Print Form

Ohio Drinking Water Assistance Fund
Drinking Water State Revolving Fund (DWSRF)
Green Project Reserve Information Form

Ohio Environmental Protection Agency
Division of Drinking and Ground Waters

GREEN PROJECT RESERVE FORM

U.S. EPA requires Ohio EPA to use at least 20 percent of its capitalization grant funds for projects to address green infrastructure, water or energy efficiency improvements and other environmentally innovative activities. These four categories of projects comprise the Green Project Reserve (GPR).

Projects that meet GPR criteria follow the established DWSRF project process. Projects clearly eligible for GPR are known as categorically eligible projects. A list of categorically eligible projects within each project category is attached to this form. Projects not found to be categorically eligible will need to have business case documentation. For a project to be considered a GPR project, a business case requires a well-documented justification. Ohio EPA reviews all business cases to determine GPR eligibility and posts them on its website by the end of the calendar quarter in which the loan is made.

Listed below are the four categories of projects that comprise the GPR. For each category, there are corresponding pages that must be completed and submitted with this cover page. Attach additional pages as necessary. Please check the **category or categories** that are applicable to your project.

- ☐ **Green Infrastructure (G)** (pages 3-4)
- ☐ **Energy Efficiency (E)** (pages 5-7)
- ☐ **Water Efficiency (W)** (pages 8-10)
- ☐ **Other Environmentally Innovative Activity (O)** (pages 11-13)

PWS Name: _____ PWSID: _____

Project Name: _____ PPL #:_____
(Assigned by Ohio EPA)

Total Est. Project Cost:_____ Total Est. GPR Amount:_____

Completed by:

Name:_____ Title:_____
(Please print)

Signature: _____ Date:_____

For Ohio EPA use only:

Loan Number (if applicable): _____ Eligible GPR Amount $:_____

Eligible GPR Categories: _____ Evaluated by/Date: _____

Loan Award Date (if applicable):_____

Date Business Case Posted on webpage (if applicable): _____

DWSRF Eligibility Principles and Business Case Development

Eligibility Principles

1. All GPR projects and activities must otherwise be eligible for DWSRF funding. The GPR requirement does not create new funding authority beyond that described in Section 1452 of the Safe Drinking Water Act (SWDA), which federally authorizes the DWSRF Program.
2. GPR projects and activities must meet the definition of one of the four GPR categories (see page 1). The individual GPR categories do not create new eligibility for the DWSRF. The projects that count toward GPR must otherwise be eligible for DWSRF funding.
3. GPR projects and activities must further the goals stated in Section 1452 of the SWDA.
4. Projects and activities that utilize the DWSRF set-asides can also be eligible for GPR. Planning and assessment activities, such as conducting water or energy audits are eligible, as well as green-oriented capacity development, source water protection and total/integrated water resources management planning activities.

GPR may be used for planning, design and/or construction activities. Entire projects, or the appropriate discrete components of projects, may be eligible for GPR. Projects do not have to be part of a larger capital project to be eligible. All projects or project components counted toward the GPR requirement must clearly advance one or more of the objectives articulated in the four GPR categories.

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 water 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 loss reduction for 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.

4. Example business cases are available at: www.epa.ohio.gov/ddagw/financialassistance.aspx.

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 utility owned facility or a part of a water infrastructure project, can be counted toward the GPR if they are part of an eligible DWSRF project:

- Pervious or porous pavement
- Bioretention
- Green roofs
- Rainwater harvesting/cisterns
- Gray water use
- Xeriscape
- Landscape conversion programs
- Moisture and rain sensing irrigation equipment

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.

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 is available at:
  http://cfpup.epa.gov/npdes/greeninfrastructure/munichandbook.cfm
  http://cfpup.epa.gov/npdes/greeninfrastructure/technology.cfm

V. Submitting Green Infrastructure (G) Form Pages

- If your project includes any (G) elements, please return pages 1 and 4 to:
- DWAF.mail@epa.state.oh.us or
- Ohio EPA, DDAGW-DWAF, Lazarus Government Center, P.O. Box 1049, Columbus, OH 43216-1049

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Division of Drinking and Ground Waters

Green Infrastructure (G)

PWS Name: _____ PWSID: _____

Project Name: _____ PPL #:_____
(Assigned by Ohio EPA)

Total Est. Project Cost:_____ Total Est. GPR Amount:_____

Project Summary:

Business Case Narrative:

Attach Supporting Documentation:

☐ Engineering Project Planning Documents ☐ Water/Energy Efficiency Determination (Ohio EPA)

☐ Public Water System Records ☐ Other: _____

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, geothermal and micro-hydroelectric which provide power to a utility (www.epa.gov/cleanenergy). Micro-hydroelectric projects involve capturing the energy from pipe flow.
  - Utility-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.
- 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: www.epa.gov/waterinfrastructure/pdfs/guidebook_si_energymanagement.pdf
  - Energy Efficiency Step-By-Step Guide: www.epa.gov/region09/waterinfrastructure/howto.html
- National Electric Manufacturers Association (NEMA) Premium energy efficiency motors (www.nema.org/gov/energy/efficiency/premium/).

