WPCLF Eligibility Principles and Business Case Development

Eligibility Principles

1. The GPR requirement as outlined in the federal program does not create new funding authority for Ohio EPA beyond that described in Title VI of the federal Clean Water Act (CWA).

2. Entire projects, or the appropriate discrete components of projects, may be eligible for GPR. GPR projects do not have to be part of a larger capital improvement project to be eligible for funding.

3. GPR projects and activities must be eligible for WPCLF funding as outlined in the 2018 program management plan. The WPCLF projects that include GPR components must also be eligible for WPCLF funding.

4. To receive a GPR discount, the GPR projects and activities must meet the programmatic requirements as outlined in the 2018 program management plan.

5. GPR projects and activities must meet the definition of one or more of the four GPR categories (green infrastructure, energy efficiency, water efficiency, or other environmentally innovative activities). All projects or project components counted toward the GPR requirement must clearly advance one or more of the four GPR categories.
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6. GPR discount is available for WPCLF Construction Loans only. Eligible costs are limited to capital costs. WPCLF program will not offer funding for operation and maintenance costs of the GPR project, including trainings.

Business Case Development

A business case is a due diligence document. For those projects, or portions of projects, that are not included in the categorical projects lists provided with this form, a business case will be required to demonstrate that the recipient has thoroughly researched anticipated "green" benefits of a project. An Ohio EPA-approved business case must be included in Ohio EPA's project files and contain clear documentation that the project achieves identifiable and substantial benefits.

1. Length of a business case

- Business cases should be adequate but not exhaustive; there is no specific format or approach required.
- Limit the information contained in the business case to only the pertinent "green" information needed to justify the project, which may include a detailed analysis and/or calculations.
- A business case can simply summarize results from, and then cite, existing documentation such as engineering reports; water or energy audits; results of system tests; etc.

2. Content of a business case

- Business cases must address the decision criteria for the category of project.
- Quantifiable water and/or energy savings or water and energy efficiency projects should be included.
- The cost and financial benefit of the project should be included, along with the payback time period, where applicable.

3. Items which strengthen business case, but are not required

- Showing that the project was designed to enable equipment to operate most efficiently.
- Demonstrating that equipment will meet or exceed standards set by professional associations.
- Including operator training or committing to utilizing existing tools such as Energy Star's Portfolio Manager or Check Up Program for Small Systems (CUPSS) for energy efficiency projects.

Green Infrastructure (G)

I. Definition

Green storm water infrastructure includes a wide array of practices at multiple scales that manage wet weather, and which maintain and restore natural hydrology by infiltrating; evapotranspiring and harvesting; and using storm water. On a regional scale, green infrastructure is preservation and restoration of natural landscape features, such as forests, floodplains and wetlands, coupled with policies such as infill and redevelopment that reduce overall imperviousness in a watershed. On the local scale, green infrastructure consists of site- and neighborhood-specific practices, such as bioretention, trees, green roofs, permeable pavements and cisterns.

II. Categorical Projects

The following types of projects, performed at a WWTP facility or a part of a water infrastructure project, can be counted toward the GPR if they are part of an eligible WPCLF project:

- Pervious or porous pavement (total capital cost of permeable pavement is eligible)
- Bioretention cells
- Street trees, native vegetation, or urban reforestation programs
- Green roofs/ green walls
- Constructed wetlands (mimic natural hydrology)
- Storm water harvesting/cisterns
- Downspouts disconnection to remove storm water from sanitary and combined sewers
- Riparian buffers or bioengineered stream banks

