



PRELIMINARY ENGINEERING REQUIREMENTS

for
WASTEWATER
SRF Projects

The **PRELIMINARY ENGINEERING REPORT (PER)** is a document that provides the information necessary for the State Revolving Fund Loan Program (SRF) to determine the technical, economic and environmental adequacy of the proposed treatment works &/or collection system project. **SRF Staff may request additional information to complete a PER.**

This document is based on the State Revolving Fund Loan Program Guidance in effect on March 2, 2009. Because the requirements for SRF projects are subject to change, you should contact SRF Staff before submitting your PER and application to be sure that you are complying with current requirements. All applications will be reviewed in accordance with the provisions of IC 13-18-13. Approval of a PER by the SRF Section is for planning purposes only and SRF does not relieve the Participant of its responsibility to properly design, build and effectively operate and maintain the proposed facilities.

* **ALL CORRESPONDENCE and PER REVISIONS MUST BE DATED, 3-HOLE PUNCHED, & TRANSMITTED BY THE AUTHORIZED REPRESENTATIVE**

* **SUBMIT 3 COPIES OF THE PER IN 3-RING BINDERS TO:**

**SHELLEY LOVE
SRF WW PROGRAM ADMINISTRATOR
STATE REVOLVING FUND LOAN PROGRAM
100 N. SENATE AVE. RM. 1275
INDIANAPOLIS, INDIANA 46204**

* **INCLUDE GRAPHS/TABLES WHERE APPLICABLE**

See ATTACHMENTS following the document.

* **INCLUDE A TABLE OF CONTENTS, LIST OF GRAPHICS, LIST OF TABLES & LIST OF APPENDICES**

* Access <http://www.in.gov/ifa/srf/> for guidance under Wastewater Documents

PREFACE

Briefly describe the Project **NEED** and **SCOPE and ENVIRONMENTAL BENEFITS**. The project must address an existing water pollution abatement need.

CHAPTER 1 PROJECT LOCATION

- * Describe the Study Area, the existing and 20-year Service Areas, and Project Area(s)/locations(s).
- * Identify the USGS Quadrangle map(s) and Section(s), Township(s) line(s) and Range(s) lines involved.
- * Provide a **map(s)** (*USGS Quadrangle*) displaying:
 1. Study area
 2. Existing & 20-year service areas
 3. Project area(s)/location(s) (proposed WWTP sites, line routings, lift stations, etc.)
- * Provide a description of the project area/location/route
- * Include a statement indicating whether the entire project is being constructed within the city/county/town's right-of-way or easements. 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 SRF's issuance of bid authorization.

Note: All GRAPHICS except schematics must display North arrow & Bar Scale

CHAPTER 2 CURRENT SITUATION

- * Describe the *existing* Wastewater Treatment Plant (WWTP) & Collection System *including* age & upgrades.
- * Provide Layouts/Site **maps** of existing Collection System, WWTP or other applicable site(s), where applicable.
- * Provide a description of the current condition of facilities (if applicable), current pollutant loadings and flows in order to establish the *project need to abate existing water pollution*.
- * Document operating problems/failures of properly constructed & maintained *on-site systems* based on:
 1. *Direct* evidence of water pollution or public health hazards (such as ponding, well contamination, direct discharges, etc.)
 2. *Indirect* evidence establishing need/failure (such as soil type, terrain, lot size, etc.)
 3. Letter from County Sanitarian
- * Collection Systems problems/needs
 1. Chronic operational problems
 - a. Surcharging
 - b. Surface ponding
 - c. Basement back-ups
 - d. Unauthorized overflows/bypasses, etc.
 2. Rehabilitation/Replacement needs
 - a. Broken/collapsed sewers
 - b. Inadequate capacity of pipes/interceptors/lift stations
 - c. Facilities exceeding useful life
 3. Document:
 - a. Sewer Ban Early Warning Letter
 - b. Sewer Ban Notification
 - c. Agreed Order (signed/pending)
 - d. Consent Decree
 - e. Other
 4. Indiana CSO Strategy requirements:
 - a. 9 minimum controls
 - b. Long-Term Control Plan
- * WWTP problems/needs
 1. Chronic operational problems
 - a. Hydraulic &/or Organic Overloading
 - b. Solids Washout
 - c. NPDES Permit Violations
 - d. Unauthorized overflows/bypasses, etc
 - e. Other

