

## **Maryland Department of the Environment**

### **Integrated Project Priority System for Water Quality Capital Projects Point Sources and Nonpoint Sources**

#### **Overview:**

This document outlines the criteria and procedures for rating and ranking water quality improvement capital projects to develop an annual Project Priority List (PPL) that will be used to select projects for financial assistance through the Water Quality Revolving Loan Fund (WQRLF or WQSRF) Program administered by the Maryland Water Quality Financing Administration (MWQFA), a unit within Maryland Department of the Environment (MDE). The rating and ranking system will also be used to select projects to receive funding from other MDE State Grant programs (below), where the non-grant portion of the project cost is eligible to be funded using the WQRLF program:

- Bay Restoration Fund (WWTP) Grant
- Biological Nutrient Removal Grant
- Supplemental Assistance Grant

This document is not for purposes of determining funding available as subsidy under the WQRLF program (i.e., loan principal forgiveness) or as State grant. For further information about eligibility for WQSRF loan principal forgiveness and State grant, review MDE's "Water Quality & Drinking Water Capital Program Funding Eligibility" at [www.mde.maryland.gov/wqfa](http://www.mde.maryland.gov/wqfa).

The WQRLF Program can provide below-market interest rate loans up to 30-year term (based on the asset's useful life) and loan principal forgiveness (as additional subsidy) to finance the following types of capital projects:

- Publicly-owned sewerage treatment works<sup>1</sup> projects, such as advanced wastewater treatment Biological Nutrient Removal (BNR) and/or Enhanced Nutrient Removal (ENR); combined sewer overflow (CSO)/sanitary sewer overflow (SSO) correction; aging sewer system rehabilitation or replacement; sewer extension to sewerage treatment facilities for failing septic system communities; non-hazardous landfill leachate conveyance and/or treatment; sewer system energy conservation; sewerage system security; water conservation/efficiency/reuse.
- Publicly or privately-owned stormwater treatment works<sup>1</sup> projects to manage, reduce, treat, or recapture stormwater or subsurface drainage water, such as best management practices (BMPs) required by Municipal Separate Storm Sewer System (MS4) permits, Stormwater General Discharge Permit (e.g., 12SW, 14GP, etc.), and non-hazardous solid waste landfill capping. (Note: Other nonpoint source pollution prevention practices identified under Federal Clean Water Act Section 319 Plan for Maryland (e.g., riparian/stream restoration, brownfield site cleanup, agricultural BMPs, septic system repairs) that are not stormwater BMPs may be funded through the MWQFA Linked Deposit (Bank Loan) Program. For additional information, see [www.mde.maryland.gov/wqfa](http://www.mde.maryland.gov/wqfa).

WQFA will identify capital projects submitted for WQRLF financing that meet U.S. Environmental Protection Agency (EPA)'s definition of "green" projects (i.e., green infrastructure, water efficiency, energy efficiency/climate change, environmentally innovative). For information and examples of EPA-defined "green projects," see [www.mde.maryland.gov/wqfa](http://www.mde.maryland.gov/wqfa).

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<sup>1</sup> "Treatment works" under WQRLF includes municipal sewerage, industrial waste, and stormwater BMPs; these projects will need to comply with the Federal prevailing (Davis-Bacon) wage rates and the use of American Iron and Steel on construction contracts, as well as undergo an environmental review.

### **Threshold Requirements for MDE Funding of Sewerage Projects**

- 1) The project scope must be included in the MDE approved County Water and Sewerage Plan and
- 2) The project, and the area served by it, must be located within a Priority Funding Area (PFA) or have been granted a PFA exception by the Smart Growth Coordinating Committee (SGCC).  
Note: Projects funded solely by the Bay Restoration Fund and/or Biological Nutrient Removal Cost-Share Grant are not subject to PFA law.

### **Additional WQRLF Funding Requirement for Publicly-Owned Treatment Works<sup>1</sup> Projects**

- 1) The applicant must certify that it has, or will develop, and implement prior to loan closing a Fiscal Sustainability Plan for the project proposed for funding (i.e., a plan that includes an inventory of critical assets; an evaluation of the condition and performance of inventoried assets; certification of evaluation/implementation of water and energy conservation efforts; and an asset maintenance, repair, and replacement schedule).

### **Additional WQRLF Funding Requirement for Publicly-Owned Projects**

- 1) Beginning in FFY 2016, the applicant must evaluate the cost and effectiveness of proposed project and select (to the extent practicable) a process that maximizes water conservation, efficient use, reuse, recapture and energy conservation, while taking into account the capital cost, O&M cost and replacement cost.