III. Projects That Do Not Meet the Definition of Green Infrastructure:

- Storm water controls that have impervious or semi-impervious liners and provide no compensatory evapotranspirative or harvesting function for storm water retention.
- Storm water ponds that serve an extended detention function and/or extended filtration. This includes dirt lined detention basins.
- In-line and end-of-pipe treatment systems that only filter or detain storm water.
- Underground storm water control and treatment devices such as swirl concentrators, hydrodynamic separators, baffle systems for grit, trash removal/floatables, oil and grease, inflatable booms and dams for in-line underground storage and diversion of flows.
- Storm water conveyance systems that are not soil/vegetation based (swales) such as pipes and concrete channels. Green infrastructure projects that include pipes to collect storm water may be justified as innovative environmental projects. See the environmentally innovative projects section of this packet.
- Hardening, channelizing or straightening streams and/or stream banks.
- Street sweepers, sewer cleaners, and vactor trucks unless they support green infrastructure projects

IV. Decision Criteria for Business Case

- Green infrastructure projects are designed to mimic the natural hydrologic condition of the site or watershed.
- Projects capture, treat, infiltrate or evapotranspire storm water on the parcels where it falls and does not include interbasin transfers of water.
- GPR project is in lieu of or to supplement municipal hard/gray infrastructure.
- Projects considering both landscape and site scale will be most successful at protecting water quality.
- Design criteria are available at: www.epa.gov/sites/production/files/2015-04/documents/green_project_reserve_eligibility_guidance.pdf

V. Submitting Green Infrastructure (G) Form Pages

If your project includes any (G) elements, please highlight this information in the project description on the Nomination Form.

Energy Efficiency (E)

I. Definition

Energy efficiency is the use of improved technologies and practices to reduce the energy consumption of water projects, use energy in a more efficient way and/or produce/utilize renewable energy.

II. Categorical Projects

- Renewable energy projects that are part of a larger public health project, such as wind, solar, biogas, combined heat and power system (CHP) that provides power to a WWTP, geothermal and micro-hydroelectric which provide power to a utility (www.epa.gov/cleanenergy). Micro-hydroelectric projects involve capturing the energy from pipe flow.
  - WWTP owned renewable energy projects can be located on-site or off-site.
  - Includes the portion of a publicly owned renewable energy project that serves the utility's energy needs.
  - Must feed into the grid that the utility draws from and/or there is a direct connection.
- Projects that achieve a 20% reduction in energy consumption are categorically eligible for GPR. Retrofit projects should compare energy used by the existing system or unit process to the proposed project. The energy used by the existing system should be based on name plate data when the system was first installed, recognizing that the old system is currently operating at a lower overall efficiency than at the time of installation. New WWTP projects or capacity expansion projects should be designed to maximize energy efficiency and should select high efficiency premium motors and equipment where cost effective. Estimation of the energy efficiency is necessary for the project to be counted toward GPR. If a project achieves less than a 20% reduction in energy efficiency, then it may be justified using a business case.
- Utility energy management planning, including energy assessments, energy audits, optimization studies and sub-metering of individual processes to determine high energy use areas, which are reasonably expected to result in energy efficiency capital projects or in a reduction in demand to alleviate the need for additional capital investment.
- For standard energy management practices, see Ensuring a Sustainable Future: An Energy Management Guidebook for Wastewater and Water Utilities, located at: www3.epa.gov/npdes/pubs/pretreatment_ensuring_sustainable_future.pdf
- Energy Efficiency Step-By-Step Guide:
- www.epa.gov/sustainable-water-infrastructure
- Collection system Infiltration/Inflow (I/I) detection equipment

III. Projects That Do Not Meet the Definition of Energy Efficiency

- Renewable energy generation that is *privately* owned or the portion of a publicly owned renewable energy facility that does not provide power to a POTW, either through a connection to the grid that the utility draws from and/or a direct connection to the POTW.
- Simply replacing a pump, or other piece of equipment, because it is at the end of its useful life, with something of average efficiency. (Note: replacing it with higher efficiency equipment requires a business case.)
- Facultative lagoons, even if integral to an innovative treatment process.
- Hydroelectric facilities, except micro-hydroelectric projects. Micro-hydroelectric projects involve capturing the energy from pipe flow.

