REQUEST FOR PROPOSALS (RFP)

FOR

DESIGN AND ENGINEERING SERVICES FOR RESERVOIR R-1 REPLACEMENT

BIGHORN DESERT VIEW WATER AGENCY
Attn: Marina West, General Manager
622 Jemez Trail
Yucca Valley, CA 92284
mwest@bdvwa.org

KEY RFP DATES - Subject to change at discretion of the Bighorn Desert View Water Agency (BDVWA):

Issue Date:	January 12, 2026
BDVWA Project Manager:	Thomas Holliman, PE
Pre-Proposal Meeting (optional):	January 27, 2026
Deadline for Requests for Information:	February 6, 2026
Proposal Due Date:	February 16, 2026
Presentation/interviews (optional):	Will be notified if applicable
Anticipated Projected Award Date:	March 10, 2026

NOTICE INVITING PROPOSALS

NOTICE IS HEREBY GIVEN that proposals will be received from qualified firms for Design and Engineering Services for the Reservoir R-1 Replacement Project.

Responses to this Request for Proposal (RFP) will be accepted until February 16, 2026 at 3:00 p.m. Proposals received after this date/time will not be considered and will be returned unopened. It is the responsibility of the Consultant to ensure that any proposals submitted have sufficient time to be received by the Bighorn Desert View Water Agency (Agency) prior to this proposal due date and time.

Proposals shall be delivered BY USPS **mail**. Proposals shall NOT be sent via email, hand delivered, or sent by courier service.

All notifications, updates and addenda will be posted on the Agency's "Current Public Notices" page at www.bighorndesertviewwateragency.com. Consultants shall be responsible for monitoring the site to obtain information regarding this solicitation. Failure to respond to required updates may result in a determination of a non-responsive proposal.

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NOTICE TO CONSULTANTS / PROPOSAL SUBMITTAL INSTRUCTIONS

1. DUE DATE AND TIME: Proposals for design and engineering support services for construction of the Reservoir R-1 Replacement Project, as described herein, will be received by the Agency until date and time shown below.

   Issue Date: January 12, 2026

   BDVWA Project Manager: Thomas Holliman, PE

   Pre-Proposal Meeting (optional): January 27, 2026

   Deadline for Requests for Information: February 6, 2026

   Proposal Due Date: February 16, 2026

   Presentation/interviews (optional): Will be notified if applicable

   Anticipated Projected Award Date: March 10, 2026

   Any changes to this RFP are invalid unless specifically modified by Agency and issued as a separate addendum document. Should there be any question as to changes to the content of this document; the Agency's copy shall prevail. It is the Consultant's sole responsibility to ensure that their proposal, inclusive of any or all addenda, is received by the Agency at the stated time and place. Any proposal received after the scheduled closing time for receipt of proposals will not be considered and will remain unopened.

   Proposals must be submitted to the Agency as set forth in this Request for Proposal document. Unless otherwise specified, proposals submitted by any other method than that set forth herein will be disqualified.

SECTION I – PROJECT INTRODUCTION AND OVERVIEW

A. General Overview:

The Bighorn-Desert View Water Agency is a consolidated independent special district, formed in 1990, operating pursuant to the provisions of the Bighorn-Desert View Water Agency Law, California Water Code Appendix, Sections 112-1 et. Seq. The Agency is governed by a five-member Board of Directors, elected at-large from within the Agency's service area. The General Manager administers the day-to-day operations of the Agency in accordance with policies and procedures established by the Board of Directors. In addition to the General Manager, the Agency employs ten (10) full-time employees organized in two departments: Administration and Operations.

The Agency provides water service to approximately 1,977 active residential customers, 507 infrequent/inactive customers, and 102 bulk-hauling customers within its nearly fifty-two (52) square-mile service area, located in the eastern desert of San Bernardino County. The Agency encompasses the unincorporated communities in the county known as Flamingo Heights, Landers, and Johnson Valley.

The Agency operates eight deep wells and ten above-ground reservoir tanks, and maintains about 600 fire hydrants and 130 miles of water main pipelines. The Agency produces groundwater for its customers from the Ames-Means Valley and Johnson Valley Groundwater Basins.

Reservoir R-1 is a 211,000 gallons bolted steel reservoir that was constructed in 1992 after the original tank was damaged beyond repair by the Landers earthquake. During inspection it was noted at the reservoir is now showing signs of significant corrosion around the bottom ring and foundation. Reservoir R-1 is a forebay which receives groundwater from two adjacent water wells. A third well is planned for the Reservoir R-1 site which will also feed into the reservoir. From the reservoir water is pumped into the Goat Mountain system from the adjacent pump station. A site layout drawing is provided as general reference for the layout of the site but may be out of date. Photographs of the existing from aerial view and at grade level are included for reference. An optional site visit will be held to allow prospective Consultants to inspect the site and the existing facilities. Agency staff will be on hand to answer questions but both the question and the answers will be provided to all prospective consultants. Only written questions and those presented at the optional walkthrough will be answered by the Agency prior to the due date for proposals.

B. Purpose Of Request For Proposal:

The Agency is currently seeking proposals from qualified engineering consulting firms for design and construction support services required for this project. The services would include the work described hereafter and detailed in Section III: Scope of Work and Technical Specifications.

One of the key deciding factors in selecting the Consultant will be the scope of work developed to achieve the Agency's objectives. As such, the Consultant should not assume that the scope of work in this proposal is adequate to complete the project and should include all required work items for the project.

The Agency will select a qualified firm to perform the required services for the new reservoir

design generally based upon their qualified expertise, project understanding, and price and in accordance with the requirements set forth within this Request for Proposal.

It is the intent of the Agency to receive responses to the RFP and, if appropriate, conduct individual interviews in order to select a firm which, in the opinion of the Agency, is best suited to perform the required services. The purpose of this RFP, therefore, is to provide the Agency with the information necessary to select the most qualified firm while obtaining the best price for the requested services. It should be noted that the Agency reserves the right to award the contract for engineering services without interviews.

C. Selection Criteria:

The criteria for firm selection will be based on, but not limited to, the following:

1. Firm's Qualifications and Experience with design of municipal steel water storage reservoirs of the size and configuration specified herein.
2. Experience and qualifications of personnel assigned to perform the work.
3. Experience in working with USDA funding requirements for rural water projects.
4. Technical approach and understanding, preparation of project specific plans and specifications for construction of municipal water storage reservoir in accordance to State of California Requirements as well as Agency Standard Specifications.
5. Fee and Payment Terms.
6. Exceptions Taken to RFP and Sample Agreement (attached).
7. Location of Consultant (i.e., proximity to Agency Sphere of Influence).

D. Evaluation And Selection Process:

1. Submittal Review: A committee will review and evaluate each submittal to determine if it meets the RFP requirements. Failure to meet the requirements set forth in the RFP will be cause for eliminating the Consultant from further consideration.
2. The technical proposals will be evaluated and ranked by a selection committee. The selection committee will establish the ranking order. The Agency will negotiate with the top-ranked firm, if deemed necessary by the selection committee. If agreement cannot be reached with the number one ranked firm, then the negotiations will be terminated, and the firm will be informed in writing. The number two ranked firm will then be invited to enter into the negotiations process.
3. The committee may interview the top-ranking Consultants. The Agency reserves the right to begin negotiations and enter into an agreement without interview or further discussions.

Description of Work	Weight of Score
Past performance and qualifications of the team members on similar projects	25%
Familiarity with capacity to handle all aspects of the work	20%
Ability to complete the project within the proposed time frame	15%
The proposed project approach, scope, manner, and thoroughness in which it is presented in the proposal	20%
Firm's experience, staff availability, stability, financial responsibility, and past performance on similar projects	20%

4. Short List: The selected candidates may be short listed to further refine the selection process.
5. The Agency reserves the right to, at their sole discretion, qualify and select the most qualified firm during the selection process or alternatively through the short-list process, conducting interviews to determine the most suitable candidate.

SECTION II – PROPOSAL REQUIREMENTS

The emphasis of the proposal should be on responding to the requirements set forth herein. In addition, Consultants need to demonstrate their capabilities, background, expertise, etc. in order for the Agency to effectively evaluate the proposals, and award to the company that provides the best value to the Agency based on the selection criteria in Section I. The Proposal should include, at a minimum, the following information:

1. **Cover Letter**

2. **Executive Summary:** to include a brief summary of the firm's origin, background, and size of the company, an organizational chart, the overall capabilities of the organization, appropriate licenses and certifications, and proximity of company's resources to the Agency's offices and facilities.

3. **General Requirements:**

   The proposal should include the following:

   1. An understanding of the project and approach to accomplish the work in a timely and acceptable manner.

   2. A detailed description of the services to be provided based on the Consultant's understanding of the project scope.

   3. A detailed work schedule for all work and time frame for items of work.

   4. The individual who will have overall responsibility for the project shall be a Registered Structural or Civil Engineer in the State of California.

   5. A resume of the key people who will be working on this project, including specifics of experience on similar projects.

   6. The proposal shall have a page limit of 25 pages, 8-1/2 X 11, 11 pt font, 1-inch margins, excluding appendices, tabs, and cover.

   7. A not-to-exceed fee based on the services outlined in the Scope of Work MUST be submitted as a separate email submittal.

   8. One (1) electronic copy via email of the proposal shall be submitted to the Agency. It will be the Consultant's responsibility to verify that the proposal has been submitted and received by the Agency by the required due date. The Agency will not be responsible for lost or delayed email submittals.

4. **Statement of Qualifications:**

   1. Qualifications and Experience (Firm and Personnel) – a description of the company's expertise related to services requested and a full discussion of the company's recent experience directly related to providing design and construction support services for bolted steel water reservoirs. For the size and scope herein provide resumes of key people to address experience and qualifications, educational background, and skills.

2. Availability – Briefly describe your firm's and personnel's ability to meet the Agency's needs in a consistent and timely manner.

3. References (Exhibit A) – list three (3) former municipal (preferred) or private clients for whom comparable services have been performed within the last five years. Include the name, mailing address, telephone number, and email address of each client's principal representative.

4. List of Subcontractors (Exhibit B) – a description of any subcontract arrangements that would be utilized for this discipline of work. Include a full description of the subcontractor's experience and personnel.

5. Consultant Business Information (Exhibit C)

6. Additions, Deletions, and/or Exceptions (Exhibit D): compliance with the Agency's contractual terms and/or RFP requirements. The Consultant shall note any additions, deletions and/or exceptions to the contractual terms and/or RFP requirements. If there are no exceptions taken, please note in the form: "There are none."

7. Project Fee Proposal (Included in a separate submittal titled "Project Fee Proposal – Bighorn Desert View Water Agency Reservoir R-1 Replacement"): said fee schedule shall include hourly rates; rates for all sub-consultants, and percentage markup of reimbursable expenses, if any shall be included. The rates shall be valid for the term of the contract. In the Project Fee Proposal, include the following information:

1. A detailed man-hour estimate by personnel classification for the major portions of the work broken down through each of the task, milestone reports, and/or plans. The fee breakdown with identify all costs of the preliminary design report (PER) per USDA requirements, see Exhibit G for the USDA, and the balance of the design services and construction support services. If selected, the Consultant will be authorized to complete the PER. Then upon approval of the PER the remaining fee will be authorized.
2.

3. Fees for any subcontractors.

4. A total not-to-exceed fee estimate based on services outlined in Scope of Work.

5. The method of compensation shall be based on a time and expense basis subject to a not- to-exceed amount for the effort to complete the project.

The Agency reserves the right to withhold award of contract for a period of ninety (90) days following RFP opening. All proposals received are considered firm for that 90-day period.

A contract incorporating the terms and conditions contained herein will be sent to the successful Consultant. Any additional terms and conditions requested or comments by Consultant must be submitted with the proposal (**Section F**: Additions, Deletions, and/or Exceptions) and will be considered as part of the selection/negotiation process.

Any questions as to the meaning of the scope of work and/or technical specifications or other pre-proposal documents must be submitted in writing and shall be directed to Thomas Holliman, District Engineer, at (909) 573-6802, tomh@trholliman.com who will provide instructions for submitting requests. Any and all such interpretations and any supplemental instructions will be sent to all prospective Consultants not later than that date set forth in Notice to Consultants. All addenda so issued shall become part of the contract documents. Under no circumstances may the Consultant contact any other department or individual for clarification or interpretation of any requirements herein.

The Agency reserves the right to reject any or all proposals, either separately or as a whole and to waive any informality in a proposal or to accept any proposal presented which it deems best suited to the interest of the Agency and is not to be bound to accept the lowest price.

The cost for developing the proposal is the sole responsibility of the Consultant. All proposals submitted become the property of the Agency. If any pages are deemed as classified or proprietary those pages should be individually marked confidential or proprietary.