continued

2. Renovation/Replacement/Upgrade/Expansion
 - a. Facilities exceeding useful life
 - b. New NPDES Permit Limits
 - c. CSO Requirements
 - d. Other
3. Document:
 - a. Notice of Violation (NOV)
 - b. Warning of Non-Compliance (WONC)
 - c. Agreed Order (AO) [signed/pending]
 - d. *New* NPDES Requirements [w/Schedule of Compliance]
 - e. Sewer Ban Early Warning or Sewer Ban Notification
- * Sludge Handling & Disposal problems/needs
 1. Federal 40 CFR Part 503 Sludge Regulations
 2. NPDES Requirements
 3. Land Application Permit Requirements
 4. Facilities exceeding useful life
- * Provide tables for Current Flows & Wasteloads
(Refer to **Tables I, II, III**), which include:
 - *average design flow* (mgd or gpd)
 - *peaking factor*
 - *peak design flow* (mgd or gpd)
 - *peak sustained infiltration*
 - *peak hourly inflow/wet weather infiltration*
 - *wasteload concentrations*
 - *wasteload pounds*
- * Significant contributors
 1. Commercial
 2. Industrial
 3. Institutional (schools, jails, hospitals, etc.)
 4. Semi-publics
 5. State/other facilities

NOTE: *Certify that the existing wastewater collection & treatment system has and will have during the 20-year study period, adequate capacity to transport & treat all wastewater flows generated from the service areas (except for permitted CSOs, which should be addressed under the Indiana CSO strategy) without surcharges, bypasses, basement back-ups, or other chronic operational problems.*

*If the participant cannot certify, then the proposed project should address known problem areas; otherwise, the participant must conduct appropriate **sewer studies** in order to identify and address the problems. The **PER** should include information on the sewer studies done (what was done, where, when, why, what was found), including the recommendations and anticipated results (in terms of residual I/I). SRF does NOT need copies of the actual sewer studies.*

CHAPTER 3 FUTURE SITUATION

- * Current Population

- * Population Projections (20-year) w/explanation for reasonable growth, *based upon*:
 1. Census data
 2. Building permits
 3. Current development trends
 4. Active Regional Planning Commission; if applicable
 5. Other

- * Tables for proposed (*Refer to Tables IV & V*)
 1. Design (20-year) flows
 - a. Domestic
 - b. Commercial/Institutional
 - c. Industrial
 - d. Peak sustained or residual infiltration
 - e. **Average** design flow (mgd or gpd)
 - f. Peaking factor
 - g. Peak hourly or Residual peak hourly Inflow/Wet weather infiltration
 - h. Peak design flow (mgd or gpd)

 2. Wasteloads
 - a. Concentrations
 - b. Pounds

- * Proposed WWTP effluent limits based on:
 1. Design flows
 2. NPDES Permit (*Contact Municipal/NPDES Permit Section Chief @ 317/ 232-8670*)
 3. Receiving Stream
 4. Wasteload Allocation (WLA)

- * Evaluation of ability to transport & treat all flows (*except permitted overflows*)

CHAPTER 4 EVALUATION of ALTERNATIVES

- * Identify a couple of *feasible* alternatives

- * Description of alternatives considered, *including*:
 1. No action
 2. Optimum operation/integration of existing facility
 3. Collection System Rehabilitation/Replacement
 4. New Collection System/Interceptor routes and alternative routes
 5. WWTP
 - a. Upgrade/Expansion
 - b. Regionalization potential
 - c. Alternative WWTP sites
 6. New WWTP
 - a. Regionalization potential
 - b. Alternative WWTP sites
 - c. Treatment alternatives
 7. Sludge Handling & Disposal Alternatives
 8. Phasing

- * Rationale for selection of Recommended Alternative
 1. Monetary
 2. Technical
 3. Reliability
 4. Implementability
 5. Environmental Impacts

CHAPTER 5 EVALUATION OF ENVIRONMENTAL IMPACTS

To avoid comments, follow the text and graphics guidance provided at the Project Planning Meeting

