

REPORT OF FINDINGS

ON IMPROVING THE TECHNICAL, FINANCIAL AND MANAGERIAL CAPACITY OF OREGON'S PUBLIC WATER SYSTEMS

DRINKING WATER ADVISORY COMMITTEE TO
THE OREGON HEALTH DIVISION

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EXECUTIVE SUMMARY

During 1998, the Drinking Water Advisory Committee (DWAC) to the Oregon Health Division (OHD) considered the challenge of improving the technical, financial and management (TFM) capabilities of public water systems. This standing committee dedicated a portion of each of its monthly meetings to discuss and debate the issues of water system viability. This *Report of Findings* presents the work of the DWAC for consideration by the general public and OHD. Guidance for DWAC in preparing this report came generally from the Safe Drinking Water Act (SDWA) Amendments of 1996. At the heart of this report are the DWAC's recommendations regarding the programs that The Health Division's Drinking Water Program could establish — or if already established, strengthen — that would assist water systems in building capabilities to achieve compliance with the requirements of the SDWA.

The body of the report is presented in five sections, labeled alphabetically. This is an intentional correspondence with the language in the SDWA, which lays out the five elements that a State must consider when preparing a capacity development strategy.

SECTION A — IDENTIFYING SYSTEMS IN NEED OF TECHNICAL, FINANCIAL AND MANAGERIAL ASSISTANCE

In prioritizing those public water systems needing assistance in building capacity, a risk-based ranking scheme is proposed. The risk rating system is based upon existing assessment routines in which public health protection and compliance with the drinking water regulations is a primary factor. Water systems failing to comply with regulations are more likely to lack financial, technical, or management capacity. Non-complying systems will be assessed to determine the seriousness of the capacity-related problems they are experiencing.

SECTION B — FACTORS THAT ENHANCE OR IMPAIR WATER SYSTEM CAPACITY DEVELOPMENT

Factors operating at the federal, state, and local level that impair or enhance water system capacity are presented in this section of the report. These factors were drawn from national studies, from the experience of DWAC, and from knowledge gained by the OHD in administering the drinking water program over the years.

The DWAC identified 125 factors at the federal, state and local levels that are either enhancements or impairments to public water system TFM capacity. Enhancements and impairments were further divided into six categories: Institutional, Regulatory, Financial, Tax, Legal and Other. These are displayed in Table 1. The largest number of impairments was at the local level (27). Of the local impairments, financial impairments were the most significant group (8).

Only a subset of these factors was chosen by the DWAC for consideration as part of the State's capacity development strategy. Thirty-four factors are specifically noted in Section B. The remaining factors were retained as part of the report because it is expected that they may be revisited as experience in capacity assistance is gained.

Table 1: Federal, State and Local Factors That Affect Water System Technical, Financial, and Managerial Capacity

Factors	Enhancements	Impairments	Noted in Findings
<i>Institutional</i>	20	17	11
<i>Regulatory</i>	23	11	9
<i>Financial</i>	11	15	8
<i>Tax</i>	2	4	0
<i>Legal</i>	7	8	3
<i>Other</i>	4	3	3
Total	67	58	34

SECTION C — RECOMMENDATIONS ON HOW THE STATE CAN USE ITS AUTHORITY AND RESOURCES TO HELP WATER SYSTEMS IMPROVE CAPACITY

The process of identifying enhancements and impairments to water system capability naturally led to a discussion of programs that could be employed by the State to improve capacity. First, the OHD needs to improve its data collection systems to gather and assemble better information about the financial and management capabilities of Oregon public water systems. The OHD needs to know more about the water systems it regulates in order to better identify those systems most in need of TFM assistance; to identify systems most likely to be serviced by the programs described below. Targeted TFM analysis will also permit the OHD Drinking Water Program to better diagnose compliance challenges. Once diagnosed, the OHD can best apply its resources (e.g., technical assistance, and regulatory enforcement) and the resources of cooperating partners in correcting water system problems.

Programs Recommended for Consideration in Formulating the Oregon TFM Capacity Strategy

The Drinking Water Advisory Committee recommends that certain programs currently in existence be considered in developing the State's Capacity Development Strategy. Current and proposed programs in the following categories are offered as possible solutions to capacity impairments: Training, Problem Solving, Public Education, Satellite Management, Source Water Assessment Planning, and Water System Planning.

SECTION D — MEASURING THE SUCCESS OF OREGON'S CAPACITY DEVELOPMENT STRATEGY

In fashioning its capacity development strategy, the DWAC noted in Section D how the OHD might assess the performance of capacity building efforts. It is suggested that seven general measures of performance be used. These measures are based upon the Oregon Benchmark system that is currently utilized to assess State government performance.

