DRINKING WATER STATE REVOLVING FUND (DWSRF) LOAN PROGRAM

PRELIMINARY ENGINEERING REPORT REQUIREMENTS

The Preliminary Engineering Report (PER) is a document that provides the information necessary for the State Revolving Fund (SRF) Loan Program to determine the technical, economic, and environmental adequacy of the proposed drinking water infrastructure project in accordance with Indiana Code 4-4-11 and 13-18-21. Approval of a PER by the SRF Loan Program is for administrative purposes only and does not relieve the public water system of its responsibility to properly design, build, and effectively operate and maintain the drinking water system. An electronic version of this document is available at www.srf.in.gov.

PER SUBMITTAL REQUIREMENTS:

1. All correspondence to the SRF Loan Program, including the PER, must be sent with a transmittal letter signed by Authorized Signatory
2. PER and all correspondence must be dated
3. PER must be 3-hole punched and in binder
4. Three copies of PER must be submitted
5. A table of contents, list of graphics, list of tables and list of appendices, if applicable, must be included;
6. Submit PER to:

   DWSRF Program Administrator
   State Revolving Fund Loan Program
   100 N. Senate Avenue, Rm. 1275
   Indianapolis, IN 46204

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CHAPTER 1 - PROJECT LOCATION

1. On a USGS Quadrangle map(s), identify the location of the:
    a. Proposed project areas (water line routes, wells, tanks, etc.) and overall study area
    b. Existing service area
    c. Future 20-year service area

2. Specify the Quadrangle map(s) name, Section(s), Township(s) and Range(s) for each project element.

3. Identify whether the Participant owns or has legal access to the land where the proposed project will be located. Include a statement indicating if the proposed project will be constructed within the city/county/town right-of-way. If it is not, the Participant will need to provide evidence that it has, or will have by a mutually agreeable date, the required property rights prior to closing an SRF loan.

4. Include a North arrow and Bar Scale on all graphics

CHAPTER 2 - CURRENT NEEDS

1. Describe the existing system in terms of age, condition, date of most recent rehabilitation/replacement of facilities.
    a. Distribution system – possible needs
        i. Facilities at end of useful life
        ii. Pressure and flow
        iii. Dead ends
        iv. Operational problems
        v. New lines to serve existing homes; identify the drinking water problem facing these homes
    b. Supply – possible needs
        i. Facilities at end of useful life
        ii. Undersized
        iii. Operational problems
    c. Storage - possible needs
        i. Facilities at end of useful life
        ii. Undersized
        iii. Operational problems
    d. Treatment – possible needs
        i. Facilities at end of useful life
        ii. Undersized
        iii. Operational problems
    e. Document needs with:
        i. Indiana Department of Environmental Management violations
        ii. Connection ban / early warning
        iii. Agreed or administrative order
        iv. New requirements
        v. Letter from County Health Department

2. Identify current population

3. Identify existing consumption for the last 12 months and show calculations:
    a. Pumped vs. sold
    b. Estimated public water use (flushing, fire protection, etc.)
    c. Percent water loss
    d. Domestic, commercial/institutional, industrial
    e. Average design flow

f. Peak design flow, including peaking factor, peak daily demand, and one hour peak demand
g. WTP flow and backwash water (if applicable)

4. Describe current significant water users
    a. Commercial
    b. Industrial
    c. Institutional (schools, jails, hospitals, etc.)

5. Provide layouts / site maps of existing drinking water system

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CHAPTER 3 - FUTURE NEEDS

1. Provide 20-year population projection with explanation for reasonable growth, based upon:
    a. Census data
    b. Building permits
    c. Current development trends – indicate if development is platted
    d. Future significant users

2. Identify 20-year design flows (refer to Table I)
    a. Domestic
    b. Commercial/Institutional
    c. Industrial
    d. Average design flow
    e. Average daily water demand
    f. Peak design flow, including peaking factor, peak daily demand, and one hour peak demand

3. Describe the 20-year needs of system
    a. Distribution system
    b. Supply
    c. Storage
    d. Treatment

Table I: Design Treatment Plant Flows (gallons per day)

Domestic (D)	
Commercial (C)	
Industrial (I)	
Total D,C, I	
Average Design Flow	
Peak D,C, I	
Peaking Factor	
Peak Design Flow	