### **Project Rating Procedure and Criteria:**

MWQFA will evaluate each project application using a “project score sheet.” The procedure described below contains references to section numbers used on the score sheet. Projects will be rated and ranked on the PPL in descending order based on the total points awarded on the score sheet. A maximum of 100 points can be awarded to any project. In case of tied scores, projects will be ranked based on population served (largest to smallest), followed by drainage acres treated (largest to smallest), followed by linear feet restored (longest to shortest), as applicable.

### **Section I – Primary Project Benefit Category**

After determining the project meets the eligibility requirements (see “Eligible Projects” above), the reviewer will select the project’s primary benefit in Section I. The primary project benefit determines from which of the four scoring criteria (described in Sections II thru V below) points will be awarded. Each eligible project must fall into one of the three primary project benefits below:

- 1) Environmental Water Quality Benefit – Examples include projects that reduce nutrients (nitrogen, phosphorus) and/or are required to comply with more stringent permit limits (e.g., wastewater treatment plant upgrade, stormwater best management practices (BMPs)). If this benefit is selected, points will be awarded in Sections II, IV and V of the score sheet.
- 2) Public Health Benefit – Examples include projects that address a public health that may or may not be required to comply with a legal order (e.g., combined sewer overflow, sanitary sewer overflow, sewer extension to homes with on-site failing septic systems). If this benefit is selected, points will be awarded in Sections III, IV and V of the score sheet.
- 3) Other benefit, neither Environmental Water Quality nor Public Health – Examples include projects that do not have a primary water quality or public health benefit, but are otherwise beneficial for facility/community sustainability such as equipment replacement, energy conservation etc. If this benefit is selected, points will be awarded in Section V of the score sheet.

**Section II – Project Environmental Water Quality Benefit Score (Maximum 65 points; total of Sections II.A. and II.B.)**

**Section II.A. – Nutrient Reduction Benefit.** This section relates directly to the multi-State effort to develop the Chesapeake Bay Total Maximum Daily Load (TMDL) and nutrient reduction efforts statewide, including in the Atlantic Coastal Bays. Priority in this section is given to projects with the greatest benefit to the Chesapeake Bay by considering resulting nutrient reduction and the relative effectiveness (RE) of the nutrient reduction based on the 8-digit watershed where that reduction will take place. RE (calculated as the delivery factor multiplied by the estuarine effectiveness) is a measure of the impact from the edge-of-stream nutrient load from an 8-digit watershed on the dissolved oxygen in the Chesapeake Bay Mainstem. Points in this section will be awarded for either the total nitrogen (TN) reduction and RE analysis or the total phosphorus (TP) reduction and RE analysis - whichever results in the higher number of points - calculated as described below. Maximum 35 points.

*TN Reduction Calculation*

Step 1 – Calculate the resulting estimated TN reduction (lbs/yr) using the appropriate methodology described in the table below:

<b>Project Type</b>	<b>Methodology</b>
WWTP upgrade - BNR (from 18 to 8 mg/l TN)	Lbs/yr TN Reduction = Design capacity in MGD * 10 mg/l * 8.344 * 365 days per year
WWTP upgrade - BNR to ENR (from 8 to 3 mg/l TN)	Lbs/yr TN Reduction = Design capacity in MGD * 5 mg/l * 8.344 * 365 days per year
WWTP upgrade - ENR (from 18 to 3 mg/l TN)	Lbs/yr TN Reduction = Design capacity in MGD * 15 mg/l * 8.344 * 365 days per year
Connect minor WWTP to BNR or ENR facility	Use appropriate calculation above, except substitute total of existing flow to be connected in MGD for existing design capacity in MGD
New stormwater management BMP operating at full capacity	Refer to: <a href="#">Sample Calculations for Nonpoint Source Projects</a> for instructions. Use the " <a href="#">Nonpoint Source Load Reduction Calculator</a> " to calculate reductions.
Stormwater management retrofit operating at reduced capacity	Refer to: <a href="#">Sample Calculations for Nonpoint Source Projects</a> for instructions. Use the " <a href="#">Nonpoint Source Load Reduction Calculator</a> " to calculate reductions.
Stream restoration	Length of stream to be restored in linear feet (as measured down center of stream)* 0.202
Shoreline erosion control (e.g., living shoreline)	0.73 * Tons of sediment eroded from project site per year (sediment tonnage is calculated as follows: [length of shoreline in ft * bank height in ft * historic rate of erosion in ft/yr * 120]/2000)

Fifteen (15) points will be awarded to projects resulting in a “high” TN reduction (greater than 200,000 lbs/year), which is approximately equivalent to a 12.5 MGD WWTP upgrading from BNR to ENR.

