Drinking Water Infrastructure Grant: Tribal Set-Aside Regional Guidelines

Environmental Protection Agency, Region 4

Drinking Water Section
EPA, Region 4 – Water Protection Division
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I. INTRODUCTION

These Region 4 Tribal Drinking Water Infrastructure Grant Guidelines (Guidelines) provide an overview of the national Drinking Water Infrastructure Grant - Tribal Set-Aside (DWIG-TSA) Program, detail the eligible uses for the funds, and describe the project solicitation and selection process used to distribute funds to the Tribes located in EPA, Region 4. They also articulate minimum threshold criteria and ranking requirements for project selection to ensure consistency and transparency across Regional DWIG-TSA Programs, and discuss the administrative policies used to manage the program. Additional details, requirements, and limitations of the DWIG-TSA Program can be found in the national Drinking Water Infrastructure Grants Tribal Set-Aside Program Revised Guidelines (December 2013).

These Guidelines were developed, in formal consultation with tribal governments, by a workgroup including representatives from the Catawba Indian Nation, Eastern Band of Cherokee Indians, Miccosukee Tribe of Indians of Florida, Mississippi Band of Choctaw Indians, Poarch Band of Creek Indians, Seminole Tribe of Florida, EPA, Indian Health Service and United South and Eastern Tribes. The workgroup established the following goals for the development of the Regional Guidelines:

- Have representation from each tribe in workgroup process
- Regional guidelines conform to national guidelines
- Achieve consensus approval for the workgroup's product(s)
- The funding selection process benefits those who invest in proactive efforts to improve long-term sustainability of water system operation
- The process benefits all tribes located in the Southeast
- Minimize the ranking criteria that favor the tribes that "have" (matching funds resources)

II. PROGRAM OVERVIEW

Regions are given flexibility in project selection but must ensure that the selection process meets the requirements of SDWA Section 1452(i)(2), which state that funds "shall be used to address the most significant threats to public health associated with public water systems that serve Indian Tribes." Project selection should also prioritize projects that meet, to the maximum extent practicable, the requirements listed in Section 1452(b)(3)(A) of the SDWA, as shown below, and the additional requirements outlined in this guidance.

SDWA Section 1452(b)(3)(A) states that funded projects should:
(i) address the most serious risk to human health; (ii) are necessary to ensure compliance with the requirements of this title; and (iii) assist systems most in need on a per household basis

To assist in the project selection process, the DWIG_TSA guidelines established three threshold requirements that must be met by a water system serving a tribe prior to award of project funding:

- Technical, managerial and financial capacity;
- Compliance with the SDWA; and
- Project readiness.

Proposed projects, received in response to an annual solicitation, will be ranked based on health impacts with exceedances of health based standards with acute health effects being ranked highest, followed by exceedances of regulated contaminants with long-term health effects, exceedances of Health Advisory levels of unregulated contaminant and projects designed to prevent future noncompliance. In addition, four criteria for further ranking projects for funding are also included. These criteria are to ensure that projects designed to address similar threats to public health are prioritized. They are:

- Implementation of a Preventative Maintenance Program,
- Tribal Priority,
- Evaluation of an applicant's ability to self-finance a project, and
- Evaluation of the project's cost efficiency

After Region 4 has identified the project(s) to be funded, they must notify OGWDW of their selections. OGWDW then will transfer the program funds to the Region, and the Region work to allocate the funding.

The tribes have two methods they can use to implement the project. They may request to administer the project funds themselves through a direct grant, or they may request that IHS administer the project funds for them, through an interagency agreement (IA) between EPA and IHS. To qualify for a grant, the tribe must meet the grant requirements listed in Appendix A, and the Region must determine that the tribe has the necessary capacity to successfully complete the project, following an approved grant work plan. If EPA approves a tribe's request to administer the grant itself, a grant agreement is signed between EPA and the tribe and grant regulations must be followed. In the case where an IA is used, the funds are administered by IHS. In either situation, EPA Regions are responsible for managing the award and for administering and tracking project progress after an award.

III. POTENTIAL RECIPIENTS AND FUNDING MECHANISMS FOR DWIG-TSA FUNDS

A. Federally Recognized Tribes

The SDWA gives EPA the authority to award grants directly to tribes. All tribes recognized by the Bureau of Indian Affairs are eligible to receive grants from the DWIG-TSA Program unless they have been deemed ineligible to receive federal funds if any federal agency or department or the Region determines that the tribe does not have the necessary capacity to successfully complete the project following an approved grant work plan. Direct grants to tribes through the DWIG-TSA Program are subject to assistance agreement regulations, Office of Management and Budget (OMB) cost principles, the Cash Management Improvement Act and EPA policies.

B. Indian Health Service

IHS has been providing drinking water infrastructure to tribes through the Sanitation Facilities Construction Program since 1959. Some tribes may request that IHS design, construct and/or administer construction of the projects funded with DWIG-TSA Program funds. Assuming that IHS agrees to provide the requested service, the tribe can request EPA to directly transfer the funds for the project to IHS

through an IA[1]. An IA reduces the administrative burden on the tribe, lessens paperwork for all parties and provides IHS with access to all of the funds throughout the project.

The IA describes the scope of work for the project, milestones, project period, budget and payment terms. The total project period, including extensions, may not exceed seven years without specific regulatory or statutory authorization, or a signed waiver.[2,3] As such, project funds must be liquidated (spent) within that seven-year period.

IV. WATER SYSTEM ELIGIBILITY FACTORS

A. System Ownership

The SDWA specifies that the DWIG-TSA funds must be used to address the most significant risks to public health associated with public water systems serving Indian tribes. This can include systems owned by a tribe, or systems owned by someone other than a tribe, as long as the system serves a tribal population, regardless of whether EPA or state primacy has oversight. EPA's definition of what constitutes a system that serves Indian tribes follows.

> *Tribally Owned Water Systems*: All existing community water systems and all non-profit, non-community water systems owned by a tribal government are considered to serve an Indian tribe and are eligible to have projects funded with DWIG-TSA funds provided they serve tribal homes.
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> During project evaluation, Region 4 will consider whether it is reasonable for the DWIG-TSA to fund the entire cost of the project. In some cases, a significant portion of the water produced by some tribally-owned water systems serves a non-tribal population. Region 4 and the affect Tribe will resolve whether it is appropriate for the DWIG-TSA funds to pay for the entire project, or whether the non-tribal community being served should pay for a portion of the project.
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> Similarly, a significant portion of the water produced by some tribally-owned community and non-profit non-community water systems will serve connections other than tribal homes (whether it is a tribal or non-tribal entity). In such cases, Region 4 must decide whether it is appropriate for DWIG-TSA funds to pay for the entire project or whether another entity should pay for a share of the project cost. In both of the above situations, Region 4 has the responsibility and authority to determine the appropriate DWIG-TSA funding level.
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> *Non-Tribally Owned Water Systems*: The tribal population served by the water system must be governed by a federally recognized tribal entity. When considering projects with non-tribally-owned water systems, Regions must take into account the tribal proportion of the population to

[1] Funding for an IA must be reprogramed by the EPA, Region 4 Financial Office. A reprogramming memo should be submitted, changing the funding Budget Object Class (BOC) from 41 to 37, as soon as the preference for an IA is received by a tribe.

[2] As per Interagency Agreement Policy Issuance (IPI-08-02), Guidance on Project Period Duration, and Interagency Agreement Policy Issuance (IPI-11-02), Clarification of Senior Resource Official Review Requirements for Time Extensions under Interagency Agreements.