At the time of the opening of proposals each Consultant shall be presumed to have read and be thoroughly familiar with the RFP and proposal requirements (including all Addenda).

Be advised that all information contained in proposals submitted in response to this solicitation may be subject to the California Public Records Act (Government Code Section 6250 et seq.), and information's use and disclosure are governed by this Act.

8. Additional Information:

The Agency shall not be liable for any pre-contractual expense incurred by the Consultant. The Consultant shall have and maintain throughout the contract period, insurance as required by the sample agreement attached acceptable to the Agency.

The Agency reserves the right to withdraw this Request for Proposal at any time and makes no representations to this Request for Proposal. The Agency reserves the right to postpone consideration of the proposals and to reject any and all proposals without indicating any reasons, therefore.

SECTION III – SCOPE OF WORK

Part 1: Project Requirements

The following requirements are provided to describe the minimum expectations for the Project and the new tank. These requirements should be incorporated into the basis of design but are not intended to be a complete or independent set of design requirements. The designer is expected to exercise professional judgement to establish the full design requirements needed to deliver the Project.

A. Site and Access

1. The new tank shall be installed at the same site as the existing tank and the finished Project site shall only be accessible by authorized vehicles and personnel. Any necessary relocation of the new tank shall be limited to within the existing fenced perimeter. The Project is not anticipating any alterations to the adjacent pump station unless directly related and necessary to this Project. No damage shall be allowed to the pump station facility from construction activities.
2. The site is currently enclosed by a minimum 8-foot chain link fence, verify that fence has adequately sized entrance and exit points in the form of metal gates to allow site access to vehicular and pedestrian traffic.
3. The site shall be continuously monitored by a security surveillance system during operation. The system shall coordinate with the existing Agency security systems.
4. The design and construction of these components shall facilitate a CEQA exemption status for the Project and not obstruct any right-of-way.
5. Any new pavement and hardscaping shall be capable of resisting deformation, cracking, and upheaving resulting from the heaviest expected vehicular load, below-grade hydrostatic pressure, and upward force generated by the growth of tree roots.
6. The Project documents shall furnish the most recent utility information from all respective utility owners. All work shall proceed with all required regulatory permits in place and all permits shall be obtained in a timely manner to not delay the schedule and be closed out at the completion of the project
7. The site grading shall facilitate drainage of runoff water away from the tank and water shall not pond within 10 feet of the tank. The runoff water shall be directed to drains, gutters, swales, and ditches for removal offsite as per Agency standards.
8. This Project is not anticipating substantial alterations to the existing trees, plants, or landscaping around the site and for no new trees or vegetation to be planted. The Project design options, and construction activities shall have the least amount of environmental impact and no site expansion to facilitate a CEQA exemption status.
9. All new underground utility valves, meters, pumps, and drains installed around the site shall be accessible for maintenance and replacement. All vaults, panels, or other shelters utilized for accessing these underground components shall be capable of resisting expected overburden and traffic loads without suffering damage and provide environmental protection to the components housed within them.
10. The tank roof shall be accessible through exterior corrosion resistant stairs of sufficient size and structural capacity for the transportation of maintenance personnel and their equipment while meeting regulatory requirements. The access points of the stairs shall be protected from unauthorized access.
11. The tank roof shall have corrosion resistant railings around the perimeter of the tank that

meet regulatory requirements for fall restraint. A ladder will be provided to access the roof with safety cage per OHSA requirements.

12. The interior of the tank shall be accessible from the roof through corrosion resistant hatch and interior ladders of sufficient size and structural capacity safe transportation of maintenance personnel and their equipment while meeting regulatory requirements. Interior ladder shall NF61 approved FRP.
13. Water mains and lateral pipes connecting the Tank and the Pump Station shall be installed below-grade in a manner to minimize maintenance interventions.

B. Performance

1. The new water tank shall be cylindrical, constructed of bolted steel, welded steel, or pre-stressed concrete. The Consultant shall recommend an appropriate operational storage capacity based on an evaluation of operational data and in conference with Agency staff. For bolted steel tanks the design will generally meet requirements of an AWWA D103-09 Factory-Coated Bolted Carbon Steel Tanks for Water Storage. For a welded steel tank, or pre-stressed concrete reservoir the Consultant shall follow the appropriate AWWA design standards and specific requirements for seismic design in California.
2. The tank shall be capable of resisting or controlling the impact of all reasonable loads imposed on it during operation including, but not limited to, hydrostatic uplift, seismic, and differential settlement. Controlling impact implies that there will be no disruption to the operations of the tank.
3. The tank shall be watertight and prevent water leaks out of the tank and water intrusion into the tank. The design documents shall clearly indicate how watertightness is achieved through the foundation, above-grade walls, roof, wall panels, as well as around pipe penetrations, hatch openings, and vents.
4. The roof top equipment, if any, and curbs shall be installed in a manner to prevent ponding water.
5. All equipment, materials and products used in the Project shall be appropriate for the site-specific conditions and the indented use of the tank and site. All materials and products used in the Project shall be capable of resisting deterioration, corrosion, deformation, delamination, debonding, and rupture throughout their anticipated lifespan.
6. All materials that contact the stored or transported water shall comply with NSF/ANSI 61 standard.
7. All appurtenances utilized in the design shall be capable of facilitating the required water flows and pressures.
8. The new tank shall have a seismic valve. Consultant shall evaluate and recommend if a mixer is necessary, and if so, type.
9. Supervisory Control and Data Acquisition (SCADA) components shall be installed and integrated with the existing SCADA system. A sufficient number and type of sensors and transducers shall be installed to provide real-time data of tank water levels, valve pressures, pipe flow rates, water quality parameters, and other data pertinent operational data equivalent to what the existing system monitors. A sufficient number and type of controllers shall be installed to allow the operators to remotely control pumps, valves, and other critical equipment in a manner equivalent to the existing systems performance. The system shall be capable of alerting the operators to abnormal conditions in a manner equivalent to the existing system. The sensors, transducers, and monitoring devices installed as part of the system shall be protected from environmental damage. The vendor of the system shall provide training and technical assistance to the Agency operation staff on proper usage. All new components used in the Project shall be capable of integrating with the Agency's

existing SCADA system.
10. The electrical system shall be sized to meet the energy needs of the site operations.
11. The sampling pipes for the tank shall be installed in a location that is easily accessible and can provide representative samples of the tank water for testing.
12. Temporary measures shall be provided during construction to maintain continuous water distribution to the Goat Mountain system. A bypass plan shall be developed to indicate how water distribution will be maintained and how system shutdown time will be limited.
13. If a steel reservoir is selected the Consultant shall provide a design for cathodic protection.

C. Quality Verification

1. A sufficient quantity and type of standard field tests of concrete, shotcrete, backfill, sub-grade, piping, valves, pumps, mechanical equipment, waterproofing coatings, and sealants shall be performed to verify that construction conforms to design expectations.
2. A watertightness test shall be conducted upon the completion of the tank in accordance with AWWA D103-09 Factory-Coated Bolted Carbon Steel Tanks for Water Storage.

D. Warranties

1. The equipment, materials, and products utilized on the Project shall be warrantied to be free of material and workmanship defects for the minimum terms indicated in Table 2.1 below.

Table 2.1 : Warranty requirements

Product	**Warranty Term**
Valves	5 Years
Meters	10 Years
Pumps	3 Years
Pipes	40 Years
Coatings/Sealants	15 Years
Mechanical Equipment	10 Years

Part 2: Scope of Services

The following Scope of Services describes the specific tasks to be performed by the Consultant. If the Consultant believes that the Project can be enhanced in any way by the addition of other tasks or the deletion of any specified tasks, they should clearly indicate such information in the proposal.

A. Project Management and Coordination

1. Perform Project coordination, monitoring, and administration.
2. Attend Project kickoff meeting, progress meetings, Project coordination meetings, design review meetings, pre-bid meeting, and pre-construction meetings.
3. Monitor task budgets and Project schedule.
4. Perform quality assurance/quality control (QA/QC) activities.
5. Prepare monthly progress and cost summary reports and invoices.

6. Identify any permitting agencies.

B. Site Investigation, Data Collection, Record Research

1. Review existing records and data including but not limited to records, drawings, reports, maps, and other documents relevant to the limits and scope of this Project.
2. Coordinate with relevant utilities and agencies to obtain existing utility mapping for the pipeline alternatives and coordinate the relocation of utility lines and appurtenances, if any.
3. Perform soil analyses to determine the corrosion under the new reservoir. The Cathodic protection system shall be designed based on the corrosion study result.
4. Review existing site conditions and evaluate which site features can be salvaged or re-purposed for the new tank and which need to be removed and replaced.
5. Review of the Agency's existing hydraulic data for the existing R-1 reservoir, adjacent pump station, and onsite production wells. Determine the optimum size of the new replacement reservoir based on the past five years of operating data and project changes in demand in the future. Determine the most cost-effective method to maintain water distribution to zone 2 during construction.

C. Preliminary Design (30% Design Submittal)

1. Provide recommendations for construction methods, project phasing (if any), replacing or slip lining the existing main water supply line and/or the pipelines connecting the tank to the adjacent pump station, and tank footprint.
2. Procure services to perform aerial or ground surveying, and mapping. Survey shall extend 100 feet beyond the Project limits. Provide the survey results in the raw data format and plotted on a map in pdf format
3. Develop design base mapping which includes utilities, rights-of-way, easements, and lot lines.
4. Develop plan sheets for pipelines showing existing utilities and proposed alignments at 1-inch equals 20 feet scale.
5. Perform field investigation of the alignments to determine the constructability issues, alignment location, and utilities clearances.
6. Identify utilities to pothole (assume 6 potholes).
7. Perform a site-specific geotechnical study to investigate earthquake fault rupture and provide geotechnical recommendations for construction.
8. Perform lead paint and asbestos testing and recommend any required abatement for demolition of the existing tank.
9. Prepare list of technical specifications and engineer's cost estimate.
10. Prepare a technical memorandum summarizing how the design satisfies performance requirements and how these requirements will be verified during construction.
11. The BDVWA will be pursuing grant and/or loan funding for the project though the USDA, Rural Development, Rural Utilities Service. As a result the Preliminary Engineering Report (PER) for the project must strictly follow the requirements as shown in Exhibit G. Because of the project parameters it is expected that the R-1 Reservoir project will be able to use the Option 4 – Streamlined Per Template (Limited Use) because the project is an in-situ replacement of an existing facility and will not be increasing the reservoir's capacity. The Consultant will include in the description of their experience any past projects which included USDA funding.

Deliverables:

Three (3) sets and an electronic PDF copy of the geotechnical report and 30% design submittal shall be presented to the Agency for review. The submittal shall include conceptual design with plan views showing the tank, pipeline alignments, existing utilities, and probable construction cost estimate. One meeting shall be scheduled with Agency staff to review the comments for the 30% design submittal.

D. Initial Design Submittal (60% Design Submittal)

1. Coordinate potholing activities.
2. Prepare complete detailed plans, plan and profile drawings, general drawings, standard and Project specific details, pipe connection details, cathodic protection details, technical specifications and 60% engineer's cost estimate.
3. Include the following deliverable in the submittal:
    1. Performance specifications for the structural design of the tank.
    2. Demolition Plan identifying staging and stock piling areas, facilities to be removed, and areas impacted by construction activities.
    3. Grading Plan identifying the elevation of the tank floor slab and final grades around the tank and necessary drainage improvements.
    4. Piping Plan including locations of pipe connections and inlet/outlet details.
    5. Tank Pipe Connection Details required based on seismic design consideration and recommendation. Possible connections include flexible connections (such EBAA Iron Flex-Tend expansion joint) and/or seismic valves that will close the tank isolation valves if a significant seismic event is detected.
    6. Tank Plan showing location of hatches, exterior ladder, handrails, vent, mixer, inlet, outlet, and overflow.
    7. Tank Details including hatches, tank vent, sample tap(s), interior ladder, guardrail attachment, inlet, outlet, drain, and overflow.
    8. Underdrain System for detecting and identifying locations of potential leaks in the tank floor.
    9. Instrumentation and Control System design parameters related to the mixing system and seismic valve controls.
    10. SCADA specification for the contractor to evaluate components that can be salvaged and reused or components that need to be removed and replaced, how to set up the system and make SCADA system operational.
    11. Pipelines showing existing utilities and proposed alignments at 1- inch equals 20 feet scale.
    12. A Bypass plan to reliably provide water to Goat Mountain system during construction.

4. Prepare Agency standard front-end specifications and technical specifications (inclusive of bid schedule, measurement, and payment section) and other related documents for bid.

Deliverables:
Three (3) sets and an electronic PDF copy of the 60% design submittal shall be presented to the Agency for review. The submittal shall include half-size drawings, contract documents, and probable construction cost estimate. One meeting shall be scheduled with Agency staff to review the comments for the 60% design submittal.

