Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities Financed by

Business Oregon
Oregon Department of Environmental Quality
Rural Community Assistance Corporation
United States Department of Agriculture

business oregon

USDA United States Department of Agriculture

Rural Community Assistance Corporation
www.rcac.org

DEQ
State of Oregon Department of Environmental Quality

Disclaimer

This document provides information on preparing wastewater planning documents and environmental reports for funding public wastewater utility projects. This information offers guidance for utility managers, engineering consultants and environmental consultants, and should be interpreted and used in a manner fully consistent with federal and state environmental laws and implementing rules. This document is not a final agency action and does not create any rights, duties, obligations, or defenses, implied or otherwise, in any third parties. This document should not be construed as rule, although some of it describes existing state and federal laws. The recommendations contained in this document should not be construed as a requirement of rule or statute. The organizations that developed this document anticipate revising this document from time to time as conditions warrant.

Authority

The following agencies cooperatively developed and adopt this document as an official guide for the preparation of wastewater planning documents and environmental assessments for public utilities:

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Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.

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Executive Summary

This guide will assist communities in developing and evaluating wastewater alternatives to meet their long-term needs. Planning for wastewater treatment and disposal facilities is critical for every community to protect public health and maintain a high quality of life. Public agencies face considerable financial demands, fluctuations in population, and a broad range of social and economic issues. The planning, design, construction and maintenance of wastewater facilities should be environmentally sound and an efficient use of public funds. Funding wastewater projects is especially challenging for small communities, defined as having a population of 10,000 or fewer. While private funding options exist, USDA-RD, HUD Community Development Block Grants, Business Oregon and Oregon DEQ Clean Water State Revolving Fund finance many wastewater projects. To access these funds, communities must submit a wastewater planning document.

Each funding organization has separate requirements for the planning document and it is difficult to know which funding organization or combination of organizations will provide the best funding package. Accordingly, this guide provides direction to utility managers, public works directors and consultants in developing a single wastewater planning document that meets the requirements of all these public funding organizations.

In addition to information on the funding organizations, wastewater utility managers will find an overview of relevant planning process and resources. Engineering consultants are provided with detailed information about the content of wastewater planning documents. Finally, environmental consultants are presented with detailed information about the content of environmental reports.

Introduction

Wastewater utilities in Oregon operate under permits issued by the Oregon Department of Environmental Quality. The permit requirements with respect to discharges reflect the federal Clean Water Act.

Many of Oregon's public wastewater systems are aging, undersized and/or unable to meet increased regulatory requirements. In response, public agencies plan periodic plant and collection system maintenance, improvements and expansion. Outside of bonds or traditional bank loans, publicly owned wastewater utilities in Oregon have four primary sources of public funds available to them, described below.

- **Oregon Department of Environmental Quality**
  DEQ administers the Clean Water State Revolving Fund, which provides below market rate loans to public agencies for preparing planning and environmental review documents, design and construction of wastewater facilities and other water quality improvement design and construction projects. DEQ offers initial assistance for communities who need technical guidance or are in the early stages of planning a wastewater treatment facility. Call 503-829-LOAN or visit http://www.oregon.gov/deq/wq/cwsrf to find a project officer in your region.
- **Business Oregon**
  Business Oregon administers the federal Housing and Urban Development Community Development Block Grant program for "non-entitlement areas," meaning cities with fewer than 50,000 people and counties with fewer than 200,000, within Oregon, as well as the Oregon Lottery-funded Water/Wastewater Financing and Special Public Works Fund grant and loan programs. These programs can finance preparation of planning and environmental review documents, however, Business Oregon focuses on post-planning projects that are ready for design and construction. Business Oregon hosts financing meetings called One Stops that connect communities with shovel-ready projects to financing agencies. Contact a Business Oregon representative at oregon4biz.com or call 503-986-0123 for details.
- **United States Department of Agriculture USDA-RD**
  United States Department of Agriculture USDA-RD administers several loan and grant programs focused on constructing and upgrading needed public and private nonprofit utility systems, including wastewater systems in small rural communities of fewer than 10,000 people. Call 1-866-923-5626 or visit www.rd.usda.gov/or.
- **Rural Community Assistance Corporation**
  Rural Community Assistance Corporation is a private nonprofit organization that provides training and technical assistance with funding through the national Rural Community Assistance Partnership. This agency is designated a Community Development Financial Institution by the U.S. Department of Treasury and can provide low-interest loans for projects. Financing can cover feasibility and pre-development expenses to meet USDA-RD's requirements. Visit http://www.rcac.org/.

These organizations require the submittal of an appropriate planning document as a condition of funding. Additionally, DEQ's Clean Water State Revolving Fund, USDA-RD and Rural Community Assistance Corporation require an environmental review to comply with the National Environmental Policy Act or the Clean Water State Revolving Fund's State Environmental Review Process.

Wastewater planning overview and process

Utilities planning framework

In 2007, six major water and wastewater associations and the U.S. Environmental Protection Agency signed an agreement pledging to support effective utility management, known as EUM, based on "Ten Attributes of Effectively Managed Water Sector Utilities" and five "Keys to Management Success." These comprise a comprehensive framework for operations, infrastructure, customer satisfaction, community welfare, natural resource stewardship and financial performance. These attributes are:

1. **Product Quality:** Produces treated wastewater and process residuals in full compliance with regulatory and reliability requirements and consistent with customer, public health and ecologic needs.
2. **Customer Satisfaction:** Provides reliable, responsive and affordable services in line with explicit, customer-accepted service levels. Receives timely customer feedback to maintain responsiveness to customer needs and emergencies.
3. **Employee and Leadership Development:** Recruits and retains a workforce that is competent, motivated, adaptive and safe working.
4. **Operational Optimization:** Ensures ongoing, timely, cost-effective, reliable and sustainable performance improvements in all facets of its operations, with a focus on minimizing resource use, loss and impacts.
5. **Financial Viability:** Understands the full life-cycle costs and maintains a balance between long-term debt, asset values, operations and maintenance expenditures, and operation revenues.
6. **Infrastructure Stability:** Understands the condition of and cost associated with critical infrastructure assets. Maintains and enhances the conditions of all assets over the long term.
7. **Operational Resiliency:** Proactively identifies, assesses, establishes tolerance levels for, and effectively manages the full range of risks (legal, regulatory, financial, environmental, safety, security, natural disaster-related and other catastrophic-disaster related).
8. **Community Sustainability:** Explicitly considers a variety of pollution prevention, watershed and source water protection approaches. Manages operations to:
    - Protect, restore and enhance the natural environment
    - Efficiently use water and energy resources
    - Promote economic vitality
    - Foster overall community improvement
9. **Water Resource Adequacy:** Ensures water availability consistent with current and future customer needs, mostly applicable to water utilities.
10. **Stakeholder Understanding and Support:** Fosters understanding and support from oversight bodies, community and watershed interests, and regulatory bodies for services levels, rates structures, operation budgets, capital improvement programs and risk management decisions.

In 2008, the associations and EPA developed an Effective Utility Management Primer to help water and wastewater utility managers make practical, systematic changes to achieve excellence in utility performance. The primer helps utility managers address their most pressing needs through a customized, incremental approach. EPA, utility advisors, collaborating organizations, and these funding organizations encourage all utility managers to implement the strategies outlined in the primer.

In 2013, USDA-RD and the EPA developed "Rural and Small Systems Guidebook to Sustainable Utility Management" using the EUM framework to address needs for small systems. They also developed "Workshop in a Box: Sustainable Management of Rural and Small Systems Workshops," a guide for training on sustainable utility management for small systems. DEQ and Rural Community Assistance Corporation use these tools at trainings.

Utilities planning resources

Sound planning is critical to the effective management of a utility and its infrastructure. In recognition of this, in 2012, the Office of Water at EPA published Planning for Sustainability: A Handbook for Water and Wastewater Utilities. The handbook shows utilities how to build sustainability and other considerations into their planning processes. It also helps them determine the right infrastructure choices for communities and ensure effective management.

Lean is a set of practices that can help utilities achieve the outcomes embodied in the Effective Utility Management Primer. The Lean process can help utilities, improve efficiency, reduce waste in their operations, and promote utility sustainability In October 2012, EPA released the Resource Guide to Effective Utility Management and Lean based on input and examples from several utilities involved in both the primer and Lean.

Asset management

An important element of infrastructure stability is asset management, which means maintaining a desired level of service for what you want your assets to provide at the lowest life-cycle cost. This refers to the most cost effective option for rehabilitating, repairing or replacing an asset. A high-performing asset management program incorporates detailed asset inventories, operation and maintenance tasks, and long-range financial planning to build system capacity. EPA developed an asset management handbook. These funding organizations encourage all utilities to implement asset management.

Integrated planning

Utilities face a daunting task in addressing multiple Clean Water Act requirements due to growth, aging infrastructure and water quality issues such as toxics, sanitary sewage overflows and stormwater. EPA, states and utilities often focus on each requirement individually without consideration of all obligations. This approach may unintentionally keep a municipality from addressing its most serious water quality issues first.