- * Discuss *NEGATIVE IMPACTS* only. Please be clear, concise & complete.
- * **Note:** *Projects which propose treatment capacity increases or new upsized lines must include the “Induced Impacts” language provided in the SRF Environmental Evaluation Section: Procedures & Language guidance.*
- * The PER **must** discuss *direct* (primary impacts due to construction, operation & maintenance of the treatment/collection system) and *indirect* (secondary or induced impacts made possible by the project) impacts of the feasible alternatives (including the no-action alternative) on:
 1. Disturbed/Undisturbed Land (provide soils maps only if in undisturbed land)
 2. Historic/Architectural Resources (provide Interim Report maps, if available)
 3. Wetlands (provide wetland maps [**not from federal internet mappers**])
 4. Surface waters (provide wetland and/or topographic maps)
 - a. Natural, Scenic and Recreational Rivers and Streams (312 IAC 7-2)
 - b. Waters of High Quality; [327 IAC 2-1-2(3)]
 - c. Exceptional Use Streams; [327 IAC 2-1-11(b)]
 - d. streams, rivers, lakes
 - e. label stream crossings on a map
 5. Groundwater
 - a. impact to local wells and water table
 - b. SRF will supply a map of the St. Joseph aquifer area for use in the PER, if necessary (for projects in far north central IN)
 6. 100-year floodplain (provide FEMA or other floodplain maps, if available)
 - a. Cannot be used for borrow or fill w/o DNR approval
 - b. Operability & Accessibility of the facilities during 100-year floods
 7. Plants and Animals
 - a. streams, wetlands, wooded and scrub/shrub areas
 - b. no need to research endangered species records
 8. Prime Farmland Impacts and Influence of Local Geology
 - a. The consultant will initiate and complete the Farmland Conversion Impact Rating form process for all SRF projects which will turn dirt to install

anything. State whether or not the project will affect prime/unique farmland.

b. Discuss the influence, if any, of karst and bedrock areas on the project

9. Air Quality

10. Open Space and Recreational Opportunities

11. Lake Michigan Coastal Management Zone Impacts (applies only to projects in the north part of Lake, Porter and LaPorte counties; SRF will supply a map of the IDNR Coastal Zone Program Area for use in the PER).

12. National Natural Landmarks Impacts (see http://www.nature.nps.gov/nnl/Registry/USA_Map/States/Indiana/indiana.htm)

13. Mitigation Measures to avoid negative impacts (such as erosion into nearby waterways or wetlands, air pollution, growth, odors, etc.) of project construction and implementation.

* Further environmental review will be necessary (1) if work on an SRF-approved project still remains to be done and more than 5 years have passed since PER approval, (2) if additional work is proposed after that time, or (3) if additional work is proposed within the 5-year period in areas not vetted previously.

CHAPTER 6 SELECTED PLAN

- * Describe the Selected Plan components & processes
- * Discuss Phasing (if applicable)
- * Include a completed *Preliminary Design Summary*
- * Provide Schematics/Layouts/Maps/Design flow train of the proposed project or selected plan, *including* North arrow & bar scale (*not necessary* for schematics).
- * Provide the *Project Component Costs* (refer to **Table VI**) and the *Selected Plan Cost* (refer to **Table VII**).
- * Include a Project Schedule/Milestone dates for:
 1. PER Submittal
 2. Anticipated PER approval
 3. Plans & Specs submittal
 4. Plans & Specs approval
 5. Land and easement acquisition
 6. Advertise for Bids
 7. Loan closing (after bids are received for subsidized loans)
 8. Contract Award
 9. Initiation of construction
 10. Substantial completion of construction
 11. Initiation of operation
- * Discuss Contract operations
 1. Operation and/or Lab work
 2. Land application
 3. Landfilling
 4. Other
- * Discuss Green Project Reserve (GPR) Sustainable Infrastructure components in PER or as an appendix to PER (if applicable).
 - i. Complete the SRF Loan Programs Green Project Reserve (GPR) Sustainability Incentive Waste Water Checklist (Attachment C)
 - ii. Identify on the Checklist, the proposed/selected components
 - iii. In an attachment to the Checklist:
 - (a) Describe how the project will incorporate/meet the intent of each proposed component
 - (b) 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 & MANAGERIAL CAPABILITIES

- * Include the **2** required **Resolutions** (*refer to ATTACHMENTS A & B*):
 1. Authorized Representative
 2. PER Acceptance

- * Include the completed *SRF Project Cost/Financing Information Form Table VIII*

- * Include Letter(s) of intent from:
 1. Land/easement owners
 2. Significant flow/wasteload contributors
 3. Contract operators

- * *Include Inter-local Governmental Agreement and/or Contracts or intent to obtain either. SRF Loan Program can not close on a loan until the Inter-Local Government Agreement or Contract between the affected parties is signed and executed.*