CHAPTER 4 - EVALUATION of ALTERNATIVES

1. Identify a range of feasible alternatives, including:
    a. No action
    b. Optimum operation of existing facility
    c. Rehabilitation vs. replacement
    d. Expansion / upgrade
    e. Reducing water loss should be evaluated if project proposes new wells, new treatment or new storage facilities

f. Regionalization
g. Treatment alternatives
h. Sludge handling and disposal (if applicable)
i. Discharge option (if applicable)

2. Provide a rationale for selection of recommended alternative:
    a. Monetary
    b. Technical
    c. Reliability
    d. Ability to implement
    e. Environmental impacts

CHAPTER 5 – EVALUATION of ENVIRONMENTAL IMPACTS

1. Follow the "SRF PER Environmental Evaluation Section: Procedures and Language" and the "SRF Environmental Graphics Guidance". The most recent versions are available at www.srf.in.gov and by request.

2. Provide a description of the proposed facility sites and line routes. Regardless, if the proposed project will be located in an easement or existing right-of-way describe those areas, particularly vegetation and disturbance history.

3. Ensure all maps and graphics identify proposed project elements (water lines, structures, access roads, etc.) and have a North arrow and Bar Scale.

4. Compare the potential negative environmental impacts among the alternatives, including that of doing nothing, within each of the following categories:
    a. Disturbed / Undisturbed land
    b. Historic Properties
    c. Wetlands
    d. Surface Water
    e. Groundwater
    f. 100-year Floodplain
    g. Plants and Animals
    h. Farmland
    i. Air Quality
    j. Open Space and Recreational Opportunities
    k. Lake Michigan Coastal Management Zone
    l. National Natural Landmarks

5. List specific mitigation measures which will eliminate or minimize the environmental impacts enumerated above.

6. Include the "Induced Impacts" language if the project proposes increasing capacity of treatment plants or lines.

7. Consider the cumulative impacts of the entire proposed system including all succeeding phases if a proposed project is to be completed in several distinct phases

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CHAPTER 6 - PROPOSED PROJECT

1. Describe the selected plan components and how the current and future needs of the utility will be met

2. Provide raw water analysis (if applicable)
    a. A raw water analysis is needed when new treatment is proposed

3. Address potential discharges (if applicable)
    a. Volume and strength
    b. Permits needed
    c. Wastewater treatment plant capacity certification letter

4. Provide hydraulic model (if applicable)
    a. A model is helpful when proposed project involves distribution system pressure and flow needs.

5. Complete a Preliminary Design Summary (see Attachment E, Preliminary Design Summary)
    a. Identify existing and proposed components

6. Provide layout or map of the proposed project, including North arrow and Bar Scale

7. Provide component costs (quantity and unit cost), non-construction costs, and contingencies (refer to Tables II and III).

Table II: Construction Costs (dollars)

Item	Quantity	Unit Cost	Total Cost
Proposed Item #1			
		Contingencies	
		Construction Costs Sub-total	

Table III: Total Project Costs (dollars)

Administrative and Legal	
Land & Rights-of-way Acquisition	
Relocation	
Engineering Fees	
Design	
Construction	
Other	
Project Inspection	
Costs Related to Start-up	
Non Construction Costs Sub-total	
Construction Costs Sub-total (Table II)	
Total Project Cost	

8. Include a Project Schedule/Milestone dates for:
    a. Plans & Specifications submittal to Indiana Department of Environmental Management
    b. Land and easement acquisition
    c. Bid advertisement
    d. Loan closing
    e. Contract award
    f. Initiation of construction
    g. Substantial completion of construction
    h. Initiation of operation

9. Discuss phasing (if applicable).

10. Discuss Green Project Reserve (GPR) Sustainability Incentive components in PER or as an appendix to PER (if applicable).
    a. Complete the SRF Loan Program Green Project Reserve (GPR) Sustainability Incentive Drinking Water Checklist (Attachment F)
    b. Identify on the Checklist, the proposed/selected components
    c. In an attachment to the Checklist:
        i. Describe how the project will incorporate/meet the intent of each proposed component
        ii. Provide the estimated additional cost associated with incorporating each selected component

NOTE: For projects funded by multiple funding sources, SRF must fund the PER-approved GPR components to the extent possible. All GPR-eligible disbursement requests must be submitted to SRF until SRF's portion of the PER-approved GPR components has been fully paid. SRF's payment for GPR-eligible components is a condition of receiving the GPR Sustainability Incentive interest rate discount.