In 2012, EPA outlined an Integrated Planning approach that allows utilities to evaluate water quality problems more holistically. This integrated planning process involves sequencing Clean Water Act requirements in a manner that addresses the most pressing health and environmental protection issues first. EPA has published several documents on integrated planning, including:

- Achieving Water Quality Through Integrated Municipal Stormwater and Wastewater Plans
- Integrated Municipal Stormwater and Wastewater Planning Approach Framework
- Combined Sewer Overflows--Guidance for Financial Capability Assessment and Schedule Development
- Financial Capability Assessment Framework for Municipal Clean Water Act Requirements
- Integrated Municipal Stormwater and Wastewater Planning Frequently Asked Questions

Purpose of a wastewater planning document

Wastewater planning results in multiple benefits, such as:

- Documenting and addressing current and potential environmental and regulatory issues
- Providing an educational tool for the public, community decision makers and state and federal agencies
- Contributing to the research, data collection and analysis that DEQ may use to develop or reissue the associated wastewater discharge permit

Funding organizations require a wastewater planning document to:

- Assure that all viable alternatives are evaluated
- Demonstrate how the recommended project is a cost-effective and environmentally sound alternative, including a "present worth" alternative analysis
- Determine the least-cost viable alternative that is modest in design, size and cost for federal USDA-RD funding
- Show how the cost of facility improvements, maintenance and operations will be paid, examining current user rates for adequacy and forecasting when rate increases are necessary
- Serve as a guide by presenting engineering design criteria, process type and extent, alternate site locations, and cost estimates

DEQ's Clean Water State Revolving Fund requires an engineering planning document, generally in the form of a comprehensive facilities plan, but may accept a pre-design report in certain circumstances. USDA-RD also requires submittal of a wastewater planning document, called a Preliminary Engineering Report, during the application process. Business Oregon's Community Development Block Grant, Water/Wastewater and Special Public Works Fund programs all require a planning document before funding a final design and construction project.

Preparation for wastewater planning

Preparation before hiring a consultant can save time and money. Several tools can help assess utilities' needs, such as the EUM Primer self-assessment tool. This helps identify options for improvement, establishes a baseline from which to measure progress, and will be useful in consensus building among the utility's stakeholders, such as city councils, sanitary system boards and community and watershed interests. Asset management tools, such as EPA's Check-up Program for Small Systems, will help with evaluating the operation and maintenance costs associated with specific systems and equipment. DEQ, USDA-RDRD, Business Oregon and Rural Community Assistance Corporation offer technical assistance with the use of self-assessment tools.

A wastewater planning document includes information on the system's condition and capacity, current and projected population, wastewater flows, treatment plant loading and the utility's financial viability. Accordingly, a utility can better prepare for facilities planning by:

1. Reviewing existing operations and maintenance costs and compiling several years of budgets, including existing debt service.
2. Conducting an asset inventory and condition assessment, which includes system deficiencies and capacity estimates.
3. Conducting collection system inflow and infiltration, Infiltration/Inflow, studies, identifying I/I reduction projects, and determining a reasonable estimate of achievable I/I removal. If the collection system is in poor condition, design flows calculated with existing data will result in excessively large treatment plant expansions. It may be necessary to complete several collection system projects and measure the results over several wet seasons. Making sure that population projections are no more than five years old.
4. Assuring that the wastewater monitoring information is accurate. For example:
    - Do the flow meters have an adequate range?
        - Are the flow meters calibrated annually?
        - Is the lab following a written quality analysis and quality control, QA/QC, plan?
    - A utility may also consult with DEQ about the preparation process to discuss:
        - Reasons the utility wants to do a facilities plan
        - Preparatory work that has been done
        - What work the utility could do itself
        - Whether the utility is prepared to move the project forward after the facilities plan is completed

Consultant selection

Preparing wastewater planning documents will likely require hiring consultants. When seeking professional services, utilities should select the consultant best qualified to meet their needs in the most cost effective manner. All public utilities must comply with state law and their own local procurement policies. Oregon procurement provisions are in Oregon Administrative Rule Chapter 137, Division 48 and require that procurement for engineering services that cost more than $250,000 be procured through qualification-based selection, rather than via a fee-based selection process.

In addition to State of Oregon qualification based selection requirements, utilities applying for funding from USDA-RD must select an engineer using the process described in Chapter 7 of the Code of Federal Regulations (7 CFR 1780.39(b)), which follows the qualification-based selection process. This process involves a public announcement, such as a Request for Qualifications, of all requirements for engineering services and negotiation of contracts based on demonstrated competence and qualifications for the type of professional services required. DEQ's Clean Water State Revolving Fund and the Water/Wastewater and Special Public Works Fund programs do not require this process though it is strongly encouraged.

Utilities may also wish to review written guidance. EPA's Contracting for Professional Services presents a systematic set of proven contract procedures and guidance on how to minimize or avoid common issues and problems that can arise. The League of Oregon Cities' City Handbook (chapter 9) contains useful information about the public procurement process. The National Rural Water Association and the Rural Community Assistance Partnership also can help in selecting an engineer. Utilities may also wish to purchase handbooks and other resources for assistance with preparing request for proposals and requests for qualifications.

Clean Water State Revolving Fund loans and USDA-RD require compliance with the American Iron and Steel Act, which requires that some iron and steel products must be manufactured in the United States if used in the construction of wastewater treatment facilities. However, only Clean Water State Revolving Fund loans require the Davis Bacon Act, which mandates payment of prevailing wages. Borrowers must follow either Davis Bacon or Bureau of Labor and Industries wage requirements, whichever is higher. Clean Water State Revolving Fund loans also require a Fiscal Sustainability Plan, which evaluates the assets and efficiency of a treatment system.

When is an environmental review required?

The four funding organizations require some level of environmental review although specific requirements and processes may vary.

Contact the funding organization early in the planning process to identify the appropriate level of environmental review. If you anticipate a project to be Community Development Block Grant-funded or involve special circumstances, contact Business Oregon to determine the level of environmental review required under the CDBG program. DEQ's Applicant Guide to the State Environmental Review Process explains the requirement for a Clean Water State Revolving Fund loan. USDA-RD offers Environmental Guidance. EPA offers guidance on writing an Environmental Information Document, required for certain grants.

Wastewater planning process

After hiring a consultant, the utility should host a "kick-off" meeting with the consultant and DEQ. The Regional Development Officer should also be invited for Business Oregon funded projects. The purpose of the kick-off meeting is to help the utility and consultant obtain a clear understanding of current, known and potential future regulatory requirements that may affect project design and scoping of alternatives.

Utilities should submit draft-planning documents to DEQ and participating funding organizations for review and comment. An environmental report is not required with the draft planning document. DEQ may convene a final review meeting and issue a comment letter afterward. For Business Oregon funded projects, the Regional Development Officer may also attend. The consultant will then make the necessary changes and resubmit the document. DEQ will give final or conditional approval once requested changes are made.

USDA-RD will review draft planning documents only if accompanied by a complete application and is available to assist with document development. Applicants, or their consultants, can submit an engineering report through USDA-RD's electronic preliminary engineering report (ePER). USDA-RD will also accept an application for funding through RD Apply, an application intake system. With RD Apply, an applicant can create an application, upload attachments, sign certifications, and draw service areas, to name a few features.

Additionally, for USDA-RD financing, utilities should submit the wastewater planning document and environmental report at the same time to their area specialist. USDA-RD's state engineer will fully review them before approving the project for funding.

Phased and incremental projects

Improving a wastewater system in incremental phases can be the most cost-effective alternative in some cases. Project phasing may also be a result of implementing integrated plans. While a utility's wastewater planning document will address needs of the larger community over a 20-year period, phasing creates smaller projects consistent with a community's funding capacity. The phases should be consistent with approved wastewater planning documents. An amendment to the facility plan or associated environmental documentation is required for proposed projects not within the original scope or amended phased planning document.

To determine the scope of a phased project, evaluate all related individual activities either on a geographical or functional basis, then prioritize projects for the system that are logical parts of the planned project.

The environmental report should address all phases of the project at once, particularly when phases are interdependent for wastewater system operations. This may help avoid redesign of previously unconsidered phases. Multi-phase reports may require amendments if they become outdated during future phases. Environmental reports are generally acceptable for five years, provided the project scope has not changed. However, reports older than 18 to 24 months can require an amendment memo to confirm environmental impacts have not changed for the project area. For example, if there are no new endangered species listed since the original report.

Plan changes and updates

Circumstances may delay construction of an approved plan. In these cases, some agencies may require updated information. The Rural Community Assistance Corporation does not have requirements around plan changes or updates.

- DEQ, Business Oregon, and USDA-RD will fund projects in facilities plans for five years from the date of approval. After five years, updated population, flow and loading projections are required. If the updated projections are significantly different than those in the original plan, a plan update is required unless waived by the funding agencies.
- DEQ and Business Oregon accept the update for up to 10 years from the initial plan approval. After 10 years, a new plan is usually required in order to get funding.
- USDA-RD will accept updates for up to five years from the date of approval of the initial plan, with some exceptions
- As RCAC primarily finances feasibility and predevelopment work, the agency does not have time limits on plans
- A community may change the selected alternative with an update within the first ten years after approval of the initial plan. After that, a new plan is usually required.
- Significant changes require a new plan, as determined by the funding agency's engineer

Updates are required to include:

- The most recent 20-year population projection, as determined by Portland State University Population Research Center
- Revised cost estimates
- Flow and loading projections
- Other information required by the financing agency(ies)

Value engineering

Value engineering is a systematic method to improve "value" by using an examination of function. The method involves an intensive, systematic and creative effort by an independent group of experienced professionals to reduce costs while enhancing reliability and performance. Value engineering is used to review a selected alternative for cost savings and project improvements, and is performed during preparation of the final engineering design documents, typically at the "pre-design" (ten percent design) phase. Value engineering is also effective when selecting between two or more closely rated alternatives.