E. Revised Design Submittal (90% Design Submittal)

1. Incorporate the 60% Design Submittal Comments.
2. Submit three (3) sets and an electronic PDF copy of the revised design drawings along with specifications and contract documents.
3. Submit one copy of 90% engineer's construction cost estimate.

Deliverables:
Three (3) sets and an electronic PDF copy of the 90% design submittal shall be presented to the Agency for review. The submittal shall include half-size drawings, contract documents, and probable construction cost estimate. One meeting shall be scheduled with Agency staff to review the comments for the 90% design submittal.

F. Final Design Submittal (100% Design Submittal)

1. Incorporate the 90% Design Submittal Comments.
2. Submit one set of full-size stamped and signed final drawings along with specifications and contract documents.
3. Submit one copy of final quantity calculations and engineer's construction cost estimate.
4. Submit all digital files (AutoCAD, MS Word, MS Excel, etc.) for the Project.

Deliverables:
One (1) and an electronic PDF copy of the 100% final design submittal shall be presented to the Agency for bid. The submittal shall include full-size stamped and signed final drawings, contract documents, and probable construction cost estimate.

G. Bid and Construction Support

1. Prepare addenda during the bid period to be distributed by the Agency.
2. Conduct pre-bid meeting and prepare meeting minutes for distribution. Consultant shall prepare written responses answering bidders' technical questions during the bid period as requested by the Agency.
3. Attend site visits (estimate 6) during construction meetings/site visits at appropriate stages or as requested by the Agency and provide detailed site visit reports on the progress of construction and conformance to Contract Documents.
4. Provide submittal list, review shop drawings (estimate 12), change order requests (estimate 4) and provide written recommendations to the Agency.
5. Review and respond to contractor's request for information (RFI) (estimate 10) and clarifications during construction and provide written recommendations to the Agency.
6. Participate in the final inspection and assist with punch list of deficiencies.
7. Prepare and submit digital record drawings to the Agency.

Deliverables:
One (1) full-size as-built plans. Provide digital copies of as-built plans in digital (AutoCAD) format.

Figure 1 – Bighorn Desert View Water Agency Boundary Map

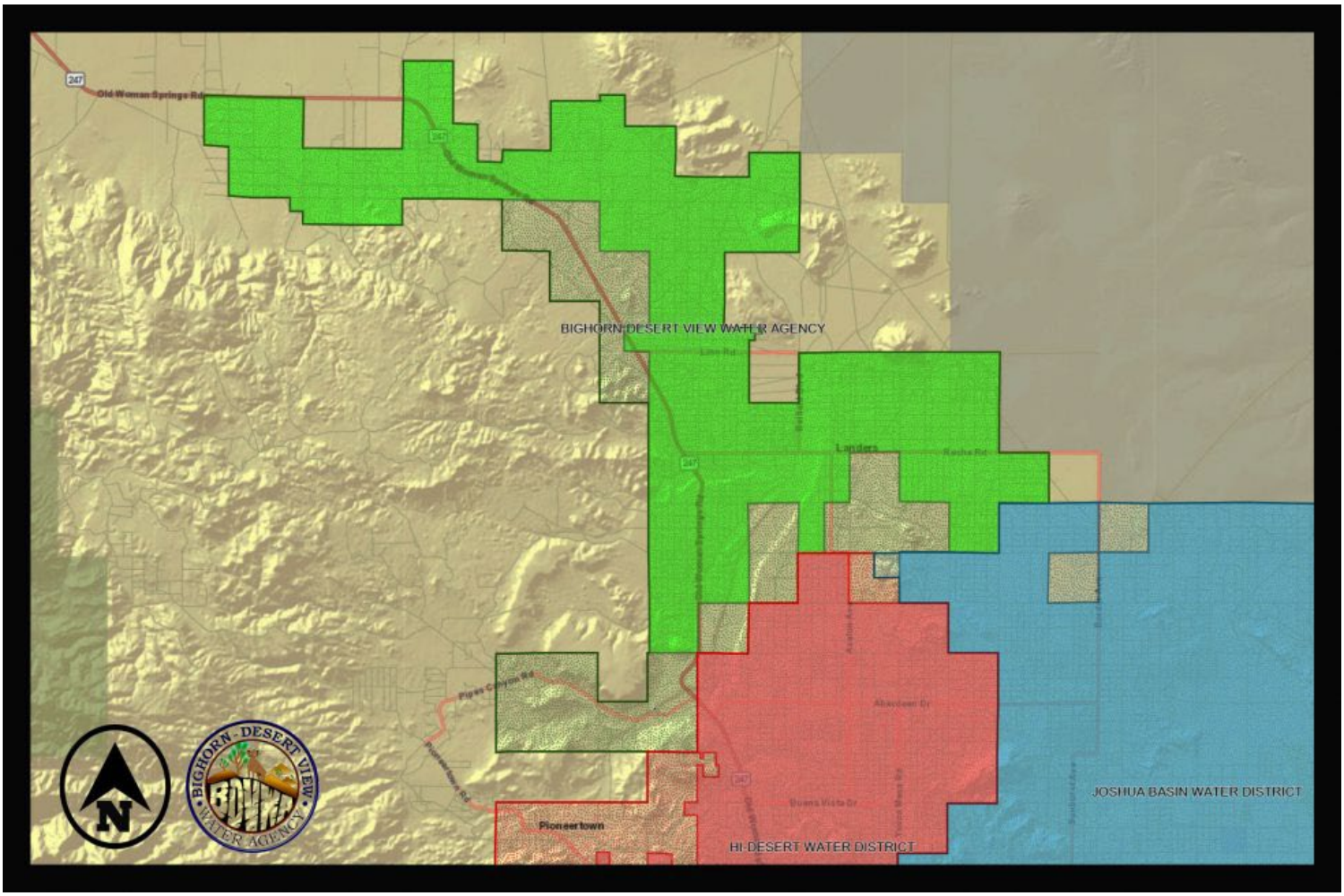

Figure 2

Reservoir R-1 Aerial View

Figure 3

Reservoir R-1 Grade Level View

EXHIBIT A: REFERENCES

Consultant shall provide a minimum of six (6) Customer References with two (2) or more years' experience with the Consultant. Local and similar size contract references are preferred.	
REFERENCE #1	
NAME OF FIRM	
ADDRESS	
AGENCY, STATE, ZIP CODE	
TELEPHONE #	( )
CONTACT	
PROJECT NAME	
COMPLETION DATE	
APPROX. COST	
REFERENCE #2	
NAME OF FIRM	
ADDRESS	
AGENCY, STATE, ZIP CODE	
TELEPHONE #	( )
CONTACT	
PROJECT NAME	
COMPLETION DATE	
APPROX. COST	
REFERENCE #3	
NAME OF FIRM	
ADDRESS	
AGENCY, STATE, ZIP CODE	
TELEPHONE #	( )
CONTACT	
PROJECT NAME	
COMPLETION DATE	
APPROX. COST	

REFERENCE #4	
NAME OF FIRM	
ADDRESS	
AGENCY, STATE, ZIP CODE	
TELEPHONE #	( )
CONTACT	
PROJECT NAME	
COMPLETION DATE	
APPROX. COST	
REFERENCE #5	
NAME OF FIRM	
ADDRESS	
AGENCY, STATE, ZIP CODE	
TELEPHONE #	( )
CONTACT	
PROJECT NAME	
COMPLETION DATE	
APPROX. COST	
REFERENCE #6	
NAME OF FIRM	
ADDRESS	
AGENCY, STATE, ZIP CODE	
TELEPHONE #	( )
CONTACT	
PROJECT NAME	
COMPLETION DATE	
APPROX. COST	

EXHIBIT B: LIST OF SUBCONTRACTORS

(ATTACH ADDITIONAL SHEETS IF REQUIRED)

NAME UNDER WHICH SUBCONTRACT IS LICENSED	LICENSE NUMBER	ADDRESS AND PHONE NUMBER OF OFFICE, MILL OR SHOP	SPECIFIC DESCRIPTION SUBCONTRACT

EXHIBIT C: CONSULTANT'S BUSINESS INFORMATION

All Consultants shall submit the information as requested below.

1. Length of time your firm has been in business: _____
2. Length of time at current location: _____
3. List types and business license number(s): _____
   _____
   _____
4. California State Contractor's License number: _____
5. Names and titles of all officers of the firm: _____
   _____
   _____
   _____
   _____
6. Is your firm a sole proprietorship doing business under a different name?
   YES ☐ or NO ☐
7. If yes, please indicate sole proprietorship name and the name you are doing business under: _____
   _____
8. Please indicate your Federal Tax Number: _____
9. Is your firm incorporated? YES ☐ or NO ☐
10. Name and remittance address that will appear on invoices: _____
    _____
    _____
11. Physical Address _____
    _____

travel, profit, insurance, sales and other taxes, licenses, incidentals, and all other related costs necessary to meet the work requirements.

CONSULTANTS: Please show **RFP number, date, and time** on RFP opening on the envelope containing your proposal.

The undersigned as Consultant, declares that the only persons or parties interested in this proposal is made without collusion with any person, firm, or corporation. Your signature on this document, should you be awarded the contract as defined in this RFP, signifies that you have fully read and understood this proposal and will comply with all specifications, conditions, unit prices, terms, and delivery of the proposal unless otherwise noted in the "exceptions" portion of the proposal.

Name of Consultant (Firm): _____

Title: _____

Authorized
Signature: _____

Date: _____

Printed/Typed Name: _____

Mailing Address: _____

State, Zip: _____

Phone: ( ) _____

Fax: ( ) _____

Email Address: _____

Price(s) shall include **all** labor, equipment, materials, transportation, overhead,

EXHIBIT D: ADDITIONS, DELETIONS, AND/OR EXCEPTIONS

Please state any and all Additions, Deletions and Exceptions that you are taking to any portion of this proposal. If not addressed below, then Agency assumes that the vendor will adhere to all terms and conditions listed.

EXHIBIT E: STANDARD AGREEMENT

EXHIBIT F: FACILITIES LAYOUT PLAN

EXHIBIT G: UNITED STATES DEPARTMENT OF AGRICULTURE Rural Utilities Service

BULLETIN 1780-2

(January 2019-CA)

Preliminary Engineering Report (PER)

PROFESSIONAL SERVICES AGREEMENT
BETWEEN
BIGHORN-DESERT VIEW WATER AGENCY
AND
[CONSULTANT]

This AGREEMENT is entered into this ___ day of _ __, 2025, between the Bighorn-Desert View Water Agency (herein after referred to as the "AGENCY") and [Consultant Name] (hereinafter referred to as the "CONTRACTOR"). AGENCY and CONTRACTOR are sometimes individually referred to as "Party" and collectively as "Parties".

1. CONSIDERATION.

A. As partial consideration, CONTRACTOR agrees to perform for the AGENCY the work listed in the SCOPE OF SERVICES, below.

B. As additional consideration, CONTRACTOR and AGENCY agree to abide by the terms and conditions contained in this Agreement.

C. As additional consideration, AGENCY agrees to pay CONTRACTOR in accordance with the proposal dated (_____) in the amounts outlined in the "Proposed XXX Fee" (page _____) included within the proposal for CONTRACTOR'S services which is attached as Exhibit "A". The AGENCY may modify this amount as set forth below. Unless otherwise specified by written amendment to this Agreement, AGENCY will pay the CONTRACTOR in accordance with Section 4 below.

2. SCOPE OF SERVICES.

A. CONTRACTOR shall perform the professional services and work listed in the attached "Proposal – description" ("Proposal"), dated _____, which is incorporated by reference, and which shall, where not specifically addressed, include all related services ordinarily provided by the CONTRACTOR under same

or similar circumstances and/or otherwise necessary to satisfy the requirements of this Agreement.

B. CONTRACTOR shall, in a professional manner, furnish all of the labor, technical, administrative, professional and other personnel, all supplies and materials, equipment, printing, vehicles, transportation, office space and facilities, all tests, testing and analyses, calculation, and all other means whatsoever, except as herein otherwise expressly specified to be furnished by AGENCY, necessary or proper to perform and complete the work and provide the professional services required of CONTRACTOR by this Agreement.

3. **PERFORMANCE STANDARDS.** While performing this Agreement, CONTRACTOR shall perform its services in such a manner as to fully comply with all applicable professional standards of care, including professional quality, technical accuracy, timely completion, and other services furnished and/or work undertaken by CONTRACTOR pursuant to this Agreement. The AGENCY will continuously monitor CONTRACTOR's services. AGENCY will notify CONTRACTOR of any deficiencies and CONTRACTOR will have fifteen (15) days after such notification to cure any deficiencies to AGENCY's satisfaction. Costs associated with curing the deficiencies shall be borne by CONTRACTOR.