IV. Decision Criteria for Business Cases

- Project must be cost effective. An evaluation must identify energy savings and payback on capital and operation and maintenance costs that does not exceed the useful life of the asset: www.epa.gov/sustainable-water-infrastructure/water-and-energy-efficiency
- The business case must describe how the project maximizes energy saving opportunities for the WWTP or unit process
- Using existing tools such as Energy Star's Portfolio Manager: www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager or Check Up Program for Small Systems (CUPSS) (www.epa.gov/dwcapacity/information-check-program-small-systems-cupss-asset-management-tool) to document current energy usage and track anticipated savings
- Projects should include approaches to integrate energy efficient practices into daily management and long-term planning.
- Operator training in conjunction with any energy savings project is strongly encouraged in order to maximize the energy savings potential.

V. Example Projects Requiring a Business Case

- WWTP projects or unit process projects that achieve less than a 20% energy efficiency improvement
- Projects implementing recommendations from an energy audit that are not otherwise designated as categorical.
- Projects that cost effectively eliminate pumps or pumping stations. Infiltration/Inflow (I/I) correction projects that save energy from pumping and reduced treatment costs and are cost effective.
- Projects that count toward GPR cannot build new structural capacity. These projects may, however, recover existing capacity by reducing flow from I/I.
- I/I correction projects where excessive groundwater infiltration is contaminating the influent requiring otherwise unnecessary treatment processes (i.e. arsenic laden groundwater) and I/I correction is cost effective.
- Replacing pre-Energy Policy Act of 1992 motors with National Electric Manufacturers Association (NEMA) premium energy efficiency motors. NEMA is a standard setting association for the electrical manufacturing industry (www.nema.org/Standards/pages/default.aspx).
- Upgrade of POTW lighting to energy efficient sources such as metal halide pulse start technologies, compact fluorescent, light emitting diode (LED).
- SCADA systems can be justified based upon substantial energy savings.
- Variable Frequency Drive can be justified based upon substantial energy savings

VI. Submitting Energy Efficiency (E) Form Pages

If your project includes any (E) elements, please highlight this information in the project description on the Nomination Form.

Water Efficiency (W)

I. Definition

U.S. EPA's WaterSense program defines water efficiency as the use of improved technologies and practices to deliver equal or better services with less water. Water efficiency encompasses conservation and reuse efforts, as well as water loss reduction and prevention, to protect water resources for the future.

II. Categorical Projects

- Installing or retrofitting water efficient devices such as plumbing fixtures and appliances.
  - For example – showerheads, toilets, urinals and other plumbing fixtures and appliances.
  - Implementation of incentive programs to conserve water such as rebates.
- WaterSense labeled products (www.epa.gov/watersense/watersense-products)
- Installing any type of water meter in previously unmetered areas:
  - If rate structures are based on metered use.
  - Can include backflow prevention devices if installed in conjunction with water meter.
- Replacing existing broken/malfunctioning water meters with automatic meter reading systems (AMR), for example:
  - AUTOMATIC meter reading systems (AMR).
  - Advanced metering infrastructure (AMI)
  - Smart meters.
  - Meters with built in leak detection
  - Can include backflow prevention devices if installed in conjunction with water meter replacement.
- Retrofitting/adding AMR capabilities or leak equipment to existing meters (not replacing the meter itself).
- Conducting water utility audits and water conservation plans which are reasonably expected to result in a capital project or in a reduction in demand to alleviate the need for additional capital investment.
- Recycling and water reuse projects that replace potable sources with non-potable sources.
  - Gray water, condensate and wastewater effluent reuse systems (where local codes allow the practice).
  - Extra treatment costs and distribution pipes associated with water reuse.
- Retrofit or replacement of existing landscape irrigation systems with more efficient landscape irrigation systems, including moisture and rain sensing equipment.
- Retrofit or replacement of existing agricultural irrigation systems with more efficient agricultural irrigation systems.