DEQ's Clean Water State Revolving Fund projects with estimated total project costs in excess of $10 million dollars require a value engineering study during or after engineering design. For these purposes, the project cost is the entire project, not just the amount financed by DEQ.

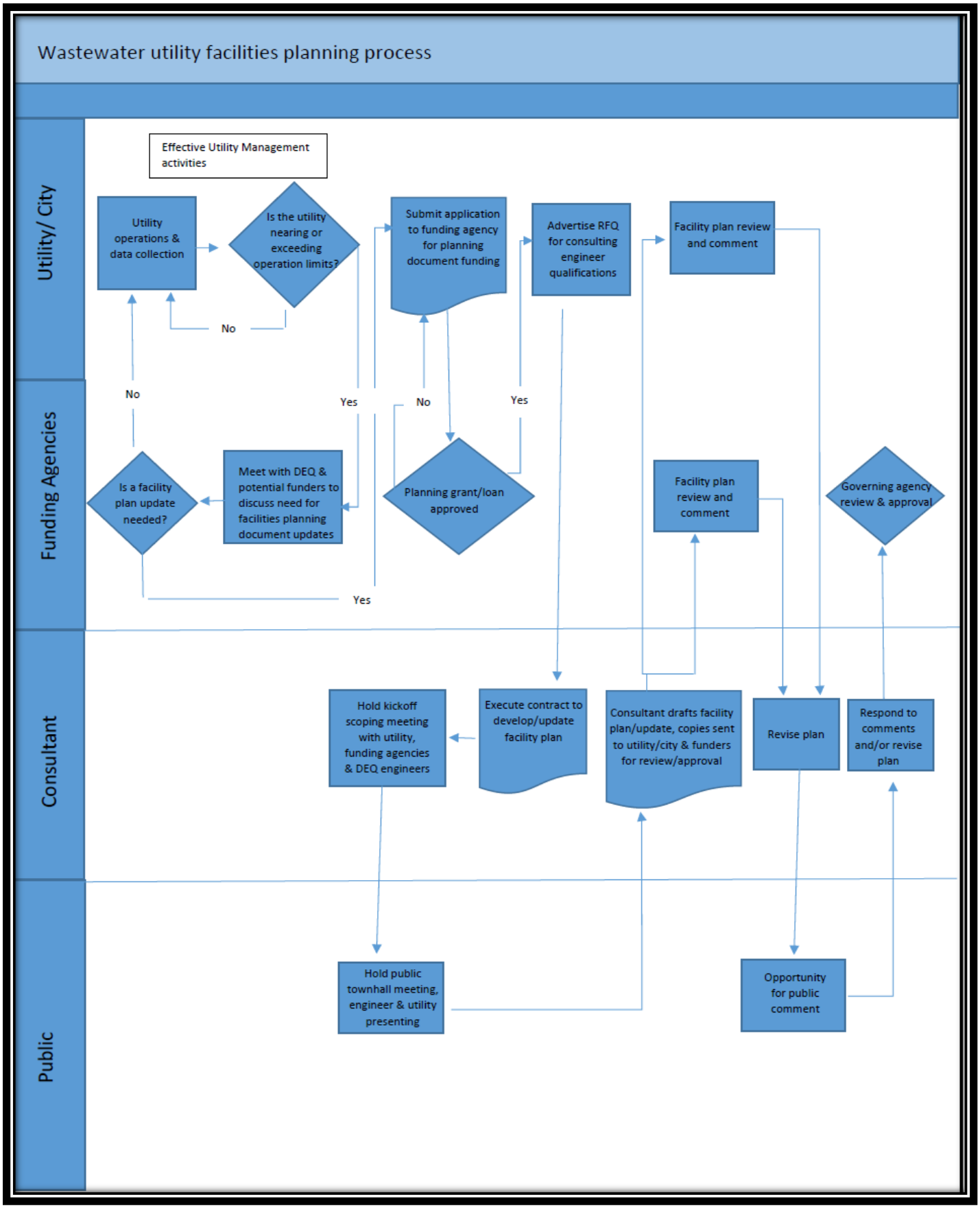
USDA-RD recommends, but does not require, value engineering for projects in excess of $10 million dollars.

Both funding organizations recommend value engineering for all projects, regardless of cost. DEQ uses EPA's guidelines to review value engineering reports for completeness. When time allows, DEQ engineers may also participate as a member of value engineering team.

Summary for utilities managers

In summary, DEQ, RCAC, Business Oregon, and USDA-RD recommend the following practices to help the wastewater planning process go smoothly:

- Conduct an Effective Utility Management self-assessment and implement a program of continuing self-improvement
- Before contracting for a wastewater planning document:
  - Consult with DEQ to assess the need and content of the document and help you define the scope
  - Prepare an inventory and self-assessment of the current condition of the system
  - Collect data on wastewater flows and permitted effluent loads at least a year ahead
  - Confirm that the monitoring program is calibrated and accurate. For example, flow meters are calibrated and capturing all flows; laboratory data is accurate (QA/QC is done correctly and regularly)
  - Confirm population projections
  - Review qualification based selection procedures
- During wastewater plan preparation:
  - Hold a kick off meeting
  - Confirm the results of the completed wastewater planning document with DEQ, funding agencies and the municipality
  - Obtain DEQ approval of the final document
- After approval of the wastewater planning document:
  - Wait until all parties agree that construction will begin within two years before beginning the Environmental Review, which can take up to a full year to complete
  - Be aware that plans are accepted “as is” for up to five years, after which updated information is required


Wastewater utility facilities planning process
Utility/ City
Funding Agencies
Consultant
Public
Effective Utility Management activities
Utility operations & data collection
Is the utility nearing or exceeding operation limits?
No
Submit application to funding agency for planning document funding
Advertise RFQ for consulting engineer qualifications
Facility plan review and comment
No
Yes
No
Yes
Is a facility plan update needed?
Meet with DEQ & potential funders to discuss need for facilities planning document updates
Planning grant/loan approved
Facility plan review and comment
Governing agency review & approval
Yes
Hold kickoff scoping meeting with utility, funding agencies & DEQ engineers
Execute contract to develop/update facility plan
Consultant drafts facility plan/update, copies sent to utility/city & funders for review/approval
Revise plan
Respond to comments and/or revise plan
Hold public townhall meeting, engineer & utility presenting
Opportunity for public comment

Contents of wastewater planning document

The appendices contain both general (Appendix C.1) and detailed (Appendix C.2) outlines for wastewater planning documents. A workgroup of federal and state agencies cooperatively developed the appendices as part of the funding application process and project development. While the detailed outline provides information on what to include in a wastewater planning document, the level of detail required will vary according to the complexity of the proposed project.

The following discussion provides additional information for wastewater planning documents in Oregon and follows the format of the detailed outline in Appendix C.2.

Project planning area

Wastewater planning documents must comply with statewide land use goals and be consistent with locally adopted comprehensive land use plans. Statewide land use Goal 11 directs local governments to establish an urban growth boundary and provide sewer services within it. Sewer services may be provided outside the boundary if it is the only practicable alternative to mitigate a public health hazard and will not adversely affect farm or forest land. Accordingly, the planning document must include a description of the boundary and show compliance with Goal 11 and the local comprehensive plan. Wastewater planning documents must include an affirmative land use compatibility statement from the local government, as a determination of compatibility with the comprehensive plan.

In addition, this section of the wastewater planning document should address socio-economic conditions and trends that could affect the project. Examples include information about local industries, employment, median household income level, vulnerable populations and poverty levels. Such demographics are available through Portland State University's Population Research Center. Contact them online, by email at askPRC@pdx.edu or call 503-725-3922.

Local physical environment

The topography, geology, soils, climate and water resources of a region can have a significant effect on what alternatives are available for wastewater treatment. Topography can influence groundwater levels and potential for runoff. Geology and soil conditions influence infiltration rates and suitability for farming. The amount and distribution of rainfall influences wet weather flows. DEQ recognizes the influence of climate with special flow projection guidelines for systems west of the Cascades (see Appendix D).

Population trends

Wastewater planning documents must use the most recent Portland State University Population Research Center's final population forecast with a 20-year horizon, regardless of the population forecast in the community's most recent comprehensive plan. However, communities located within Metro boundaries must use the coordinated population forecast issued by the Metro regional government. This requirement is detailed in Oregon Administrative Rule, Chapter 660, Division 32.

In 2013, the Oregon legislature assigned coordinated population forecasting to the Population Research Center at Portland State University. PSU's Oregon Population Forecast Program provides coordinated forecasts with a 50-year forecast horizon for Oregon counties and cities no less than once every four years, which are prepared and released in three groups, each consisting of roughly one-third of the counties along with their corresponding city urban growth boundaries. Accordingly, the wastewater planning document must use the population forecast from the most recent Oregon Population Forecast Program report.

Integrated Water Resources Strategy

Oregon's Integrated Water Resources Strategy provides a blueprint to help the state better understand and meet its instream and out-of-stream water needs, taking into account water quantity, water quality and ecosystem needs. It consists of four primary objectives, followed by critical issues and recommended actions:

- Understand water resources today
- Understand instream and out-of-stream needs
- Understand the coming pressures that affect our needs and supplies
- Meet Oregon's instream and out-of-stream needs

The following IWRS recommended actions apply to wastewater planning:

- 7A. Develop and upgrade water and wastewater infrastructure
- 7B. Encourage regional (sub-basin) approaches to water and wastewater systems
- 9A. Undertake place-based integrated, water resources planning
- 10C. Encourage additional water reuse projects
- 10D. Reach environmental outcomes with non-regulatory alternatives
- 12B. Reduce the use of and exposure to toxics and other pollutants
- 12C. Implement water quality pollution control plans
- 13C. Fund communities needing feasibility studies for water conservation, storage and reuse projects

As appropriate, wastewater facilities plans should incorporate these recommended actions.