Examples of measures include:

- The percentage of population served by public water systems meeting State drinking water standards.
- The percentage of population served by surface water that is adequately treated.
- The percentage of population with drinking water protection programs in place.
- Other measures as indicated in Section D.

SECTION E — PUBLIC INVOLVEMENT IN PREPARING THE OREGON CAPACITY DEVELOPMENT
REPORT OF FINDINGS

The final section of the DWAC's *Report of Findings* provides recommendations on how the broadest possible involvement by citizens and stakeholders could be obtained in gathering information, opinions and ideas on how to build the capacity of public water systems.

GLOSSARY OF TERMS AND ACRONYMS USED IN THIS REPORT

APWA: American Public Works Association - A national organization of public works professionals (i.e. water, wastewater, transportation, and solid waste.)

Capacity: Refers to the capabilities required of a public water system in order to achieve and maintain compliance with the drinking water rules. It has three elements:

Technical: Technical capacity or capability means that the water system meets standards of engineering and structural integrity necessary to serve customer needs. Technically capable water systems are constructed, operated, and maintained according to accepted quality standards.

Financial: Financial capacity or capability means that the water system can raise and properly manage the money it needs to operate efficiently over the long term.

Managerial: Managerial capacity or capability means that the water system's management structure is capable of providing proper stewardship of the system. Governing boards or authorities are actively involved in oversight of system operations.

DEQ: Department of Environmental Quality - This agency is responsible for the quality of the environment (i.e. air, water, and solid waste) of Oregon.

DWAC: Drinking Water Advisory Committee - The policy advisory group to the Health Division on drinking water issues. Members are nominated by represented constituency groups and appointed by the Division Administrator.

DWSRF: The Drinking Water State Revolving Loan Fund - Congress authorized this fund in 1996. The Oregon Economic Development Department administers the DWSRF.

EFC: The Environmental Finance Center at Boise State University - An organization that operates under an EPA charter to provide assistance to States and communities on matters concerned with financial management and access to financial assistance.

EPA: The US Environmental Protection Agency - This federal agency oversees State programs and provides financial support. EPA determines when a State's capacity development program is in compliance with the safe drinking water act.

MCL: Maximum Contaminant Level - The maximum allowable level for a given drinking water contaminant.

NRWA: National Rural Water Association - A professional organization representing water systems serving less than 10,000 people.

OAWU: Oregon Association of Water Utilities - The Oregon affiliate of the National Rural Water Association.

OHD: The Oregon Health Division - This agency is responsible for administering the drinking water in standards in Oregon through a primacy agreement with U.S.EPA.

PNWS - AWWA: The Pacific Northwest Section of the American Water Works Association - An organization of water professionals dedicated to providing leadership to the drinking water profession in Oregon, Idaho, and Washington in the areas of drinking water quality, water resource policy, and water related planning.

PUC: The Public Utility Commission of Oregon - The State agency that has regulatory responsibility for drinking water systems that are privately owned and operated.

PWS: Public Water System as defined in the Safe Drinking Water Act.

RCAC: Rural Community Assistance Corporation - a Western regional organization assisting rural communities.

SDWA: The Safe Drinking Water Act, passed by the US Congress in 1974 and amended in 1986 and 1996.

TFM: Technical, financial, and managerial - This abbreviation is used to save space in the report and avoid frequent repetition of these terms.

WRD: Water Resources Department – the Oregon agency responsible for allocating and conservation of available water resources.

INTRODUCTION TO CAPACITY DEVELOPMENT/ SAFE DRINKING WATER ACT (SDWA)

Water system capacity is the ability to plan for, achieve, and maintain compliance with applicable drinking water standards. Based upon the research and technical assistance efforts of water works professionals, capacity is known to have three components: technical, financial, and management. Adequate capability in all three areas is necessary for a successful public water system.

Capacity development is the process of water systems acquiring and maintaining adequate technical, financial, and managerial capabilities to assist them in the provision of safe drinking water. The Safe Drinking Water Act's (SDWA) capacity development provisions provide a framework for States and water systems to work together to help ensure that systems acquire and maintain the technical, financial, and managerial capacity needed to meet the Act's public health protection objectives.

The 1996 SDWA Amendments include requirements for States to obtain authority to assure that new systems are viable, to develop a strategy to address the capacity of existing systems, and to ensure that potential Drinking Water State Revolving Fund (DWSRF) recipients have sufficient technical, financial and managerial (TFM) capacity prior to receiving loan funds (or that the loan funds will allow them to receive the capacity they require). The Act outlines several items to include in States' capacity development strategies for existing systems; however it is not mandated that States *must* include each of these items, but rather that they must *consider* each of the items in developing the strategy. Clearly, including each of the required elements produces a comprehensive capacity development program for the State and addresses all of the necessary issues. However, each State must examine each of the issues and determine those elements that best fit the needs of the State.