CHAPTER 8 PUBLIC PARTICIPATION

- * Include a copy of the Publisher's Affidavit from the newspaper with the Public Hearing notice.
- * Notify contract customer and/or significant flow/wasteload contributors or rate payers.
- * Have completed PER available for public review 10 days prior to Public Hearing.
- * Include a Sign-in sheet showing who attended the Public Hearing.
- * Include either meeting minutes or a Transcript of the Public Hearing.
- * Include *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.
- * Provide prepared, self-sticking **Mailing Labels** for:
 1. Interested parties (those individuals, industries, groups, organizations which demonstrated an interest in receiving copies of the Environmental Assessment/Finding of No Significant Impact). Be sure to include everyone who attended the public hearing.
 2. County Drainage Board
 3. County Health Department
 4. Active Regional Planning Commission for the planning area
 5. Local media outlets (newspaper, radio, or t.v. station)
 6. Customer Communities

ATTACHMENTS

Resolutions

- A. Authorized Representative *Model*
- B. PER Acceptance *Model*
- C. WW GPR Checklist

Tables

- I. EXISTING WW FLOWS OF SEWERED & UNSEWERED COMMUNITIES *MODEL*
- II. CURRENT TREATMENT PLANT OPERATION *MODEL*
- III. EST. INFLUENT STRENGTH & LOADINGS *MODEL*
- IV. DESIGN TREATMENT PLANT FLOWS *MODEL*
- V. DESIGN TREATMENT PLANT LOADINGS *MODEL*
- VI. EST. CONSTRUCTION COSTS of the SELECTED ALTERNATIVE *MODEL*
- VII. SELECTED PLAN COST SUMMARY *MODEL*
- VIII. SRF PROJECT FINANCING INFORMATION *MODEL*

A.

MODEL AUTHORIZED REPRESENTATIVE RESOLUTION

WHEREAS, the (PARTICIPANT) of _____, Indiana, herein called _____, has plans for a municipal water pollution control project to meet State and Federal regulations, such as the NPDES discharge limitations, and the community intends to proceed with the construction of such works:

WHEREAS, the (PARTICIPANT) has adopted this Resolution dated _____.

NOW, THEREFORE, BE IT RESOLVED by the Council/Board, the governing body of said _____, that:

1. _____ be authorized to make application for an SRF Loan and provide the State Revolving Fund 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 community.
2. The community agrees to comply with the Indiana Finance Authority, State of Indiana and Federal requirements as they pertain to the SRF.
3. That two copies of the resolution be prepared and submitted as part of the community's Preliminary Engineering Report.

ADOPTED this _____ day of _____, 2010.

THE (PARTICIPANT) OF _____, INDIANA
BY AND THROUGH ITS COUNCIL/BOARD OF TRUSTEES

AUTHORIZED SIGNATORY

_____ **BY:** _____

ATTEST: _____

B.
MODEL PER ACCEPTANCE RESOLUTION

WHEREAS, the **(PARTICIPANT)** of _____ County, 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 _____, for their comments; and

WHEREAS, the **(PARTICIPANT's)** Board/Council finds that there was not sufficient evidence presented in objection to the recommended project in the Preliminary Engineering Report.

NOW, THEREFORE BE IT RESOLVED THAT:

The _____ Preliminary Engineering Report dated _____ be approved and adopted by the **(PARTICIPANT's)** Board/Council; and
That said PER be submitted to the State Revolving Fund Loan Program for review and approval.

Passed and adopted by the **(PARTICIPANT's)** Board/Council this _____ day of _____, at their regularly scheduled meeting.

President/Mayor

Member

Member

Member

Attest: _____

TABLE I

**MODEL FOR EXISTING WASTEWATER FLOWS (in gallons per day)
OF SEWERED AND UNSEWERED COMMUNITIES**

Existing Treatment Facilities Design Flows (for Sewered Communities only)

Average Design Flow (gpd) _____ Peak Design Flow (gpd) _____

Domestic ¹ (D)	_____	Peak DCI (Total DCI X Peaking Factor) ⁴	_____
Commercial/ Institutional ¹ (C)	_____	Peak Hourly Inflow &/or Wet Weather Infiltration ⁵	_____
Industrial ¹ (I)	_____	<u>Peak Hourly Flow</u>	_____
<u>Total DCI</u>	=====		
Peak Sustained Infiltration ²	_____		
TOTAL EXISTING FLOW³	=====		

1. DCI flows must be based upon actual water use records where possible. Flows may be estimated by one of the following methods:
 - a) Billing records for the most recent 24 months (less 10-20 % consumption) are to be used whenever available;
 - b) When billing records are unavailable, pumped water volumes (less 20-40 % consumption and losses) for the most recent 12 months are to be used;
 - c) In communities (or portions thereof) without a water supply system, use 310 gpd/connection or 100 gpcpd.