4. PAYMENTS. For Agency to pay CONTRACTOR as specified by this Agreement, CONTRACTOR shall submit a detailed monthly invoice to AGENCY which lists the hours worked and hourly rates for each personnel category plus reimbursable costs, if any, for each task performed, the percentage of the task completed during the billing period, the cumulative percentage completed for each task, the total cost of that work during the preceding billing period and a cumulative cash flow curve showing projected and actual expenditures versus time to date.

5. NON-APROPRIATION OF FUNDS. Payments due and payable to CONTRACTOR for current services are within the current budget and within an available, unexhausted and unencumbered appropriation of the AGENCY. In the event the AGENCY has not appropriated sufficient funds for payment of CONTRACTOR services beyond the current fiscal year, this Agreement will cover only those costs incurred up to the conclusion the current fiscal year.

6. ADDITIONAL WORK.

A. AGENCY's General Manager may determine, at the Manager's sole discretion, that CONTRACTOR needs to perform additional work ("Additional Work") to complete the Scope of Work. If Additional Work is needed, the Manager will give written authorization to CONTRACTOR to perform such Additional Work.

B. If CONTRACTOR believes Additional Work is needed to complete the Scope of Work, CONTRACTOR shall provide the Manager with written notification that

contains a specific description of the proposed Additional Work, reasons for such Additional Work, and a detailed proposal regarding cost to complete.

C. Payments for Additional Work must be approved by AGENCY's Board of Directors. All Additional Work shall be subject to all other terms and provisions of this Agreement.

7. FAMILIARITY WITH WORK.

A. By executing this Agreement, CONTRACTOR agrees that it has:

i. Carefully investigated and considered the Scope of Services to be performed;

ii. Carefully considered how the services should be performed; and

iii. Understands the facilities, difficulties, and restrictions surrounding performance of the services under this Agreement.

B. If services involve work upon any site, CONTRACTOR agrees that CONTRACTOR has or will investigate the site and is or will be fully acquainted with the conditions there existing, before commencing the services hereunder. Should CONTRACTOR discover any latent or unknown conditions that may materially affect the performance of the services, CONTRACTOR shall immediately inform AGENCY of such fact and shall not proceed except at CONTRACTOR'S own risk until written instructions are received from AGENCY.

C. The AGENCY does not guarantee or ensure the accuracy of any reports, information, and/or data provided to CONTRACTOR. To the extent that any reports, information, and/or other data provided was supplied to AGENCY by persons who are not employees of AGENCY, any liability resulting from inaccuracies and/or omissions contained in said information shall be limited to liability on behalf of the party who prepared the information for AGENCY.

D. The AGENCY's approval of work or materials furnished hereunder shall not in any way relieve CONTRACTOR of responsibility for the technical adequacy of its work. Neither the AGENCY's review, approval or acceptance of, nor payment for any of the services shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement. Where approval by the AGENCY is indicated in this Agreement, it is understood to be conceptual approval only and does not relieve the CONTRACTOR of responsibility for complying with all laws, codes, industry standards, and liability for damages caused by negligent acts, errors, omissions, noncompliance with industry standards, or the willful misconduct of the CONTRACTOR or its subcontractors. CONTRACTOR's obligation to defend, indemnify, and hold harmless the AGENCY, and its directors, officers, employees and agents as set forth in Section 19 of this Agreement also applies to the actions

or omissions of the CONTRACTOR or its subcontractors as set forth above in this paragraph.

8. TERM. The term of this Agreement will be from _____ to _____. Unless otherwise determined by written amendment signed by the parties, this Agreement shall terminate in the following instances:

A. Completion of the professional services and work specified in the "_____ Services Proposal – description", dated _____;

B. Termination as stated in Section 16.

9. TIME FOR PERFORMANCE.

A. CONTRACTOR will not perform any professional services and work under this Agreement until:

1. CONTRACTOR furnishes proof of insurance as required under Section 23 of this Agreement; and

2. AGENCY furnishes CONTRACTOR with written Notice to Proceed, upon which time CONTRACTOR shall immediately commence work under this Agreement.

B. Should CONTRACTOR begin any phase of the professional services and work in advance of receiving written authorization to proceed, any such professional services are at CONTRACTOR'S own risk.

10. TIME EXTENSIONS. Should CONTRACTOR be delayed beyond CONTRACTOR's control, AGENCY may grant a time extension for the completion of the contracted professional services. If a delay should occur, CONTRACTOR must notify the AGENCY within forty-eight hours (48 hours), *in writing*, of the cause and the extent of the delay and detail how it interferes with the Agreement's schedule. The AGENCY may extend the completion time, when appropriate, for the completion of the contracted services.

11. CONSISTENCY. In interpreting this Agreement and resolving any ambiguities, the main body of this Agreement takes precedence over the attached documents; this Agreement supersedes any conflicting provisions. Any inconsistency between the documents will be resolved in the order in which the Exhibits appear below:

A. "_____ Services Proposal – description" (dated _____, 2025.

B. Proposed Fee (page _____) from CONTRACTOR (dated _____).

12. **CHANGES.** AGENCY may order changes in the professional services and work within the general scope of the Agreement, consisting of additions, deletions, or other revisions, and the contract sum and the contract time will be adjusted accordingly. All such changes must be authorized, *in writing*, executed by CONTRACTOR and AGENCY. The cost or credit to AGENCY resulting from changes in the services will be determined in accordance with a written agreement between the parties.

13. **TAXPAYER IDENTIFICATION NUMBER.** CONTRACTOR will provide a Taxpayer Identification Number to the AGENCY on the appropriate Internal Revenue (W-9) form.

14. **PERMITS AND LICENSES.** CONTRACTOR, at its sole expense, will obtain during the term of this Agreement, all necessary permits, licenses, and certificates that may be required in connection with the performance of services under this Agreement.

15. **WAIVER.** AGENCY's review or acceptance of, or payment for, the professional services and work product prepared by CONTRACTOR under this Agreement shall not be construed to operate as a waiver of any right AGENCY may have under this Agreement or of any cause of action arising from CONTRACTOR's performance. A waiver by AGENCY of any breach of any term, covenant, or condition contained in this Agreement shall not be deemed to be a waiver of any subsequent breach of the same or any other item, covenant, or condition contained in the Agreement, whether of the same or different character.

16. **TERMINATION.**

A. Except as otherwise provided, AGENCY may terminate this Agreement at any time with or without cause, upon written notice to CONTRACTOR.

B. CONTRACTOR may terminate this Agreement at any time with AGENCY's mutual consent. CONTRACTOR's termination notice shall be in writing at least thirty (30) days before the effective termination date.

C. Upon receiving a termination notice from the AGENCY, CONTRACTOR shall immediately cease performance under this Agreement unless otherwise instructed in the termination notice. Except as otherwise provided in the termination notice, any additional professional services and work performed by CONTRACTOR after receiving a termination notice shall be performed at CONTRACTOR's sole cost and expense and AGENCY will not be obligated to compensate CONTRACTOR for such additional professional services and work.

D. Should termination occur, all finished or unfinished documents, data, studies, surveys, drawings, maps, reports and other materials prepared by CONTRACTOR shall, at AGENCY'S option, become AGENCY's property, and CONTRACTOR will receive just and equitable compensation for any professional services and work (except as provided in Section 16.C. above) satisfactorily completed up to the

effective date of notice of termination, not to exceed the total costs in Section 1.C. above.

E. Should the Agreement be terminated pursuant to this Section, AGENCY may procure on its own terms professional services from another person or firm similar to those provided by CONTRACTOR prior to termination.

F. By executing this document, CONTRACTOR waives any and all claims for damages that might otherwise arise from AGENCY's termination under this Section 16.

17. OWNERSHIP OF DOCUMENTS. All documents, data, studies, drawings, maps, models, photographs and reports prepared by CONTRACTOR under this Agreement are AGENCY's property. CONTRACTOR may retain copies and said documents and materials as desired, but shall deliver all original materials to AGENCY upon AGENCY's written notice. AGENCY agrees that use of CONTRACTOR's completed work product, for purposes other than identified in this Agreement, or use of incomplete work product, is at AGENCY's own risk.

18. PUBLICATION OF DOCUMENTS. Except as necessary for performance of service under this Agreement, no copies, sketches, or graphs of materials, including graphic artwork, prepared pursuant to this Agreement, will be released by CONTRACTOR to any other person or entity without AGENCY's prior written approval. All press releases, including graphic display information to be published in newspapers or magazines, will be approved and distributed solely by AGENCY, unless otherwise provided by a written agreement between the parties.

19. INDEMNIFICATION.

A. CONTRACTOR shall indemnify and hold AGENCY, the State Water Board (or other grantor) harmless from and against any and all claims, demands, causes of action, suits, debts, obligations, liabilities, losses, damages, costs, expenses, attorney's fees, awards, fines, settlements, judgments or losses of whatever nature, character, and description, with respect to or arising out of the work to be performed under this Agreement, including without limitation, any and all such claims, demands, causes of action, suits, debts, obligations, liabilities, losses, damages, costs, expenses, attorney's fees, awards, fines, settlements, judgments or losses of whatever nature, character, and description, arising by reason of death or bodily injury to one or more persons, including the employees of CONTRACTOR; injury to property of any kind, including loss of use; or economic damages of any kind, caused by, or arising out of, any alleged or actual act or omission, regardless of whether such act or omission is active or passive, by CONTRACTOR, any of CONTRACTOR's subcontractors or AGENCY, including their respective directors, officers, employees, agents and assigns, excepting only such matters arising from the sole negligence or willful misconduct of the AGENCY.

A. CONTRACTOR shall defend, indemnify and hold AGENCY, the State Water Board (or other grantor), and their respective directors, officers, employees and agents, (individually an "Indemnified Party" and collectively the "Indemnified Parties") harmless from and against any and all claims, demands, causes of action, suits, debts, obligations, liabilities, losses, damages, costs, expenses, reasonable attorney's fees, awards, fines, settlements, judgments or losses of whatever nature, character, and description, to the extent that any or all such claims, demands, causes of action, suits, debts, obligations, liabilities, losses, damages, costs, expenses, attorney's fees, awards, fines, settlements, judgments or losses of whatever nature, character, and description, arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of CONTRACTOR and/or any of CONTRACTOR's subconsultants, including their respective directors, officers, employees, agents and assigns.

B. CONTRACTOR shall defend, indemnify and hold AGENCY, including its directors, officers, employees and agents, harmless from and against any and all claims, demands, causes of action, suits, debts, obligations, liabilities, losses, damages, costs, expenses, attorney's fees, awards, fines, settlements, judgments or losses of whatever nature, character, and description, with respect to or arising out of any breach by CONTRACTOR or CONTRACTOR's subcontractors, including their respective directors, officers, employees, agents and assigns, of the aforesaid obligations and covenants, and any other provision or covenant of this Agreement.

C. Should AGENCY be named in any lawsuit, or should any claim be brought against it by lawsuit or otherwise, whether the same be groundless or not, arising out of, or related to, this Agreement, or its performance, CONTRACTOR shall defend AGENCY (at AGENCY's request and with counsel satisfactory to AGENCY) and shall indemnify AGENCY for any judgment rendered against it or any sums paid out in settlement or otherwise. This indemnification and hold harmless obligation includes any personal injury or property damage claim or lawsuit filed against the AGENCY related to CONTRACTOR's performance of the Scope of Work under this Agreement.

D. For purposes of this Section, "AGENCY" includes AGENCY and their officers, officials, employees, agents, representatives, and volunteers.

E. It is the intent of the Parties to this Agreement that the defense, indemnity and hold harmless obligation of CONTRACTOR under this Agreement shall be as broad and inclusive as may be allowed under *California Civil Code* §§ 2778 through 2784.5, or other similar state or federal law.

F. It is expressly understood and agreed that the foregoing provisions shall survive termination of this Agreement.

G. The requirements as to the types and limits of insurance coverage to be maintained by CONTRACTOR as required by Section 23, and any approval of said insurance

by AGENCY, are not intended to and will not in any manner limit or qualify liabilities and obligations otherwise assumed by CONTRACTOR pursuant to this Agreement, including, without limitation, to the provisions of this Section 19.

20. ASSIGNABILITY. This Agreement is for CONTRACTOR's professional services. CONTRACTOR's attempts to assign the benefits or burdens of this Agreement without AGENCY's written approval are prohibited and will be null and void.