[3] Class Waiver for the Clean Water Act Indian Set-Aside and the Safe Drinking Water Act Tribal Set-Aside Infrastructure Programs dated July 21, 2008.

benefit from the project. A system's tribal population may be a small percentage of the total service population, but a particular project may be primarily for the benefit of that tribal population. If the project is exclusively, or primarily, for the benefit of a tribal population, then Region 4 may conclude that the DWIG-TSA should fund the entire cost of the project. On the other hand, if the tribal population benefitting from the project is a relatively small percentage of the total population benefitting from the project, then Region 4 must conclude that it is not appropriate for the DWIG-TSA to fund the entire cost of the project. In this case the DWIG-TSA Program should fund the project proportionally according to the tribal population served. Region 4 will evaluate these situations, with tribal input, on a project by project basis.

Federally Owned Systems: The DWIG-TSA Program cannot directly be used to fund drinking water systems owned and operated by the federal government for the benefit of a tribe. If a project meets the criteria of the SDWA 1452(i)(1) and (2); however, tribes may choose to have EPA enter into an IA with a federal agency to provide construction or improvement of drinking water facilities so long as the terms of the IA meet the criteria to be considered a grant or cooperative agreement, and not a contract. That is, the purpose of the IA must be to carry out the public purpose for the benefit of the tribe. It shall not be for the direct benefit or use of the United States Government.

B. Public Water Systems Serving Commercial or Industrial Properties

Community water systems typically serve residential properties and their funding for improvements serves the goal of providing safe drinking water to tribal homes. Funding of systems serving solely commercial or industrial uses is not allowed under the DWIG-TSA Program. Funding can only be provided for systems if they serve a tribal residential population and the extent of funding must be scaled to the proportion of water served to residential users.

C. System Location

The SDWA does not restrict funding to projects that are within reservations or on tribally-owned land. The Act only requires that the system serve an Indian tribe. As such, system location alone is not a factor in determining eligibility.

D. Constructed Conveyance Public Water Systems

Based on the 1996 Amendments to the SDWA, EPA modified its federal drinking water regulations to adopt a revised definition of "public water system," and on August 5, 1998 published a revised definition of a public water system. It is defined as "a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves at least 25 individuals."[11] Systems that serve Indian tribes and meet this definition are eligible for DWIG-TSA funding. This revised definition expanded the means of delivering water to include not only systems that provide water for human consumption through pipes, but also systems that provide water for human consumption through "other constructed conveyances." A *constructed conveyance* is broadly interpreted to refer to any manmade conduit such as a ditch, culvert, waterway, flume, mine drain or canal.

V. ELIGIBLE USES OF DWIG-TSA FUNDS

The DWIG-TSA Program can only fund public water system projects that EPA determines will meet the SDWA priorities for funding. These include projects that address the most serious health risks, facilitate compliance with the NPDWR and address those systems most in need (on a household basis). Eligible project categories should directly or in a phased manner:

- Address a current NPDWR health-based violation (MCL) or treatment technique violation (TT);
- Address a current MCL or action level exceedance(s);
- Address a system deficiency as part of an approved NPDWR exemption;
- Address drinking water outages or limited supply needed for human consumption;
- Reduce the risk of failure of major treatment or distribution system components;
- Provide first service to homes that lack access to safe drinking water; and
- Provide operational efficiencies to reduce operation and maintenance costs.

Examples of eligible projects are provided below.

Example Eligible Project Types
• Rehabilitate or develop sources (excluding reservoirs, dams, dam rehabilitation and water rights) to replace contaminated sources; • Install or upgrade treatment facilities if, in the Region's opinion, the project would improve the quality of drinking water to comply with NPDWR; • Install or upgrade storage facilities, including finished water reservoirs, to prevent microbiological contaminants from entering the water system; • Install or replace transmission and distribution pipes to prevent contamination caused by leaks or breaks in the pipe, or improve water pressure to safe levels; • Replace aging infrastructure if the replacement is needed to maintain compliance or further the health protection goals of the SDWA; • Install new transmission, distribution or service lines to connect existing homes to a public water supply; • Water efficiency projects (e.g., installation of meters); • Expansion, consolidation or development of a new public water system (Limited Circumstances See Section A Below); and • Develop preliminary engineering reports (PERs) for future project funding by DWIG-TSA Program.

A. Expansion, Consolidation or Development of a New Public Water System

Under limited circumstances, expansion, consolidation or construction of new public water systems are eligible projects for DWIG-TSA funds. While Section 1452 of the SWDA states that DWIG-TSA funds may only be used for assisting existing public water systems and are not available for the construction of new public water systems, EPA believes that the SDWA may be interpreted to permit the creation of new public water systems, in limited circumstances, to solve the public health problems intended to be addressed by the statute. The conditions used to determine if development of a new water supply is appropriate are listed below.

Conditions for Creation of New Water Systems with DWIG-TSA Funds
• Options for connection with adjacent public water systems have been fully explored and deemed unreasonable by the EPA Region; • Upon completion of the project, the entity created must meet the federal definition of a public water system; • Funding is limited to projects where an actual public health problem exists with documented health risks; • The project must be limited in scope to the specific geographic area affected by health risk; and • The project can only be sized to accommodate a reasonable amount of growth expected over the life of the facility. Growth cannot be a substantial portion of the project.

A project to supply drinking water to existing homes that do not currently receive their drinking water from an existing public water system is eligible for funding, if the current source of the drinking water available to the homes has documented concentration levels of contaminants above the MCL for the NPDWR and/or there is an inadequate supply of safe drinking water at the home to meet basic water needs. An inadequate supply is considered to be less than 30 gallons per person per day for more than 20 days per year. Note that DWIG-TSA grants can only be awarded to tribes, not directly to the water system or to the individual home owners.

System consolidation can also be an eligible project for DWIG-TSA funds if specific circumstances exist. The purpose of system consolidation funded by DWIG-TSA is to address the public health risk posed to the service population by the current system. This is accomplished through provision of an alternative water source and/or the expansion of the user base to support long-term tribally sustained operation and maintenance of the system. A project to eliminate an existing public water system through consolidation with another existing system is eligible for funding if the water served by the system to be eliminated exceeds the MCL for at least one contaminant included on the NPDWR, has a TT violation, and/or lacks an adequate quantity of water to meet basic needs as described above. Additionally, systems which Region 4 believes are lacking in adequate technical, managerial and financial capacity are also eligible for consolidation with a system that demonstrates it has capacity.

All projects selected for construction of new public water systems, system expansion and system consolidation should meet the project cost efficiency requirements (see the Section X: Threshold Requirements and Ranking Criteria). Region 4 will avoid funding a costly system consolidation when there are lower capital cost alternative solutions (e.g. treatment), particularly in situations where the tribe has the technical, managerial and financial capacity to operate and maintain its facilities. DWIG-TSA funds are limited and Region 4 will make award decisions to benefit the maximum tribal population.

B. Unscheduled "Emergency" Projects

It is possible that an emergency project will become necessary after Region 4 uses the prioritization method to rank projects for a year and informs the tribes of the rankings and selections. Such projects can include those where some type of failure was unanticipated or the result of natural disaster or an emergency and may require immediate attention to protect public health. In these cases, Region 4 has the authority to fund the emergency project ahead of the selected projects provided it meets the

requirements of the DWIG-TSA Program. Funding can be redirected from a project to support an emergency project only between the times a selected project is identified and when an IA is signed with IHS or a direct grant is signed by a tribe. After an IA or a direct grant has been signed for a project, funds cannot be redirected. Region 4 must inform the tribe(s) whose project(s) were by-passed of the Region's decision and provide the rationale behind that decision. The projects that were by-passed will receive consideration for the next available round of funding.