Existing facilities

For treatment plant projects the description and evaluation must include all wastewater collection, treatment, and disposal facilities in the study area, including connected common sewerage systems not owned or operated by the city or service district. Satellite collection systems may substitute a separate plan. If the project does not rely on other larger wastewater system changes, planning documents addressing a subset of the larger wastewater system need only address the proposed project components.

Utilities that have conducted an asset inventory and condition assessment through the Effective Utility Management process will have this information available for the wastewater planning documents. A complete asset inventory includes:

- Capacity information and condition assessment of the conveyance system
- The treatment plant, sludge treatment/disposal, biosolids land application
- Recycled water use systems, as applicable

Details about quantity of inflow and infiltration should follow the general guidance of EPA document I/I Analysis and Project Certification. This document provides a procedure to determine non-excessive I/I (see 40 CFR 133.103e and 40 CRF 35.2120 for current definition of non-excessive I/I). If I/I exceeds the non-excessive I/I criteria, a cost- effective analysis is needed to determine the amount that is cost effective to remove. This analysis should be included as a recommended special study in the conclusions sections if not included in the wastewater planning document. Chapter six of *"*Wastewater Engineering: Collection and Pumping of Wastewater*"* by Metcalf & Eddy, Inc., offers information about cost-effective I/I analysis.

Financial status of any existing facilities

In addition to the financial information requested in this section, the planning document should include:

- The previous three years of audits
- The most recently approved budget
- The current monthly residential user rate and rate structure
- A calculation of the average wastewater bill rate as a percentage of mean household income

This section of the wastewater planning document must include a detailed discussion of the methodology used to develop an equivalent dwelling unit estimate, also known as residential equivalent unit. This is the average wastewater flow received by the treatment facility for one single-family residential housing unit. To calculate this, break down the total number of residential, commercial, industrial and public connections in the system by category and include estimates both before and after the proposed project. Present the data in the following table format:

Equivalent Dwelling Unit Summary Table

Type of User	Number of Users Before	After	Total Usage (Gal. / year)	Usage Per User (Gal. / year)	EDUs[1]	EDUs[2]
Residential, Permanent						
Residential, Seasonal						
Commercial, Small						
Commercial, Large						
Industrial, Small						
Industrial, Large						
Public/Other, Small						
Public/Other, Large						
Totals						

Notes on the chart above:

- "User" means a single connection to the sewage system.
- "Number of Users Before" means the total number of users before constructing the project.
- "Number of Users After" means the total number of users immediately after constructing the project. This does not include projected growth.
- Multi-family users with one meter may be considered commercial or other.
- Permanent residential is defined as "reside in residence more than six months out of the year."
- Small commercial, industrial or public facilities are those that typically receive water service through a one-inch or smaller meter.
- Provide a separate list of all commercial, industrial and public facilities.
- Based on actual usage (USDA-RD and DEQ)
- Based on 7,500 gallons per month as an average residential flow (OBDD-IFA)

Need for project

This section of the wastewater planning document must fully discuss the Clean Water Act and any associated state and federal rules. DEQ staff will provide technical assistance with determining and applying the relevant regulations. The planning document must include regulations pertaining to:

- Direct surface water discharges
- Stormwater discharges
- Erosion control
- Effluent reuse
- Groundwater
- Sludge management
- Wetland or waterway impacts

Relevant Clean Water Act components include:

- Beneficial uses
- Waste load allocations derived from a Total Maximum Daily Load if one is completed or proposed

- Status of the receiving stream

Regulatory requirements in this section should be categorized as follows:

- **Current Regulatory Requirements**: Describe all applicable requirements in all permits.
- **Known Future Regulatory Requirements**: Describe all requirements, such as new rules, new standards (e.g. ammonia and copper), and TMDLs that haven't yet been implemented in the permits.
- **Potential Future Regulatory Requirements**: Describe promulgated regulations. This includes technology-based nutrient limits, pharmaceuticals, and other toxics, etc.

A complete planning document must also include regulatory requirements from other relevant agencies such as the Oregon Department of Land Conservation and Development.

The second topic in this section is "Aging Infrastructure." This section must include details of all unit performance issues, deficiencies and useful life. Evaluate the existing system's reliability according to EPA and DEQ guidelines (see Appendix D). An evaluation of the current system's ability to meet current and potential future effluent limits and other regulatory requirements is also required. This section must also include an evaluation of the collection system's condition, calculation of inflow and infiltration (I/I) using EPA methods. This section must also include a determination of whether the I/I is "non-excessive." The definitions for non-excessive I/I is contained in the code of federal regulations (40 CFR 35.2120).

The "Reasonable Growth" section must include flow and load projections based on a 20-year planning period from completion of construction. For example, if the projected project completion date is 2020, then the "design year" is 2040. While alternate flow projection methods may be proposed, the plan must include a probability analysis of peak flows based on DEQ flow-projection guidelines. See "DEQ Guidelines for Making Wet-Weather and Peak Flow Projections for Sewage Treatment in Western Oregon." Provide adequate justification if alternate flow projections are used as the basis of design.

Alternatives considered

As discussed in the detailed outline, a full consideration of all viable alternatives and a transparent selection process is key to the planning process. Any acceptable alternative must be designed and constructed in accordance with sound engineering practices and must meet the requirements of Federal, State and local agencies. At a minimum, consider the following alternatives:

- Building new centralized facilities
- Optimizing the current facilities (no construction)
- Developing centrally managed decentralized systems
- Developing an optimum combination of centralized and decentralized systems

In addition to the eight items listed in the detailed outline in Appendix C2 (description, design criteria, map, environmental impacts, land requirements, potential construction problems, sustainability considerations and cost estimates), the planning document must also detail how each of the USDA-RD design policies are met (7 CFR 1780.57):

1. Environmental review - see Environmental Review section of this guide
2. Architectural Barriers Act as implemented by the Americans with Disabilities Act
3. Cost effective energy-efficient and environmentally-sound products and services
4. Provide reasonable fire protection to the extent practicable
5. Provide for reasonable growth to the extent practicable
6. Incorporate water conservation practices when economically feasible
7. Conform to Federal and State water pollution control standards
8. New combined sanitary and stormwater sewer facilities will not be financed by the agency
9. Comply with the provisions for dam safety as set forth in the Federal Guidelines for Dam Safety
10. All pipe used shall meet current American Society for Testing Materials (ASTM) or American

Water Works Association (AWWA) standards
11. Provide the most economical service practicable
12. All new structures must be designed with appropriate seismic safety provisions

The planning document must include enough detail to make a clear justification for selecting the recommended alternative. If an alternative is rejected as non-viable without an economic analysis, the basis of the rejection must be clearly stated.

The discussion must also include a determination of whether local comprehensive plan and development regulations allow each alternative and any conditions or limitations. If the recommended alternative is a significant project that is not included in applicable comprehensive plan, an amendment to the plan may be necessary. This requirement applies to urban growth boundaries or unincorporated communities with a population greater than 2,500. Consultation with the state's Department of Land Conservation and Development may be necessary.

The estimation of life cycle operating costs must include operator certification requirements for each alternative as well as the cost associated with retaining qualified staff.

Selection of an alternative

The planning document must describe the alternative selection procedures. As stated in the detailed outline (Appendix C.2, section 5), the analysis should include a "triple bottom line analysis." When a traditional qualitative matrix scoring analysis is used, exclude the near-term (20-year) life cycle costs. Instead, evaluate longer-term life costs in the triple bottom line analysis, such as end-of-life plant rehabilitation, expansion and flexibility to meet potential future requirements. The analysis may be used to eliminate non-feasible alternatives.

The plan should address relevant policies regarding selection of alternatives. USDA-RD requires a life cycle cost analysis to determine the most economical service practicable (7 CFR 1780.57(n)) and that the project be modest in size, cost and design (7 CFR 1780.10). This alternative selection method will also satisfy Clean Water State Revolving Fund requirements for DEQ's Cost and Effectiveness Analysis. Specific guidance on the Cost and Effectiveness is available online.

Proposed project (recommended alternative)

The operating budget should only include maintenance, wastewater treatment and collections operations. The proposal section of the plan must contain a fully developed description of the project based on the preliminary description under the evaluation of alternatives. This section must also include a detailed present worth value calculation for the preferred alternative.

Annual operating budget

The wastewater planning document should include:

- Analysis of financing options
- A viable financing plan
- An itemized annual budget for construction, operations, maintenance and replacement costs associated with the preferred alternative
- A summary of the community's budget history, adopted budget and future budget expectations

The projected annual budget must include, see details in sections below:

- Identification of users and calculation of equivalent dwelling units
- Evaluation of system revenues
- A proposed projected rate structure based on equivalent dwelling units and as a percentage of median household income

- A comparison of rate structures

Business Oregon's Community Development Block Grant program accepts financial reviews prepared and approved by USDA-RD in lieu of the requested financial information in the grant application.

Income

This section must identify the total system revenues, including any fee equivalents derived from other funding sources intended to pay for the proposed improvement. This could include levies on taxable property within the service area, but does not include system development charges.