CHAPTER 7 - LEGAL, FINANCIAL, and MANAGERIAL CAPABILITIES

1. Submit signed Resolutions: (refer to Attachments A and B):
    a. Signatory Authorization
    b. PER Acceptance

2. Include the completed SRF Financial Information Form (Refer to Attachment C)

3. Submit prior to SRF Loan Closing:
    a. Proof that the Participant has secured all needed land and easements
    b. Copies of signed agreements with significant users (if applicable)
    c. Copies of signed water agreement if the Participant currently buys or sells water or proposes to buy or sell water from another public water system

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CHAPTER 8 - PUBLIC PARTICIPATION

1. Conduct a Public Hearing to discuss the proposed project (Refer to Attachment D)

2. Submit the Publisher's Affidavit and a copy of the Public Hearing notice from the newspaper
    a. The notice should:
        i. Be placed in the newspaper once 10 days prior to the Public Hearing
        ii. State what will be discussed at the Public Hearing
        iii. State when and where the Public Hearing will be held
        iv. State the PER is available for public review 10 days prior to Public Hearing, and where and when the PER may be reviewed

v. State that written comments will be accepted at the Public Hearing and for five days after the Public Hearing, including an address of where to send written comments

3. Submit a sign-in sheet from the Public Hearing

4. Submit a copy of the minutes from the Public Hearing

5. Submit all written comments submitted by the public, including comments submitted during the public hearing and during the 5-day period following the hearing. Also include any response to comments provided by or on behalf of the Participant. Please state if no written comments were received.

6. Provide prepared, self-sticking mailing labels which include:
    a. Attendees from the Public Hearing sign-in sheet
    b. Interested parties (those individuals, industries, groups, organizations who demonstrated an interest in receiving copies of the Environmental Assessment/Finding of No Significant Impact)
    c. Local media outlets (newspaper, radio, or T.V. station)

Attachment A: DWSRF Loan Program
Signatory Authorization Resolution

Whereas, the _____ [insert name of Utility / Political Subdivision] of _____ [insert location], Indiana, (the "Participant") has plans for a drinking water infrastructure improvement project to meet State and Federal regulations, such as the Safe Drinking Water Act, and the Participant intends to proceed with the construction of such project:

Now, therefore, be it resolved by the Council / Board of Trustees, the governing body of the Participant, that:

1. _____ [insert name] be authorized to make application for a State Revolving Fund Loan ("SRF Loan") and provide the SRF Loan Program such information, data and documents pertaining to the loan process as may be required, and otherwise act as the authorized representative of the Participant; and

2. The Participant agrees to comply with State and Federal requirements as they pertain to the SRF Loan Program; and

3. Two certified copies of this Resolution be prepared and submitted as part of the Participant's Preliminary Engineering Report.

Adopted and Passed by the Council / Board of Trustees of the Utility / Political Subdivision of _____ [insert location], Indiana, this _____ [insert day] day of _____ [insert month], of 20____ [insert year].

Council / Board of Trustees

_____
[insert name], President

Attest: _____
[insert name], Secretary / Clerk Treasurer

Approved and signed by the Mayor of _____ [insert location], Indiana this _____ [insert day] day of _____ [insert month], of 20____ [insert year].

_____
[insert name], Mayor

Attest: _____
[insert name], Secretary / Clerk Treasurer

Attachment B: DWSRF Loan Program
PER Acceptance Resolution

Whereas, the _____ [insert Utility / Political Subdivision] of _____ [insert location], Indiana, has caused a Preliminary Engineering Report ("PER"), dated _____, to be prepared by the consulting firm of_____; and

Whereas, said PER has been presented to the public at a public hearing held on _____ [insert date], at _____ [insert location], for public comment; and

Whereas, the _____ [insert Utility / Political Subdivision] Council / Board of Trustees finds that there was not sufficient evidence presented in objection to the recommended project in the PER.