C. DWIG-TSA and Clean Water Indian Set Aside (CWISA) Inter-Program Transfer Authority

Congress provided EPA with the authority to transfer funds between the CWISA administered by the Office of Wastewater Management (OWM) and DWIG-TSA Program. Starting in 2013, EPA began implementing this authority by allowing Regions to transfer funds between the two programs up to an amount that is equivalent to 33% of a Region's DWIG-TSA allotment. Any transferred clean water infrastructure funds must be used to fund projects that are related to drinking water and will provide the greatest public health benefit to tribes.

VI. INELIGIBLE USES OF DWIG-TSA FUNDS

According to Section 1452 (a)(2), the SDWA specifically disallows projects for:

- Monitoring;
- Operation and maintenance;
- Projects intended primarily for future growth, and
- Land acquisition (unless the land is integral to the project and is from a willing seller) (Section 1452(k)(1)(A)(i)).

Water systems serving a tribe that do not meet the threshold requirements established in Section VIII of these Guidelines are also not eligible for DWIG-TSA funds. In addition, EPA has determined that a number of other types of projects are ineligible for funding through the DWIG-TSA Program.

Examples of Projects Ineligible for Funding
• Dams, or rehabilitation of dams, including bank stabilization, erosion control or repair to weirs and flow control structures; • Water rights (except if the water rights are owned by a public water system that is being consolidated and the EPA Regional Office has determined that the consolidation is necessary because the system to be consolidated lacks adequate technical, managerial, or financial capacity); • Reservoirs (except for finished water reservoirs and those reservoirs that are part of the treatment process and are located on the property where the treatment facility is located); • Projects that serve only commercial uses such as livestock watering • Projects needed mainly for fire protection; • Compliance monitoring; • Projects for tasks that are considered routine operation and maintenance; • Acquisition of land or a conservation easement; • Loans to water systems; • Technical or financial assistance to a water system to carry out a capacity development strategy;

VII. ANNUAL PROJECT SOLICITATION

The solicitation for projects will be included in the annual Availability of Funds mailing that is coordinated through the EPA, Region 4 Tribal Relations Coordinator and mailed to each tribe every year. The solicitation will be mailed out each year around October, and the Region 4 Drinking Water Section will be responsible for ensuring the solicitation is delivered to the appropriate tribal drinking water contacts. The deadline for submitting proposals will be December 1st of each year and a selection will be made by January 1st. Funding for the selected project(s) will be available until June 1st at which time a grant application or Interagency Agreement application should be submitted to EPA, Region 4 by the selected tribe(s). Failure to submit an application by the deadline will result in the funds being made available to the next highest ranking project(s) or they may be swept by EPA, Headquarters and reallocated to another Region for funding tribal water infrastructure. Project proposals should include the following:

- A cover letter from the Tribal Leader requesting funding for the project including,
    - A brief description of the project(s) to be funded
    - Justification for the need of the project(s)
    - Approximate funding requested
    - The preference for the potential award to be processed as a direct grant to the tribe or an IA with IHS
- Preliminary Engineering Report (see template in Appendix C)
- Demonstration that all sanitary deficiencies are addressed from most recent sanitary survey or Completed Capacity Checklist (Appendix D)

VIII. THRESHOLD REQUIREMENTS

The DWIG-TSA Guidelines establish threshold requirements that water systems serving tribes must meet prior to funding. This section describes how Tribes and water systems can demonstrate meeting the threshold requirements. There are three threshold requirements that a water system serving a tribe must meet prior to project funding:

- Technical, managerial and financial capacity;
- Systems compliant with the SDWA; and
- Project readiness.

A. Technical, Managerial and Financial Capacity

The DWIG-TSA Program only funds drinking water infrastructure projects at public water systems that have the technical, managerial and financial capacity to ensure compliance with the requirements of the SDWA per requirements of Section 1452 (a)(3)(A)(i). The EPA, Region 4, in consultation with tribes, developed a Capacity Checklist which can be found in Appendix D. Tribes wishing to be considered for funding should be able to demonstrate the capabilities identified in the checklist through sanitary survey reports, utility policies/Standard Operating Procedures, asset management plans, and other utility documents. Prior to the award of DWIG-TSA funds, the public water system receiving the improvement(s) must demonstrate that it has:

1. *Certified Operator:* An operator in charge is certified at the appropriate level to operate the public water system, including the infrastructure proposed in the project. The level of certification required is based on the National Tribal Operator Certification Guidelines. A tribe or the water system serving the tribe must provide copies of the operator's certification prior to award of DWIG-TSA funds.

2. *Annual Operating Budget*: EPA requires that an annual operating budget with information on income from user rates or other sources, operation and maintenance costs and short-lived asset reserves for the public water system serving the tribe be provided prior to award. The recommended details to include in an annual operating budget are included in Section 6.f. "Annual Operation Budget" of the PER requirements document in Appendix C.

   An annual operating budget is also required when a tribe requests funding for PER development to demonstrate the public water system serving the tribe and considering improvements through DWIG-TSA funds has an operating budget. This operating budget only needs to consider the existing infrastructure under operation by the public water system. Changes to the operating budget that may result from future infrastructure improvements should be reflected in the PER.

3. *Accounting System*: A utility should demonstrate that they have an accounting system that records, tracks and reports the public water system's revenues and expenses separate from other program activities. The Infrastructure Task Force cites this as an attribute of a sustainable utility, where utility funds are managed separately from general tribal funds.[4] The ability to track operating funds is an important element in demonstrating a utility's managerial and financial capacity. Expenses or revenues associated with the utility should be managed in a separate accounting system or tracked through separate line items within the tribe's accounting ledger.

   To meet DWIG-TSA Program threshold requirements, tribes must document that the accounting system for the public water system receiving DWIG-TSA funds has the capability to record, track and report on the program specific financial information independently from other programs. As part of the project award Regions shall require a written certification from the governing body of the public water system that their accounting system meets these requirements. An example certification letter is included in Appendix E.

B. Systems Compliant with the SDWA

The primary purpose of the DWIG-TSA Program is to support the construction of drinking water infrastructure that will facilitate compliance with the SDWA. According to the SDWA Section 1452 (a)(3)(A)(ii), DWSRF funds, including those allotted to the DWIG-TSA Program, cannot be awarded to existing public water systems that are in significant noncompliance (SNC) with any requirements of the National Primary Drinking Water Regulations. Systems can demonstrate meeting this threshold by being in compliance with all monitoring/reporting requirements and having no health-based violations unless the project will directly address existing health-based violations.

[4] Infrastructure Task Force, January 2012, Summary of Commonalities and Best Practices from Tribal Utility Interview, http://www.epa.gov/tp/pdf/itf-commonalities-12.pdf

C. Project Readiness

Projects that have not been fully evaluated prior to funding may not provide the most feasible and cost efficient solution to address public health risks and may also result in construction delays. To improve project readiness to ensure that health risks are adequately addressed, a project submitted for funding must have a completed Preliminary Engineering Report (PER) that follows the standardized template for PERs developed by the Infrastructure Task Force (0). The standardized PER makes it easier for tribes to receive funding from more than one federal source and simplifies coordination between federal agencies.

The PER should clearly describe the public water system's current situation, include an analysis of alternatives and propose a specific course of action from an engineering perspective. The analysis of alternatives must compare construction costs and operation and maintenance costs. A project that has been vetted through an analysis of alternatives and is ready for implementation ensures that funds are awarded to projects that are ready to proceed to construction.

IX. FUNDING PRIORITIZATION SYSTEM AND RANKING CRITERIA

Region 4 will use the following numeric funding prioritization system to rank proposed projects received from the annual solicitation. The ranking system differentiates the projects according to the severity of the health risk to be resolved by the project. This section will describe the quantifiable ranking criteria that will be applied to all funding proposals each year.