Include in this section a proposed rate structure and estimated revenues upon project completion. This should correspond to the recommended alternative and Appendix C. The funding agencies use the projected Operation and Maintenance, debt service and reserves to arrive at a total annual cost figure. Divide the equivalent dwelling unit count into the total annual cost to arrive at a cost. The agencies use the cost to evaluate program eligibility, affordability, grant eligibility and cost reasonableness.

The rate structure should emphasize conservation with the use of an ascending, flow and load-based, rate structure and must include:

1. A comparison of various rate structure alternatives on a per-equivalent dwelling unit basis using the estimated budget and industry standards. This comparison should also include an evaluation of the user rate as a percentage of the median household income
2. A proposed per unit monthly user rate assuming the proposed project is funded entirely with loans. A separate calculation of the monthly user rate per equivalent dwelling unit may be included for those projects expecting grant funding
3. A proposed rate implementation schedule, including steps needed to adopt and implement a new rate structure by construction completion

Annual operations and maintenance costs

In addition to the guidelines in section the detailed outline (Appendix C.2), calculate the annual operations and maintenance costs on a per-equivalent dwelling unit basis.

Debt repayments

This section must include a description of debt service paid for wastewater facilities, whether through property taxes or user rates, and the payoff date. As mentioned in the detailed outline (Appendix C.2.), base all estimates of funding on loans not grants. However, a separate discussion of debt repayments may be included for those projects likely to be grant funded.

Short-lived asset reserve

Break down the short-lived asset list into three groups. USDA-RD requires a short-lived assets reserve for the entire wastewater system, not just the specific project components included in the funding package. The three groups are:

- Those with an expected life of one to five years
- Six to 10 years
- 11 to 15 years

Furnish the estimated cost at time of construction for each asset or group of assets. The list is used to calculate the annual reserve deposit and assists in determining grant/loan percent. It must include the entire wastewater system, not just the proposed improvements. Do not duplicate items in the three lists.

In addition to the above, the annual operating budget must include any anticipated additional capital outlay over the next 10 years, this must not include items already accounted for in the short lived assets or captured as maintenance items. Provide details on each capital outlay item.

Conclusions and recommendations

The conclusions and recommendations section will include any additional findings and recommendations. This section should mention all additional reports needed to obtain funding, such as environmental impact analysis of the alternatives. Describe additional studies needed in cases where two or more alternatives are too close to make a final decision. This could include an I/I cost effectiveness analysis and/or a value analysis study. If the estimated construction cost is $10,000,000 or more, this section should mention the need for a value engineering study at the predesign phase.

Project schedule

The project schedule should include a Gantt chart of all major tasks including: 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. For phased projects, a separate Gantt chart should be included for each phase.

Wastewater planning document appendices

Include the following documents in the appendices:

1. Summary of all effluent quality monitoring data
2. Rainfall statistic page from "Climatography of the United States No. 20, Monthly Station Climate Summaries, 1971-2000" for the rain gage used in the facilities plan
3. Flood plain map
4. Soils map
5. Land Use Map, include service areas and Urban Growth Boundary
6. Recycled Water Use Plan
7. Biosolids Management Plan
8. National Pollutant Discharge Elimination System and/or Water Pollution Control Facility Permit
9. Outfall Mixing Zone Study
10. Other environmental studies related to the permit
11. Detailed cost estimate spreadsheets
12. Sewer Use Rate Study

Scope of environmental review and content of environmental report

Scope

The level or extent of environmental review will vary, generally in accordance with the project's complexity or scope. Construction of a new wastewater treatment plant at a new location will require a more comprehensive environmental review than the replacement of old pipes in an existing trench or addition of a flow meter at the treatment plant.

When multiple agencies provide funding for a single project, applicants must meet environmental review requirements for each agency. Early communication and coordination with funding agencies may prevent or minimize potential delays.

Content

USDA-RD requirements

As of April 1, 2016, utilities applying to USDA-RD shall follow the 7 CFR 1970, sub-part A, B, C and D. USDA-RD requires applicants to describe their proposals in sufficient detail to enable the agency to determine the required level of National Environmental Policy Act review.

If the proposed action does not fall within an established Categorical Exclusion (sub-part B) or if there are extraordinary circumstances associated with the proposed action (1970.52), USDA-RD's responsible official then determines if the action is one that normally requires the preparation of an Environmental Assessment (sub-part C) or Environmental Impact Statement (sub-part D). Those types of actions are specified in 7 CFR 1970, sub-part A, B, C and D. The 7 CFR 1970 can be found at USDA-RD's Environmental Guidance.

Rural Community Assistance Corporation Requirements

Projects financed through RCAC interim financing that will be guaranteed by USDA-RD permanent financing must meet USDA-RD's environmental review requirements for the project.

Clean Water State Revolving Fund requirements

The 7 CFR 1970, sub-part A, B, C and D generally meet DEQ's requirements with the following differences:

- When the 7 CFR 1970 directs the applicant to contact the Oregon state office of Rural Utility Service USDA-RD staff, applicants for the Clean Water State Revolving Fund should instead contact the DEQ project officer.
- The applicant for the Clean Water State Revolving Fund will consult directly with federal authorities delegated with overseeing compliance with additional federal environmental laws and executive orders. For a step-by-step process on documenting compliance with these federal authorities, applicants should follow the Applicant Guide to The State Environmental Review Process.
- DEQ will issue a public notice of environmental determinations for Clean Water State Revolving Fund loan projects.

Business Oregon requirements

Community Development Block Grant program funding requires applicants to follow Chapter 3 of the *CDBG Grant Management Handbook* and the HUD website page for Environmental Review Requirements in Oregon.

The Special Public Works Fund and Water/Wastewater Fund do not require environmental review.

Environmental review roles and responsibilities by funding program

Environmental Review Responsibility	USDA-RD & RCAC *	DEQ Clean Water State Revolving Fund	Business Oregon	
			CDBG	Special Public Works Funds
				Water/Wastewater Fund
Environmental Determination is required for:	Construction loans	Construction loans	All planning, design and construction grants	**No environmental review is required** for projects financed with grants or loans entirely from the Water/Wastewater Fund or Special Public Works Fund, or a combination thereof.
Consultation with additional federal authorities:	USDA-RD	Applicant	Responsible entity (applicant)	
Documentation of environmental impacts:	USDA-RD	Applicant	Responsible entity	
Environmental Determination is made by:	USDA-RD	DEQ	Responsible entity certifying officer	
Accepting/adopting another agency's environmental report:	USDA-RD accepts environmental reports approved by other agencies, less than 5 years old, may require supplemental information.	DEQ accepts environmental reports approved by other agencies, less than 5 years old, may require additional consultation with other federal authorities.	Responsible entity may adopt environmental assessment prepared for another agency provided certain requirements are satisfied	
Public notice is published by:	Owner (Applicant)	DEQ	Responsible Entity	
Environmental review guides	7 CFR 1970	7 CFR 1970 and Applicant Guide to the SERP	CDBG Grant Management Handbook and HUD website	
For more information contact:	USDA-RD state environmental coordinator	DEQ project officer	Business Oregon Regional Development Officer	Business Oregon Regional Development Officer

*Rural Community Assistance Corp. interim financing with USDA-RD: follow USDA-RD requirements.

Consultation with additional federal authorities

There are a number of federal laws, executive orders and policies that apply to projects receiving federal financial assistance, regardless of whether the statute authorizing the assistance makes them applicable. These are often referred to as "federal cross-cutting authorities" or "cross-cutters." Appendix E lists the most common federal cross-cutting authorities. Contact your funding agency to determine which authorities apply to your project.

Appendix A – References

Asset Management Handbook, 2003. Asset Management: A Handbook for Small Water Systems (EPA 816-R-03-016).

Contracting for Professional Services. 1994. Contracting for Professional Services.

CUPSS, 2011. Check Up Program for Small Systems (CUPSS). [Online]

DEQ Flow Projection Guidelines, April 1996. Guidelines for Making Wet-Weather and Peak Flow Projections.

DEQ Pump Station Standards, May 2001. Oregon Standards for Design and Construction of Wastewater Pump Stations.

EUM, 2008. Effective Utility Management - A Primer for Water and Wastewater Utilities.

LOC City Handbook, 2010. League of Oregon Cities City Handbook.

USDA-RD Environmental Regulations 7 CFR 1970. Guide for Preparing the Environmental Documentation for Water Environmental Program Proposals

Resource Guide to Effective Utility Management and Lean, 2012. Resource Guide to Effective Utility Management and Lean - Improving Performance and Addressing Key Management Priorities at Waster-Sector Utilities

Sustainability Handbook, 2012. Planning for Sustainability: A Handbook for Water and Wastewater Utilities (EPA-832-R-12-001).

US EPA Design Criteria, 1974. Design Criteria for Mechanical, Electric, and Fluid System and Component Reliability (EPA 430-99-74-001).

US EPA Contracting for Professional Services, 1982. Contracting for Professional Services (EPA-430/9-82-005).

US EPA Handbook, October 1991. Handbook Sewer System Infrastructure Analysis and Rehabilitation (EPA/625/6-91/030).

US EPA Infiltration/Inflow, May 1985. Infiltration/Inflow: I/I Analysis and Project Certification.

US EPA Integrated Planning, June 2012. Integrated Municipal Stormwater and Wastewater Planning Approach Framework.

