation or does not reduce pollutant source

Cost Range	Cost
High	Rain cisterns, Rain storage tanks, Leaking tank removal, Permeable pavement over uncontaminated areas Permeable Reactive Barriers or Contaminated soil removal
Medium	In-situ or ex-situ treatment of contaminated soil and groundwater, bio-remediation, oxidation; or vegetated retention basins
Low	Groundwater monitoring wells or phytoremediation

Acid Mine Drainage Examples

Benefit Range	Benefit
High	>5 miles of stream restored
Medium	1-5 miles of stream restored
Low	<1 mile of stream restored

Cost Range	Cost
High	Reclamation, structural construction or long-term chemical feed.
Medium	Passive Treatment (where analysis shows this is feasible for the discharge and less costly than active treatment)
Low	Limestone trenches, limestone sand, other low-cost limestone applications

Agricultural Examples

Benefit Range	Benefit
High	>1,000 lbs N saved / acre/year
Medium	100-999 lbs N saved / acre/year
Low	<100 lbs N saved / acre/year

Cost Range	Cost
High	Cost >$200,000
Medium	Cost $50,000-$199,999
Low	Cost <$50,000

Pounds of Phosphorus can be substituted for Nitrogen. For practices that are not reported in acres but rather in numbers (storage, barnyards etc.), use "manure acres" as the unit. If the benefit includes sediment, the unit would be tons/acre saved.

SAFETY RATING (5 Points)

(5 Points) The highest rating is provided to projects which correct a "critical or on-going safety or health hazard." An example might be a water quality project which has the side benefit of eliminating steep waste rock or mill tailing piles.

(3 Points) Points are also assigned if the project corrects a "frequent safety of health hazard." An example might be a serious street flooding problem which only occurs during hard rains.

(1 Point) A "potential safety or health hazard" might be the improved use of animal manures so that groundwater which is approaching the nitrate MCL concentration would be protected against further contamination.