SDWA §1420(c)(2) addresses the requirements of strategies developed by each State to improve the technical, financial, and managerial capacity of public water systems under their jurisdiction. The development of the State's strategy is directly related to the level of financial resources available to help pay for water system improvements. A State that does not develop and implement a capacity development strategy will receive only 90 percent of the DWSRF allotment it would otherwise receive in FY 2001, 85 percent of its scheduled allotment in FY 2002, and only 80 percent of its scheduled allotment in each subsequent fiscal year.

In developing and implementing a capacity development strategy, SDWA §1420(c)(2) (A-E) requires States to “consider, solicit public comment on, and include as appropriate” five elements:

- Methods or criteria to prioritize systems [§1420(c)(2)(A)]
- Factors that encourage or impair capacity development [§1420(c)(2)(B)]
- How the State will use the authority and resources of the SDWA [§1420(c)(2)(C)]
- How the State will establish the baseline and measure improvements [§1420(c)(2)(D)]
- Procedures to identify interested persons [§1420(c)(2)(E)]

The Oregon Drinking Water Advisory Committee (DWAC) chose to prepare a comprehensive report of findings that includes consideration of all SDWA-required capacity development strategy elements.

OREGON'S DRINKING WATER ADVISORY COMMITTEE

The Oregon Drinking Water Advisory Committee (DWAC), an important assembly of drinking water stakeholders, established by the OHD in the late 1970's, began work toward developing this *Report of Findings* in January of 1998. A record of the DWAC's work is found in Appendix A. In addition to the DWAC members listed below, other individuals and organizations were invited to participate in this work. An extensive mailing was conducted to solicit interest in serving with the DWAC. The purpose was to form a stakeholder group that would represent the broadest possible spectrum of interested parties while at the same time respecting the need to keep the group small enough to function efficiently. Additionally, a number of individuals who were not formally appointed chose to voluntarily attend the DWAC meetings and were able to contribute materially to the DWAC's work. Provisions were made to expand the public involvement process by the following means:

- A mailing list of persons or organizations was developed so that periodic updates could be provided.
- A decision was made to present the initial recommendations of the DWAC to the public through a series of public workshops.
- Organizations that publish newsletters were asked to convey information about the DWAC's activities.

These measures, taken together, helped to ensure that the public would have multiple opportunities to learn about and provide input to the capacity development activities.

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SECTION A: IDENTIFYING SYSTEMS IN NEED OF TECHNICAL, FINANCIAL, AND MANAGERIAL ASSISTANCE

BACKGROUND

The key issue in designing the State's capacity development strategy is identifying and prioritizing those public water systems that are most in need of technical, financial and managerial (TFM) capacity to deliver safe drinking water to the public. At the core of this discussion is this question: "What information about water systems does the OHD or other stakeholders have that helps identify problems that need to be addressed?" Care was taken to identify and consider the variety of sources for information about the TFM conditions of water systems. Ultimately, the Drinking Water Advisory Committee (DWAC) determined the following:

The best and most current information (consistent and verifiable) for providing an indication of the capabilities of public water systems is the technical compliance information maintained by the OHD. Limited financial and management capacity information is maintained by the OHD and by the Public Utility Commission of Oregon for regulated systems.

The DWAC deliberated the issue of how current information could be used to identify and prioritize systems needing TFM capacity building. Discussions addressed concerns that assistance given under the capacity development program might be focused primarily on population considerations, thus directing the limited financial and program resources to the capacity deficiencies of larger public water systems.

The drinking water program already has mechanisms in place for dealing with acute risks to public health. Public notification, boil water advisories where appropriate, and immediate corrective actions are all undertaken when pathogenic organisms or high levels of chemical contaminants are detected in a water supply. Consequently, the capacity development strategy will not be expected to deal with these emergency situations.

A chronic pattern of non-compliance will often serve as an indication that a water system lacks TFM capacity. Failures to monitor, frequent recurrences of coliform bacteria in the distribution system, variations in water quality leaving treatment facilities and other symptoms of this nature should trigger an assessment of a water system's TFM capabilities.

The purpose of the prioritization scheme was not to decide which systems would or would not receive assistance, but was aimed more at determining the order in which systems would be given attention. Because the capacity development strategy will become an ongoing element of the State's drinking water program, it should be possible to eventually serve all systems that truly need capacity assistance.

Identification and Prioritization

As a result of the considerations identified above the OHD Drinking Water Program staff developed a matrix system for prioritizing drinking water system problems that might be identified. The matrix system is founded on risk factors relative to compliance problems. Comparative rankings of risks generated through the matrix system allows the OHD to most effectively use limited resources.