US EPA Value Engineering, 1984. Value Engineering For Wastewater Treatment Works (EPA 430/9-84-009).

Rural Utility Services, Bulletin 1780-2 Guidance for the Use of Engineers Joint Contract Documents Committee (EJCDC) Documents on Water and Waste Projects with RUS Financial Assistance (Revised 4/19/17)

Appendix B –Definitions

Definitions

Capital Improvement Plan. A short-range plan, usually covering four to 10 years, which identifies and prioritizes capital improvement projects and equipment purchases for a community.

Categorical Exclusion. A project that does not individually or cumulatively have a significant effect on the human environment" (40 CFR 1508.4).

Comprehensive Plan. The local plan which guides a community's land use, conservation of natural resources, economic development and public facilities.

Design. The preparation of plans and specification for construction projects.

Environmental Assessment. A concise public document used by an agency to determine whether to issue a Finding of No Significant Impact or prepare an Environmental Impact Statement, as defined by 7 CFR 1970.101

Environmental Impact Statement. If during the environmental review process the funding agency determines that a proposed project may "significantly affect the quality of the human environment," an EIS will be required (42 U.S.C. 4332 (2)(c)). An Environmental Impact Statement is the most detailed level of environmental review, requires significant public participation, and will often be managed at a federal national office level. These reviews can take years to complete but are rarely required for wastewater projects.

Environmental Report. Also known as an Environmental Review Record by the Community Development Block Grant program. The documentation of the environmental review process including assessments or Environmental Impact Statements, published notices, notifications and correspondence related to a specific project or group of projects.

Equivalent Dwelling Unit. Also known as Residential Equivalent Unit REU, it is the average wastewater flow received by the treatment facility for one single-family residential housing unit. This also refers to the level of wastewater service provided to a typical rural residential dwelling.

Facilities Plan. A comprehensive document that examines the entire existing wastewater collection, treatment and disposal system and identifies all operational and performance problems. It projects future wastewater loads and describes and evaluates viable alternatives for reliably meeting discharge permit requirements.

Feasibility Study. An engineering study that involves the consideration and detailed discussion of project alternatives and implementation without the preparation of detailed engineering design.

Federal Cross-Cutting Authorities. A number of federal laws, executive orders and government-wide policies apply by their own terms to projects and activities receiving federal financial assistance, regardless of whether the statute authorizing the assistance makes them applicable. These "cross-cutting federal authorities" (cross-cutters) include environmental laws such as the National Historic Preservation Act and the Wild and Scenic Rivers Act, and social and economic policy authorities such as executive orders on equal employment opportunity and government-wide debarment and suspension rules.

Infiltration/Inflow (I/I) Reduction Plan. A wastewater collection system capital improvement plan focused on reducing inflow/infiltration. Elements of this plan typically include television inspection, smoke testing, flow monitoring, a priority list of improvements, and a schedule for those improvements. Infiltration is groundwater entering a sewer system through such means as defective pipes, pipe joints, connections or manhole walls. Inflow includes direct flow of water other than wastewater or groundwater into a sewer system. Planning should include monitoring, data collection and measurement, evaluation, analysis, security evaluations, report preparation, environmental review, public education and review process,

and any other activity leading to a written plan for the provision of sewage facilities intended to remediate an existing or anticipated water pollution problem, but excluding the preparation of detailed bid documents for construction.

Pre-design or Preliminary Design Report. A document that describes in detail and definite terms the recommended project using preliminary design drawings and other supporting information including, but not limited to: basis of design, design criteria, site plan, process and instrumentation diagrams, hydraulic profile, major equipment list and preliminary construction cost estimates.

Preliminary Engineering Report. USDA-RD asks applicants to provide a preliminary engineering report, as defined in RUS Bulletin 1780-2, so it can review proposed projects for technical, environmental, financial and social feasibility. The report needs to show that a proposed project is modest in design, size and cost, and constructed and operated in an environmentally responsible manner. The depth of analysis in a report is proportional to the size and complexity of the proposed project. Accordingly, a new wastewater treatment facility, or major upgrade to an existing wastewater treatment facility, will require a level of effort similar to a comprehensive wastewater facilities plan. EPA and USDA offer guidance on creating a PER.

Public Facility Plan. A support document to a comprehensive plan that describes the water, wastewater and transportation facilities that support land uses designated in the appropriate acknowledged comprehensive plan within the urban growth boundary containing a population greater than 2,500.

Value Engineering (VE) or Value Analysis (VA) Report. A report developed through a specialized cost-control technique applicable to the design of sewage treatment facilities that identifies cost savings that can be made without sacrificing reliability or efficiency. Value analysis is a higher-level review that is typically performed at during or immediately following facilities planning.

Appendix C – Planning document outlines

The following outlines a preliminary engineering report.

C.1: General outline

1. Project planning
   - Location
   - Environmental Resources Present
   - Population Trends
   - Community Engagement
2. Existing facilities
   - Location Map
   - History
   - Condition of Existing Facilities
   - Financial Status of any Existing Facilities
   - Water/Energy/Waste Audits
3. Need for project
   - Health, Sanitation, Environmental Regulations and Security
   - Aging Infrastructure
   - Reasonable Growth
4. Alternatives considered
   - Description
   - Design Criteria
   - Map
   - Environmental Impacts
   - Land Requirements
   - Potential Construction Problems
   - Sustainability Considerations
   - Water and Energy Efficiency
   - Green Infrastructure
   - Other
   - Cost Estimates
5. Selection of an alternative
   - Life Cycle Cost Analysis/Cost and Effectiveness Certification
   - Non-Monetary Factors
6. Proposed project (recommended alternative)
   - Preliminary Project Design
   - Project Schedule
   - Permit Requirements
   - Sustainability Considerations
   - Water and Energy Efficiency
   - Green Infrastructure
   - Other
   - Total Project Cost Estimate (Engineer's Opinion of Probable Cost)
   - Annual Operating Budget
   - Income
   - Annual Operations and Maintenance Costs
   - Debt Repayments
   - Reserves
7. Conclusions and recommendations

C.2: Detailed outline

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:

   - **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.
   - **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 must meet National Environmental Policy Act requirements or a state equivalent review process, if required by funding agency.
   - **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. Provide population projections for the project planning area and concentrated growth areas for the project design period. Base projections on historical records with justification from recognized sources. Demographic data is available from Portland State University College of Urban & Public Affairs Population Research Center: https://www.pdx.edu/prc/home.
   - **Community engagement**. Describe the utility's approach used, or proposed for use, to engage the community in the project planning process. This outreach should help 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, for example, processing unit, of the existing facility and include the following information:

   - **Location map**. Provide a map, schematic process layout and photographs of all existing facilities. Identify facilities that are no longer in use or abandoned.
   - **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.
   - **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.
   - **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 Operation and Maintenance 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.
   - **Water/energy/waste audits**. If applicable to the project, discuss the main outcomes of past water, energy and waste audits.

3. Need for project

   Describe the needs in the following order of priority:

   - **Health, sanitation, environmental regulations 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.

- **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.
- **Reasonable growth.** Describe the reasonable growth capacity that is necessary to meet needs during the planning period. Additional revenues should support facilities designed to meet future growth needs. Consider 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 considered to meet the identified needs, including:

- Alternative approaches to ownership and management, system design, including resource efficient or green alternatives, and sharing of services, including various forms of partnerships
- Building new centralized facilities
- Optimizing the current facilities (no construction)
- Developing centrally managed decentralized systems, including small cluster or individual systems
- Developing an optimum combination of centralized and decentralized systems

Alternatives should be consistent with those considered in the environmental review. Technically infeasible alternatives that were considered should be mentioned briefly along with an explanation, but do not require full analysis. For each technically feasible alternative, the description should include the following information:

- **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.
- **Design criteria**. State the design parameters used for evaluation purposes. These parameters should comply with federal, state, and agency design policies and regulatory requirements.
- **Map.** Provide a schematic layout map to scale and a process diagram if applicable. If applicable, include future expansion of the facility.
- **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
- **Land requirements**. Identify sites and easements required. Specify whether these properties are currently owned, to be acquired, leased, or have access agreements.
- **Potential construction problems**. Discuss concerns such as subsurface rock, high water table, limited access, existing resource or site impairment, or other conditions that may affect cost of construction or operation of facility.
- **Sustainability considerations**. Sustainable utility management practices include environmental, social, and economic benefits that aid in creating a resilient utility.
- **Water and energy efficiency**. Discuss water reuse, water efficiency, water conservation, energy efficient design (for example, 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.
- **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.
- **Other.** Discuss any other aspects of sustainability, such as resiliency or operational simplicity, which are incorporated into the alternative, if applicable.

- **Cost estimates**. Provide cost estimates for each alternative, including a breakdown of the following costs associated with the project: construction, non- construction, and annual Operations and Maintenance 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. Operations and Maintenance costs should include a rough breakdown by 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.

Item	Cost estimate
Personnel (for example, 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	

Example Operations and Maintenance Cost Estimate
* See Appendix C3 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, for example, 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.

