



# ASDWA White Paper for the EPA Environmental Finance Centers: State Preliminary Engineering Report Requirements and Planning Needs for Water System Projects

## Introduction

**Purpose:** The purpose of this paper is to ensure the effectiveness of the [29 Environmental Finance Centers' \(EFCs\)](#) efforts to assist small and disadvantaged water systems with project plans and Preliminary Engineering Reports (PERs). One of the biggest needs for water system projects that the EFCs can help with is to provide technical assistance (TA) for the development of PERs (sometimes referred to as “project plans” or “general plans.”) The EFCs should coordinate directly with state drinking water programs to ensure that the project plans and PERs adhere to state-specific requirements. Additionally, the EFCs should go beyond the requirements to consider all potential project alternatives and funding sources to address small and disadvantaged water system capabilities and long-term needs.

- **State Requirements for Plans and PERs:** The EFCs must adhere to the state-specific requirements and approval processes for project plans and PERs so that water system projects can proceed and obtain funding. While states and federal funding programs may have similar procedures or steps in the process for development, submission, and approval of plans and PERs, many states have additional state-specific requirements. These state requirements may also impact the EFC process and ability to subcontract to engineering firms in the state to develop PERs for the water system projects.
- **Project Plan and PER Content and Alternatives for Water System Needs:** Some states also have specific requirements for plan and PER content. In accordance with (and in addition to) state guidelines and requirements, plans and PERs should consider all potential alternatives for options and solutions, along with different costs and operating requirements to address small and disadvantaged water system needs. This also includes considerations for the water system's Technical, Managerial and Financial (TMF) Capacity and long-term sustainability.

**Background:** On November 4, 2022, EPA announced the selection of 29 EFCs to provide TA and help small and disadvantaged water systems access federal funding for infrastructure projects. On November 30, 2022, ASDWA provided [a letter of recommendations to EPA](#) highlighting state drinking water program needs and considerations for the EFCs that will be providing TA to water systems.

## State Requirements for Plans and PERs

All EFC TA providers must coordinate directly with the state in which a water system project is to be developed. Coordination is necessary to ensure that EFC efforts to assist small water systems with PERs and projects comply with all the state requirements for the development and submission of the project design and specifications and complete all the tasks necessary in the project funding approval process. States have requirements for licensed engineers and may have procurement requirements that apply to hiring and subcontracting an engineering firm to develop PERs for water systems. Additionally, the development of the PERs may be eligible for funding or reimbursement from the state DWSRF program, as well as from [USDA Rural Development](#) and [HUD CDBG](#) if the PER meets the program specific criteria.

**State Project Approval Processes:** State project approval processes are in place to ensure “value engineering” that considers the costs, capabilities, and specific needs for each individual water system in the design of the project. These processes also ensure that water quality and public health protection is maintained when changing sources, adding or changing treatment, and/or making modifications to the distribution system. These processes include the tasks and steps for the engineer to follow, requirements for the proposed design and specifications, and guidelines for the preparation and submission of the design. These requirements and funding approval processes may be different for the state SRF than for other federal funding programs, or in some states may be used for both purposes.

**Nebraska:** The [Nebraska Administrative Code Title 131, Chapter 3 \(page 7\)](#) has general requirements for CWSRF and DWSRF projects that include procurement standards for engineering services and construction contracts, public participation, environmental review, and more.

**State Licensed Engineers:** State funding agencies may require that the PER document be developed or stamped by a Professional Engineer registered in the state where the project is to be constructed. Any preliminary design information must be written in accordance with the regulatory requirements of the state where the project will be built.

**Tennessee:** [Tennessee Title 62 Chapter 2](#) requires an “Engineer’s Seal” by a qualified person to be affixed to plan documents for non-transient non-community and community public water systems.

**State Procurement Requirements:** State procurement requirements may apply to hiring (or subcontracting) an engineering firm to develop PERs. For states that have these requirements, the process typically includes appropriately publicizing the RFP, the use of a rating criteria and process for selecting the vendor, and fee allowances. The language for the requirement may also be included in a different statute or regulation than drinking water regulations, and may be contingent upon the amount of the professional services fee for the development of the PER. However, some states may not apply the procurement requirements to the EFCs due to EPA’s competitive TA procurement process.

**Virginia:** [The Virginia Public Procurement Act §2.2-4300](#) includes policies for government entities (including public water systems) to procure any services from nongovernmental sources that may or may not result in monetary consideration for either party.

**Idaho:** [Idaho Statute 67-2320](#) (h) requires that “When a public agency (including a water system) solicits a request for qualifications for engineering (or other) services for which the professional service fee is anticipated to exceed the total sum of fifty thousand dollars (\$50,000), it shall publish public notice in the same manner as required for procurement of public works construction projects under section [67-2805\(2\)](#).”

## Project Plan and PER Content and Alternatives for Addressing Water System Needs

The EFCs will play a key role as an advisor for these water systems to ensure the engineers consider all alternatives and that long-term sustainable solutions are selected, in consultation with the state drinking water programs. Very small and disadvantaged water systems typically cannot afford to operate and maintain advanced drinking water treatment processes and do not have operators with higher level certifications and training necessary to run them. In addition to adhering to the state specific requirements for PER content, engineers must include a thorough analysis of options to address the water system's needs in the "Alternatives" section of the PER. This analysis should include additional considerations for the water system's TMF Capacity, long-term sustainability, technical assistance needs, and other associated factors. State drinking water programs and TA providers already working in the state are knowledgeable about water systems' compliance and funding history, as well as previous capacity development, training, and assistance efforts. Expanding beyond the minimum PER requirements and taking this information into account, EFCs can assist water systems in selecting from a range of alternative solutions and funding options. The [ASDWA Small and Disadvantaged Water System Funding and Assistance White Paper](#) provides more information and examples.