Funding Prioritization System

Acute Maximum Contaminant Level Exceedance – 2000 points

Chronic Maximum Contaminant Level Exceedance – 1000 points

Unregulated Contaminant Health Advisory Level Exceedance – 500 points

Infrastructure Upgrades to Sustain Future Compliance – 100 points

Other Ranking Criteria:

Implementation of Preventative Maintenance Plan	50 points
Tribal Priority (per year since last DWIG award)	50 points
Ability to self-finance*	0-50 points
Project cost efficiency*	0-50 points

* The Regional Administrator has the ability to waive these specific criteria on a case-by-case basis. This is allowed if a Tribe can demonstrate that a project provides a significant public health benefit or resolves serious compliance issues as described in Section 1452(b)(3)(A) of the SDWA and that these considerations outweigh the ranking criteria. Criteria will be applied where multiple proposals demonstrate the same health-based need.

A. Acute Maximum Contaminant Level Exceedance

This category includes exceedances of National Primary Drinking Water Regulations involving microbial contaminants or Nitrate/Nitrite. The associated violations could be Maximum Contaminant Level exceedances such as Fecal Coliform or Nitrate, or the violations could be certain Treatment Technique violations associated with the Surface Water Treatment Rules or Revised Total Coliform Rule. In order to qualify for this ranking the water system must be able to demonstrate exceedances of standards such as positive fecal coliform or elevated nitrate or turbidity levels. This category does not include the existence of potential pathways of contamination that would be considered significant deficiencies where actual contamination cannot be demonstrated. In addition, to qualify for this ranking, the exceedance must be associated with infrastructure needs and not the result of poor operation or maintenance of the system.

B. Chronic Maximum Contaminant Level Exceedance

This category include exceedances of National Primary Drinking Water Regulation Maximum Contaminant Levels involving regulated chemical contaminants that have a long-term impact to public health. In order to qualify for this ranking, a water system must be able to demonstrate exceedance of Maximum Contaminant Levels for Volatile Organic Chemicals, Synthetic Organic Chemicals, Pesticides, Inorganic Chemicals, Disinfection Byproducts or Radionuclides. In addition, to qualify for this ranking, the exceedance must be associated with infrastructure needs and not the result of poor operation and maintenance of the treatment or distribution system.

C. Unregulated Chemical Health Advisory Level Exceedance

This category includes exceedances of Health Advisory Levels associate with chemical contaminants not regulated under the Nation Primary Drinking Water Regulations. Health Advisories serve as the informal technical guidance for unregulated drinking water contaminants to assist Federal, State and local officials, and managers of public or community water systems in protecting public health as needed. The Health Advisory Program, sponsored by the EPA's Office of Water, publishes concentrations of drinking water contaminants at Drinking Water Specific Risk Level Concentration for cancer (10-4 Cancer Risk) and concentrations of drinking water contaminants at which noncancer adverse health effects are not anticipated to occur over specific exposure durations - One-day, Ten-day, and Lifetime - in the *Drinking Water Standards and Health Advisories* (DWSHA) tables. The DWSHA tables are revised periodically by the Office of Water so that the benchmark values are consistent with the most current Agency assessments and can be found at the following web link: http://water.epa.gov/drink/standards/hascience.cfm#dw-standards.

D. Infrastructure Upgrades to Sustain Future Compliance

This category includes proposed projects that address sanitary deficiencies or defects for all infrastructure associated with a public water system: intake, transmission, treatment, storage, distribution, back-up

power, controls, security, etc. Proposed projects may also include upgrades related to improved sustainability of the water system under EPA priorities such as energy/water efficiency, green infrastructure, or consolidation of water systems.

E. Other Ranking Criteria

In situations where EPA, Region 4 receives multiple proposed projects that address the same health ranking criteria, the following ranking criteria be used for further prioritization.

1. Implementation of a Preventative Maintenance Plan

Preventative maintenance is an essential responsibility for owners/operators of public water systems to maintain long-term compliance with the Safe Drinking Water Act and to minimize capital replacement costs. The plan may be a stand-alone document, set of Standard Operating Procedures, be included in an asset management plan, or other document. The plan may be in written form or maintained electronically. A preventative maintenance plan should include all manufactures recommendations for routine maintenance and should include a process for documenting task completion such as a work order system.

2. Tribal Priority

Tribes located in Region 4 expressed a desire for the DWIG-TSA Program to benefit all tribal water systems by providing an additional level of compliance assurance through inclusion of a Tribal Priority criteria in the ranking process. In order to be eligible for funding consideration, a water system must be in compliance status with all monitoring and reporting guidance and must be able to demonstrate adequate technical, managerial, and financial capacity. By adding tribal priority points based on years since last receiving funding, additional incentive is created for all Tribes to provide adequate support for their water system(s). Ten points will be awarded to each tribal proposal for each year since the last DWIG award to the respective tribe. Awards for PERs will not be considered when calculating tribal priority points.

3. Applicant Ability to Self-Finance

The ability of tribes to pay for needed infrastructure varies widely across the country. The applicant's ability to self-finance refers to the ability of the community served by the public water system to provide funds to cover all or a portion of the cost associated with the construction of the proposed infrastructure. The limited grant funds from the DWIG-TSA Program should be used to assist public water systems that serve communities with the greatest financial need. Therefore, the project ranking criteria elevates the priority of projects requested from public water systems that serve a community with greater need. The median household income for the relevant project area will be compared to the statewide nonmetropolitan household income. Where the project area income is less than the statewide average, ½ point will be given for each percentage point the project area income is less than the statewide average.
Example: Project area "A" average household income = $30,000
State "A" statewide average household income = $40,000
Applicant ability to self-finance ranking score = ½ x (100% - $30,000/$40,000) = 12.5 points

The median household income of the service area and the nonmetropolitan median household income of the state will be determined from available U.S. Census data. If there is reason to believe that the Census data do not provide an accurate representation of the median household income within the area to be

served, the reasons will be documented and the applicant may furnish additional information regarding such median household income. Information will consist of reliable data from local, Regional, state or federal sources, or from a survey conducted by a reliable impartial source.

4. Project Cost Efficiency

SDWA Section 1452(b)(3)(A)(iii) requires the DWIG-TSA Program to assist systems most in need on a per household basis. Including project cost efficiency in the Region's prioritization process addresses this requirement. Each proposal will receive one Project Cost Efficiency point for each $1,000 per unit project cost less than $50,000.

Example: Project "A" cost per home = $35,000

Applicant Project Cost Efficiency ranking score = ($50,000-$35,000)/1,000 = 15 points

APPENDICES

Appendix A: Grant Management and Oversight Requirements

Appendix A
Grant Management and Oversight Requirements

Grants through the DWIG-TSA program are subject to assistance agreement regulations, Office of Management and Budget (OMB) cost principles, the Cash Management Improvement Act, and Agency policies. Grants must be awarded and managed as any other assistance agreement. The Office of Grants and Debarment (OGD) has developed Orders, Grants Policy Issuances (GPIs) and directives to assist project officers and program offices in fulfilling and understanding their responsibilities (available at http://intranet.epa.gov/ogd/policy/policy.htm. Several grant requirements are discussed in further detail below.

