Guidance on Preliminary Engineering Reports

A Preliminary Engineering Report (PER) is a planning document used to find the best construction project to remedy a public health/safety or environmental concern. The State of Nevada, Division of Environmental Protection (NDEP) offers partial funding for drafting PERs through three programs:

- Drinking Water State Revolving Fund (DWSRF)
- Clean Water State Revolving Fund (CWSRF)
- Capital Improvements Grant Program

To receive funding for a PER, water, wastewater, or storm water projects must follow the outline presented in the US Department of Agriculture (USDA), Rural Utilities Service (RUS) Bulletin 1780-2, available on the NDEP website:

ndep.nv.gov/uploads/water-financing-srf-drinkingwater-docs/usdabulletin_1794-602a2.pdf

By following this bulletin, communities can seek funding from different federal and state sources without paying to amend PERs to meet varying requirements. NDEP can fund a PER in accordance to the current Intended Use Plan.

This document outlines NDEP's expectations for PERs, which will support a successful review and approval for final payment. The main text of this document reflects the requirements of the USDA. The text in each blue box provides additional NDEP guidance.

Your PER should address specific prioritized needs in the context of the current managerial, technical, and financial status of your utility. This is not meant to be a comprehensive document that outlines every scenario or possible resolution for the community. Generally, NDEP expects clear, detailed information written in a manner that the targeted community and interested members of the public will be able to understand and learn from.

NDEP can also fund Environmental Reviews (ER) for the chosen project as part of this funding. The ER must address the chosen project(s) area of impact to move the project into the design phase for funding.

The level of detail required in a PER (and ER) may vary according to the complexity of the system issue and specific project. If you determine that items in the guidance outline are not necessary for your project, please send a letter presenting this determination to NDEP, Office of Financial Assistance (OFA). OFA must concur with your determination before approving such a variance. NDEP will also request a kickoff meeting before beginning the PER (and ER) to answer any questions and discuss specific expectations with the utility.

The principal forgiveness loan will contain the following conditions:

- A 15% match for each disbursement request.
- The PER must meet the conditions of NDEP's guidance documents and the Rural Utilities Services Bulletin 1780-2. The ER must address the chosen project(s) area of impact to move the project into the design phase for funding. Should the document not meet these conditions, the funding awarded to create the document must be repaid to OFA.
- OFA will request planning meetings with borrowers and their selected engineering professional to discuss the status of the document. OFA may reimburse eligible expenses in connection with these meetings throughout the creation of the documents.

Whichever is shorter		
% Complete	Months Expired	Eligible expenses may be reimbursed up to % of loan
30%	6 months	30%
60%	9 months	60%
90%	12 months	90%
100%	15 months	100%

By signing below, you acknowledge that you understand and concur with the requirements of a PER (and ER) for reimbursement from OFA.

Date:_____ Date:_____

_____ _____

Authorized Loan Representative Consulting Engineer of Record

_____ _____

Print Name and Title Print Name and Title

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

NDEP GUIDANCE

In addition to these seven sections, please include an executive summary before the project planning section. Your executive summary should explain the purpose and scope of the report. It should also briefly summarize each section of the report.

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.

NDEP GUIDANCE

The project planning section helps put the need for the project, the existing economic and cultural impacts, and the funding options into perspective for the community and other interested parties.

This part of the report should contain maps, photographs, and/or detailed descriptions of the existing service area location. It should also note any natural resources present, historically or culturally significant sites, area demographics including population trends, household income, occupancy statistics, and other community specific information (e.g. primary employer, fixed income residents, vacation homes). Include documentation of the demographic source.

Community involvement when planning for the project must be documented in this section as well. You should include details about:

- Steps taken to help the citizens served by the utility understand the need for the project
- The operational service needs
- Funding for the project
- The condition of assets in the system
- Strategies moving forward.

Please also describe the methods the utility used to reach out and communicate with the community.

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.

NDEP GUIDANCE

This section is the foundation of a PER and will help the community understand the fiscal sustainability plan that will be required for project funding through NDEP.

Include information about the existing system that helps the community understand the existing infrastructure and any potential deficits or compliance orders that may need addressed.

If a sanitary survey has been completed for the utility, discuss the information in the survey and the progress on addressing each item in the survey.

Include a list that shows all major assets, age of assets, condition of assets, anticipated remaining service life, criticality of assets, and anticipated replacement costs. Also discuss any component failures and reasons for the failures, and note any applicable violations of regulatory requirements.

Your description of O&M (operation and maintenance) costs should distinguish between expenditures that were actually made and expenditures that were only budgeted or planned for.

Consider the questions:

- Does the utility have a maintenance management system?
- Are they meeting their annual system checks?

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

NDEP GUIDANCE

Once you identify the need of the system, you should analyze different solutions — or "alternatives" — ***to that specific need***. For instance, if your utility needs to address arsenic exceedances, you might identify 4 solutions to fix the problem:

(1) Point-of-use treatment for arsenic
(2) Coagulation/filtration treatment for arsenic
(3) Ion exchange treatment for arsenic
(4) A new well that meets arsenic compliance, possibly with blending.

All alternative solutions that are technically feasible should be analyzed from an engineering perspective and reviewed using the criteria outlined in the bulletin. Your PER should clearly present all technically feasible solutions to give community decision makers a range of options.

Representative water samples or tests should be ***current*** or conducted within the timeline of PER development. Provide documentation that shows you obtained accurate information for parameters such as temperature and pH, which need to be field tested.

If a solution is technically infeasible, explain why and how you arrived at that determination. Provide enough information to give the reader an understanding of your determination. Cost is not a reason to flag a solution as technically infeasible.