Now, therefore be it resolved that:

1. The PER dated _____ [insert date] _____be approved and adopted by the _____ [insert Utility / Political Subdivision] Council / Board of Trustees; and

2. Said PER be submitted to the State Revolving Fund Loan Program for review and approval.

Adopted and Passed by the Council / Board of Trustees of the Utility / Political Subdivision of _____ [insert location], Indiana, this _____ [insert day] day of _____ [insert month], of 20____ [insert year].

Council / Board of Trustees

_____
[insert name], President

Attest: _____
[insert name], Secretary / Clerk Treasurer

Approved and signed by the Mayor of _____ [insert location], Indiana this _____ [insert day] day of _____ [insert month], of 20____ [insert year].

_____
[insert name], Mayor

Attest: _____
[insert name], Secretary / Clerk Treasurer

Attachment C: DWSRF Loan Program
Financial Information Form

Proposed Project Costs:

Supply / wells cost	$_____
Transmission / distribution System cost	$_____
Treatment cost	$_____
Storage cost	$_____
Subtotal construction cost	$_____
Contingencies (should not exceed 10% of construction cost)	$_____
Non-construction costs e.g., engineering, legal and financial services related to the project, land costs, start-up costs, and construction inspection	$_____
Total Proposed Project Cost	$_____

The following are not SRF Loan Program eligible:

Previously funded SRF components that have not met useful life	$_____
Materials and work done on private property	$_____
Grant applications and income surveys done for other agencies	$_____
Expenses incurred as a part of forming a utility, Regional Sewer / Water District, or Conservancy District	$_____
Total Ineligible Costs	$_____

List other grant / loan funding sources and amounts

Other grants	$_____
Other loans	$_____
Hook-on fees	$_____
Cash on hand	$_____
Total Other Funding Sources	$_____
Requested SRF Loan	$_____
Estimated post-project user rate for 4,000 gallons	$_____
Anticipated SRF interest rate	_____

Financial Advisor:

Firm Contact_____

Name_____

Bond Counsel:

Firm Contact_____

Name_____

Attachment D: DWSRF Loan Program
Public Notice

Notice of Public Hearing
[Name of water system/community]
Preliminary Engineering Report (PER) to obtain assistance from the Drinking Water State Revolving Fund (DWSRF) Loan Program

The [name of water system/community] will hold a public hearing at [time] on [date] at [place], [address]. The [name of water system/community]'s engineering consultant will present the recommended upgrades to [name of water system/community]'s drinking water infrastructure, which will include [general description], as described in the PER. The project will be funded through a DWSRF loan.

At this hearing, there will be the opportunity for questions and comments from the public. Participation is welcomed and encouraged. If special assistance is required at the meeting, please contact [phone#, name]. Copies of the PER are available for public viewing starting [date of notice] through [date 5 days following hearing] at [location]. Written comments regarding this project should be sent to [contact name, mailing address] prior to [date, 5 days following hearing].

Attachment E: DWSRF Loan Program
Preliminary Design Summary

INSTRUCTIONS: List existing and proposed design information.

1. General information
    1.1. Project name:
2. Design information
    2.1. Current population:
    2.2. Design year and population:
    2.3. Average Design Flow:
        2.3.1. Domestic:
        2.3.2. Commercial:
        2.3.3. Industrial:
    2.4. Peak design flow:
3. Water supply
    3.1. Surface water
        3.1.1. Location:
        3.1.2. Type:
        3.1.3. Volume:
    3.2. Ground water:
        3.2.1. Number of wells:
        3.2.2. Location:
        3.2.3. Type and diameter
        3.2.4. Capacity:
        3.2.5. Well house:
        3.2.6. Aquifer type:
    3.3. Emergency power:
4. Flow meters
    4.1. Type:
    4.2. Location:
5. Treatment
    5.1. Provide raw water analysis
    5.2. Pumps
        5.2.1. Number:
        5.2.2. Capacity:
    5.3. Clarification
        5.3.1. Rapid mixing