Orders, Policies, and Directives	Overview
EPA Order 5700.7, *Environmental Results Under Assistance Agreements*	The Order applies to funding packages to the Grants Management Office after January 1, 2005, and requires EPA Program Offices to: 1) Link proposed assistance agreements to the Agency's Strategic Plan/Government Performance and Results Act (GPRA) architecture; 2) Ensure that outputs and outcomes are appropriately addressed in assistance agreement work plans and funding recommendations; and 3) Ensure that progress in achieving agreed-upon outputs and outcomes is adequately addressed in grantee progress reports and advanced monitoring activities.
OGD policy memorandum GPI 00-02, *Pre-Award Costs*, and 2 CFR 225	Applies to all grants awarded on or after April 1, 2000 and addresses EPA's revised interpretation of a provision in the general grant regulations at 40 CFR 31.23(a) concerning the approval of pre-award costs. Addresses EPA's interpretation of a provision in the general grant regulations at 40 CFR 31.23(a) allowing up to 90 days of preaward costs. • Recipients may incur pre-award costs [up to] 90 calendar days prior to the award date provided they include such costs in their application, the costs meet the definition of pre-award costs and are approved by the EPA Project Officer and EPA Award Official. • The award official can approve pre-award costs incurred more than 90 calendar days prior to the grant award date, in appropriate circumstances, if the pre-award costs are in conformance with the requirements set forth in 2 CFR 225 (supersedes OMB Circular A-87, Cost Principles for State, Local, and Indian Tribal Governments) and with applicable Agency regulations, policies and guidelines. If otherwise consistent with the coverage of 2 CFR 225, the following two situations may meet the requirements at Appendix B 31. Pre-award costs: • Any allowable costs incurred after the start of the fiscal year for which the funds were appropriated but before grant award (i.e. for a FY 2010 project, this date is October 1, 2009). • Allowable facilities planning and design costs associated with the construction portions of the project included in the grant that were incurred before the start of the fiscal year for which the funds were appropriated (i.e. for a FY 2010 project, this date is October 1, 2009).

Orders, Policies, and Directives	Overview
OMB Circular A-16, which incorporates Executive Order 12906 and the One-Stop Geospatial E-gov Initiative	Project officer must indicate in the funding recommendations for a proposed assistance agreement that the grant involves or relates to the creation, collection, or analysis of geospatial information.
OGD Cost Review Guidance	GPI's 00-05 & 08-04 require EPA staff to review all elements of cost for all funding packages. Cost review checklists are available at http://intranet/epa.gov/ogd/cost_review/main/index.htm.
EPA Order 5700.6A2, *Policy on Compliance, Review, and Monitoring*	Streamlines post-award management of assistance agreements and helps ensure effective oversight of recipient performance and management. Requires EPA project office to develop and carry out post-award monitoring plan, and conduct annual baseline monitoring or the equivalent for every award.
OGD directives to project officers	Grants will be managed according to the EPA Project Officer Manual (http://intranet.epa.gov/OGD/project_officer_manual6/)and directives listed at http://intranet.epa.gov/OGD/policy/policy.htm
OGD policy memorandum GPI 08-05, *Guidance regarding Grants Management and the Management of Interagency Agreements under the Performance Appraisal and Recognition System (PARS)* Office of Human Resources (OHR) PARS policy documents	For consideration in assessing grants project officer and supervisor/manager compliance with key grants management policies under the PARS process, developing PARS performance agreements, and conducting mid-year and end-of-year performance reviews. http://intranet.epa.gov/policy/pars/index.htm
"Place of performance" requirement	For most projects, the geographic information needed includes the NPDES or SDWIS number(s). For those without these identification numbers, the latitude and longitude of the project should be provided.

Appendix B: Federal Cross-Cutting Authorities

Appendix B
Federal Cross-Cutting Authorities

A number of federal laws and Executive Orders apply in Federal financial assistance programs - including projects and activities funded through the DWIG-TSA Program. Below is a list of statutes, regulations, and other information that may be helpful in complying with the requirements of other federal authorities.

Environmental Authorities

- Archeological and Historic Preservation Act of 1974, Pub. L. 86-523, as amended
- Clean Air Act, Pub. L. 84-159, as amended
- Coastal Barrier Resources Act, Pub. L. 97-348
- Coastal Zone Management Act, Pub. L. 92-583, as amended
- Endangered Species Act, Pub. L. 93-205, as amended
- Environmental Justice, Executive Order 12898
- Floodplain Management, Executive Order 11988 as amended by Executive Order 12148
- Protection of Wetlands, Executive Order 11990
- Farmland Protection Policy Act, Pub. L. 97-98
- Fish and Wildlife Coordination Act, Pub. L. 85-624, as amended
- National Environmental Policy Act, Pub. L. 91-190, as amended
- National Historic Preservation Act of 1966, PL 89-665, as amended
- Wild and Scenic Rivers Act, Pub. L. 90-542, as amended

Economic and Miscellaneous Authorities

- Demonstration Cities and Metropolitan Development Act of 1966, Pub. L. 89-754, as amended
- Executive Order 12372, Intergovernmental Review of Federal Programs
- Procurement Prohibitions under Section 306 of the Clean Air Act and Section 508 of the Clean
- Water Act, including Executive Order 11738, Administration of the Clean Air Act and the Federal
- Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans
- Uniform Relocation and Real Property Acquisition Policies Act, Pub. L. 91-646, as amended
- Debarment and Suspension, Executive Order 12549
- Davis-Bacon Act, Pub. L. 107-217, as amended

Social Policy Authorities

- Age Discrimination Act of 1975, Pub. L. 94-135
- Title VI of the Civil Rights Act of 1964, Pub. L. 88-3524
- Section 13 of the Federal Water Pollution Control Act Amendments of 1972, Pub. L. 92-500 (the Clean Water Act)
- Section 504 of the Rehabilitation Act of 1973, Pub. L. 93-112 (including Executive Orders 11914 and 11250)
- The Drug-Free Workplace Act of 1988, Pub. L. 100-690 (applies only to the capitalization grant recipient)
- Equal Employment Opportunity, Executive Order 11246
- Women's and Minority Business Enterprise, Executive Orders 11625, 12138 and 12432
- Section 129 of the Small Business Administration Reauthorization and Amendment Act of 1988, Pub. L. 100-590
- Anti-Lobbying Provisions (40 CFR part 30) [applies only to capitalization grant recipients].

Appendix C: Preliminary Engineering Report Template

January 16, 2013

INTERAGENCY MEMORANDUM

Attached is a document explaining recommended best practice for the development of Preliminary Engineering Reports in support of funding applications for development of drinking water, wastewater, stormwater, and solid waste systems.

The best practice document was developed cooperatively by:

- US Department of Agriculture, Rural Development, Rural Utilities Service, Water and Environmental Programs;
- US Environmental Protection Agency (EPA), Office of Water, Office of Ground Water and Drinking Water and Office of Wastewater Management;
- US Department of Housing and Urban Development (HUD), Office of Community Planning and Development;
- US Department of Health and Human Services, Indian Health Service (IHS);
- Small Communities Water Infrastructure Exchange;

Extensive input from participating state administering agencies was also very important to the development of this document.

Federal agencies that cooperatively developed this document strongly encourage its use by funding agencies as part of the application process or project development. State administered programs are encouraged to adopt this document but are not required to do so, as it is up to a state administering agency's discretion to adopt it, based on the needs of the state administering agency.

A Preliminary Engineering Report (Report) is a planning document required by many state and federal funding agencies as part of the process of obtaining financial assistance for development of drinking water, wastewater, solid waste, and stormwater facilities. The attached Report outline details the requirements that funding agencies have adopted when a Report is required.

In general the Report should include a description of existing facilities and a description of the issues being addressed by the proposed project. It should identify alternatives, present a life cycle cost analysis of technically feasible alternatives and propose a specific course of action. The Report should also include a detailed current cost estimate of the recommended alternative. The attached outline describes these and other sections to be included in the Report.

Projects utilizing direct federal funding also require an environmental review in accordance with the National Environmental Policy Act (NEPA). The Report should indicate that environmental issues were considered as part of the engineering planning and include environmental information pertinent to engineering planning.

For state administered funding programs, a determination of whether the outline applies to a given program or project is made by the state administering agency. When a program or agency adopts this outline, it may adopt a portion or the entire outline as applicable to the program or project in question at the discretion of the agency. Some state and federal funding agencies will not require the Report for every project or may waive portions of the Report that do not apply to their application process, however a Report thoroughly addressing all of the contents of this outline will meet the requirements of most agencies that have adopted this outline.