The nature of the specific assistance offered under the capacity development program should be determined only after an assessment of the technical, financial, and managerial capacity of the water systems that are ranked highest (or are ranked as "worst"). The following Tables help explain the risk matrix system:

TABLE A.1: Capacity Development Risk Matrix Criteria

RISK LEVEL ASSESSMENT BASED ON RISK TYPE ^{i ii}

A. Health/Water Quality

High:

1. Waterborne disease outbreaks.
2. Fecal/*E.coli* positive or Coliform Rule Maximum Contaminant Level (MCL) violations.
3. Surface water or groundwater under surface water influence (GWUSWI) treatment technique violations from turbidity MCL exceedances or <2.0-log inactivation through filtration treatment.
4. Nitrate/Nitrite MCL violations.

Medium High:

1. Surface water or GWUSWI treatment technique violations for failure to meet minimum “CT” (Chlorine x Contact Time) inactivations through disinfection treatment.
2. Volatile Organic (VOC), Synthetic Organic (SOC), Radionuclides, and Inorganic (IOC) Chemical (including Lead Action Level) MCL violations.

Medium:

1. Total coliform (fecal negative) MCL violations.
2. IOC, SOC, VOC or Radiological contaminant detections at levels greater than 50% of the MCL.

Medium Low:

1. Copper action level violations.
2. IOC, SOC, VOC or Radiological contaminant detections at levels greater than 20% and less than 50% of the MCL.

Low:

1. Groundwater contamination greater than the MCL for any chemical contaminant within 1000 feet of the drinking water source (2-year travel time).
2. Groundwater contaminant detection (chemical or viral) within 1000 feet of the drinking water source (2-year travel time).

B. Monitoring and Reporting

High:

1. Surface water and GWUSWI water quality reports (turbidity, “CT,” etc.)
2. Coliform bacteria.

Medium High:

Nitrate/Nitrite.

Medium:

1. VOC and SOC.
2. IOC (including Lead).

Medium Low:

Radionuclides.

Low:

Copper.

C. Certified Operator/Operations

High:

No certified operator.

Medium High:

Water Treatment Plant operates with no operator on site.

Medium:

Certified to an insufficient grade or discipline.

Medium Low:

Certified operator is on staff, but no attention is being paid to maintaining the water quality in the distribution system.

Low:

Insufficient number of certified operators for the water system operations.

D. Sanitary Hazards

High:

Source construction (wells and springs) / major operation issues (Water Treatment Plant operating practices).

Medium High:

Other operation issues (sampling plans, flushing practices, cross-connection control program, etc.).

Medium:

Finished water storage standards / practices (cleaning, inspection, water “turn- over,” etc.).

Medium Low:

Distribution system standards and maintenance practices (adequate blow off points, valve exercising, good as-built plans of piping layout).

Low:

Minor construction standards.

E. Source Susceptibility – Potential Threats to Drinking Water Quality

High:

High sensitivity, high potential source risk, no Drinking Water Protection Plan.

Medium High:

High or moderate sensitivity, moderate or high potential risk, no Drinking Water Protection Plan.

Medium:

High sensitivity, high potential source risk, Drinking Water Protection Plan that is not potential contaminant source specific.

Medium Low:

High or moderate sensitivity, moderate or low potential source risk, Drinking Water Protection Plan that is not potential contaminant source specific.

Low:

High sensitivity, high potential source risk, complete Drinking Water Protection Plan.

F. Master Plans

High:

No Master Plan or Master Plan is older than 20 years in age.

Medium High:

Recommendations do not address critical issues with the water system.

Medium:

Master Plan is missing key elements from Oregon Administrative Rules required content.

Medium Low:

Recommendations of the Master Plan may not be the optimized alternatives (only a temporary solution is prescribed).

Low:

Master Plan is > 10 years old but is < 20 years old.

G. Relative Weighting Factors

A relative weight factor was created to compare the severity of risk types. For instance, the relative risk of health and water quality issues is significantly greater than Master Plan issues. Therefore, a point scale was developed to achieve that balance.

H. Population Weighting Factors

(To be multiplied to the sub-total of points accumulated in Paragraphs A – F.)

> 100,000	=	3.0
10,001 – 100,000	=	2.5
3,301 – 10,000	=	2.0
501 – 3,300	=	1.5
< 501	=	1.0

ⁱ Systems can accumulate more than one set of points in a given category.

For instance, a system with a nitrate violation, total coliform violation, and a copper action level exceedance would receive points not just for the worst violation, but rather for each as follows:

- Nitrate = 5 points
- TCR violation = 3 points
- Copper = 2 points
- Total under Health / Water Quality = 10 points

ⁱⁱ Although a numeric score is established for the water system, OHD will only use the scores to identify systems at serious risk (attention now), moderate risk (monitor and determine whether the system gets worse), and low risk (no attention needed).