5.3.1.1. Number:

5.3.1.2. Size:

5.3.1.3. Detention time:

5.3.2. Flocculation

5.3.2.1. Number:

5.3.2.2. Size:

5.3.2.3. Detention time:

5.3.2.4. Flocculation speed:

5.3.2.5. Velocity:

5.3.3. Sedimentation

5.3.3.1. Number:

5.3.3.2. Size:

5.3.3.3. Detention:

5.3.3.4. Baffle location:

5.3.3.5. Overflow rate:

5.3.3.6. Velocity:

5.3.3.7. Sludge removal:

5.4. Filtration

5.4.1. Type:

5.4.2. Number and size of units:

5.4.3. Peak flow rate:

5.4.4. Average flow rate:

5.4.5. Backwash rate:

5.4.6. Backwash pumps (number and capacity):

5.4.7. Backwash tank capacity:

5.4.8. Wastewater tank capacity:

5.4.9. Method of cleaning:

5.4.10. Disposal of backwash solids:

5.5. Aeration

5.5.1. Type:

5.5.2. Loading rate:

5.6. Iron and Manganese Control

5.6.1. Type:

5.7. Softening

5.7.1. Type:

5.7.2. Chemical feed location:

5.7.3. Sludge removal and disposal method:

5.7.4. Number and size of brine tank:

5.7.5. Brine waste disposal:

6. Disinfection

6.1. Type of disinfectant used:

6.2. Type of chemical feed system:

6.3. Capacity:

6.4. Disinfectant dosage:

6.5. Contact time:

6.6. Point of application:

6.7. Automatic switchover:

6.8. Ventilation provided:

6.9. Safety equipment:

6.10. Testing equipment:

6.11. Housing:

7. Controls

7.1. Type:

8. Water storage

8.1. Type:

8.2. Number:

8.3. Capacity:

8.4. High and low water level:

8.5. Elevation at bottom of tank:

8.6. Available pressure:

8.7. Booster pump:

9. Distribution system

9.1. Type of pipe material:

9.2. Diameter and lengths:

9.3. Number of hydrants:

9.4. Number and size of valves:

9.5. Separation distance from sanitary sewers:

9.6. Separation distance from other water mains:

9.7. Fire protection:

10. Miscellaneous

10.1. Laboratory equipment:

10.2. Safety equipment:

10.3. Fence location and type:

10.4. Emergency power:

10.5. Sampling facilities:

10.6. Utility building:

Attachment F: DWSRF Loan Program

STATE REVOLVING FUND LOAN PROGRAM

GREEN PROJECT RESERVE SUSTAINABILITY INCENTIVE

DRINKING WATER CHECKLIST
REVISED OCTOBER 2015

SRF Loan Program Participant Information

Participant Name: _____

Project Name/Location: _____

Date: _____Revision No._____

Instructions

This checklist shall be completed by the SRF Loan Program participant and be updated as the project changes from concept to design through construction completion. A checklist should be submitted with:

1. The SRF Loan Program Application,
2. The Preliminary Engineering Report, along with GPR project description and cost estimates,
3. The Post-Bid Documents, including GPR construction costs, and
4. Construction completion.

Please see the *U.S. EPA Green Project Reserve Guidance,* available at www.srf.in.gov, for a detailed review of eligibility; definition of the GPR categories; examples of ineligible projects; categorical projects and those that require business cases. **All GPR projects, components, and activities must be eligible for SRF funding.**

Check all that apply to the project:

I. GREEN INFRASTRUCTURE

1. Categorical Projects
   - ☐ The following types of projects, done at a utility-owned facility or as part of a water infrastructure project, can be counted toward the GPR if they are a part of an eligible DWSRF project:
     - ☐ Pervious or porous pavement,
     - ☐ Bioretention,
     - ☐ Green roofs,
     - ☐ Rainwater harvesting/cisterns,
     - ☐ Gray water use,
     - ☐ Xeriscape,
     - ☐ Landscape conversion programs, and
     - ☐ Moisture and rain sensing irrigation equipment.

2. Decision Criteria For Business Cases
   - ☐ Green infrastructure projects are designed to mimic the natural hydrologic conditions of the site or watershed.
   - ☐ Projects capture, treat, infiltrate, or evapotranspire stormwater on the parcels where it falls and does not include inter basin transfers of water.

- ☐ GPR project is in lieu of or to supplement municipal hard/gray infrastructure.
- ☐ Other - Please provide an attachment explaining the scope of the project and brief explanation of the approach for the business case.