The detailed outline provides information on what to include in a Report. The level of detail required may also vary according to the complexity of the specific project. Reports should conform substantially to this detailed outline and otherwise be prepared and presented in a professional manner. Many funding agencies require that the document be developed by a Professional Engineer registered in the state or other jurisdiction where the project is to be constructed unless exempt from this requirement. Please check with applicable funding agencies to determine if the agencies require supplementary information beyond the scope of this outline.

Any preliminary design information must be written in accordance with the regulatory requirements of the state or territory where the project will be built.

Information provided in the Report may be used to process requests for funding. Completeness and accuracy are therefore essential for timely processing of an application. Please contact the appropriate state or federal funding agencies with any questions about development of the Report and applications for funding as early in the process as practicable.

Questions about this document should be referred to the applicable state administering agency, regional office of the applicable federal agency, or to the following federal contacts:

Agency	Contact	Email Address	Phone
USDA/RUS	Benjamin Shuman, PE	ben.shuman@wdc.usda.gov	202-720-1784
EPA/DWSRF	Kirsten Anderer, PE	anderer.kirsten@epa.gov	202-564-3134
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HUD	Stephen Rhodeside	stephen.m.rhodeside@hud.gov	202-708-1322
IHS	Dana Baer, PE	dana.baer@ihs.gov	301-443-1345

Sincerely,

1/16/13

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USDA, Rural Development, Rural Utilities Service, Water and Environmental Programs

Sheila E. Frace 01/16/13

Sheila Frace, Acting Deputy Director
US EPA, Office of Water, Office of Wastewater Management

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1-16-13

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Attachment

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Border Environment Cooperation Commission	Joel Mora, PE
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Colorado Department of Public Health & Environment	Michael Beck
Colorado Department of Public Health & Environment	Bret Icenogle, PE
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Idaho, Department of Environmental Quality	Tim Wendland
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Missouri Department of Natural Resources	Cynthia Smith
Montana Department of Commerce	Kate Miller, PE
North Carolina Department of Commerce	Olivia Collier
North Carolina Rural Center	Keith Krzywicki, PE
North Carolina Department of Commerce	Vickie Miller, CPM
Rhode Island Department of Health	Gary Chobanian, PE
Rhode Island Department of Health	Geoffrey Marchant

ABBREVIATIONS

NEPA – National Environmental Policy Act
NPV – Net Present Value
O&M – Operations and Maintenance
OMB – Office of Management and Budget
Report – Preliminary Engineering Report
SPPW – Single Payment Present Worth
USPW – Uniform Series Present Worth

GENERAL OUTLINE OF A PRELIMINARY ENGINEERING REPORT

1) PROJECT PLANNING
   a) Location
   b) Environmental Resources Present
   c) Population Trends
   d) Community Engagement

2) EXISTING FACILITIES
   a) Location Map
   b) History
   c) Condition of Existing Facilities
   d) Financial Status of any Existing Facilities
   e) Water/Energy/Waste Audits

3) NEED FOR PROJECT
   a) Health, Sanitation, and Security
   b) Aging Infrastructure
   c) Reasonable Growth

4) ALTERNATIVES CONSIDERED
   a) Description
   b) Design Criteria
   c) Map
   d) Environmental Impacts
   e) Land Requirements
   f) Potential Construction Problems
   g) Sustainability Considerations
      i) Water and Energy Efficiency
      ii) Green Infrastructure
      iii) Other
   h) Cost Estimates

5) SELECTION OF AN ALTERNATIVE
   a) Life Cycle Cost Analysis
   b) Non-Monetary Factors

6) PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)
   a) Preliminary Project Design
   b) Project Schedule
   c) Permit Requirements
   d) Sustainability Considerations
      i) Water and Energy Efficiency
      ii) Green Infrastructure

iii) Other

e) Total Project Cost Estimate (Engineer's Opinion of Probable Cost)

f) Annual Operating Budget
   i) Income
   ii) Annual O&M Costs
   iii) Debt Repayments
   iv) Reserves

7) CONCLUSIONS AND RECOMMENDATIONS

DETAILED OUTLINE OF A PRELIMINARY ENGINEERING REPORT

1) PROJECT PLANNING

Describe the area under consideration. Service may be provided by a combination of central, cluster, and/or centrally managed individual facilities. The description should include information on the following:

a) Location. Provide scale maps and photographs of the project planning area and any existing service areas. Include legal and natural boundaries and a topographical map of the service area.

b) Environmental Resources Present. Provide maps, photographs, and/or a narrative description of environmental resources present in the project planning area that affect design of the project. Environmental review information that has already been developed to meet requirements of NEPA or a state equivalent review process can be used here.

c) Population Trends. Provide U.S. Census or other population data (including references) for the service area for at least the past two decades if available. Population projections for the project planning area and concentrated growth areas should be provided for the project design period. Base projections on historical records with justification from recognized sources.

d) Community Engagement: Describe the utility's approach used (or proposed for use) to engage the community in the project planning process. The project planning process should help the community develop an understanding of the need for the project, the utility operational service levels required, funding and revenue strategies to meet these requirements, along with other considerations.

2) EXISTING FACILITIES

Describe each part (e.g. processing unit) of the existing facility and include the following information:

a) Location Map. Provide a map and a schematic process layout of all existing facilities. Identify facilities that are no longer in use or abandoned. Include photographs of existing facilities.

b) History. Indicate when major system components were constructed, renovated, expanded, or removed from service. Discuss any component failures and the cause for the failure. Provide a history of any applicable violations of regulatory requirements.

c) Condition of Existing Facilities. Describe present condition; suitability for continued use; adequacy of current facilities; and their conveyance, treatment, storage, and disposal capabilities. Describe the existing capacity of each component. Describe and reference compliance with applicable federal, state, and local laws. Include a brief analysis of overall current energy consumption. Reference an asset management plan if applicable.

d) Financial Status of any Existing Facilities. (Note: Some agencies require the owner to submit the most recent audit or financial statement as part of the application package.) Provide information regarding current rate schedules, annual O&M cost (with a breakout of current energy costs), other capital improvement programs, and tabulation of users by monthly usage categories for the most recent typical fiscal year. Give status of existing debts and required reserve accounts.

e) Water/Energy/Waste Audits. If applicable to the project, discuss any water, energy, and/or waste audits which have been conducted and the main outcomes.

3) NEED FOR PROJECT

Describe the needs in the following order of priority:

a) Health, Sanitation, and Security. Describe concerns and include relevant regulations and correspondence from/to federal and state regulatory agencies. Include copies of such correspondence as an attachment to the Report.

b) Aging Infrastructure. Describe the concerns and indicate those with the greatest impact. Describe water loss, inflow and infiltration, treatment or storage needs, management adequacy, inefficient designs, and other problems. Describe any safety concerns.

c) Reasonable Growth. Describe the reasonable growth capacity that is necessary to meet needs during the planning period. Facilities proposed to be constructed to meet future growth needs should generally be supported by additional revenues. Consideration should be given to designing for phased capacity increases. Provide number of new customers committed to this project.