**PER Content:** States may have minimum design standards and specifications for what is required to be included in the content of the PER, or additional requirements or guidelines for certain conditions. The [Federal Interagency Memorandum](#) includes a general and detailed outline of the PER content required for federal funding. However, as previously discussed, the specific requirements can vary for each state.

**Kansas:** PERs in Kansas must adhere to the state's [minimum design standards](#) to include a waste stream summary (WSS) if any of the project alternatives will create or modify waste streams (e.g., RO salt discharge in waste lagoons). If no waste is generated as part of the project, then a statement must be included that the WSS is not necessary.

**Alternative Solutions:** The project plan or PER should evaluate a range of options beyond constructing or updating a treatment plant, to include developing a new source or rehabilitating an existing source, through considering regionalization and source water protection solutions, and doing nothing as an option. Alternative solutions should also consider the needs for technical assistance and training, in addition to and in conjunction with water system projects.

**New York:** The [New York Engineering Report Outline for New York State Assisted Drinking Water Infrastructure Projects](#) requires the PER to include an Alternatives Analysis (page 3-5) with a detailed description of each alternative and how it will resolve the identified need; provides cost estimates for each alternative; discusses all relevant non-monetary factors; and provides a summary table that identifies any major differences for the alternatives, as well as pros and cons. The report outline also includes a checklist form with evaluation criteria for assessing the water system's TMF Capacity.

**Water System Affordability:** The project plan or PER should encompass considerations for the financial capacity of the water system, including its rate structures and customer affordability. Some water system rate structures are governed by utility commissions, and others by local elected officials. Affordability can be a significant issue, as some communities cannot afford higher rates to pay for improvements. For example, capital costs for infrastructure construction of advanced treatment processes such as Granular Activated Carbon (GAC) and Reverse Osmosis (RO) are often accompanied by higher operation and maintenance (O&M) costs for media replacement, RO membrane servicing, or waste stream disposal.

**Project Plan Requirements for Funding:** Some states, such as Pennsylvania and New Hampshire have requirements for the water systems needs and capabilities built into the funding application process and technical assistance, rather than having state PER requirements.

**Pennsylvania:** PENNVEST (the state infrastructure investment agency) has a [Handbook for Drinking Water Projects](#) that has some similar content to other state PERs. The handbook includes a list of necessary documents for SRF funding applicants, and requirements for a planning consultation meeting and for a “Planning Consultation and Prefeasibility Assessment Report.”

**New Hampshire:** New Hampshire does not require PERs and instead focuses on funding the construction projects based on a thorough evaluation of the water system’s needs and capabilities. The funding application and the ranking process for loans requires an outline of the issues, an affordability index, and an approved asset management plan as a condition of receipt for the final funding disbursement. The asset management plan requirement ensures that the water system has a funding strategy for the remaining highest criticality assets and has evaluated the amount of money needed for an annual reserve fund.

**Alternative Funding Sources:** Project PER options and decision-making processes should also consider whether projects may be eligible for 100% grant opportunities or SRF loans with principal forgiveness. Beyond the SRF, funding is also available from federal programs such as [ARPA](#), [WIIN](#), [ASADRA](#), and [FEMA](#). Some water systems have used a combination of these and other funding sources such as [USDA Rural Development](#) and [HUD CDBG](#) for many types of projects including lead service line replacement projects, addressing SDWA violations and emerging contaminants, water security and resilience, and more.

**State Partnerships:** Many states have formally established committees and councils (or general coordination efforts) where state drinking water programs regularly meet and coordinate with USDA, FEMA, and other federal and state agency funding programs, technical assistance providers, and private foundations to consider all possible sources of funding and assistance for their small and disadvantaged water systems. The EFCs should work with the state drinking water program and partners to understand the different project requirements and approval processes for the state SRF and other federal funding programs and consider additional options for technical assistance needs.

**Operator Certification:** A project that installs additional and/or advanced treatment will likely change the classification of the water system and the associated operator certification requirements. Water systems across the country, and especially small water systems in rural areas, are experiencing workforce challenges with hiring and retaining operators. Operators that are currently certified for chlorination at a small water system will require a higher level certification, along with training and hands-on experience to operate filtration and/or advanced treatment systems such as GAC and RO. Provisions for TA and training, as well as stipends and travel expenses for mentoring operators from other water systems to stay onsite are needed to ensure that lower level operators at small water systems have the knowledge and ability to properly operate and maintain the new treatment system to meet drinking water standards and protect public health. Ideally, the operator with the appropriate level of certification should be in place before construction to understand the treatment plant controls and receive training on the treatment from the vendor or engineer.

**Pennsylvania:** Pennsylvania’s construction permitting process requires a pre-application meeting with the water system that includes a discussion of the necessary operator certification level to run the treatment plant. The state will not issue the permit for the water system until an operator with adequate training and certification is in place.