21. INDEPENDENT CONTRACTOR. AGENCY and CONTRACTOR agree that CONTRACTOR shall act as an independent contractor and shall have control of all of its work and the manner in which it is performed. CONTRACTOR will be free to contract for similar service to be performed for other employers while under contract with AGENCY. CONTRACTOR and its employees are not agents or employees of AGENCY. Any provision in this Agreement that may appear to give AGENCY the right to direct CONTRACTOR as to the details of doing the work or to exercise a measure of control over the work means that CONTRACTOR will follow the direction of the AGENCY only as to end results and end product of the work only. The services to be provided by CONTRACTOR under this Agreement are outside the usual course of the AGENCY's business. CONTRACTOR holds itself as duly licensed, qualified, and capable of performing the services set forth herein and that CONTRACTOR is customarily engaged in an independently established trade, occupation, and/or business of the same nature as the work to be performed herein.

22. AUDITS OF RECORDS. CONTRACTOR shall maintain full and accurate records with respect to all services and matters covered under this Agreement. AGENCY shall have free access at all reasonable times to such records, and the right to examine and audit the same and to make transcript there from, and to inspect all program data, documents, proceedings and activities. CONTRACTOR shall retain such financial and program service records for at least three (3) years after termination or final payment under this Agreement.

23. INSURANCE.

A. Before commencing performance under this Agreement and at all other items this Agreement, and at all other times this Agreement is effective, CONTRACTOR shall procure and maintain the following types of insurance with coverage limits complying, at a minimum, with the limits set forth below:

Type of Insurance	Limits
Commercial General Liability	$1,000,000.
Automobile Liability	$1,000,000.
Professional Liability	$1,000,000.

Worker's Compensation Statutory Requirement

B. Commercial General Liability Insurance, in broad form acceptable to AGENCY, including coverage for completed operations, liability assumed by contract, liability assumed for subcontractors and independent contractors, underground hazard, collapse hazard and explosion. The policy limits shall be at least $1,000,000 for each occurrence and in the aggregate for bodily injury and $1,000,000 for each occurrence and in the aggregate for property damage. A per project aggregate limit endorsement shall be included. The Certificates of Insurance shall designate AGENCY as an additional insured, shall state that the insurance is primary and noncontributory, shall waive rights of subrogation against AGENCY, and shall include a per project aggregate limit. The Certificate shall provide that the policy may not be canceled or modified without 30-days' prior written notice to AGENCY. Each policy shall be endorsed to designate AGENCY as an additional insured, shall provide that the insurance afforded to AGENCY is primary and noncontributory, shall waive rights of subrogation against AGENCY, and shall include a per project aggregate limit. The certificates and endorsements shall be delivered to AGENCY before Contractor or any subcontractor begins work on the project.

C. Business Automobile Liability Insurance will cover owned, scheduled, non-owned, and hired automobiles, with a combined single limit of no less than $1,000,000 per accident for bodily injury, and property damage for the policy coverage. Liability policies will be endorsed to AGENCY, its officers, officials, employees, agents, representatives, and volunteers as "Additional Insureds" under said insurance coverage and to state that such insurance will be deemed "primary" such that any other insurance that may be carried by AGENCY will be excess thereto. Such insurance will be on an "occurrence", not a "claim made" basis and will not be cancelable or subject to reduction except upon ten (10) day prior written notice to AGENCY.

D. Professional liability coverage will be on an "occurrence basis", if such coverage is available, otherwise on a "claims made" basis. When coverage is provided on a "claims made basis ", CONTRACTOR shall continue to renew the insurance for a period of three (3) years after this Agreement expires or is terminated. Such insurance shall have the same coverage and limits as the policy that was in effect during the term of this Agreement, and shall cover CONTRACTOR for all claims made by the AGENCY arising out of any errors or omissions of CONTRACTOR, or its officers, employees or agents during the time this Agreement was in effect.

E. Workers Compensation Insurance as required by the State of California and Employer's Liability. Coverage of at least $1,000,000 per occurrence for the Employer's Liability. Labor Code Section 1860.

F. CONTRACTOR shall furnish, or caused to be furnished, to the AGENCY duly authenticated Certificates of Insurance, evidencing maintenance of the insurance

required under this Agreement and such other evidence of insurance or copies of policies as may be reasonably necessary and required by AGENCY from time to time. All insurance coverages required by this Section 23 shall be placed with California admitted insurers with a current A.M. Best Company Rating of at least "A: VII".

G. Should CONTRACTOR, for any reason, fail to obtain and maintain the insurance required by this Agreement, AGENCY may obtain such coverage at CONTRACTOR'S sole cost and expense and deduct the cost of such insurance from payments due to CONTRACTOR under this Agreement and/or terminate pursuant to Section 16.

24. USE OF SUBCONTRACTORS. CONTRACTOR shall obtain AGENCY's prior written approval to use any subcontractors while performing any portion of this Agreement. Such approval shall also include the AGENCY's authorization of the proposed subcontractor and the terms of the subcontractor's compensation.

No subcontract shall be awarded by CONTRACTOR unless prior written approval thereof is obtained from the AGENCY. CONTRACTOR shall be responsible for payment to subcontractors used by them to perform the services under this Agreement. If CONTRACTOR subcontracts any of the work to be performed, CONTRACTOR shall be as fully responsible to the AGENCY for the performance of the work, including errors and omissions of CONTRACTOR's subcontractors and of the persons employed by the subcontractor, as CONTRACTOR is for the acts and omissions of persons directly employed by the CONTRACTOR. Nothing contained in this Agreement shall create any contractual relationship between any subcontractor of CONTRACTOR and the AGENCY. CONTRACTOR shall bind every subcontractor and every subcontractor of a subcontractor to the terms of this Agreement that are applicable to CONTRACTOR's work unless specifically noted to the contrary in the subcontract in question and approved in writing by the AGENCY.

25. INCIDENTAL TASKS. CONTRACTOR shall meet with AGENCY monthly to provide the status on the professional services and work required by this Agreement, which will include a schedule update and a short narrative description of progress during the past month for each major task, a description of the professional services and work remaining and a description of such services to be completed before each major task, a description of such services remaining and a description of the services to be completed before the next scheduled update.

26. NOTICES. All communications to either Party by the other Party shall be deemed made when received by such Party at its respective name and address as follows:

TO CONTRACTOR:	TO AGENCY:
XX	Marina D. West, PG, General Manager
XX	Bighorn-Desert View Water Agency
XX	622 S. Jemez Trail
XX	Yucca Valley, CA 92284-1440

Any such written communications by mail shall be conclusively deemed to have been received by the addressee upon deposit thereof in the United States Mail, postage prepaid and properly addressed as noted above. In all other instances, notices shall be deemed given at the time of actual delivery. Changes may be made in the names or addresses of persons to whom notices are to be given by giving notice in the manner prescribed in this paragraph.

27. CONFLICT OF INTEREST. CONTRACTOR shall comply with all conflict-of-interest laws and regulations including, without limitation, the AGENCY's conflict of interest rules and regulations.

28. SOLICITATION. CONTRACTOR maintains and warrants that it has not employed nor retained any company or person, other than CONTRACTOR's bona fide employee, to solicit or secure this Agreement. Further, CONTRACTOR warrants that it has not paid nor has it agreed to pay any company or person, other than CONTRACTOR's bona fide employee, any fee, commission, percentage, brokerage fee, gift or other consideration contingent upon or resulting from the award or making this Agreement. Should CONTRACTOR breach or violate this warranty, AGENCY may rescind or terminate this Agreement without liability.

29. THIRD PARTY BENEFICIARIES. This Agreement and every provision herein are for the exclusive benefit of CONTRACTOR and AGENCY and not for the benefit of any other person or entity. There shall be no incidental or other beneficiaries of any of CONTRACTOR's or AGENCY's obligations under this Agreement.

30. INTERPRETATION. This Agreement was drafted in, and will be construed in accordance with the laws of the State of California and exclusive venue for any action involving this agreement shall be in San Bernardino County.

31. COMPLIANCE WITH LAW. CONTRACTOR agrees to comply with all federal, state, and local laws applicable to this Agreement.

32. ENTIRE AGREEMENT. This Agreement, and its attachments, sets forth the entire understanding of the Parties. There are no understandings, terms or other agreements expressed or implied, oral or written. There are _____ attachments to this Agreement. This Agreement shall bind and inure to the benefit of the Parties to this Agreement and any subsequent successors and assigns.

33. **RULES OF CONSTRUCTION.** Each Party had the opportunity to independently review this Agreement with legal counsel. Accordingly, this Agreement will be construed simply, as a whole, and in accordance with its fair meaning. It will not be interpreted strictly for or against either Party.

34. **SEVERABILITY.** If any portion of this Agreement is declared by a court of competent jurisdiction to be invalid or unenforceable, then such portion will be deemed modified, such portion and the balance of this Agreement will continue in full force and effect.

35. **AUTHORITY/MODIFICATION.** The Parties represent and warrant that all necessary action has been taken by the Parties to authorize the undersigned to execute this Agreement and to engage in the actions described herein. This Agreement may be modified by written amendment. AGENCY's General Manager, or designee, may execute any such amendment on behalf of the AGENCY.

36. **ACCEPTANCE OF FASCIMILE SIGNATURES.** The Parties agree that this Agreement, any agreements ancillary to this Agreement, and in connected or related documents to be extended into this Agreement will be considered signed when the signature of a party is delivered by facsimile transmission. Such facsimile signature will be treated in all respects as having the same effect as an original signature.

37. **CAPTIONS.** The captions of the paragraphs of this Agreement are only for convenience of reference and will not affect the interpretation of the Agreement.

38. **TIME IS OF ESSENCE.** Time is of the essence for each and every provision of this Agreement.

39. **FORCE MAJEURE.** Should performance of this Agreement be prevented due to fire, food, explosion, acts of terrorism, war, embargo, government action, civil or military authority, the natural elements, or other similar causes beyond the Parties' reasonable control, then the Agreement will immediately terminate without obligation of either party to the other.

40. **STATEMENT OF EXPERIENCE.** By executing this Agreement, CONTRACTOR represents that it has demonstrated trustworthiness and possesses the quality, fitness, and capacity to perform the Agreement in a manner satisfactory to AGENCY. CONTRACTOR represents that its financial resources, surety and insurance experience, experienced completion ability, personnel, current workload experience in dealing with private contractors and experience in dealing with public agencies all suggest that CONTRACTOR is capable of performing the proposed contract and has a demonstrated capacity to deal fairly and effectively with and to satisfy the said public AGENCY.

41. **WARRANTY OF AUTHORIZED SIGNATORIES.** Each of the signatories hereto warrants and represents that he or she is competent and authorized to enter into this Agreement on behalf of the Party for whom he or she purports to sign.

42. **CONSEQUENTIAL DAMAGES.** CONTRACTOR and AGENCY each agree to waive consequential damages for claims, disputes or other matters in question arising out of or relating to this Agreement. This mutual waiver is applicable, without limitation, to all consequential damages due to either Party's termination in accordance with this Agreement. AGENCY further agrees that to the fullest extent permitted by law, CONTRACTOR shall not be liable to AGENCY for any special, indirect or consequential damages whatsoever, whether caused by CONTRACTOR's negligence, errors, omissions, strict liability, breach of contract, breach of warranty or other cause or causes whatsoever, including but not limited to, loss of use of equipment or facility, and loss of profits or revenue.

43. **ATTORNEYS' FEES.** In the event that either the AGENCY or CONTRACTOR brings an action or proceeding for damages for an alleged breach of any provision of this Agreement, to interpret this Agreement or determine the rights of and duties of either Party in relation thereto, the prevailing Party shall be entitled to recover as part of such action or proceeding all litigation, arbitration, mediation and collection expenses, including witness fees, court costs, and reasonable attorneys' fees. Such fees shall be determined by the Court in such litigation or in a separate action brought for that purpose. Mediation will be attempted if both Parties mutually agree before, during, or after any such action or proceeding has begun.

This Agreement is executed on the ___ day of _____ at Yucca Valley, California, and is effective as of effective date.

XXXXX
"CONTRACTOR"

BY: _____

Name: _____

Title: _____

BIGHORN-DESERT VIEW WATER AGENCY

_____
Marina D. West, PG, General Manager

Approved as to Form:

_____
XXXX, General Counsel
Bighorn-Desert View Water Agency

UNITED STATES DEPARTMENT OF AGRICULTURE

Rural Utilities Service

BULLETIN 1780-2

SUBJECT: **Preliminary Engineering Reports for the Water and Waste Disposal Program**

TO: Rural Development State Directors, Community Program Directors, and State Engineers

EFFECTIVE DATE: Date of approval.

OFFICE OF PRIMARY INTEREST: Engineering Branch, Water and Environmental Programs

INSTRUCTIONS: This bulletin replaces existing RUS Bulletin 1780-2 (April 4, 2013) .

AVAILABILITY: This bulletin and all the exhibits, as well as any Rural Development instruction or Rural Utilities Service bulletins, regulations, or forms referenced in this bulletin are available at any Rural Development State Office. The State Office staff is familiar with the use of the documents in their States and can answer specific questions on Agency requirements.