4) ALTERNATIVES CONSIDERED

This section should contain a description of the alternatives that were considered in planning a solution to meet the identified needs. Documentation of alternatives considered is often a Report weakness. Alternative approaches to ownership and management, system design (including resource efficient or green alternatives), and sharing of services, including various forms of partnerships, should be considered. In addition, the following alternatives should be considered, if practicable: building new centralized facilities, optimizing the current facilities (no construction), developing centrally managed decentralized systems, including small cluster or individual systems, and developing an optimum combination of centralized and decentralized systems. Alternatives should be consistent with those considered in the NEPA, or state equivalent, environmental review. Technically infeasible alternatives that were considered should be mentioned briefly along with an explanation of why they are infeasible, but do not require full analysis. For each technically feasible alternative, the description should include the following information:

a) Description. Describe the facilities associated with every technically feasible alternative. Describe source, conveyance, treatment, storage and distribution

facilities for each alternative. A feasible system may include a combination of centralized and decentralized (on-site or cluster) facilities.

b) Design Criteria. State the design parameters used for evaluation purposes. These parameters should comply with federal, state, and agency design policies and regulatory requirements.

c) Map. Provide a schematic layout map to scale and a process diagram if applicable. If applicable, include future expansion of the facility.

d) Environmental Impacts. Provide information about how the specific alternative may impact the environment. Describe only those unique direct and indirect impacts on floodplains, wetlands, other important land resources, endangered species, historical and archaeological properties, etc., as they relate to each specific alternative evaluated. Include generation and management of residuals and wastes.

e) Land Requirements. Identify sites and easements required. Further specify whether these properties are currently owned, to be acquired, leased, or have access agreements.

f) Potential Construction Problems. Discuss concerns such as subsurface rock, high water table, limited access, existing resource or site impairment, or other conditions which may affect cost of construction or operation of facility.

g) Sustainability Considerations. Sustainable utility management practices include environmental, social, and economic benefits that aid in creating a resilient utility.

i) Water and Energy Efficiency. Discuss water reuse, water efficiency, water conservation, energy efficient design (i.e. reduction in electrical demand), and/or renewable generation of energy, and/or minimization of carbon footprint, if applicable to the alternative. Alternatively, discuss the water and energy usage for this option as compared to other alternatives.

ii) Green Infrastructure. Discuss aspects of project that preserve or mimic natural processes to manage stormwater, if applicable to the alternative. Address management of runoff volume and peak flows through infiltration, evapotranspiration, and/or harvest and use, if applicable.

iii) Other. Discuss any other aspects of sustainability (such as resiliency or operational simplicity) that are incorporated into the alternative, if applicable.

h) Cost Estimates. Provide cost estimates for each alternative, including a breakdown of the following costs associated with the project: construction, non-construction, and annual O&M costs. A construction contingency should be included as a non-construction cost. Cost estimates should be included with the descriptions of each technically feasible alternative. O&M costs should include a rough breakdown by O&M category (see example below) and not just a value for each alternative. Information from other sources, such as the recipient's accountant or other known technical service providers, can be incorporated to assist in the development of this section. The cost derived will be used in the life cycle cost analysis described in Section 5 a.

Example O&M Cost Estimate	
Personnel (i.e. Salary, Benefits, Payroll Tax, Insurance, Training)	
Administrative Costs (e.g. office supplies, printing, etc.)	
Water Purchase or Waste Treatment Costs	
Insurance	
Energy Cost (Fuel and/or Electrical)	
Process Chemical	
Monitoring & Testing	
Short Lived Asset Maintenance/Replacement*	
Professional Services	
Residuals Disposal	
Miscellaneous	
Total	

* See Appendix A for example list

5) SELECTION OF AN ALTERNATIVE

Selection of an alternative is the process by which data from the previous section, "Alternatives Considered" is analyzed in a systematic manner to identify a recommended alternative. The analysis should include consideration of both life cycle costs and non-monetary factors (i.e. triple bottom line analysis: financial, social, and environmental). If water reuse or conservation, energy efficient design, and/or renewable generation of energy components are included in the proposal provide an explanation of their cost effectiveness in this section.

a) Life Cycle Cost Analysis. A life cycle present worth cost analysis (an engineering economics technique to evaluate present and future costs for comparison of alternatives) should be completed to compare the technically feasible alternatives. Do not leave out alternatives because of anticipated costs; let the life cycle cost analysis show whether an alternative may have an acceptable cost. This analysis should meet the following requirements and should be repeated for each technically feasible alternative. Several analyses may be required if the project has different aspects, such as one analysis for different types of collection systems and another for different types of treatment.

1. The analysis should convert all costs to present day dollars;
2. The planning period to be used is recommended to be 20 years, but may be any period determined reasonable by the engineer and concurred on by the state or federal agency;
3. The discount rate to be used should be the "real" discount rate taken from Appendix C of OMB circular A-94 and found at (www.whitehouse.gov/omb/circulars/a094/a94_appx-c.html);
4. The total capital cost (construction plus non-construction costs) should be included;

5. Annual O&M costs should be converted to present day dollars using a uniform series present worth (USPW) calculation;
6. The salvage value of the constructed project should be estimated using the anticipated life expectancy of the constructed items using straight line depreciation calculated at the end of the planning period and converted to present day dollars;
7. The present worth of the salvage value should be subtracted from the present worth costs;
8. The net present value (NPV) is then calculated for each technically feasible alternative as the sum of the capital cost (C) plus the present worth of the uniform series of annual O&M (USPW (O&M)) costs minus the single payment present worth of the salvage value (SPPW(S)):

$$NPV = C + USPW\ (O\&M) - SPPW\ (S)$$

9. A table showing the capital cost, annual O&M cost, salvage value, present worth of each of these values, and the NPV should be developed for state or federal agency review. All factors (major and minor components), discount rates, and planning periods used should be shown within the table.
10. Short lived asset costs (See Appendix A for examples) should also be included in the life cycle cost analysis if determined appropriate by the consulting engineer or agency. Life cycles of short lived assets should be tailored to the facilities being constructed and be based on generally accepted design life. Different features in the system may have varied life cycles.

b) Non-Monetary Factors. Non-monetary factors, including social and environmental aspects (e.g. sustainability considerations, operator training requirements, permit issues, community objections, reduction of greenhouse gas emissions, wetland relocation) should also be considered in determining which alternative is recommended and may be factored into the calculations.

6) PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

The engineer should include a recommendation for which alternative(s) should be implemented. This section should contain a fully developed description of the proposed project based on the preliminary description under the evaluation of alternatives. Include a schematic for any treatment processes, a layout of the system, and a location map of the proposed facilities. At least the following information should be included as applicable to the specific project:

a) Preliminary Project Design.

i) Drinking Water:

Water Supply. Include requirements for quality and quantity. Describe recommended source, including site and allocation allowed.

Treatment. Describe process in detail (including whether adding, replacing, or rehabilitating a process) and identify location of plant and site of any process discharges. Identify capacity of treatment plant (i.e. Maximum Daily Demand).

Storage. Identify size, type and location.

Pumping Stations. Identify size, type, location and any special power requirements. For rehabilitation projects, include description of components upgraded.

Distribution Layout. Identify general location of new pipe, replacement, or rehabilitation: lengths, sizes and key components.

ii) Wastewater/Reuse:

Collection System/Reclaimed Water System Layout. Identify general location of new pipe, replacement or rehabilitation: lengths, sizes, and key components.

Pumping Stations. Identify size, type, site location, and any special power requirements. For rehabilitation projects, include description of components upgraded.

Storage. Identify size, type, location and frequency of operation.

Treatment. Describe process in detail (including whether adding, replacing, or rehabilitating a process) and identify location of any treatment units and site of any discharges (end use for reclaimed water). Identify capacity of treatment plant (i.e. Average Daily Flow).

iii) Solid Waste:

Collection. Describe process in detail and identify quantities of material (in both volume and weight), length of transport, location and type of transfer facilities, and any special handling requirements.

Storage. If any, describe capacity, type, and site location.

Processing. If any, describe capacity, type, and site location.

Disposal. Describe process in detail and identify permit requirements, quantities of material, recycling processes, location of plant, and site of any process discharges.

iv) Stormwater:

Collection System Layout. Identify general location of new pipe, replacement or rehabilitation: lengths, sizes, and key components.

Pumping Stations. Identify size, type, location, and any special power requirements.