III. Projects That Do Not Meet the Definition of Water Efficiency

- Agricultural flood irrigation.

- Lining of canals to reduce water loss.
- Replacing drinking water distribution lines. This activity extends beyond WPCLF eligibility and is more appropriately funded by the WSRLA funding program.
- Leak detection equipment for drinking water distribution systems, unless used for reuse distribution pipes.

IV. **Decision Criteria for Business Cases**

- Water efficiency can be accomplished through water saving elements or reducing water consumption. This will reduce the amount of water consumption and amount of water removed from rivers, lakes steams, ground water or other sources.
- Water efficiency projects should deliver equal or better services with less net water use as compared to traditional or standard technologies and practices.
- Efficient water use often has the added benefit of reducing the amount of energy required by a WWTP system, since less water would need to be collected and treated; therefore, there are also energy and financial savings.
- Proper water infrastructure management should address where water losses could be occurring in the system and fix or avert them. This could be achieved, for example, by making operational changes or replacing aging infrastructure.

V. **Example Projects Requiring a Business Case**

- Water meter replacement with traditional water meters (see AWWA M6 *Water Meters – Selection, Installation, Testing and Maintenance*).
- Projects that result from a water audit or water conservation plan.
- Storage tank replacement/rehabilitation to reduce loss of reclaimed water.
- New water efficient landscape irrigation system (where there currently is not one).
- New water efficient agricultural irrigation system (where there currently is not one).

VI. **Submitting Water Efficiency (W) Form Pages**

- If your project includes any (W) elements, please highlight this information in the project description on the Nomination Form.

Environmentally Innovative (O)

I. **Definition**

Environmentally innovative projects include those that demonstrate new and/or innovative approaches to delivering services or managing water resources in a more sustainable way.

II. Categorical Projects

- Construction of U.S. Building Council LEED-certified buildings, or renovation of an existing building on WWTP facilities, which is part of an eligible WPCLF project.
- Any level of certification (Platinum, Gold, Silver, Certified).
- All building costs are eligible, not just storm water, water efficiency and energy efficiency related costs. Costs are not limited to the incremental additional costs associated with LEED-certified buildings. www.usgbc.org/DisplayPage.aspx?CategoryID=19.
- Decentralized wastewater treatment solutions to existing deficient or failing onsite wastewater systems.

  Note 1: Decentralized wastewater systems include individual onsite and/or cluster wastewater systems used to collect, treat and disperse relatively small volumes of wastewater. An individual onsite wastewater treatment system is a system relying on natural processes and/or mechanical components, that are used to collect, treat and disperse or reclaim wastewater from a single dwelling or building. A cluster system is a wastewater collection and treatment system under some form of common ownership that collects wastewater from two or more dwellings or buildings and conveys it to a treatment and dispersal system located on a suitable site near the dwellings or buildings. Decentralized projects may include a combination of these systems. U.S. EPA recommends that decentralized systems be managed under a central management entity with enforceable program requirements, as stated in the *EPA Voluntary Management Guidelines:* *http://nepis.epa.gov/Adobe/PDF/20009NAM.PDF*

  Note 2: Treatment and Collection Options: A variety of treatment and collection options are available when implementing decentralized wastewater systems. They typically include a septic tank, although many configurations include additional treatment components following or in place of the septic tank, which provide for advanced treatment solutions. Most disperse treated effluent to the soil where further treatment occurs, utilizing either conventional soil absorption fields or alternative soil dispersal methods which provide advanced treatment. Those that discharge to streams, lakes, tributaries, and other water bodies require federal or state discharge permits (see below). Some systems promote water reuse/recycling, evaporation or wastewater uptake by plants. Some decentralized systems, particularly cluster or community systems, often utilize alternative methods of collection with small diameter pipes which can flow via gravity, pump, or siphon, including pressure sewers, vacuum sewers and small diameter gravity sewers. Alternative collection systems generally utilize piping that is less than 8 inches in diameter, or the minimum diameter allowed by the state if greater than 8 inches, with shallow burial and do not require manholes or lift stations. Septic tanks are typically installed at each building served or another location upstream of the final treatment and dispersal site. Collection systems can transport raw sewage or septic tank effluent. Another popular dispersal option used today is subsurface drip infiltration. Package plants that discharge to the soil are generally considered decentralized, depending on the situation in which they are used. While not entirely inclusive, information on