Table A.2: Methodology For Prioritizing Systems Needing TFM Assistance

RISK LEVELS

Risk Type	High 5 Points	Med. High 4 Points	Medium 3 Points	Med. Low 2 Point	Low 1 Points	G. Relative Weighting Factors	Total Points
A. Health/Water Quality						5	
B. Monitoring and Reporting						3.5	
C. Certified Operator						3	
D. Sanitary Hazards						2.5	
E. Source Susceptibility						2	
F. Master Plan						1	
						Sub Total	
						x Pop. Wt. Factor (Item H)	
						Grand Total	

SECTION B: FACTORS THAT ENCOURAGE OR IMPAIR CAPACITY DEVELOPMENT

BACKGROUND

Considerable attention was given to addressing Section 1420(C)(2)(B) of the SDWA Amendments of 1996. The Act requires each State to identify the factors that either encourage or impair the technical, financial, & managerial (TFM) capacity of public water systems. States are required to identify regulatory, financial, tax, and legal factors. A fifth factor category, "other," was added to capture issues outside of the prescribed categories.

The factors operating at the federal, state, and local level that impair or enhance water system capacity are presented in this section of the report. These factors were drawn from national studies, from the experience of Drinking Water Advisory Committee (DWAC) members, and from knowledge gained by the OHD in administering the drinking water program over the years. The DWAC identified 125 factors at the federal, state and local levels that are either enhancements or impairments to public water system TFM capacity. Table B.1 itemizes the factors by major category.

Table B.1: Federal, State and Local Factors That Affect Water System Technical, Financial, and Managerial Capacity

Factors	Enhancements	Impairments	Noted in Findings
<i>Institutional</i>	20	17	11
<i>Regulatory</i>	23	11	9
<i>Financial</i>	11	15	8
<i>Tax</i>	2	4	0
<i>Legal</i>	7	8	3
<i>Other</i>	4	3	3
Total	67	58	34

Capacity enhancement or impairment factors were identified for each of the key levels of government: federal, state and local. The purpose of this work was to point out for each level of government the issues that require the attention of intergovernmental partners. In some cases, the DWAC has recommended that actions be taken at each level of government in order to improve the overall capacity of public water systems. Some recommendations are policy measures offered for consideration of the drinking water program's governmental partners.

Those factors that should receive special consideration in the drafting of the State's capacity development strategy are described in Table B.5. For additional information about factors that were identified but were not specifically noted for the strategy, please refer to Appendix B.

1. Federal Factors That Impair or Enhance Public Water System Technical, Financial, and Managerial Capacity

Please note the specific recommendations to address impairments to capacity development that would be best implemented at the federal level through statutory, regulatory or other changes.

Table B.2: Federal Factors That Affect Water System Technical, Financial, and Managerial Capacity

Factors	Enhancements	Impairments	Noted in Findings
<i>Institutional</i>	2	5	0
<i>Regulatory</i>	8	2	2
<i>Financial</i>	5	3	2
<i>Tax</i>	0	0	0
<i>Legal</i>	1	0	0
<i>Other</i>	2	2	1
Total	18	12	5

A. Enhancements

Institutional, Regulatory, Financial, Tax, Legal, or Other Enhancements: Not Adopted in Findings

The DWAC felt that strategy for implementation is best dealt with at a state and local level.

B. Impairments

Institutional Impairments: Not Adopted in Findings

Regulatory Impairments: The structure and language of drinking water rules are complex and difficult for the regulated community and customers to understand. The growing body of federal regulations and requirements present public water systems with compliance obstacles and challenges that may impair capacity. In addition, the prescriptive nature of drinking water regulations is an impairment to public water system capacity.

Financial Impairments: Federal rules do not seem to consider the cost of compliance as part of the rulemaking process. Thus, there are insufficient DWSRF resources to meet State needs. In addition, the lack of federal resources for State drinking water grants to address "old" unfunded and underfunded mandates is a problem.

Tax Impairments: Not Adopted in Findings

Legal Impairments: Not Adopted in Findings

Other Impairments: The implementation costs of capacity development are high compared to unknown benefits.

2. State Factors That Impair or Enhance Public Water System Technical, Financial, and Managerial Capacity

State and local factors known to impair or enhance the capacity of public water systems are identified in the next two subsections of this report. Unlike the federal level factors, those that require the highest level of government attention, government officials in Oregon can be affected by state and local impairments and enhancements. The factors listed here are excellent candidates for consideration in the State's capacity development strategy. Section C of this Report of Findings includes proposals for programs and activities that could overcome state and local TFM capacity impairments.

Table B.3: State Factors That Affect Water System Technical, Financial, and Managerial Capacity

Factors	Enhancements	Impairments	Noted in Findings
<i>Institutional</i>	8	3	6
<i>Regulatory</i>	11	5	6
<i>Financial</i>	2	4	3
<i>Tax</i>	0	2	0
<i>Legal</i>	1	4	1
<i>Other</i>	2	1	2
Total	24	19	18

A. Enhancements

Institutional Enhancements: Public water systems in Oregon benefit from four key institutional enhancements; the traditional support of technical assistance and training programs by the OHD and others, a strong field presence of State drinking water program staff, the administrative branch's commitment to strengthen water systems, and the high level of cooperation among State agencies.