Treatment. Describe treatment process in detail. Identify location of treatment facilities and process discharges. Capacity of treatment process should also be addressed.

Storage. Identify size, type, location and frequency of operation.

Disposal. Describe type of disposal facilities and location.

Green Infrastructure. Provide the following information for green infrastructure alternatives:

- Control Measures Selected. Identify types of control measures selected (e.g., vegetated areas, planter boxes, permeable pavement, rainwater cisterns).
- Layout: Identify placement of green infrastructure control measures, flow paths, and drainage area for each control measure.
- Sizing: Identify surface area and water storage volume for each green infrastructure control measure. Where applicable, soil infiltration rate, evapotranspiration rate, and use rate (for rainwater harvesting) should also be addressed.
- Overflow: Describe overflow structures and locations for conveyance of larger precipitation events.

b) Project Schedule. Identify proposed dates for submittal and anticipated approval of all required documents, land and easement acquisition, permit applications, advertisement for bids, loan closing, contract award, initiation of construction, substantial completion, final completion, and initiation of operation.

c) Permit Requirements. Identify any construction, discharge and capacity permits that will/may be required as a result of the project.

d) Sustainability Considerations (if applicable).

i) Water and Energy Efficiency. Describe aspects of the proposed project addressing water reuse, water efficiency, and water conservation, energy efficient design, and/or renewable generation of energy, if incorporated into the selected alternative.

ii) Green Infrastructure. Describe aspects of project that preserve or mimic natural processes to manage stormwater, if applicable to the selected alternative. Address management of runoff volume and peak flows through infiltration, evapotranspiration, and/or harvest and use, if applicable.

iii) Other. Describe other aspects of sustainability (such as resiliency or operational simplicity) that are incorporated into the selected alternative, if incorporated into the selected alternative.

e) Total Project Cost Estimate (Engineer's Opinion of Probable Cost). Provide an itemized estimate of the project cost based on the stated period of construction. Include construction, land and right-of-ways, legal, engineering, construction program management, funds administration, interest, equipment, construction contingency, refinancing, and other costs associated with the proposed project. The construction subtotal should be separated out from the non-construction costs. The non-construction subtotal should be included and added to the

construction subtotal to establish the total project cost. An appropriate construction contingency should be added as part of the non-construction subtotal. For projects containing both water and waste disposal systems, provide a separate cost estimate for each system as well as a grand total. If applicable, the cost estimate should be itemized to reflect cost sharing including apportionment between funding sources. The engineer may rely on the owner for estimates of cost for items other than construction, equipment, and engineering.

f) Annual Operating Budget. Provide itemized annual operating budget information. The owner has primary responsibility for the annual operating budget, however, there are other parties that may provide technical assistance. This information will be used to evaluate the financial capacity of the system. The engineer will incorporate information from the owner's accountant and other known technical service providers.

i) Income. Provide information about all sources of income for the system including a proposed rate schedule. Project income realistically for existing and proposed new users separately, based on existing user billings, water treatment contracts, and other sources of income. In the absence of historic data or other reliable information, for budget purposes, base water use on 100 gallons per capita per day. Water use per residential connection may then be calculated based on the most recent U.S. Census, American Community Survey, or other data for the state or county of the average household size. When large agricultural or commercial users are projected, the Report should identify those users and include facts to substantiate such projections and evaluate the impact of such users on the economic viability of the project.

ii) Annual O&M Costs. Provide an itemized list by expense category and project costs realistically. Provide projected costs for operating the system as improved. In the absence of other reliable data, base on actual costs of other existing facilities of similar size and complexity. Include facts in the Report to substantiate O&M cost estimates. Include personnel costs, administrative costs, water purchase or treatment costs, accounting and auditing fees, legal fees, interest, utilities, energy costs, insurance, annual repairs and maintenance, monitoring and testing, supplies, chemicals, residuals disposal, office supplies, printing, professional services, and miscellaneous as applicable. Any income from renewable energy generation which is sold back to the electric utility should also be included, if applicable. If applicable, note the operator grade needed.

iii) Debt Repayments. Describe existing and proposed financing with the estimated amount of annual debt repayments from all sources. All estimates of funding should be based on loans, not grants.

iv) Reserves. Describe the existing and proposed loan obligation reserve requirements for the following:

Debt Service Reserve – For specific debt service reserve requirements consult with individual funding sources. If General Obligation bonds are proposed to be used as loan security, this section may be omitted, but this should be clearly stated if it is the case.

Short-Lived Asset Reserve – A table of short lived assets should be included for the system (See Appendix A for examples). The table should include the asset, the expected year of replacement, and the anticipated cost of each. Prepare a recommended annual reserve deposit to fund replacement of short-lived assets, such as pumps, paint, and small equipment. Short-lived assets include those items not covered under O&M, however, this does not include facilities such as a water tank or treatment facility replacement that are usually funded with long-term capital financing.

7. CONCLUSIONS AND RECOMMENDATIONS

Provide any additional findings and recommendations that should be considered in development of the project. This may include recommendations for special studies, highlighting of the need for special coordination, a recommended plan of action to expedite project development, and any other necessary considerations.

Appendix A: Example List of Short-Lived Asset Infrastructure

Estimated Repair, Rehab, Replacement Expenses by Item within up to 20 Years from Installation)	
Drinking Water Utilities	**Wastewater Utilities**
Source Related	**Treatment Related**
Pumps	Pump
Pump Controls	Pump Controls
Pump Motors	Pump Motors
Telemetry	Chemical feed pumps
Intake/ Well screens	Membrane Filters Fibers
Water Level Sensors	Field & Process Instrumentation Equipment
Pressure Transducers	UV lamps
Treatment Related	Centrifuges
Chemical feed pumps	Aeration blowers
Altitude Valves	Aeration diffusers and nozzles
Valve Actuators	Trickling filters, RBCs, etc.
Field & Process Instrumentation Equipment	Belt presses & driers
Granular filter media	Sludge Collecting and Dewatering Equipment
Air compressors & control units	Level Sensors
Pumps	Pressure Transducers
Pump Motors	Pump Controls
Pump Controls	Back-up power generator
Water Level Sensors	Chemical Leak Detection Equipment
Pressure Transducers	Flow meters
Sludge Collection & Dewatering	SCADA Systems
UV Lamps	**Collection System Related**
Membranes	Pump
Back-up power generators	Pump Controls
Chemical Leak Detection Equipment	Pump Motors
Flow meters	Trash racks/bar screens
SCADA Systems	Sewer line rodding equipment
Distribution System Related	Air compressors
Residential and Small Commercial Meters	Vaults, lids, and access hatches
Meter boxes	Security devices and fencing
Hydrants & Blow offs	Alarms & Telemetry
Pressure reducing valves	Chemical Leak Detection Equipment
Cross connection control devices	
Altitude valves	
Alarms & Telemetry	
Vaults, lids, and access hatches	
Security devices and fencing	
Storage reservoir painting/patching	

Appendix D: Capacity Checklist

Appendix D
The EPA, Region 4 will rely on information from sanitary surveys to assess capacity until the workgroup approves a checklist.

Appendix E: Example Certification Utility Financial Account

Appendix E
Example Certification Utility Financial Account

The following is an example of a form that a Region might develop to certify how a water system benefiting from DWIG-TSA Program funding manages the utility.

Public Water System Name: _____

Public Water Supply Identification Number: _____

System managed by a:

☐ Tribal government

☐ Non-tribal utility serving a tribal community

I certify that the accounting system used to manage the financial operating plan for the public water system benefiting from the Drinking Water Infrastructure Tribal Set-Aside funds has the capability to record, track, and report on the program specific financial information independently from other programs.

_____

PRINT NAME

_____

TITLE

_____

SIGNATURE DATE