- **Life cycle cost analysis.** Complete a life cycle-present-worth cost analysis, an engineering economics technique to evaluate present and future costs, to compare the technically feasible alternatives. Do not leave out alternatives because of anticipated costs, let the analysis show whether an alternative may have an acceptable cost. This analysis should meet the following requirements for each technically feasible alternative. Several analyses may be required if the project has different aspects, such as for different types of collection systems and different types of treatment.
- The analysis should convert all costs to present day dollars
- The recommended planning period is 20 years, but may be any period determined reasonable by the engineer and concurred on by the state or federal agency
- The discount rate to be used should be the "real" discount rate taken from Appendix C of OMB circular A-94
- The total capital cost (construction plus non-construction costs) should be included
- Annual Operation and Maintenance costs should be converted to present day dollars using a uniform series present worth calculation
- 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
- The present worth of the salvage value should be subtracted from the present worth costs
- 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 Operations and Maintenance (USPW (O&M)) costs minus the single payment present worth of the salvage value (SPPW(S)):

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

- Develop a table showing the capital cost, annual Operation and Maintenance cost, salvage value, present worth of each of these values, and the NPV for state or federal agency review. Show all factors, major and minor components, discount rates and planning periods used. Include short-lived asset costs in the life cycle cost analysis if determined appropriate by the consulting engineer or agency. Tailor life cycles of short-lived assets to the facilities being constructed and based on generally accepted design life. Different features in the system may have varied life cycles. See Appendix C.3 for examples.
- **Non-monetary factors.** Consider non-monetary factors, including social and environmental aspects, in determining which alternative to recommend. These may include: sustainability considerations, operator-training requirements, permit issues, community objections, reduction of greenhouse gas emissions and wetland relocation.

6. Proposed project (recommended alternative)

The engineer should include a recommendation for which alternative(s) to implement. 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. The minimum required information, as applicable, includes:

- **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, for example, Average Daily Flow

- **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. Address capacity of treatment process
  - **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, address soil infiltration rate, evapotranspiration rate and use rate for rainwater harvesting.
  - **Overflow.** Describe overflow structures and locations for conveyance of larger precipitation events

- **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.

- **Permit requirements.** Identify any construction, discharge and capacity permits that will/may be required because of the project

- **Sustainability considerations**, if applicable.

  - **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.
  - **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 harvest and use, if applicable
  - **Other**. Describe other aspects of sustainability, such as resiliency or operational simplicity, incorporated into the selected alternative

- **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-ways, legal, engineering, construction program management, funds administration, interest, equipment, construction contingency, refinancing and other costs associated with the proposed project.
  - Separate the construction subtotal from the non-construction costs.
  - The non-construction subtotal should be included and added to the construction subtotal to establish the total project cost
  - Add an appropriate construction contingency 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, itemize the cost estimate 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

- **Annual operating budget.** Provide itemized annual operating budget information to evaluate the financial capacity of the system. The owner has primary responsibility for the annual operating budget; however, other parties that may provide technical assistance. The engineer will incorporate information from the owner's accountant and other known technical service providers.

- **Income.** Provide information about all sources of income for the system including a proposed rate schedule, separate project income for existing and proposed new users based on existing user billings, water treatment contracts and other sources of income. In the absence of historical data or other reliable information, for budget purposes, base water use on 100 gallons per capita per day. Calculate water use per residential connection using 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.

- **Annual operations and maintenance 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, use actual costs of other existing facilities of similar size and complexity. Include facts in the Report to substantiate Operation and Maintenance 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.

- **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.

- **Reserves.** Describe the existing and proposed loan obligation reserve requirements for the following:
    a. **Debt service reserve.** Consult with individual funding sources for specific debt service reserve requirements. Clearly state if proposing General Obligation bonds as loan security and omit this section.

    b. **Short-lived asset reserve.** A table of short-lived assets should be included for the system, see Appendix C.3 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 Operation and Maintenance; however, this does not include long-term capital financing facilities such as a water tank or treatment facility replacement.

7. Conclusions and recommendations

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

C.3: Example list of short-lived asset infrastructure

Estimated Repair, Rehab, and Replacement Expenses by Item, within up to 20 years from installation:

- Wastewater Utilities
- Treatment Related
- Pump
- Pump Controls Pump Motors Chemical feed pumps
- Membrane Filters Fibers
- Field & Process Instrumentation Equipment
- UV lamps Centrifuges Aeration blowers
- Aeration diffusers and nozzles
- Trickling filters, RBCs, etc. Belt presses & driers
- Sludge Collecting and Dewatering Equipment
- Level Sensors Pressure Transducers Pump Controls
- Back-up power generator
- Chemical Leak Detection Equipment

- Flow meters
- SCADA Systems

Collection System Related:

- Pump
- Pump Controls
- Pump Motors
- Trash racks/bar screens
- Sewer line rodding equipment
- Air compressors
- Vaults, lids, and access hatches Security devices and fencing Alarms & Telemetry
- Chemical Leak Detection Equipment

Appendix D – Reliability requirements

This appendix explains US EPA and DEQ reliability requirements:

EPA Reliability requirements

In 1974, EPA published a technical bulletin as a supplement to Federal Guidelines: Design, Operation, and Maintenance of Wastewater Treatment Facilities titled Design Criteria for Mechanical, Electric, and Fluid System and Component Reliability. The bulletin outlines minimum standards of reliability for three classes of wastewater treatment works: Class I, Class II and Class III.

Class I is the highest level of reliability and applies to facilities that discharge to waters which could be permanently or unacceptably damaged by discharge of degraded effluent for only a few hours.
Class II reliability applies to facilities that discharge to waters that would not be permanently or unacceptably damaged by discharge of degraded effluent, but could be if the discharge continued over several days.

Class III applies to facilities that discharge to waters that would not be permanently or unacceptably damaged by discharge of degraded effluent for any length of time.

Section 212 of the EPA bulletin lists component backup requirements. In these requirements, the bulletin uses the terms “peak wastewater flow” and “total design flow” but does not clearly define them. However, other federal guideline information describes “peak flow” as the peak instantaneous flow and “design flow” as the annual average flow.

Western Oregon planning requirements

Western Oregon has a distinct dry and wet season. The vast majority of the precipitation occurs during the months of November through May, with very little precipitation occurring during the summer months. As such, peak flows may exceed average dry weather flows by more than an order of magnitude.

Oregon Administrative Rules prohibit overflows during the summer months unless they are the result of a storm event that exceeds the one-in-10 year 24-hour storm. Sanitary Rules prohibit sewerage overflows during the winter months unless it is due to a storm event that exceeds the one-in-five-year 24-hour storm magnitude. Therefore, treatment plants in Oregon must be capable of treating all wastewater up to these flows.

DEQ developed guidelines to estimate current or projected sewage flow rates using a statistical method based on rainfall in a report entitled DEQ Flow Projection Guidelines. This report uses the following definitions for various flow rates employed in wastewater design:

- $MMDWF_{10}$: The Maximum Monthly Average Dry-Weather Flow with a 10 Percent Probability of Occurrence
- MMWWF5: The Maximum Monthly Average Wet-Weather Flow with a 20 Percent Probability of Occurrence
- $PDAF_5$: The Peak Daily Average Flow Associated with a One-in-Five-Year Storm
- PIF_5: The Peak Instantaneous Flow Attained during a One-in-Five-Year Peak Daily Average Flow

Reliability classification in Western Oregon

A treatment plant's capacity is based on both hydraulic and treatment capacity. Hydraulic capacity is simply the amount of sewage that can move through the system without overflowing. Treatment capacity is the amount of sewage that can be treated to meet effluent limits. In Oregon, wastewater treatment facilities must have both the hydraulic and treatment capacity to handle the peak day average flow associated with a five-year storm (PDAF5).

Applying the EPA reliability requirements directly could require an unnecessarily large and costly wastewater treatment facility because the ratio between the dry and wet season flow can be very high in western Oregon. Therefore, DEQ recommends applying the reliability criteria in Western Oregon as follows:

Collection systems

- Design gravity and alternative collection systems to handle the peak hourly flow associated with the one-in- five-year 24-hour storm event (PIF5). See Oregon Administrative Rule Chapter 340 Division 052.
- Sewage pumping stations should have a firm capacity (and stations should still be operational should the largest pump go out of service) equivalent to the peak hourly flow associated with the one-in-five-year 24-hour storm event (PIF5). However, in-system storage (flow equalization) may be considered to reduce the design peak hourly flow on a case-by-case basis (DEQ Pump Station Standards, May 2001).

Treatment systems

- In general, all units should be able to handle the peak hourly flows without overflowing or damaging the equipment, with the largest flow capacity unit out of service. The system should also contain enough flexibility to allow any unit to be taken out of service and meet permit requirements by redistributing the wastewater to other active treatment units.
- All pumping stations required to convey wastewater flows should have a firm capacity (largest pump out of service) equivalent to the peak hourly flow.
- The headworks should be sized for peak hourly flow. A minimum of two units are required. Facilities with only one mechanical screen may include a manual bar screen for redundancy. No redundancy is needed for grit removal units.
- Primary clarifiers, when present, should be sized for peak daily flow. No redundancy is needed if the secondary processes are adequate to treat dry weather flows without primary treatment.
- Size aeration basins using modeling to generate desired treatment. Typically, this means 10 mg/L at maximum monthly average dry weather flow with a 10 percent chance of occurrence (summer) and 30 mg/L at maximum monthly average flow with a five percent chance of occurrence (winter). A minimum of two units are required.
- Size the secondary clarifiers for either the peak average daily flow associated with a one-in-five-year storm with all clarifiers operational, or the MMDWF10 with the largest clarifier off line, whichever results in greater treatment capacity. A minimum of two secondary clarifiers are required. Use separate overflow rates for the dry and wet seasons.
- Size the disinfection system for peak-hour flow with full redundancy.
- For chlorination systems, the contact chamber should be sized for at least 15 minutes of contact time at the
- peak hour flow, 20 minutes at peak day, or 60 minutes at average dry-weather flow, whichever results in the largest basin. A minimum of two contact units is required. A minimum length-to-width ratio of 40:1 is
- required, with 72:1 preferred. Operation in series is recommended.
- For UV systems, a minimum of two units is required. Sizing is based on a minimum dose of 30 mJ/cm2 at either the peak-hour flow with all units on, or the maximum day dry weather flow with largest unit offline, whichever results in the larger design. This dose must be calculated with a certain percentage of fouling and end-of-lamp life statistics as discussed in the Ten State Standards. Full redundancy of the ballasts and controls is required. A single control panel is acceptable, as long as there is full redundancy within the panel. In addition, a UV transmittance of more than 65 percent should be verified before selecting UV.
- Collimated beam tests are recommended. A UV transmittance and UV intensity meters are required. UVT and UVI control is recommended.