2. Based on I/I analysis reviewing the most recent MRO's (24 months) during a high groundwater non-rainfall day period (preferably 7-14 consecutive days) and taking the average followed by subtracting the average DCI (sewered communities only). For unsewered communities, infiltration could be based on 200 gp/dm (Conventional Gravity Sewers).

3. Total DCI + Peak Sustained Infiltration

4. System Peaking Factor (check which applies)
 - a) Measured from hourly flow data ____ (the preferred method for existing conventional gravity sewers)
 - b) i. Estimated from 10-States Standards ____ (Conventional Gravity Only)
 - ii. Estimated from other source (list) _____

5. Sewered Communities only.

Yes or NA

 - _____ 1. Flow meter calibrated
 - _____ 2. Flows appear accurate
 - _____ 3. Based on subtracting the dry weather peak flows from the influent peak flow including all bypassed flows. If this information is not available verify if the peak hourly flow can be determined based on flow data obtained from the influent pumping station(s).

TABLE III

MODEL FOR ESTIMATED INFLUENT STRENGTH & LOADINGS
UNSEWERED COMMUNITIES

Conventional Gravity, Pressure, Vacuum Sewers

	Concentration (mg/l)			Daily Load (lb)		
	D	C	I	D	C	I
CBOD ₅	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /
TSS	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /
NH ₃ -N	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /
P	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /	_____ / _____ / _____ /

Source(s) of Data:

Domestic (D) _____

Commercial/Institutional (C) _____

Industrial (I) _____

TABLE IV

MODEL FOR DESIGN TREATMENT PLANT FLOWS (gpd or mgd)

Domestic (D)	_____
Commercial/ Institutional (C)	_____
Industrial (I)	_____
<u>Total DCI</u>	=====
+ Residual Infiltration	_____
AVG. DESIGN FLOW	=====
Peak DCI	_____ (peaking factor = _____)
Residual Infiltration	_____
Residual Peak Hourly Inflow &/or Wet Weather Infiltration	_____
PEAK DESIGN FLOW	=====

TABLE V

MODEL FOR DESIGN TREATMENT PLANT LOADINGS

	Concentration (mg/l)	Daily Load (lb)
Influent CBOD5	_____	_____
TSS	_____	_____
NH3-N	_____	_____
P	_____	_____
Other	_____	_____
	_____	_____
	_____	_____
	_____	_____
	_____	_____

TABLE VI

ESTIMATED CONSTRUCTION COSTS OF THE SELECTED ALTERNATIVE MODEL

Alternative: _____

Item	Quantity	Unit Cost	Total Cost
1) _____	_____	_____	_____
2) _____	_____	_____	_____
3) _____	_____	_____	_____
4) _____	_____	_____	_____
5) _____	_____	_____	_____
6) _____	_____	_____	_____
7) _____	_____	_____	_____
8) _____	_____	_____	_____
9) _____	_____	_____	_____
10) _____	_____	_____	_____

Total Construction Cost _____

TABLE VII

MODEL SELECTED PLAN COST SUMMARY

Item	Total Cost
Non-Construction Costs	
Administrative and Legal	_____
* Land & Rights-of-way Acquisition	_____
Relocation	_____
Engineering Fees	
Design	_____
Construction	_____
Other	_____
Project Inspection	_____
Costs Related to Plant Start-up	_____
<u>Non-Construction Subtotal</u>	<u>_____</u>
Construction and Equipment Subtotal	_____
Contingencies (not to exceed 10%)	_____
TOTAL PROJECT COST	<u>_____</u>

* Ineligible for SRF unless it represents administrative costs to acquire easements and/or land. Land may be eligible if it is an integral part of the treatment process.