Note: Resolving an individual need in phases is not an "alternative." For instance, phase 2 of a water line replacement project is not an "alternative" to phase 1 of the same project. Discussion regarding phasing a project is more appropriately addressed in the community's planning and funding of the proposed water line replacement project.

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

NDEP GUIDANCE

If your PER will address more than one need, it should detail alternative solutions for each individual need clearly and separately. For example, if your system has three needs — to correct an arsenic exceedance, create more storage, and resolve metering needs — your PER should fully analyze and describe technically feasible alternatives for dealing with each of these prioritized needs.

Note: For each alternative, consider and document environmental information and potential issues. You must include relevant regulations and correspondence that shows you consulted with federal, state, and local agencies on public health/safety or environmental issues. Guidance in preparing an environmental report is provided in the USDA RUS Bulletin 1794A-602, available online:

ndep.nv.gov/uploads/water-financing-srf-drinkingwater-docs/usdabulletin_1794-602a2.pdf

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

NDEP GUIDANCE

You must use the same method to break down costs for each technically feasible alternative solution.

Each alternative must address:

1. Changes in cost to operator skill/training/certifications
2. Labor hours that will be required for the proposed alternative.

For funding through NDEP, you must also evaluate the water and energy efficiency of each alternative, which will be included later in your fiscal sustainability plan.

Please note that to receive principal forgiveness funding through NDEP, your system must keep an account for short-lived asset replacement. Use information from section 2 of this bulletin to create a replacement cost for this calculation. Appendix A also contains a list of assets for consideration. NDEP defines a short-lived asset as an asset with a life shorter than 15 years. Make sure you provided the source of cost information.

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

NDEP GUIDANCE

If alternatives to your proposed project have different life cycles, your PER must discuss each life cycle for comparison purposes. The 20-year rule should be a benchmark, but it makes sense to use actual life, if different, for the benefit of the community's financial analysis.

Only include salvage values if you anticipate that the utility will sell, auction, or otherwise dispose of the asset for a financial benefit at the end of its useful life. If the utility anticipates selling the asset, your PER should explain the details of this known transaction.

(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.

NDEP GUIDANCE

If you anticipate that a proposed alternative will be funded with principal forgiveness funds, your life cycle cost analysis must include the cost of short-lived assets. Include the complete cost of replacement, including needed installation and contractor services.

You must also detail other non-monetary factors that are specific to each alternative that you are evaluating. This provides the reader confidence that the review was not overlooked.

You should also address:

- Community discussion of the proposed alternative
- Operator training requirements
- Permits
- Easements
- Environmental impacts
- Historic or cultural impacts
- Conservation efforts

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

NDEP GUIDANCE

This section of your PER must provide NDEP enough information to determine if the recommended alternative will meet regulatory compliance. Include schematics, maps, and layouts.

You must attach pilot studies or manufacturers' certifications for all drinking water treatment facilities, which will become part of each manufacturer's warranty.

If your project focuses on a wastewater or reuse facility, you must discuss grit and rag removal or give a reason for excluding this process. Additionally, you must discuss how residuals will be handled and ultimately disposed of.

frequency of operation.

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

iii) Solid Waste:

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

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

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

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

iv) Stormwater:

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

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

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

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

Describe type of disposal facilities and location.

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

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

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

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

d) Sustainability Considerations (if applicable).

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

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

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

e) Total Project Cost Estimate (Engineer's Opinion of Probable Cost). Provide an itemized estimate of the project cost based on the stated period of construction. Include construction, land and right-of-ways, legal, engineering, construction program management, funds administration, interest, equipment, construction contingency, refinancing, and other costs associated with the proposed project. The construction subtotal should be separated out from the non-construction costs. The non-construction subtotal should be included and added to the construction subtotal to establish the total project cost. An appropriate construction contingency should be added as part of the non-construction subtotal. For projects containing both water and waste disposal systems, provide a separate cost estimate for each system as well as a grand total. If applicable, the cost estimate should be itemized to reflect cost sharing including apportionment between funding sources. The engineer may rely on the owner for estimates of cost for items other than construction, equipment, and engineering.

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

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

of such users on the economic viability of the project.

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

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

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

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

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

NDEP GUIDANCE

Since the community is ultimately responsible for paying for the chosen project, NDEP requires a discussion about that payment. You should note if other funding sources are being considered (such as local funding, grants, loans, or any other funding source). NDEP, other funding agencies, and the Nevada Water and Wastewater Review Committee are available to analyze the chosen project and provide feedback on the best funding alternative for the project.

Your PER should address all funding mechanisms (and related operating, maintenance, debt service, and short lived asset reserves) that the community has considered to support the project. If available, this information is valuable for supporting your request to NDEP for principal forgiveness funding.

Include a detailed discussion about the utility user rates.

Consider a few questions:

- When were the rates last reviewed by the governing board?
- How will the chosen project(s) affect the rates?
- Is the governing board currently working on a rate study?
- Are the activities of the utility being subsidized by any other funding source (e.g. general fund, other utility rates, tax assessments, etc.)?

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.

NDEP GUIDANCE

Your PER must include a conclusion that clearly identifies the proposed project. Make sure to address any additional considerations for the selected project or unique circumstances of the utility or community.

Remember: The US Environmental Protection Agency requires public water systems to have technical, managerial, and financial (TMF) capacity in order to be eligible to receive funding from the Drinking Water State Revolving Fund. NDEP believes that this requirement also extends to public wastewater systems. TMF capacity is a condition of funding from NDEP for both state revolving fund programs and the Capital Improvements Grant program.

You can find a guidance document for evaluating TMF capacity on the NDEP website:

ndep.nv.gov/water/financing-infrastructure/state-revolving-fund-loans/drinking-water/capacity-development

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	Pump Motors
Equipment 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	