This bulletin is available on the Rural Utilities Service website at http://www.rurdev.usda.gov/RDU_Bulletins_Water_and_Environmental.html.

PURPOSE: This bulletin assists applicants and their consultants with instructions on how to prepare a Preliminary Engineering Report as part of an application for funding as required by 7 CFR 1780.37(d) and 7 CFR 1780.65(a).

MODIFICATIONS: Rural Development State Offices may modify this guidance when appropriate to comply with State statutes and regulations in accordance with the procedures outlined at Rural Development Instruction 2006-B (2006.55).

MICHELE BROOKS

Digitally signed by MICHELE BROOKS
Date: 2025.09.04 19:51:20 -04'00'

MICHELE BROOKS
Assistant Administrator
Water and Environmental Programs

Date

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ABBREVIATIONS

CDBG – Community Development Block Grant
CFR – Code of Federal Regulations
EDU – Equivalent Dwelling Unit
EPA – Environmental Protection Agency
GAO – Government Accountability Office
GPCD – Gallons per Capita per Day
HUD – Department of Housing and Urban Development
O & M – Operations and Maintenance
PER – Preliminary Engineering Report
RD – Rural Development
RUS – Rural Utilities Service
SRF – State Revolving Fund
STEP – Septic Tank Effluent System
USDA – United States Department of Agriculture
WEP – Water and Environmental Programs
WWD – Water and Waste Disposal

1. BACKGROUND

A Preliminary Engineering Report (PER) is a planning document required by many state and federal agencies as part of the process of obtaining financial assistance for development of drinking water, wastewater, solid waste, and stormwater projects. An applicant for funding from the Water and Waste Disposal (WWD) program must submit a PER as required by 7 CFR 1780.33(c) and 1780.55. The PER describes the proposed project from an engineering perspective, analyzes alternatives to the proposal, defines project costs, and provides information critical to the underwriting process. A PER submitted to USDA Rural Development must be sealed by an engineer licensed in the jurisdiction where the project will be constructed.

2. GENERAL

This bulletin provides information and guidance for applicants and professional consultants in developing a PER for submittal with an application for WWD funding. RD State Offices should provide a copy of the Bulletin to applicants and consulting engineers upon request or refer them to the website listed on the Bulletin's cover sheet for an electronic copy.

Content of a PER: The PER Templates describe the content of a PER for the given application and should be used without modification, except when noted otherwise. Often an applicant will initially consider only a single funding source and later determine that an application to additional funding agencies is necessary. To avoid having to revise the PER to meet the additional agencies' needs, the consulting engineer should consider using the Interagency PER template. Otherwise, one of the other templates may suffice, depending on the specifics of a project.

The PER should be a clearly written, concise report that provides the pertinent information needed to support a funding decision. Length should generally be 30 pages or less for smaller projects or 50 pages or less for larger projects. Extraneous information will prolong the review process. Similarly, attaching voluminous documents or reports in the appendices should be avoided, as overly large appendices can hamper the goal of conveying necessary information for project acceptance. When appendices are needed, please facilitate review with the use of tabs or other navigation aids. Table of contents should include the page numbers associated with each appendix provided.

Alternatives Analyses: Alternatives analyses help determine if a project is modest in size, design and cost. The number of analyses required will vary depending on the specifics and complexity of the project. Appendix A includes a list of standard alternatives that should be considered for common project elements funded by the WWD program. Only projects allowed under the Streamlined PER criteria may have a PER without an alternatives analysis (see Section 3.4 and Appendix B).

Short-Lived Assets: Short-lived assets (SLA) are items that require periodic replacement prior to the end of a project's useful life. They do not include items covered by O&M or items that are usually funded with long-term capital financing. The short-lived asset table in Appendix A of the Interagency Memorandum contains a list of examples of short-lived assets. Depending on local practices and applicants, some of these items may not be considered short-lived assets if they are considered part of O&M or long-term capital financing. Consulting engineers and applicants should coordinate with each other and with the Agency to determine which items should be considered short-lived assets for specific projects. For Rural Development underwriting purposes, only assets with life spans of 15 years or less will be considered SLAs. Note that the list of SLAs provided for underwriting purposes may differ from the SLA list provided for the alternatives analysis. A list of SLAs for the entire system are needed for funding underwriting whereas only a list of SLAs relevant to project is needed for the alternatives analysis.

Cyber Security: The projected operation and maintenance (O&M) budget must include a line item for cyber security costs (see Appendix C), even if it is zero, but applicants are encouraged to enter into a cyber security contract.

Collaborative Delivery Methods: The PER guidance within this Bulletin assumes the use of standard design-bid-build method of project delivery. If collaborative methods are used (such as design build – stipulated price) the PER should be written and developed with this method in mind. Cost opinions will likely have different cost breakouts, particularly for engineering and construction related services. In some situations, an alternatives analysis may not be necessary if a project includes a request for proposals allowing competing design builders to present alternative designs. Use of collaborate delivery methods requires approval of the Agency and the Agency's Office of General Counsel. Project schedules should account for this effort.

Sole Sourcing Equipment: Sole sourcing equipment and materials is generally not allowed by 2 CFR 200.319. Projects wishing to sole source equipment must obtain Agency approval. Sole sourced equipment must conform with applicable domestic preference requirements.

Amendments: In certain situations, a previously concurred with PER may require modification due to unforeseen circumstances that affect the scope of work needed to complete the project objectives. In such cases, an amendment to the PER, that clearly demonstrates the PER modifications, may be submitted for agency review, consideration and concurrence. This amendment will be an official document, stamped and signed by the engineer of record.

The PER is not finalized until the agency has concurred with the document. Any modifications made to the PER prior to agency concurrence should be made within the original document.

PER amendments are rare after funding obligation and cannot be accepted after bids are opened for all contracts within the original project scope.

3. PRELIMINARY ENGINEERING REPORT OPTIONS

The four PER template options available for WEP funded projects are described below. Not every template is suitable for every situation or project. Please read the details below to see which templates are allowed for a particular project in consideration. Irrespective of the template used, the PER must be sealed by an engineer licensed in the state where the project will be constructed.

3.1 OPTION 1 - INTERAGENCY PER TEMPLATE

Government at both state and federal levels endeavor to improve coordination between funding agencies in the processes involved in applications for infrastructure funding. A GAO report, "Rural Water Infrastructure: Additional Coordination Can Help Avoid Potentially Duplicative Application Requirements" (GAO-13-111), released October 16, 2012, called the effort of the working group led by USDA to develop the attached Interagency PER Template "encouraging" and stated that it would "help communities".

In 2012 the USDA, Rural Development (RD), Rural Utilities Service (RUS), Water and Environmental Programs (WEP) formed a working group to develop an interagency template for PERs for use by both federal agencies and state administering agencies. The USDA-led working group included 36 individuals representing 4 federal agencies, 16 state agencies, the Border Environment Cooperation Commission, and the North Carolina Rural Center. Also, the effort was supported by the Small Community Water Infrastructure Exchange. On January 16, 2013, the principals of the federal participants executed an interagency memorandum supporting use of the interagency template, attached as Exhibit One.

Content of an Interagency PER: The attached Interagency PER Template describes the content of a PER and should be used without modification, unless noted otherwise. Often an applicant will initially consider only a single funding source and later determine that an application to additional funding agencies is necessary. To avoid having to revise the PER to meet the additional agencies' needs, the consulting engineer should provide responses to all sections of the PER outline, unless specific sections do not apply to a proposed project.

Requirements for providing funding decision (financial) data are integrated within the body of this template. The PER preparer may elect to provide this data within the body of the report or use Appendix C.

The Interagency PER Template may be used for **all WEP-funded projects** and may be particularly helpful when other federal funding programs are contributing to the project financing.

3.2 OPTION 2 – WEP-SPECIFIC PER TEMPLATE

The WEP-Specific PER Template may be used for **all WEP-funded projects but might not be appropriate when other federal programs are utilized for project funding** (depending on the planning document requirements of the other funding agencies.) Complete but concise PERs should be developed when utilizing this template. The WEP-Specific PER Template is provided in Exhibit Two.

3.3 OPTION 3 – OTHER ENGINEERING REPORT WITH CROSS-REFERENCES

Capital improvement plans and engineering reports prepared for other agencies may be used if those reports include the information described in the Option 1 or Option 2 templates, described above. To use this option, the location of the necessary information must be identified. Three methods to do this cross-reference are: a) Writing the page numbers from the other engineering report onto the Option 1 or Option 2 table of contents to identify the locations of the respective information; b) Providing a letter that explains where the required information can be found within the other engineering report. A cross-reference table should be attached to this letter; c) Providing a copy of the table of contents from the other engineering report and notating upon it where the necessary information required by the Option 1 or Option 2 templates can be found.

Required information not furnished in the other engineering report may be provided in a separate document, sealed by an engineer licensed in the state where the project will be constructed.

3.4 OPTION 4 – STREAMLINED PER TEMPLATE (LIMITED USE)

The Streamlined PER Template may be used for **simple projects when there are no technical alternatives to the proposed action**. Appendix B provides a list of such projects for which this PER template may be used. Projects that apply for only loan funding (no grant) may also qualify for the Streamlined PER. Projects not fitting in one of these categories must use one of the other template alternatives. In rare circumstances, the State Engineer might request analysis of an alternative for projects listed in Appendix B. The Streamlined PER Template is provided in Exhibit Three.

EXHIBIT ONE
INTERAGENCY 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 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			
EPA/DWSRF			
EPA/CWSRF			
HUD			
IHS			

Sincerely,

1/16/13

Jacqueline M. Ponti-Lazaruk, Assistant Administrator
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

1/16/13

Andrew Sawyers, Deputy Director
US EPA, Director, Office of Water, Office of Ground Water and Drinking Water

1/16/13

Ronald Ferguson, PE, RADM, Director
Division of Sanitation Facilities Construction, Indian Health Service

1-16-13

Stanley Gimont, Director
Office of Block Grant Assistance, US Department of Housing and Urban Development

Attachment

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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 rights-of-way, 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	

EXHIBIT TWO
WEP-SPECIFIC PRELIMINARY ENGINEERING REPORT TEMPLATE

EXHIBIT TWO

GENERAL OUTLINE OF A WEP-SPECIFIC PRELIMINARY ENGINEERING REPORT

1) PROJECT PLANNING
   a) Location
   b) Environmental Drivers and Considerations
   c) Population Trends

2) EXISTING FACILITIES
   a) Location Map
   b) Condition of Existing Facilities
   c) Water/Energy/Waste Audits

3) NEED FOR PROJECT

4) ALTERNATIVES CONSIDERED
   a) Description
   b) Design Criteria
   c) Map
   d) Environmental Impacts
   e) Land Requirements
   f) Potential Construction Problems
   g) Resilience and Sustainability Considerations
      i) Resilience
      ii) Sustainability
   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
      i) Drinking Water Projects
      ii) Wastewater/Reuse Projects
      iii) Solid Waste Projects
      iv) Stormwater Projects
   b) Project Schedule
   c) Permit Requirements
   d) Community Engagement
   e) Total Project Cost Estimate (Engineer's Opinion of Probable Cost)
   f) Funding Decision Data

7) CONCLUSIONS AND RECOMMENDATIONS

DETAILED OUTLINE OF A WEP-SPECIFIC 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.

b) Environmental Drivers and Considerations. As applicable, provide any critical information on environmental resources that may affect the project or that are driving decisions regarding alternatives selected or design methodology. Do not copy and paste the NEPA documentation in this section, as this section is concerned with impacts environmental factors are having on the existing system and the proposed project. For example, if wetlands are present, provide the extent and nature of the wetlands and how they complicate or limit actions. Also, if suitable habitat for threatened or endangered species is present within the project site(s), provide information about these species and any challenges that may come to pass because of their presence. If the project includes water storage or other potentially tall structures, provide discussion on how visibility of the structure may affect historic properties, if such historic sites/properties are present in the area. If topographic features complicate or facilitate a project, provide a narrative to this matter along with relevant topographic mapping.

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. This section may be omitted for rehabilitation projects that do not include system expansion.

2) EXISTING FACILITIES

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

a) Location Map. For all projects, provide a map or plan view layout of all existing facilities. Provide a schematic process diagram for projects involving work to treatment facilities. Identify facilities that are no longer in use or abandoned. Include photographs of existing facilities.

b) 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 current energy consumption, relevant to the project. Reference an asset management plan if applicable. Provide a water loss or inflow and infiltration analysis for projects proposing an increase to system capacity.