  Note: U.S. EPA has concluded that existing literature does not support a 20 percent energy efficiency improvement threshold for drinking water systems; therefore, there is no categorical 20 percent threshold for pumping/treatment systems for the DWSRF. A business case is required.

III. Projects That Do Not Meet the Definition of Energy Efficiency
- 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.)
- Hydroelectric facilities, except micro-hydroelectric projects. Micro-hydroelectric projects involve capturing the energy from pipe flow.

IV. Decision Criteria for Business Cases
- Projects should include products and practices that will decrease environmental impacts, such as reducing greenhouse gas emissions, and provide financial 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.
- 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/cupss/) to document current energy usage and track anticipated savings.

V. Example Projects Requiring a Business Case

- Energy efficient retrofits upgrades, or new pumping systems and treatment processes [including variable frequency drives (VFDs)].
- Pump refurbishment to optimize pump efficiency (such as replacing or trimming impellers if pumps have too much capacity, replacing damaged or worn wearing rings/seals/bearings, etc.).
- Projects that result from an energy efficiency related assessments (such as energy audits, energy assessment studies, etc.), that are not otherwise designated as categorical.
- Projects that cost effectively eliminate pumps or pumping stations.
- Projects that achieve the remaining increments of energy efficiency in a system that is already very efficient.
- Upgrade of lighting to energy efficient sources (such as metal halide pulse start technologies, compact fluorescent, light emitting diode, etc.).
- Automated and remote control systems (SCADA) that achieve substantial energy savings (see American Water Works Association (AWWA) M2 *Instrumentation and Control*).

Water pump system improvements or replacements

A business case is needed to show that the pump(s) selected for the project ranks among the most energy efficient commercially available. Efficiency improvements should be substantial compared to the average efficiency currently available for that type of pump. At minimum, the business case should provide specific information for the pumps and equipment selected including manufacturer, make and model of key components and documentation of the energy efficiency specifications for proposed equipment, which identifies substantial savings over other currently available equipment.

The business case must include adequate documentation such as direct reference to a preliminary engineering report or other planning document, of the reasons for upgrading the pump station, as well as what the estimated energy savings are from doing so.

VI. Submitting Energy Efficiency (E) Form Pages

- If your project includes any (E) elements, please return pages 1 and 7 to:
- DWAF.mail@epa.state.oh.us or
- Ohio EPA, DDAGW-DWAF, Lazarus Government Center, P.O. Box 1049, Columbus, OH 43216-1049

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Energy Efficiency (E)

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Project Name: _____ PPL #:_____
(Assigned by Ohio EPA)

Total Est. Project Cost:_____ Total Est. GPR Amount:_____

Project Summary:

Pump Facilities

Age of existing pumps or pumping facilities	
Existing pump/motor efficiency rating, if known	
New pump/motor efficiency rating	
Estimated annual electrical savings	
Estimated annual cost savings	

Business Case Narrative: (Calculate energy efficiency improvements and costs savings.)

Attach Supporting Documentation

☐ Engineering Project Planning Documents ☐ Water/Energy Efficiency Determination (Ohio EPA)

☐ Public Water System Records ☐ Other: _____

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/index.html)
- 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:
  - Advanced metering infrastructure (AMI).
  - Smart meters.
  - 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, leak detection studies and water use efficiency baseline studies reasonably expected to result in a capital project or in a reduction in demand to alleviate the need for additional capital investment.
  - For standard practices, see AWWA M36 *Water Audits and Loss Control Programs.*
  - Free Water Audit Software, Version 4.1 (2010). (www.awwa.org/Resources/WaterLossControl.cfm?ItemNumber=47846&navItemNumber=48155)
- Developing conservation plans/programs reasonably expected to result in water conserving capital project or in a reduction in demand to alleviate the need for additional capital investment.
  - For standard practices, see AWWA M52 *Water Conservation Programs – A Planning Manual.*
- 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 to more efficient landscape irrigation systems, including moisture and rain sensing controllers.
- Projects that result from a water efficiency related assessments (such as water audits, leak detection studies, conservation plans, etc.) as long as the assessments adhered to the standard industry practices referenced above.
- Distribution system leak detection equipment, portable or permanent.
- Automatic flushing systems (portable or permanent).
- Pressure reducing valves (PRVs).
- Internal plant water reuse (such as backwash water recycling).

III. Projects That Do Not Meet the Definition of Water Efficiency
- Covering open finished water reservoirs; federally mandated, so not considered "above and beyond."

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 drinking water system, since less water would need to be treated and transported; 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*).
- Distribution pipe replacement or rehabilitation to reduce water loss and prevent water main breaks (see AWWA M28 *Rehabilitation of Water Mains*).
- Storage tank replacement/rehabilitation to reduce water loss.
- New water efficient landscape irrigation system.