TABLE VIII

SRF PROJECT FINANCING INFORMATION

(Wastewater)

1. Project Cost Summary

- a. Collection/transport system cost _____
- b. Treatment System cost _____
- c. Non-Point-Source (NPS) cost (septic tank removal) _____

Subtotal Construction Cost _____

- d. Capacity Reservation Fees _____
- e. Contingencies _____

(should not exceed 10% of construction cost)

- f. Non-construction Cost _____

e.g., engineering/design services, field exploration studies, project management & construction inspection, legal & administrative services, land costs (including capitalized costs of leased lands, ROWs, & easements), start-up costs (e.g., O&M manual, operator training).

- g. **Total Project Cost** (lines a+b+c+d+e+f) _____
- h. Total ineligible SRF costs* (see next page) _____

* Total ineligible SRF costs will not be covered by the SRF loan.

- i. Other funding sources (list other grant/loan sources & amounts)
 - (1) Local Funds (hook-on fees, connection fees, capacity fees, etc.) _____
 - (2) Cash on hand _____
 - (3) Community Development Block Grant - Community Focus Fund (CFF) _____
 - (4) US Dept. of Agriculture Rural Development (RD) _____
 - (5) Other _____

Total Other Funding Sources _____

2. **SRF Loan Amount** (line g minus line item h+i*) _____

* If there are adequate funds available under (i) to cover (h) then subtract (i) only.

3. Financial Advisor

- a. Firm _____
- b. Name _____
- c. Phone Number _____

4. Bond Counsel

- a. Firm _____
- b. Name _____
- c. Phone Number _____

The following costs are not eligible for SRF reimbursement:

1. Land cost (*unless it's for sludge application*) \$_____

Only the actual cost of the land is **not eligible**; associated costs (such as attorney's fees, site title opinion and the like) **are eligible**.

2. Materials & work done on private property \$_____

(*Installation/repair of laterals, including disconnection of inflow into laterals; abandonment of on-site systems [septic tank or mound systems]*). Grinder pumps, vacuum stations and other appurtenances/installations on private property to treat/transport ARE fundable IF owned and maintained by the participant.

3. Grant applications and income surveys done for other agencies (e.g., OCRA, RUS, etc.).
\$_____

4. Any project solely designed to promote economic development and growth is ineligible.

5. Costs incurred for preparing NPDES permit applications and other tasks unrelated to the SRF project.
\$_____

6. Cleaning of equipment, such as digesters, sand filters, grit tanks and settling tanks. These items should have been maintained through routine operation, maintenance and replacement by the political subdivision. Sewer cleaning is **ineligible** for SRF *unless* the cleaning is required for sewer rehabilitation such as sliplining and cured in place piping (CIPP)
\$_____



C.

Clean Water GPR Checklist, July 1, 2010

STATE REVOLVING FUND LOAN PROGRAM
GREEN PROJECT RESERVE SUSTAINABILITY INCENTIVE
CLEAN WATER CHECKLIST

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. For instance, 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: Green Infrastructure, Water Efficiency, Energy Efficiency and Environmentally innovative; 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

- Implementation of green streets (combinations of green infrastructure practices in transportation rights-of-way), for either new development, redevelopment or retrofits including:
 - Permeable pavement,
 - Bioretention,
 - Trees,
 - Green roofs, and
 - Other practices such as constructed wetlands that can be designed to mimic natural hydrology and reduce effective imperviousness at one or more scales, and
 - Vector trucks and other capital equipment necessary to maintain green infrastructure projects.
- Wet weather management systems for parking areas including:
 - Permeable pavement,
 - Bioretention,
 - Trees,
 - Green roofs, and
 - Other practices such as constructed wetlands that can be designed to mimic natural hydrology and reduce effective imperviousness at one or more scales.