Ten (10) points will be awarded to projects resulting in a medium “TN” reduction (greater than 10,000 lbs/year but less than or equal to 200,000 lbs/year), which is approximately equivalent to a 0.66 MGD WWTP upgrading from BNR to ENR.

Five (5) points will be awarded to projects resulting in a “low” TN reduction (greater than 0 lbs/year but less than or equal to 10,000 lbs/year).

*Relative Effectiveness of TN Reduction on the Chesapeake Bay*

Step 2 – Determine the RE of TN reduction resulting from the project by confirming the 8-digit watershed where the reduction will take place (for point source projects, this is the 8-digit watershed where the point of discharge is located; for nonpoint source projects, this is the 8-digit watershed where the project is

located). Identify the corresponding RE for that 8-digit watershed in the “TN\_re\_TS” column of the RE spreadsheet provided by MDE’s Science Services Administration.

Twenty (20) points will be awarded to projects located in or discharging to an 8-digit watershed in which the TN reduction is “most effective” (greater than 7.5 RE).

Fifteen (15) points will be awarded to projects located in or discharging to an 8-digit watershed in which the TN reduction is “more effective” (greater than 5.5 but less than or equal to 7.5 RE).

Ten (10) points will be awarded to projects located in or discharging to an 8-digit watershed in which the TN reduction is “moderately effective” (greater than 3.5 but less than or equal to 5.5 RE).

Five (5) points will be awarded to projects located in or discharging to an 8-digit watershed in which the TN reduction is “less effective” (greater than 1.5 but less than or equal to 3.5 RE).

Projects located in or discharging to an 8-digit watershed in which the TN reduction is “least effective” (less than or equal to 1.5 RE) will not be awarded points in this section.

Step 3 – Add the points awarded for TN reduction in Step 1 and for TN relative effectiveness in Step 2.

*TP Reduction Calculation*

Step 4 – Calculate the resulting estimated TP reduction (lbs/yr) using the appropriate methodology described in the table below:

<b>Project Type</b>	<b>Methodology</b>
WWTP upgrade - BNR (from 3 to 2 mg/l TP)	Lbs/yr TP Reduction = Design capacity in MGD * 1 mg/l * 8.344 lbs/gal * 365 days per year
WWTP upgrade – BNR to ENR (from 2 to 0.3mg/l TP)	Lbs/yr TP Reduction = Design capacity in MGD * 1.7 mg/l * 8.344 lbs/gal * 365 days per year
WWTP upgrade - ENR (from 3 to 0.3 mg/l TP)	Lbs/yr TP Reduction = Design capacity in MGD * 2.7 mg/l * 8.344 lbs/gal * 365 days per year
Connect minor WWTP to BNR or ENR facility	Use appropriate calculation above, except substitute total of existing flow to be connected in MGD for existing design capacity in MGD
New stormwater management BMP operating at full capacity	Refer to: <a href="#">Sample Calculations for Nonpoint Source Projects</a> for instructions. Use the “ <a href="#">Nonpoint Source Load Reduction Calculator</a> ” to calculate reductions.
Stormwater management retrofit operating at reduced capacity	Refer to: <a href="#">Sample Calculations for Nonpoint Source Projects</a> for instructions. Use the “ <a href="#">Nonpoint Source Load Reduction Calculator</a> ” to calculate reductions.
Stream restoration	Length of stream to be restored in linear feet (as measured down center of stream) * 0.0107
Shoreline erosion control (e.g., living shoreline)	0.48 * Tons of sediment eroded from project site per year (see Step 1 above for sediment loss calculation)

Fifteen (15) points will be awarded to projects resulting in a “high” TP reduction (greater than 65,000 lbs/year), which is approximately equivalent to a 12.5 MGD WWTP upgrading from BNR to ENR.

Ten (10) points will be awarded to projects resulting in a “medium” TP reduction (greater than 3,500 lbs/year but less than or equal to 65,000 lbs/year), which is approximately equivalent to a 0.66 MGD WWTP upgrading from BNR to ENR.

Five (5) points will be awarded to projects resulting in a “low” TP reduction (greater than 0 lbs/year but less than or equal to 3,500 lbs/year).

*Relative Effectiveness of TP Reduction on the Chesapeake Bay*

Step 5 – Determine the RE of TP reduction resulting from the project as described in Step 2, except refer to the “TP\_re\_TS” column.