Regulatory Enhancements: State land use goals support growth management and the efficient provision of public facilities. In addition, State regulations encourage consolidation of systems.

Financial Enhancements: The State of Oregon has provided significant financial and administrative resources for the coordination of important sources of capital financing for water system improvements. Oregon's "one stop funding" process, administered by the Economic Development Division, is an excellent resource for municipal water systems.

Tax Enhancements: Not Adopted in Findings

Legal Enhancements: Not Adopted in Findings

Other Enhancements: The Governor's Executive Order 97-22 directs agencies to ensure that their actions are consistent with Quality Development Objectives. This directive supports water systems that promote compact development.

B. Impairments

Institutional Impairments: State institutional impairments exist because of limitations of resources available for local system training and insufficient staffing to promote and provide technical assistance.

Regulatory Impairments: Due to the complexity of drinking water system requirements, water systems have incomplete information about the body of regulations regarding the provision of safe drinking water. The current volume of rules, regulations, requirements and guidance relative to public water systems is difficult to master, especially by the limited staff of small systems. Because of this fact, the information to be monitored by systems, and the fact this information is dynamic, systems with limited TFM capacity have trouble keeping up with regulatory changes. New regulatory requirements will be problematic, i.e., operator certification requirements.

Public water systems face regulatory oversight from multiple agencies. Current lack of formal coordination between these regulatory agencies is an impairment to capacity development. In the case of PUC-regulated public water systems, traditional rate making practices may have the unintended effect of discouraging long-term financial capacity in favor of short-term financial management and planning practices. Rate base regulation, a presumption of contribution of capital, general disallowance for reserve accounts, and the costs involved in filing rate cases may negatively affect the long-term financial and technical viability of regulated water systems. Only municipal water systems can reserve water system funds for future investment in the system.

Financial Impairments: Private systems are not allowed by the PUC to create reserves. This limits the rate-regulated systems from accumulating resources for system improvements. At the drinking water program level, there is limited funding available for corrective field evaluations, e.g., sanitary surveys and other system contacts by field staff.

Tax Impairments: Not Adopted in Findings

Legal Impairments: According to current statutory restrictions, many small private water systems are ineligible to receive DWSRF financing.

Other Impairments: The Governor's Executive Order 97-22 also creates a problem for drinking water systems because it conceptually discourages the funding of some rural regional water systems.

The Governor's Executive Order (EO97-22) orders State agencies to ensure that agency actions, such as grant and loan programs, are consistent with the QDOs; the QDO's conceptually discourage regional systems that could support sprawl.

3. Local Factors That Impair or Enhance Public Water System Technical, Financial, and Managerial Capacity

Local factors that impair or enhance TFM capacity are identified in this subsection. Local factors that impair capacity should be logically addressed at the local level. The capacity development programs outlined in Section C are the suggested State-administered response to local impairments. Of the fifty-three factors identified by the DWAC, eleven are specifically recommended for consideration by the OHD.

Table B.4: Local Factors That Affect Water System Technical, Financial, and Managerial Capacity

Factors	Enhancements	Impairments	Noted in Findings
<i>Institutional</i>	10	9	5
<i>Regulatory</i>	4	4	1
<i>Financial</i>	4	8	3
<i>Tax</i>	2	2	0
<i>Legal</i>	5	4	2
<i>Other</i>	0	0	0
Total	25	27	11

A. Enhancements

Institutional Enhancements: Oregon's strong tradition of local control translates into better community understanding and commitment to addressing community needs, such as the provision of safe drinking water. Local recognition of performance -- through programs like the Oregon Benchmarks -- heightens institutional commitment to provide efficient and effective local services.

Regulatory Enhancements: Local control also means that local entities have the flexibility to react to changes in rules, regulations and expectations of the regulatory entities.

Financial Enhancements: Not Adopted in Findings

Tax Enhancements: Not Adopted in Findings

Legal Enhancements: The State’s urban growth boundary requirements provide opportunities for system consolidation.

Other Enhancements: Not Adopted in Findings

B. Impairments

Institutional Impairments: Water systems do not generally recognize the need to operate in a business-like fashion. There is a lack of planning and evaluation, poor financial management and budgeting (including capital budgeting), and a lack of training available for management. Management capacity of smaller water systems is negatively affected by high turnover of board members. A resistance to regulators prescribing how systems should be managed and operated also affects the acquisition of institutional capacity.