Appendix E –Compliance with federal cross-cutting authorities example

The above project met all Federal Cross-Cutting requirements as part of compliance with USDA environmental review, National Environmental Policy Act or State Environmental Policy Act.
In detail:

1. **Historic/Cultural Resources (NHPA/AHPA, EO 11593) —** HPO was contacted by letter October 28th, 2008. On November 21st, 2008 SHPO responded by letter (SHPO Case # 08-2433) advising that no prior cultural resource surveys have been completed near the project area. A search of the SHPO database identified 69 historic properties in Clatsop County, none of which are within the project APE. THPO consultations letters were sent to the Confederated Tribes of the Grand Ronde and Siletz Indians in October 2008. The Grand Ronde indicated they have not identified any archeological or cultural sites within the project area; but that precautions should be taken during construction due to the high likelihood of ancestral habitation in these areas. The Siletz Indians were contacted a separate time in December 2008 but failed to respond. The Shoalwater Bay Tribe of the Shoalwater Bay require consultation for projects in Clatsop County. The Shoalwater were contacted by letter 2/6/09 with four follow-up phone calls made over the next month. No response was received. USDA sent letters to the tribes and SHPO in October 2011 to conclude the Section 106 process. SHPO responded by letter in October 2011, indicating two potential cultural sites had been discovered by private citizens since the time they were originally consulted on the project. SHPO requested that an archaeological survey be performed to ground truth the sites prior to project approval. An archaeological survey was completed by Heritage Research Associates in February 2012 and sent to SHPO and USDA-RD for review. The cultural report and field surface survey did not identify any archaeological resources in the project's APE and no further archaeological investigations were recommended. Regardless, an Inadvertent Discovery Plan will be required in the USDA Letter of Conditions to mitigate against any unanticipated discovery of archaeological artifacts or human remains.
2. **Wetlands (EO 11990) —** Wetland impacts require review and often permitted through both the Oregon Department of State Lands (DSL) and the U.S. Army Corp or Engineers (ACOE). Curran-McLeod contacted ACOE to discuss construction details and submit permitting applications. ACOE indicated a permit is not required given the plan to HDD underneath any wetland areas. Curran-McLeod has removed their ACOE permit application. Initial correspondence with DSL identified hydric soils and wetlands within the railroad ROW (Option A) area where the HDD is planned. DSL recommended on-site wetland determination to determine the extent of wetlands at the drill entry sites, equipment staging areas, and proposed pump stations. This route was eliminated as an option due to land easement issues, thus there will no longer be a need for a wetland delineation.
3. **Flood Plains (EO 11988 & 12148) —** The ER indicates the project site is not located within the 100- year flood zone as indicated by FEMA FIRM map panels 410027 0020B and 410027 0019B. The loan specialist has completed FEMA form 81-93.
4. **Farmland Protection Policy Act** — State land use goals prohibit the extension of sewers into resource areas and outside urban growth boundaries (UGB), except to resolve a documented health hazard (State Goal 11). The Shoreline project meets these requirements. The project is located entirely in existing highway/road ROWs. Properties bordering the project are zoned for many uses including single family (SF), lake and wetland (LW), residential-agricultural 5 acre parcels (RA-5), open space recreational (OPR), exclusive farm use (EFU), military reserve (MR) and agricultural-forest (AF). None of the surrounding land uses will be affected because the project remains within the ROWs.
5. **Coastal Zone Management Act** — The City of Warrenton and the SSD are both located within the Oregon Coastal Zone covered by the Coastal Zone Management Plan, managed by the Oregon

Division of Land and Conservation Development (DLCD). Because the project involves a federal action (USDA), DLCD will require a Federal Consistency Determination before the project can be approved to proceed. Federal consistency review includes local comprehensive plan and ordinance review as well as other state agency programs that are a part of the CZMP. A consistency determination was received from DLCD on August 24th, 2011.

6. **Wild & Scenic Rivers/Protected Areas** — The project's area of potential effect does not include any National or State Park areas, Wild and Scenic rivers or wildlife refuges.
7. **ESA/EFH/Critical ESA Species Habitat** — Current protected species lists were provided by US Fish and Wildlife Service, Oregon Department of Fish and Wildlife and National Marine Fisheries Service, the latter two did not identify issues in the current project proposal, if BMPs were used during construction. US Fish and Wildlife provided comments concerning the federally threatened Oregon silverspot butterfly (Speyeria zerene hippolyta). The butterfly is known to have occurred on Camp Rilea, in the meadows or pastures directly west of Hwy 101, and near the proposed project area east of Hwy 101 at Cullaby Lake. After further consultation, EPA issued a letter April 21, 2009, stating their determination that the project will have no effect on ESA-listed species or their critical habitat and will not adversely affect essential fish habitat.
8. **Environmental Justice (EO 12898)** — USDA is required to perform an environmental justice analysis of all projects funded through our program. Included in this analysis is a search of the census and social justice information for the community a project is to be located in and completion of USDA-RD form 2006-38 Civil Rights Impact Analysis Certification, certifying that the project does not have a disproportionate impact on a community or protected group within a community. The loan specialists completed a civil rights impact analysis and did not identify any issues. .The environmental report includes the required population and income data. And future rate increases may cause hardship to lower income households. Exact data is not known at this time.
9. **Clean Air Act**-- This project entails soil excavation and improvements on the wastewater system, changes at the sites above and changes to the piping system.
   The dust rules that will apply during excavation include:

   - Division 208: Visible Emissions and Nuisance Requirements:
     - Water is will be used to control dust from the work site.
     - Necessary site ingress/egress mitigations will ensure that dirt is not dragged on to the pavement because that can cause a dust problem. By installing water bars to spray both sides to the truck will wash the dirt off of the tires of the trucks.
     - For the installation of piping systems, the contractor may need crushed rock and asphalt. If so, the owner and operator of the rock crusher and asphalt plant will obtain an air permit to operate.
   - Division 248: Asbestos Requirements:
     - During excavation on land and on roadways this project may come across Cement Asbestos Pipe (nonfriable asbestos pipe). The contractor will test the pipe before beginning construction.
     - An asbestos survey is required for demolition in order to identify and remove asbestos containing building materials according to DEQ regulations.

10. **Safe drinking water/Sole source aquifers**—This project will not be in the vicinity of a designated sole source aquifer or discharge to groundwater.

Appendix F – Good practices to overcome common concerns

Draft a complete wastewater planning document:

1. Prior to starting or commissioning a wastewater planning document, collect data on wastewater flows and permitted effluent loads at least a year ahead
2. Prior to collecting data on wastewater flows and permitted effluent loads, confirm that the measuring devices are functioning properly (for example, flow meters are calibrated and capturing all flows, laboratory data is accurate, QA/QC is done correctly and regularly.
3. Make "Approval by DEQ" part of the contract for commissioning the writing of a wastewater planning document
4. Confirm the results of the completed wastewater planning document with DEQ, funding agencies and municipality
5. Avoid spending time and money on an environmental review if the project will not move forward: Confirm the results of the completed wastewater planning document with DEQ, funding agencies and municipality.
6. Know when your project needs to be in place
7. Wait until all parties agree that construction will begin within two years before beginning the environmental review, which may take a full year to complete

DEQ, Business Oregon, and USDA-RD will fund projects in plans for five years from the date of approval. After five years, updated population, flow and loading projections are required. If the updated projections are significantly different than those in the original plan, an update is required unless waived by the funding agencies. DEQ and Business Oregon accept the update for up to 10 years from the initial plan approval. After 10 years, a new plan is usually required in order to get funding.

Minimize the cost and time of wastewater planning:

1. Consult with DEQ before commissioning a wastewater planning document. DEQ can assess the need and content of the document and help you define the scope
2. Updating a wastewater planning document on a regular basis is not a DEQ requirement. However, updating makes sense if facts on the ground have changed, such as expansion of service area and or population, or the ability to treat wastewater.
3. Prior to starting or commissioning a wastewater planning document, collect data on wastewater flows and permitted effluent loads at least a year ahead.
4. Prior to collecting data on wastewater flows and permitted effluent loads, confirm that the measuring devices are functioning properly (such as flow meters are calibrated and capturing all flows, laboratory data is accurate (QA/QC is done correctly and regularly).
5. Do data collection above with plant/municipality personnel. Confirm that the data is correct and usable. Get a line item cost for data collection from consultants before signing a contract. Subtract cost of doing the legwork yourself from the bottom line. Bargain with consultants for best price using data collected.
6. Confirm the results of the completed wastewater planning document with DEQ, funding agencies and municipality.