Twenty (20) points will be awarded to projects located in or discharging to an 8-digit watershed in which the TP reduction is “most effective” (greater than 7.5 RE).

Fifteen (15) points will be awarded to projects located in or discharging to an 8-digit watershed in which the TP reduction is “more effective” (greater than 5.5 but less than or equal to 7.5 RE).

Ten (10) points will be awarded to projects located in or discharging to an 8-digit watershed in which the TP reduction is “moderately effective” (greater than 3.5 but less than or equal to 5.5 RE).

Five (5) points will be awarded to projects located in or discharging to an 8-digit watershed in which the TP reduction is “less effective” (greater than 1.5 but less than or equal to 3.5 RE).

Projects located in or discharging to an 8-digit watershed in which the TP reduction is “least effective” (less than or equal to 1.5 RE) will not be awarded points in this section.

Step 6 – Add the points awarded for TP reduction in Step 4 and for TP relative effectiveness in Step 5.

Step 7 - Compare the total points calculated in Step 3 for TN against the total points calculated in Step 6 for TP. **Award the higher of the two totals in Section II.A.**

Section II.B. – Water Quality Compliance Status – This section gives priority to water quality projects being undertaken in accordance with a compliance requirement. Maximum 30 points.

Thirty (30) points will be awarded to a project that is required by a final administrative or judicial order, as confirmed by an appropriate MDE program (e.g., Water Management Administration’s Compliance Program).

Twenty (20) points will be awarded to a project that is required due to an MS-4 Permit, as confirmed by documentation submitted by the applicant and/or MDE Water Management Administration’s Sediment Stormwater and Dam Safety Program.

Ten (10) points will be awarded to a project that is required to achieve new (more restrictive) limits in a National Pollutant Discharge Elimination System (NPDES) or State Groundwater Discharge permit, as confirmed by MDE Water Management Administration Wastewater Permits Program.

### **Section III – Public Health Benefit Score (Maximum 65 points; total of Sections III.A. and III.B.)**

Section III.A. – Public Health. This section gives priority to projects that address the public health hazards posed by water quality problems. Maximum 35 points.

Thirty-five (35) points will be awarded to a project that mitigates a public health emergency or confirmed repeated contamination of a drinking water supply by E. coli, fecal coliform, or nitrate above drinking water Maximum Contaminant Level (MCL), as confirmed by documentation submitted by the applicant.

Twenty-five (25) points will be awarded to a project that mitigates confirmed repeated contamination of surface water, groundwater, or a drinking water supply (other than as noted above), as confirmed by documentation submitted by the applicant.

Fifteen (15) points will be awarded to a project that mitigates other public health concerns associated with limited risk/exposure, other than the above.

Section III.B. – Project Compliance Status. This section gives priority to public health projects being undertaken in accordance with a compliance requirement. Maximum 30 points.

Thirty (30) points will be awarded to a project that is required by a final administrative or judicial order, as confirmed by an appropriate MDE program (e.g., Water Management Administration's Compliance Program).

#### Section IV – Project Cost Efficiency (Maximum 10 points)

This section gives priority to the most cost-efficient projects. Only the most appropriate of the four possible efficiencies (see “Efficiency” column in the table below) will be scored per project using the described methodology. If multiple efficiencies apply, the one resulting in the highest score will be used.

Efficiency	Methodology
Annualized Capital Cost \$/lb per year TN or TP Reduction (for BNR/ENR projects)	(Total project cost/20)/lb per year TN or TP reduction as calculated in Step 1 or Step 4 of Section II.A, respectively. Award the higher points.
Capital Cost \$/Household (for non-BNR/ENR wastewater projects)	Total project cost/current EDU to be served by project
Capital Cost \$/Drainage Acres (for stormwater projects)	Total project cost/drainage acres to be treated by project
Capital Cost \$/Linear Feet of Restoration (for stream restoration and shoreline erosion control projects)	Total project cost/linear feet to be restored by project (for stream restoration projects, this is the length of stream to be restored as measured down the center of the stream)

##### *Annualized Capital Cost \$/lb per year TN or TP Reduction (for BNR/ENR projects)*

Ten (10) points will be awarded to BNR/ENR projects with a “low” annualized capital cost \$/lb per year (less than or equal to \$6/lb TN per year or \$350/lb TP per year).

Five (5) points will be awarded to BNR/ENR projects with a “medium” annualized capital cost \$/lb per year (greater than \$6/lb TN per year but less than or equal to \$12/lb TN per year or greater than \$350/lb TP per year but less than or equal to \$700/lb TP per year).