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

3) NEED FOR PROJECT

Describe why the project is needed. This section is vitally important, because without clear justification, the project cannot be funded by Rural Development. The project need may fall in one or more of the following categories: health or sanitary problems, security concerns, aging infrastructure nearing the end of useful life, system operations or operational efficiency, resilience, or reasonable growth. Projects whose primary purpose is to upgrade existing facilities or construct new facilities required to meet applicable health or sanitary standards may qualify for additional financial assistance under 7 CFR 1780.10(c)(1) and 7 CFR 1780.13(b). See Appendix E for the required documentation.

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. The level of detail provided should be appropriate for the complexity of the project. 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. Financially infeasible is not the same as technically infeasible. 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, as applicable. 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. If environmental impacts are relevant to project selection, provide a brief description of how protection of environmental resources may affect implementing the specific alternative being considered

e) Land Requirements. Identify sites and easements required. Further specify whether these properties are currently owned, to be acquired, leased, or have access agreements. For projects that require routine maintenance of assets on private property such as Septic Tank Effluent System (STEP) or grinder pump systems, permanent easements and/or agreements will be required.

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) Resilience and Sustainability Considerations. As it applies to alternative selection, briefly describe how the alternative improves the system's long-term resilience and sustainability.

i) Resilience. Resilience measures enhance an infrastructure asset's or utility's ability to withstand and recover from natural or man-made hazards, including flooding, high winds, wildfire, drought, earthquake, cyberattack, electrical power outage, and supply chain disruptions. Modern building codes provide a baseline level of resilience to several hazards, but actions taken to exceed minimum requirements or other project attributes that enhance resilience should be discussed here. Many resilience measures, such as hardening or elevating infrastructure, may incur additional capital expense during construction See section 5(a) for guidance on how to capture the benefits in a lifecycle cost analysis.

ii) Sustainability. Sustainable utility management practices include environmental, social, and economic benefits that aid in creating a resilient utility. Note that, per 7 CFR 1780.10(a)(1), projects must be modest, and alternatives must be compared on a lifecycle cost basis; however, sustainability is a "non-monetary factor" that can be part of project selection. Sustainability considerations may not apply to every alternative or every project, but every PER should include this section, if only to say, "not applicable."
(1) Environmental benefits might include decreased emissions or reduced consumption of natural resources during construction or over the project's lifecycle or environmental improvements beyond the minimum required by NEPA or other laws.
(2) Social benefits may involve opportunities for recreation, education, or other functions of life not directly tied to water or wastewater. Community acceptance and enthusiasm for an infrastructure project helps to ensure the project will have the support needed to thrive long-term. Robust and extensive community engagement is essential.
(3) Financial sustainability of funding recipients (utilities) is one of WEP's primary goals. In practice, it means that the entity has the funds operate indefinitely without undue hardship. WEP attempts to achieve this by selecting the most appropriate, modest project, and through underwriting of the award. This section of the PER may discuss aspects of the project that provide the community additional financial benefits.
(4) Other factors that may affect sustainability, including workforce issues. For example, a remote system requiring a high grade of operator may have

difficulty staffing the position. Other examples include operability issues, familiarity of existing staff with the technology, robustness of the system in case of changing demand, staff shortages (pandemics, hunting season), or electrical outages (if common).

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 and should reflect domestic preference requirements associated with the funding. O&M costs should include a rough breakdown by O&M category (see example below) and not just a value for each alternative. However, O&M costs can be limited to those categories that will increase or decrease in value depending on the 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 for Alternative _____

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	
Security and Cyber Security	
Maintenance of Assets on Private Property	
Total	

* Appendix A of Exhibit 1, the Interagency PER template, provides a list of examples

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 must consider life cycle costs and may also consider non-monetary factors (i.e., triple bottom line analysis: financial, social, and environmental). Generally monetary factors utilizing a life cycle cost analysis should be used for project selection. When non-monetary factors are used for selection, a compelling argument explaining why non-monetary factors outweigh monetary factors must be provided.

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, the lifespan of the shortest-lived alternative, or any period determined reasonable by the engineer and concurred on by the Agency;
Different features in the system may have varied life cycles;
3. The discount rate to be used should be the "real" discount rate taken from the latest Appendix C of OMB circular A-94. Contact the State Engineer for assistance.

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. Short-lived assets (SLA) (See Appendix A of Exhibit 1 for examples) should be included. The lifespans of SLAs should be based on generally accepted design life. For each instance during the planning period a SLA needs replacement, the present value (PV) should be calculated. Alternatively, the SLA cost may be annualized and the present value calculated using the USPW. Note that SLAs are treated differently in the financial assistance underwriting process.
7. Using a salvage value (S) of zero at the end of the alternative's design life, calculate S for the end of the planning period by straight-line interpolation and convert to present day dollars. Alternative means of determining salvage value may be used if described and justified.;
8. The present worth of the salvage value should be subtracted from the present worth costs;
9. The net present value (NPV) is then calculated for each technically feasible alternative as the sum of the capital cost (C) plus the present value of the annual O&M and SLA, minus the present value of the salvage value:

$$NPV = C + USPW\ (O\&M) - PV(S) + PV(SLA1) + PV(SLA2) + \ldots$$

$$PV = FV\ \frac{1}{(1+r)^n}$$

$$USPW = A\left[\frac{(1+r)^n - 1}{r(1+r)^n}\right]$$

r = Real discount rate
n = Planning period in years
FV = Future value
A = Annual cost

10. A table showing the capital cost, annual O&M cost, SLAs, salvage value, present worth of each of these values, and the NPV should be developed for agency review. All factors, costs, discount rates, and planning periods used should be shown within the table;
11. Resilience and hardening measures may add up-front costs to a project but provide benefits that pay off as costs avoided after a natural disaster. These benefits can be difficult to capture in a LCCA, thus may be considered as non-monetary factors (see below). However, several Federal Agencies have developed tools and guidance to monetize the expected value of avoided costs due to certain resilience measures. PER writers are encouraged to utilize the resources below to monetize the benefits of proposed resilience measures and enter that as a negative cost in the NPV calculation.

- https://www.epa.gov/crwu/climate-resilience-evaluation-and-awareness-tool-creat-risk-assessment-application-water
- https://www.nibs.org/projects/natural-hazard-mitigation-saves-2019-report
- https://www.fema.gov/grants/guidance-tools/benefit-cost-analysis/resources
- https://www.nist.gov/services-resources/software/edge-economic-decision-guide-software-online-tool

b) Non-Monetary Factors. Non-monetary factors, including sustainability considerations, non-monetizable resilience benefits, operator training requirements, permit issues, community objections, reduction of greenhouse gas emissions, wetland relocation, and funding agency domestic preference requirements may be considered in determining which alternative is recommended and may be factored into the decision-making process.

6) PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

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. Only components that are part of the project need to be discussed.

i) Drinking Water Projects:

If water loss in the distribution system exceeds reasonable levels, the loss must be addressed to the extent economically feasible.

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.

Security. Identify physical and cyber security systems.

ii) Wastewater/Reuse Projects:

Projects increasing wastewater treatment and or collection system capacity or facilities experiencing sanitary sewer overflows or combined sewer overflows must address excessive inflow and infiltration to the extent economically feasible.

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).

Security. Identify physical and cyber security systems.

iii) Solid Waste Projects:

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 Projects:

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. Describe aspects of project that preserve or mimic natural processes to manage stormwater, if applicable to the selected alternative.

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) Community Engagement. Briefly describe the utility's approach (or proposed approach) for engaging the community in the project planning process. It should help the community develop an understanding of the project need, the operational service levels required, funding and revenue strategies and the efforts needed to meet those requirements, along with other considerations. As applicable, describe how the project will contribute to community and financial sustainability. Projects that are unwanted for social reasons may erode confidence in the utility enterprise itself. Community engagement and acceptance help support financial sustainability by keeping users connected to the utility system.

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 broken down by work elements, land and rights-of-way, 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. Construction costs should reflect domestic preference requirements required by funding sources. The non-construction subtotal should be included and added to the construction subtotal to establish the total project cost. A reasonable and uninflated construction contingency should be added as part of the non-construction subtotal. Contingency greater than 10% of construction cost must be justified based on project-specific issues. For projects containing both water and waste disposal systems, provide a separate cost estimate for each system as well as a grand total. The engineer may rely on the owner for estimates of cost for items other than construction, equipment, and engineering. Appendix D includes a suggested format for providing estimated costs.

f) Funding Decision Data. Suggested formats for providing financial and other data used for funding decisions are included in Appendix C.

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.

EXHIBIT THREE
STREAMLINED PRELIMINARY ENGINEERING REPORT TEMPLATE

STREAMLINED PRELIMINARY ENGINEERING REPORT

The Streamlined Preliminary Engineering Report may only be used for the project types listed in Appendix B or projects that are applying for only loan funding (no grant).

1) EXECUTIVE SUMMARY

Briefly describe the location of the proposed project, proposed project improvements, including total project costs with reference to project costs breakdown in the appropriate section, etc.

2) PROJECT PLANNING AREA/LOCATION

Provide a brief discussion regarding the proposed planning area. Include existing service area(s) and proposed project service area(s). Include legal and natural boundaries of the service area.

3) EXISTING FACILITIES

Provide a brief discussion regarding the condition and adequacy of the existing facilities. Describe major system components. Include any current violations and other technical challenges experienced by the system.

4) NEED FOR PROJECT

Provide a brief discussion regarding the project need. Project need may be based on health/sanitary problems, security issues, aging infrastructure, operational efficiency problems, resilience, or reasonable growth. Projects whose primary purpose is to upgrade existing facilities or construct new facilities required to meet applicable health or sanitary standards may qualify for additional financial assistance under 7 CFR 1780.10(c)(1) and 7 CFR 1780.13(b). See Appendix D for the required documentation.

5) PROPOSED PROJECT / SCOPE OF WORK

Describe the project including preliminary project design, project schedule, permit requirements, possible construction problems, land requirements, resilience/sustainability considerations, and project costs. If there is multi-agency coordination involved, please include information for scheduling, costs, etc.

APPENDICES

Project Maps including location map, layout of existing system, layout of proposed improvements
Health & Sanitary Documentation (if applicable)
Overall Project Schedule
Engineer's Opinion of Probable Cost (Proposed Project)
Funding Decision Data for Loan and Grant Determination (See Appendix C)

APPENDIX A
SUGGESTED ALTERNATIVES

Below is a listing of common project types that utilize WWD funds. Next to each project type is a list of alternatives that could be considered for such projects. The suggested alternatives for consideration listed below do not include all possibilities, and some of these alternatives may require permanent access to private property. When more practical or technologically better alternatives are available, such alternatives should be included in the analysis.

Project or project component	**Suggested alternatives for consideration[1]**
New well	Connection to neighboring system, different well placement locations, expanding a current well, other water source, water reuse
New water storage tank	Elevated storage tanks, ground storage tanks
New water distribution system	Alternative system layouts (including alternative sources)
New wastewater collection system	Gravity, low pressure, vacuum, STEP systems
Collection system replacement	Component replacement, lining
New centralized system	Connection to neighboring system, cluster systems
New treatment system	Alternative treatment methods
Wastewater sludge dewatering	Sludge drying beds, dewatering boxes, filter press, screw press, centrifuge systems
Wastewater effluent disposal	Alternative disposal methods, sprayfields, rapid infiltration basins, surficial waters

[1.] Applicants will need to obtain the necessary permanent easements for access to assets installed on private property and will be required to operate and maintain those assets.

APPENDIX B
PROJECTS THAT MAY USE STREAMLINED PRELIMINARY ENGINEERING REPORT TEMPLATE

Below is a listing of systems, subsystems, or project types which usually do not have feasible alternatives. If a project consists predominately of these items, a Streamlined PER will be suitable for WEP funding consideration. However, if a repair project costs more than 50% of the cost of replacement, an alternatives analysis is required and the Streamlined PER cannot be used.

- SCADA (new or replacement)
- Meters (new or replacement)
- Metering equipment
- Replacement of pump(s)
- Replacement of valve(s)
- Replacement of Fire Hydrant(s)
- Non-Treatment process equipment (HVAC air conditioner, etc)
- Purchase of office equipment or laboratory equipment
- Purchase of vehicles
- Purchase of existing water rights
- Building structural repairs
- Minimal modifications or replacement in kind of non-treatment process related items
- Modification/repairs to an existing water supply well (as long as it is not increasing the capacity)
- In situ replacement of an existing well or tank if the capacity or storage is not being increased
- Tank repaint and repairs
- Replacement or rehabilitation of existing water distribution or transmission lines
- Rehabilitation (including lining) of existing wastewater collection system (not including replacement of collection lines)
- Expansion of less than 5 miles or a 75% increase (whichever is smaller) in a water distribution system or wastewater collection system.
- Replacement of pump stations within general area of existing station
- New utility service connections to individual users
- Sludge removal from a lagoon
- Rehabilitation of a lagoon / detention pond
- Projects where the funding source clearly identifies the alternative to be built
- Projects that do not have alternatives due to state regulatory authority mandates

APPENDIX C
FUNDING DECISION DATA

This information will be used to evaluate the financial capacity of the system. Consulting engineers helping applicants with the application process may choose to consult with the owner's accountant or fiscal agent for support in developing this data. Accounting and fiscal agent cost are eligible for WWD funding. Use of this Appendix formatting is optional.