treatment and collection processes are described, in detail, in the "*Onsite Wastewater Treatment Technology Fact Sheets*" section of the EPA Onsite Manual:
www.norweco.com/pdf/EPA/625R00008tfs4.pdf
and on EPA‟s septic system website under Technology Fact Sheets.
www.epa.gov/septic

Note 3: For the purposes of the WPCLF funding program, decentralized systems as described above are section 319 projects and Davis-Bacon does not apply.

III. **Projects That Do Not Meet the Definition of Environmentally Innovative**

- Air scrubbers to prevent nonpoint source deposition.
- Facultative lagoons, even if integral to an innovative treatment processes.
- Surface discharging decentralized wastewater systems where there are cost effective soil-based alternatives
- Higher sea walls to protect WWTP facilities from sea/lake level rise.
- Reflective roofs at water infrastructure facilities to combat heat island effect.

IV. **Decision Criteria for Business Cases**

- WPCLF funding program has the flexibility in determining what projects qualify as innovative based on unique geographical and climatological conditions.
- Technology or approach whose performance is expected to address water quality but the actual performance has not been demonstrated in the state; or
- Technology or approach that is not widely used in Ohio, but does perform as well or better than conventional technology/approaches at lower cost; or
- Conventional technology or approaches that are used in a new application in the state.

V. **Example Projects Requiring a Business Case**

- Constructed wetlands projects used for municipal wastewater treatment, polishing, and/or effluent disposal.
- Natural wetlands, as well as the restoration/enhancement of degraded wetlands, may not be used for wastewater treatment purposes and must comply with all regulatory/permitting requirements.
- Projects may not (further) degrade natural wetlands.
- Projects or components of projects that result from total/integrated water resource management planning consistent with the decision criteria for environmentally innovative projects and that are eligible for WPCLF funding program.
- Projects that facilitate adaptation of WWTP to climate change identified by a carbon footprint assessment or climate adaptation study.
- WWTP upgrades or retrofits that remove phosphorus for beneficial use, such as biofuel production with algae.

- Application of innovative treatment technologies or systems that improve environmental conditions and are consistent with the Decision Criteria for environmentally innovative projects such as:
- Projects that significantly reduce or eliminate the use of chemicals in wastewater treatment;
- Treatment technologies or approaches that significantly reduce the volume of residuals, minimize the generation of residuals, or lower the amount of chemicals in the residuals. (National Biosolids Partnership, 2010; *Advances in Solids Reduction Processes at Wastewater Treatment Facilities Webinar* *www.wef.org/biosolids/*). This includes composting, class A and other sustainable biosolids management approaches.

- Educational activities and demonstration projects for water or energy efficiency.
- Projects that achieve the goals/objectives of utility asset management plans (www.epa.gov/sustainable-water-infrastructure/asset-management-water-and-wastewater-utilities).
- Sub-surface land application of effluent and other means for ground water recharge, such as spray irrigation and overland flow.
  - Spray irrigation and overland flow of effluent is not eligible for GPR where there is no other cost-effective alternative.
- Educational activities and demonstration projects for water or energy efficiency.
- Projects that achieve the goals/objectives of utility asset management plans (www.epa.gov/sustainable-water-infrastructure/asset-management-water-and-wastewater-utilities).

If your project includes any (O) elements, please highlight this information in the project description on the Nomination Form.