- Vactor trucks and other capital equipment necessary to maintain green infrastructure projects.
- Implementation of comprehensive street tree or urban forestry programs, including expansion of tree boxes to manage additional stormwater and enhance tree health.
- Stormwater harvesting and reuse projects, such as cisterns and the systems that allow for utilization of harvested stormwater, including pipes to distribute stormwater for reuse.
- Downspout disconnection to remove stormwater from
 - Sanitary,
 - Combined sewers, and
 - Separate storm sewers and manage runoff onsite.
- Comprehensive retrofit programs designed to keep wet weather discharges out of all types of sewer systems using green infrastructure technologies and approaches such as:
 - Green roofs,
 - Green walls,
 - Trees and urban reforestation,
 - Permeable pavements
 - Bioretention cells, and
 - Turf removal and replacement with native vegetation or trees that improve permeability.
- Establishment or restoration of:
 - Permanent riparian buffers,
 - Floodplains,
 - Wetlands (federal rules prevent the SRF Loan Programs from providing financing assistance for a wetland required as a mitigation measure)
 - Vegetated buffers or soft bioengineered stream banks
 - Stream day lighting that removes natural streams from artificial pipes and restores a natural stream morphology that is capable of accommodating a range of hydrologic conditions while also providing biological integrity.
- Projects that involve the management of wetlands to improve water quality and/or support green infrastructure efforts (e.g., flood attenuation).
 - Includes constructed wetlands.
 - May include natural or restored wetlands if the wetland and its multiple functions are not degraded and all permit requirements are met.
- The water quality portion of projects that employ development and redevelopment practices that preserve or restore site hydrologic processes through sustainable landscaping and site design.
- Fee simple purchase of land or easements on land that has a direct benefit to water quality, such as riparian and wetland protection or restoration.

2. Decision Criteria for Business Cases

- Green infrastructure projects that are designed to mimic the natural hydrologic conditions of the site or watershed.
- Projects that capture, treat, infiltrate, or evapotranspire water on the parcels where it falls and does not result in interbasin 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.

3. Example of Project Requiring a Business Case

- Fencing to keep livestock out of streams and stream buffers. Fencing must allow buffer vegetation to grow undisturbed and be placed a sufficient distance from the riparian edge for the buffer to function as a filter for sediment, nutrients and other pollutants.

II. WATER EFFICIENCY

1. Categorical Projects

- Installing or retrofitting water efficient devices, such as plumbing fixtures and appliances.
 - For example, shower heads, toilets, urinals and other plumbing devices.
 - Implementation of incentive programs to conserve water such as rebates.
 - Water sense labeled 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, or upgrading existing 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 detection equipment to existing meters (not replacing the meter itself).
- Water audit and water conservation plans, which are reasonably expected to result in a capital project.
- 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.
- Retrofit or replacement of existing agricultural irrigation systems to more efficient agricultural irrigation systems.

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 POTW, since less water would need to be collected and treated; therefore, there are also energy and financial 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

- Water meter replacement with traditional water meters.
- 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.
- New water efficient agricultural irrigation system.

III. ENERGY EFFICIENCY

1. Categorical Projects

- Renewable energy projects such as wind, solar, geothermal, micro-hydroelectric, and biogas combined heat and power systems that provide power to a POTW. Micro-hydroelectric projects involve capturing the energy from pipe flow.
 - POTW owned renewable energy projects can be located onsite or offsite.
 - Include the portion of a publicly owned renewable energy project that POTW's energy needs.
 - Must feed into grid system that the utility draws from and/or there is a direction connection.
- POTW 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 a capital project are eligible.
- Projects that achieve a 20% reduction in energy consumption are categorically eligible for GPR. If a project achieves less than a 20% reduction in energy efficiency, then it may be justified using a business case.
- Collection system Infiltration/Inflow detection equipment.

2. 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.
- The business case must describe how the project maximizes energy saving opportunities for the POTW or unit process.
- 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/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. Examples of Projects Requiring a Business Case

- POTW projects or unit process projects that achieve less than a 20% energy efficiency improvement may be justified using a business case.
- 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 standards setting association for the electrical manufacturing industry (<http://www.nema.org/gov/energy/efficiency/premium/>).
- 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.

IV. ENVIRONMENTALLY INNOVATIVE

1. Categorical Projects

- Total/integrated water resources management planning likely to result in a capital project.
- 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).
- Planning activities by a POTW to prepare for adaptation to the long-term effects of climate change and/or extreme weather.
- Construction of US Building Council LEED certified buildings or renovation of an existing building on POTW facilities.
- Decentralized wastewater treatment solutions to existing deficient or failing onsite wastewater systems.

2. Decision Criteria for Business Cases

- Technology or approach whose performance is expected to address water quality but the actual performance has not been demonstrated in the state;
- 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 an attachment explaining the scope of the project and brief explanation of the approach for the business case.

3. Examples of Projects Requiring a Business Case

- Constructed wetlands projects used for municipal wastewater treatment, polishing, and/or effluent disposal.
 - Natural wetlands.
 - Project may not further degrade.
- 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 Clean Water SRF eligible.
- Projects that facilitate adaptation of POTWs to climate change identified by a carbon footprint assessment or climate adaptation study.
- POTW 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.
 - 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.
- 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.