Current Rate Schedules

Current rate schedules for the system should be provided. Since schedules will vary widely from applicant to applicant, no format is suggested.

Other Capital Improvement Programs

The following suggested format may be used to provide any anticipated capital improvement projects expected within the foreseeable future.

Future Capital Improvement Project	Description	Estimated Cost (if known)
_____ Project		$ ___ __
_____ Project		$_____
_____ Project		$_____
_____Project		$_____
_____Project		$_____

Tabulation of Water Use

The following suggested format may be used to provide water use data needed for underwriting loan and grant applications. If actual meter readings are not available or reliable, please provide detailed information explaining the method / standard used to report the volumes listed above. If the system provides their service to more than one town/city /service area, please provide a separate table for each entity.

For multifamily residences, if a master meter is used to record all water use within the complex, the complex will be considered a commercial user. If there are individual meters for each unit on the property those individual units will be considered residential users.

Type of User	Number of Users	Actual Usage last 12 months (gallons)	Projected Users	Projected Annual Usage (gallons)
Residential				
Residential (Seasonal)				
Commercial				
Industrial				
Governmental				

Annual Operation and Maintenance Costs

Itemized annual operation and maintenance costs must be provided for both the current system and for the system after the proposed improvements are made and the project is complete. In the absence of other reliable data, base O&M on actual costs of other existing facilities of similar size and complexity. Explain any significant differences between current and projected O&M costs. Include personnel costs, administrative costs, water purchase or treatment costs, accounting and auditing fees, legal fees, utilities, energy costs, insurance, annual repairs and maintenance, monitoring and testing, supplies, chemicals, residuals disposal, office supplies, printing, professional services, cybersecurity, 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 to run the system.

The following suggested format may be used to provide the current and proposed operation and maintenance expenses for the system as whole. The projected O&M costs should represent a typical post-construction year, incorporating any operational changes (increases or decreases) expected upon project completion. For instance, if the project consists of system expansion, additional O&M cost is expected. Conversely, if the project improves efficiency or reduces the water loss or inflow and infiltration, then a reduction in O&M cost is expected.

	Current O&M based on Most Recent Audit (year)	Projected Amount (first typical year after construction)
Salaries		
Benefits (Health Ins., Pension, & Etc.)		
Accounting / Auditing		
Legal		
Utilities		
Insurance		
Misc. Office Expenses		

Repairs / Maintenance		
Testing / Monitoring		
Water Purchase / Treatment Cost		
Chemicals		
Supplies		
Professional / Contract Services		
Cyber Security Contract(s)		
Maintenance of Assets on Private Property		
Sludge Disposal		
Other		
Total O&M Costs	**$_____**	**$_____**

Income Projection

Provide information about all sources of income for the system including a proposed rate schedule. Income should be realistically projected 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 67 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.

	Most Recent Audit (year)	Projected Amount (first typical year after construction)
Annual User Fees (metered)		
Annual User Fees (unmetered)		
Fire Protection		
Connection/Tap Fees		
Interest		
Readiness to Serve /Debt Service Charge		
Other		
Total Income	**$_____**	**$_____**

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. Any inclusion of grant funding estimates should be done in consultation with local Rural Development staff. Since debt terms can vary widely, no format is suggested. Please collaborate with Rural Development staff to ensure all necessary information is included.

Reserves

Short Lived Assets:

A table of short-lived assets should be included for the system. The table should include the asset, the expected useful life, 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 but does not include facilities such as a water tank or treatment facility replacement that are usually funded with long-term capital financing

The following suggested format may be used to provide short-lived assets associated with the entire (water or wastewater) system. Only include items not covered under the O&M costs listed above or costs that will be coved by a planned capital improvement project. Annual reserves listed should be fully funded by the borrower and utilized for future equipment/asset replacement. Expected useful life is for the entire life of the asset, not the remaining life of that asset.

	Expected Useful Life (in years)	Estimated Replacement Cost	Annual Reserve
Asset description	1 to 5	$	$
Asset description	1 to 5	$	$
Asset description	1 to 5	$	$
Asset description	1 to 5	$	$
Asset description	1 to 5	$	$
Asset description	1 to 5	$	$
Asset description	1 to 5	$	$
		Subtotal 5 year assets	$
Asset description	5 to 10	$	$
Asset description	5 to 10	$	$
Asset description	5 to 10	$	$
Asset description	5 to 10	$	$

Asset description	5 to 10	$	$
Asset description	5 to 10	$	$
Asset description	5 to 10	$	$
		Subtotal 10 year assets	$
Asset description	10 to 15	$	$
Asset description	10 to 15	$	$
Asset description	10 to 15	$	$
Asset description	10 to 15	$	$
Asset description	10 to 15	$	$
Asset description	10 to 15	$	$
Asset description	10 to 15	$	$
		Subtotal 15 year assets	$
		Total Annual Reserve	**$**

Debt Service Reserves:

A 10% debt service reserve is required when using loan security other than general obligation or special assessment bonds. Reserve requirements for WWD loans are set forth in 7 CFR 1780.

APPENDIX D
ESTIMATE OF PROJECT COST
SUGGESTED FORMAT

An itemized estimate of the project cost is required for all PERs. The following table may be used by the report preparer when presenting the total project costs. Use of this table is optional. This table includes suggested cost items for funding consideration that may be skipped otherwise.

Construction Costs		
	[work element]	$
	[work element]	$
	[work element]	$
	[work element]	$
	[work element]	$
	[work element]	$
	…	…
Construction Subtotal		**$**
Construction Contingency		$
Study & Report Services (PER, environmental, etc.)		$
Engineering Design		$
Engineering Bid and Construction Services		$
Resident Project Representative		$
Legal Costs		$
Land Acquisition		$
Obtaining rights-of-way / Easements		$
Funds Administration		$
Interest on Interim Financing		$
Equipment		$
Refinancing		$
Other Costs		$
Total Project Costs		**$**

APPENDIX E
HEALTH AND SANITATION

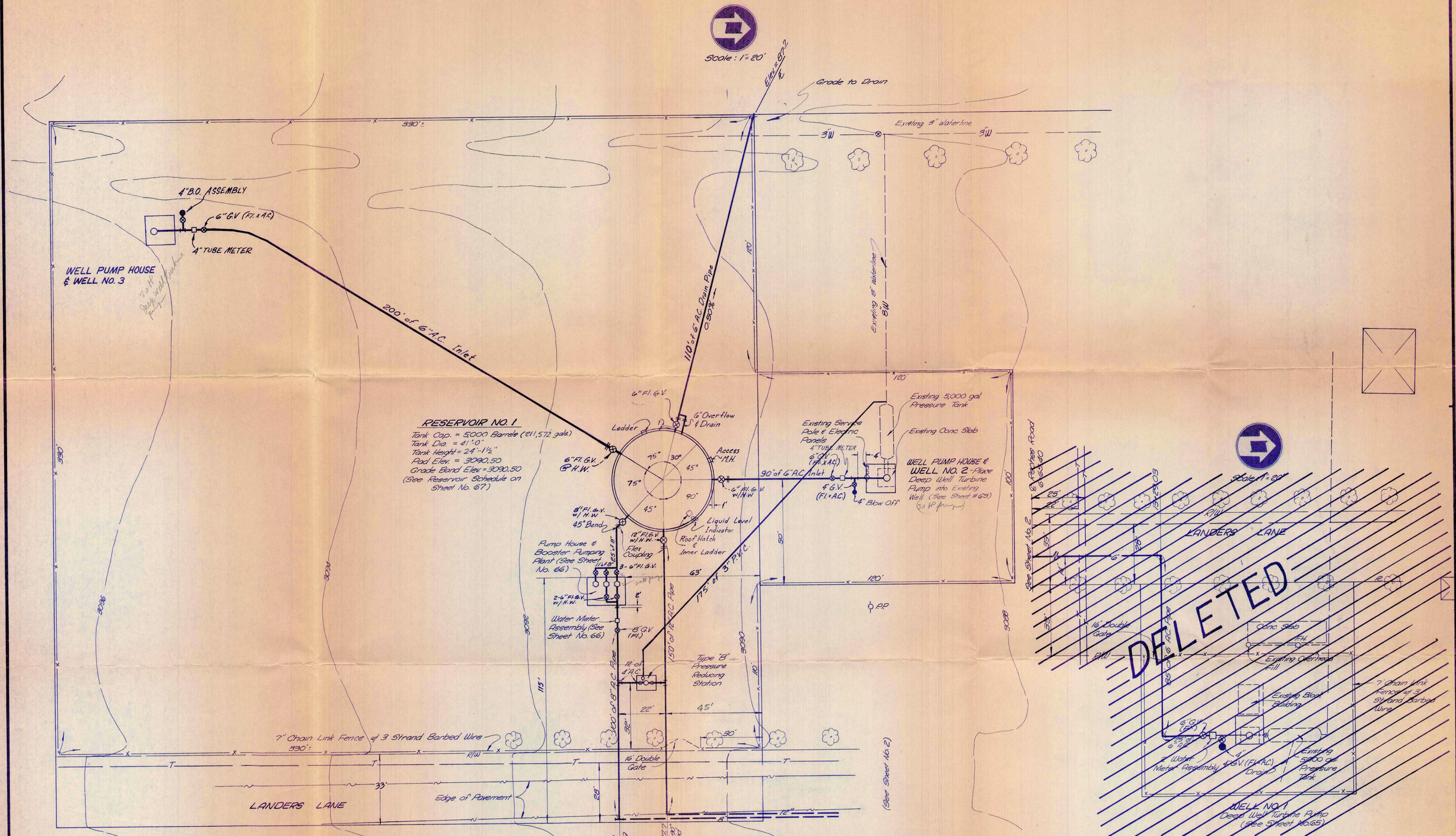
In addition to service area, median household income requirements, before the poverty interest rate and/or grant above 45% may be considered, a health and sanitary determination will be made by the Agency in accordance with 7 CFR 1780.10(c)(1) and 7 CFR 1780.13(b)(1). The goals of this process are to determine whether a health or sanitary problem exists, document the standards that are being addressed by the proposed project and ensure that the primary purpose of the project is to address these standards.

A health or sanitary problem is defined herein as an existing situation facing an applicant that could threaten human health or the environment, while a health or sanitary standard is any governmental requirement or published industry-recommended practice that is for the purpose of protection of human health or the environment. In some cases, a standard may be a requirement of State law, the Ten State Standards (www.10statesstandards.com), or published industry standards. It does not have to be actually enforced or enforceable. In cases where a Federal, State, or local law or regulation is enacted, not yet in effect but with a specified effective date, projects seeking to construct or modify systems to meet the new standard are considered to have a health or sanitary problem.

Federal, state, or local health advisory levels may be considered health standards for health and sanitary determinations in the case of emerging contaminants that currently do not have health-based standards, such as per- and polyfluoroalkyl substances (PFAS). In addition, replacing any lead components of a drinking water distribution system, especially lead service lines, can be considered to be addressing a health standard, even if an exceedance of the lead action level has not been documented in the water. Secondary drinking water standards may be considered a sanitary standard if they affect the ability of rural residents to use rural water to drink, wash their clothing, bathe, or cook.

Projects that will help alleviate overcrowding can qualify as addressing a health or sanitary condition under this section, provided that the applicant provides adequate plans that reasonably demonstrate that the new housing development will be fully financed and will be completed once the infrastructure project is completed.

Examples of documentation the Agency may accept include, but are not limited to: letters from regulators, newspaper articles, letters or reports from engineers or scientists, photographs of sewage on the ground surface, documentation from technical assistance providers, or uploaded information from public health or environmental databases, such as the EPA website http://echo.epa.gov/.



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CIVIL ENGINEERING · SURVEYING
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SAN BERNARDINO, CALIFORNIA

FIELD BOOK REF.

AS-BUILT 3-6-80

MARK	REVISIONS	APPR	DATE

DESIGNED BY
DRAWN BY
CHECKED BY
RECOMMENDED BY

COUNTY OF SAN BERNARDINO
C.S.A.70, IMPROVEMENT ZONE "W-1"

APPROVED BY
Glen L. Ludwig 3-21-79
GLEN L. LUDWIG R.C.E. 13191 DATE

WATER DISTRIBUTION SYSTEM

WELL SITE NO. 1 & 2

RESERVOIR SITE NO. 1

CONTRACT NO. 78-504
FILE NO. 3-165
SHEET 62 of 70