II. WATER EFFICIENCY

1. Categorical Projects
    - ☐ Installing or retrofitting water efficient devices such as plumbing fixtures and appliances.
        - ☐ For example – showerheads, toilets, urinals, and other plumbing devices.
        - ☐ Water sense labeled products.
        - ☐ Implementation of incentive programs to conserve water such as rebates.
    - ☐ 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
        - ☐ 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, leak detection studies, and water use efficiency baseline studies, which are reasonably expected to result in a capital project or in a reduction in demand to alleviate the need for additional capital investment.
    - ☐ Developing conservation plans/programs reasonably expected to result in a water-conserving 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 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).

2. 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 taken out of rivers, lakes, streams, groundwater, or from 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.
- ☐ Other – Please provide an attachment explaining the scope of the project and brief explanation of the approach for the business case.

3. Example Projects Requiring a Business Case
   - ☐ Water meter replacement with traditional water meters.
   - ☐ Distribution pipe replacement or rehabilitation to reduce water loss and prevent water main breaks.
   - ☐ Storage tank replacement/rehabilitation to reduce water loss.
   - ☐ New water efficient landscape irrigation system.

III. ENERGY EFFICIENCY

1. Categorical Projects
   - ☐ Renewable energy projects, which are part of a larger public health project, such as wind, solar, geothermal, and micro-hydroelectric that provide power to a utility. Micro-hydroelectric projects involve capturing the energy from pipe flow.
     i. Utility-owned renewable energy projects can be located on-site or off-site
     ii. Includes the portion of a publicly owned renewable energy project that serves the utility's energy needs
     iii. 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.
   - ☐ National Electric Manufacturers Association (NEMA) Premium energy efficiency motors (http://www.nema.org/gov/energy/efficiency/premium/).

2. Decision Criteria For Business Cases
   - ☐ Projects should include products and practices which 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 (http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager) or Check Up Program for Small Systems (CUPSS) (http://www.epa.gov/cupss/) to document current energy usage and track anticipated savings.
   - ☐ Other – Please provide an attachment explaining the scope of the project and brief explanation of the approach for the business case.

3. 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 AWWA M2 Instrumentation and Control).

IV. ENVIRONMENTALLY INNOVATIVE

1. 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.
        - ☐ 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.
        - ☐ Planning activities by a utility to prepare for adaptation to the long-term effects of climate change and/or extreme weather.
    - ☐ Utility Sustainability Plan consistent with 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)(1)(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 US 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 stormwater, water efficiency and energy efficiency related costs. Costs are not limited to the incremental additional costs associated with LEED certified buildings.

2. 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.
    - ☐ Other – Please provide and attachment explaining the scope of the project and brief explanation of the approach for the business case.

3. 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 innovative projects and that are DWSRF eligible,
    - ☐ 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 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,
- ☐ 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.

V. CLIMATE AND EXTREME WEATHER RESILIENCY

1. Categorical Projects – none at this time.

2. Decision Criteria for Business Cases

- ☐ Utility functions and performance can be disrupted by climate change/extreme weather events.
  - ☐ Flooding
  - ☐ Drought
  - ☐ Tornado
  - ☐ Lightning
  - ☐ Earthquake
- ☐ Incorporate project elements that provide flexibility to adapt operations and functionality as external conditions change.
- ☐ Project components designed to perform beyond the minimum Building Code or Design Standards.
- ☐ Utilize climate resiliency and adaptation strategies when siting or routing key project structures or components.
- ☐ Ability to modify or expand proposed facilities based on future climate change issues.
- ☐ Other - Please provide an attachment explaining the scope of the project and brief explanation of any aspects in the planning, construction or operation phase that support the approach for the business case.

3. Examples of Projects Requiring a Business Case

- ☐ Utilizing natural, native and drought resistant planted elements that are economically replaced at project sites for storm water control or landscaping.
- ☐ Siting new structures away from flash flood areas or poor structural soils in former waterway areas.
- ☐ Consideration of finished floor elevation above the 100-year flood elevation or normal code requirements.
- ☐ Increasing structural, roof (snow) or wind loadings beyond code requirements for new structures.
- ☐ Incorporate passive cooling systems for instrumentation, control or power panel rooms subject to high heat conditions.