VI. Submitting Water Efficiency (W) Form Pages

- If your project includes any (W) elements, please return pages 1 and 10 to:
- DWAF.mail@epa.state.oh.us or
- Ohio EPA, DDAGW-DWAF, Lazarus Government Center, P.O. Box 1049, Columbus, OH 43216-1049

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Water Efficiency (W)

PWS Name: _____ PWSID: _____

Project Name: _____ PPL #:_____
(Assigned by Ohio EPA)

Total Est. Project Cost:_____ Total Est. GPR Amount:_____

Project Summary:

Water Main Replacement	
Water main material/length to be replaced	
Est. total system water lost due to breaks and leaks	
Est. water loss from pipe being replaced	
Total annual production	
Number of breaks recorded in past 24 months for the area to be replaced	
Est. annual water savings	
Est. annual costs savings	
Other efficiencies to be gained by the replacement? (reduced head and therefore less energy loss in an upstream pump station, etc.)	

Meter Installation/Replacement	○ Original Installation ○ Replacement
Reason for replacement	
Est. annual water savings	
Est. annual costs savings	

Business Case Narrative (Calculate water saving improvements and costs savings):

Attach Supporting Documentation

☐ Engineering Project Planning Documents ☐ Water/Energy Efficiency Determination (Ohio EPA)

☐ Public Water System Records ☐ Other: _____

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
- Total/integrated water resources management planning, or other planning framework where project life cycle costs (including infrastructure, energy consumption and other operational costs) are minimized, which enables communities to adopt more efficient and cost-effective infrastructure solutions.
  - Funded through set-asides: Small Systems Technical Assistance, State Program Management or Local Assistance and Other State Programs.
  - Plans to improve water quantity and quality associated with water system technical, financial and managerial capacity.
  - Eligible source water protection planning.
    - Periodic, updated or more detailed source water delineation or assessment as part of a more comprehensive source water protection program.
    - Source water monitoring (not compliance monitoring) and modeling as part of a more comprehensive source water protection program. www.epa.gov/safewater/dwsrf/pdfs/source.pdf.
  - Planning activities by a utility to prepare for adaptation to the long-term effects of climate change and/or extreme weather.
    - Office of Water – Climate Change and Water website: www.epa.gov/water/climatechange/
  - Utility Sustainability Plan consistent with U.S EPA's SRF sustainability policy.
  - Greenhouse gas (GHG) inventory or mitigation plan and submission of a GHG inventory to a registry (such as Climate Leaders or Climate Registry), as long as it is being done for a facility which is eligible for DWSRF assistance.
- Source Water Protection Implementation Projects.
  - Voluntary, incentive-based source water protection measures pursuant to Section 1452(k)(l)(A)(ii), where the state primacy agency has determined that the use of such measures will reduce or preclude the need for treatment.
- Construction of U.S. Building Council LEED-certified buildings, or renovation of an existing building, owned by the utility, which is part of an eligible DWSRF 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.

III. Projects That Do Not Meet the Definition of Environmentally Innovative
- Higher sea walls to protect water infrastructure facilities from sea/lake level rise.
- Reflective roofs at water infrastructure facilities to combat heat island effect.

IV. Decision Criteria for Business Cases
- State programs are allowed flexibility in determining what projects qualify as innovative in their state 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 the state, 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
- Projects, or components of projects, that result from total/integrated water resources management planning (including climate change) consistent with the decision criteria for environmentally innovation projects and that are DWSRF eligible, for example:
  - Application of innovative treatment technologies or systems that improve environmental conditions and are consistent with the decision criteria for environmentally innovative projects.
  - Projects that significantly reduce or eliminate the use of chemicals in water 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 (Cornwell, 2009; *Water Treatment Residuals Engineering*; Water Research Foundation).
  - Trenchless or low impact construction technology.
  - Using recycled materials or re-using materials on-site.
- Educational activities and demonstration projects for water or energy efficiency (such as rain gardens).
- Projects that achieve the goals/objectives of utility asset management plans www.epa.gov/safewater/smallsystems/pdfs/guide_smallsystems_assetmanagement_bestpractices.pdf www.epa.gov/owm/assetmanage/index.htm.

VI. Submitting Environmentally Innovative (O) Form Pages
- If your project includes any (O) elements, please return pages 1 and 13 to:
- DWAF.mail@epa.state.oh.us or
- Ohio EPA, DDAGW-DWAF, Lazarus Government Center, P.O. Box 1049, Columbus, OH 43216-1049

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Environmentally Innovative (O)

PWS Name: _____ PWSID: _____

Project Name: _____ PPL #:_____
(Assigned by Ohio EPA)

Total Est. Project Cost:_____ Total Est. GPR Amount:_____

Project Summary:

Business Case Narrative:

Attach Supporting Documentation

☐ Engineering Project Planning Documents ☐ Water/Energy Efficiency Determination (Ohio EPA)

☐ Public Water System Records ☐ Other: _____