Regulatory Impairments: Not Adopted in Findings

Financial Impairments: Water systems are inadequately funded due to rate structures that do not generate sufficient revenues. The lack of revenues results in systems not having the resources to hire staff or meet other expenses. This is exacerbated and/or results from a lack of support by customers for the proper financial support of the system.

Tax Impairments: Not Adopted in Findings

Legal Impairments: Oregon’s land use laws may restrict water system development or consolidation where it would contribute to rural residential sprawl.

Other Impairments: Not Adopted in Findings

Table B.5a: Factors that Enhance or Impair Capacity at the Federal Level

Factors that Enhance or Impair Capacity at the Federal Level Noted in Findings			
Factor	Description	Enhancement	Impairment
Regulatory	Language of rules can be difficult to understand and to translate to customers; most people do not understand complexity of rule interaction		Yes
	Complexity of regulation – more MCLs to meet, cascading effect of rules, costs of compliance, the “Feds” telling local government what they have to do		Yes
Financial	Federal rules do not consider (seemingly) cost of compliance as part of the rule making process – insufficient State Revolving Fund \$\$ to meet State needs		Yes
	Limited grants to address “old” unfunded and underfunded mandates		Yes
Other	High cost of capacity development for an uncertain benefit		Yes

Table B.5b: Factors that Enhance or Impair Capacity at the State Level

Factors that Enhance or Impair Capacity at the State Level Noted in Findings			
Factor	Description	Enhancement	Impairment
Institutional	Support for technical assistance and training	Yes	
	Field presence solves many problems – elevates level of operations	Yes	
	Commitment to protect and strengthen drinking water program elements from primary State agency to the Governor's office	Yes	
	Coordination with appropriate agencies	Yes	
	Insufficient local system training		Yes
	Limitations to program prevent State from teaching how to instill capacity into community water systems; insufficient staff to promote/provide technical assistance		Yes
Regulatory	Encourage consolidation – acquisition adjustments considered	Yes	
	Land use goals support growth management and the efficient provision of public facilities which encourage capacity development within urban growth boundaries	Yes	
	Operator certification requirements (added cost to small utilities)/unfunded mandates		Yes
	Various agencies involved in drinking water – difficult to coordinate efforts		Yes
	Only municipalities can hold/reserve water rights for future use		Yes
	PUC does not allow financial return on construction work in progress – the plant must be used and useful		Yes
Financial	Grants, loans, State Revolving Fund – “One Stop Funding” for technical assistance, capacity building, etc.	Yes	
	No reserves allowed for private systems – PUC prevents privately owned water systems from “getting ahead” to generate a revenue pool		Yes
	Limited funding for corrective field evaluations – i.e. sanitary surveys		Yes
Legal	Many small private non-profits are not eligible for State Revolving Fund		Yes
Other	The Governor's Executive Order (EO97-22) orders State agencies to ensure that agency actions, such as grant and loan programs, are consistent with the Quality Development Objectives (QDOs); the QDO's conceptually support water systems that promote compact development	Yes	
	The Governor's Executive Order (EO97-22) orders State agencies to ensure that agency actions, such as grant and loan programs, are consistent with the QDOs; the QDO's conceptually discourage regional systems that could support sprawl		Yes

Table B.5c: Factors that Enhance or Impair Capacity at the Local Level

Factors that Enhance or Impair Capacity at the Local Level Noted in Findings			
Factor	Description	Enhancement	Impairment
Institutional	Local (local, county, Council of Governments) control often equals better understanding of community needs	Yes	
	Performance measures – Oregon benchmarks	Yes	
	Insufficient, on-going continuity		Yes
	Do not have “mindset” about having to operate their utility as a business – lack of evaluation and planning functions, poor budgetary skills, lack of managerial training at most community systems, etc.		Yes
	Local government “resistance” to an outside agency telling them how to run their utility		Yes
Regulatory	Flexibility to adapt to rules/expectations	Yes	
Financial	Insufficient funds to carry out responsibilities; inadequate funding for sanitary surveys performed by county health programs		Yes
	Not enough money allocated to drinking water system operations and improvements – rate structure does not allow for water systems to hire “experts” or sufficient number of staff; inability to increase utility rates and/or set water/tax rates which enhance system improvements		Yes
	Public understanding of finance		Yes
Legal	Oregon’s land use laws may restrict water system development or consolidation where it would contribute to rural residential sprawl.		Yes
	Implementing exceptions to the boundaries is difficult		Yes

SECTION C: RECOMMENDATIONS ON HOW THE STATE CAN USE ITS AUTHORITY AND RESOURCES TO HELP WATER SYSTEMS IMPROVE CAPACITY

BACKGROUND

Following its work of identifying and discussing the factors that encourage or impair capacity development, the Drinking Water Advisory Committee (DWAC) directed its attention to forming a set of recommendations for program elements designed to address the need for improving the technical, financial and managerial (TFM) capabilities of regulated public water systems. Detailed information is available in Appendix C.