BNR/ENR projects with a “high” annualized capital cost \$/lb per year (greater than \$12/lb TN per year or \$700/lb TP per year) will not be awarded points in this section.

##### *Capital Cost \$/Household (for non BNR/ENR wastewater projects)*

Ten (10) points will be awarded to non BNR/ENR wastewater projects with a “low” capital cost \$/household (less than or equal to \$15,000/household).

Five (5) points will be awarded to non BNR/ENR wastewater projects with a “medium” capital cost \$/household (greater than \$15,000/household but less than or equal to \$35,000/ household).

Non BNR/ENR wastewater projects with a “high” capital cost \$/household (greater than \$35,000/household) will not be awarded points in this section.

##### *Capital Cost \$/Drainage Acres (for stormwater projects)*

Ten (10) points will be awarded to stormwater projects with a “low” capital cost \$/drainage acre (less than or equal to \$25,000/acre).

Five (5) points will be awarded to stormwater projects with a “medium” capital cost \$/acre (greater than \$25,000/acre but less than or equal to \$40,000/ acre).

Stormwater projects with a “high” capital cost \$/drainage acre (greater than \$40,000/acre) will not be awarded points in this section.

*Capital Cost \$/Linear Feet (for stream restoration and shoreline erosion control projects)*

Ten (10) points will be awarded to stream restoration and living shoreline projects with a “low” capital cost \$/linear foot (less than or equal to \$500/linear foot).

Five (5) points will be awarded to stream restoration and shoreline erosion control projects with a “medium” capital cost \$/linear foot (greater than \$500/linear foot but less than or equal to \$1,000/linear foot).

Stream restoration and shoreline erosion control projects with a “high” capital cost \$/linear foot (greater than \$1,000/linear foot) will not be awarded points in this section.

**Section V – Sustainability Benefit Score (Maximum 25 points; total of Sections V.A thru V.G.)**

This section gives priority to projects that provide for “sustainable development” – development, per the U.N. World Commission on the Environment and Development, which “meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Seven (7) points will be awarded in Section V.A. to a project that benefits the needs for existing sustainable community:

- Expansion less than 20% EDU growth or increase in design capacity for sewerage projects, including “decentralized” wastewater treatment systems ([http://www.epa.gov/owm/septic/pubs/septic\\_guidelines.pdf](http://www.epa.gov/owm/septic/pubs/septic_guidelines.pdf)) or
- Expansion is for new development or redevelopment to support sustainable community (i.e., proximity to a transit station, Base Realignment and Closure (BRAC) or Brownfield revitalization area, or a Department of Housing and Community Development (DHCD)-designated Sustainable Community (including Community Legacy areas) or a DHCD-designated Maryland Main Street)

Three (3) points will be awarded in Section V.B. to a project that provides for reuse/recycling of stormwater, wastewater, or treatment products (e.g., biosolids/biogas for energy generation, treated effluent or stormwater reuse etc.).

Three (3) points will be awarded in Section V.C. to a project whose owner has a system-wide Asset Management and/or Environmental Management System, as confirmed by documentation submitted by the applicant.

Three (3) points will be awarded in Section V.D. to a project whose owner has a full-cost pricing sewer user charge or a dedicated fee system for non-sewerage projects, as confirmed by documentation submitted by the applicant.

Three (3) points will be awarded in Section V.E. to a project that will be financed by multiple partners, in addition to MDE and the applicant (e.g., Department of Transportation, Housing and Urban Development Community Development Block Grant, U.S. Department of Agriculture Rural Development, U.S EPA Special Appropriation Project Grant etc.)

Three (3) points will be awarded in Section V.F. to a project located in a designated Maryland Environmental Benefits District. (Contact MDE at 410-537-3812).

Three (3) points will be awarded in Section V.G. to a project that includes sustainable green elements (e.g., Leadership in Energy and Environmental Design (LEED) rating, WaterSense certified products, U.S. EPA Water Quality Scorecard, positive Climate Change impact, etc.) or the project’s green element(s) will achieve 20 percent or more energy/water reduction.

Approved by U.S. EPA on November 24, 2010  
Revision 1 approved by U.S. EPA on November 14, 2012  
Revision 2 approved by U.S. EPA on January 22, 2015

**Public Participation:**

This document was the subject of a 30-day public comment period, which included a public hearing on November 19, 2014 at 10:00 AM at the Maryland Department of Environment (Aqua Conference Room, 1st Floor Lobby), 1800 Washington Boulevard, Baltimore, Maryland, 21230.