The program elements are suggested in response to significant TFM impairments and enhancements identified in Section B of this *Report of Findings*. These program elements represent efforts the State of Oregon, its cooperating local governments and public, not-for-profit and private partners are currently undertaking and could implement in the future to improve TFM capabilities.

Generally, the impairments to TFM are problems that need to be addressed by public water systems regulators, and the regulated community. The programs listed are suggested to overcome TFM capacity problems in public water systems.

The suggested program elements are presented without specific schedules for implementation or ranking. The purpose of this section of the *Report* is to present programs for improving TFM capabilities without regard to implementation demands. The program elements presented do not include specific recommendations regarding responsibility for implementation by the OHD Drinking Water Program or other stakeholders. However, it is expected that the OHD will seek assistance from other stakeholders and service providers in improving the TFM capabilities of public water systems.

General Program Recommendation: Gather Data on Technical, Financial, Managerial Capacity Needs

The OHD could expand its data collection systems to gather and assemble better information about the financial and management capabilities of Oregon public water systems. The OHD needs to know more about the water systems it regulates in order to better identify those systems most in need of TFM assistance; to identify systems most likely to be aided by the programs listed. Targeted TFM analysis will also permit the OHD Drinking Water Program to better diagnose compliance challenges. Once diagnosed, the OHD can best apply its resources (e.g., technical assistance, and regulatory enforcement) and the resources of cooperating partners in correcting water system problems.

Programs Recommended for Consideration in Formulating the Oregon Technical, Financial, Managerial Capacity Strategy

The DWAC recommends that the following programs currently in existence be considered in developing the State's capacity development strategy. Current and proposed programs in the following categories are offered as possible solutions to capacity impairments; Training, Problem Solving, Public Education, Satellite Management, Source Water Assessment Planning, and Water System Planning.

1. Training

OHD should consider developing additional training programs for all levels of water system operation. DWAC members indicated that the following training programs are available for improving water system capabilities and should be considered by drinking water stakeholders in formulating the State's capacity development strategy:

Current Programs/Implementations

- Technical Assistance – Peer groups, agencies such as OHD, WRD, DEQ (limited assistance)
- Agency Training/Re-certification (i.e. OHD, EPA, DEQ) – Certificates, water system operation
- Contracted Training – Special topics as needed provided by vendors/colleges (i.e. Clackamas Community College programs, Backflow Management Inc., Linn-Benton Community College)
- Peer Group Training (i.e. OAWU, APWA, NRWA) – Short schools (many topics), special topics as needed (i.e. operational issues, administrative issues)
- Specialty Training: Cross Connection, Safety, Hazardous Chemicals
- PNWS-AWWA training courses (like Consumer Confidence Report training in Portland) which occur 4-8 times each year by presentation or teleconference
- PNWS-AWWA Short schools presented by Sub-Sections which usually include up to 16 hours of training
- PNWS-AWWA Sub-Section Meetings – monthly meetings around the State where there is usually an hour or so of technical training
- PNWS-AWWA Annual Section Conference with up to 20 hours of technical training
- OAWU – Annual Meeting, Summer Classic

Future Programs/Options

- Engineering Specialty Training: Design/Management/Operations
- OHD Drinking Water Program: Technical/Regulation Training and Technical Transfer
- Financial Training: Introduction to Public Facilities Financing, Loans/Grants/Resources
- System Management: Computers/Available Programs, Resources and Costs
- Expansion of technical training assistance as planned through requests by peer groups or contractors
- Programs geared to small systems – and brought to locations convenient to them i.e. in “close” proximity to their work sites
- Training programs focused at management of water utilities (other than technical) – applicable to managers of all sized systems
- RCAC field training and workshops
- CEUs for RCAC Management and Administration courses
- Specific operator jar test field courses and follow up
- CEUs for hands-on field training of system operators

2. Problem Solving

OHD should consider developing a series of “how-to guides for solving specific problems including problem identification, scoping, assessment, design, management, and evaluation of result/success.

Current Programs/Implementations

- Circuit Rider approach
- PNWS-AWWA: Systems Management short schools
- Consulting Engineers: Water Specialty Consultants
- Private Management Consultants
- CPEs/Sanitary Surveys

- PNWS - AWWA has 42 Committees that have information on everything from Diversity training to Water Quality questions. Committee information can be accessed through <http://www.wv-w.com>.
- OHD/County Health Departments
- PUC problem solving services (for privately owned water systems – managerial and financial only)
- Inter-entity Coordinating Committee Guide on how to hire consultants, complete a scope of work and enter into a contract

Future Programs/Options

- Preliminary engineering analyses
- Water System master plans (enhanced)
- PNWS-AWWA Advanced Guidance Manuals
- Critical path methods; computer analysis
- Enhanced Technical Assistance Program
- Enhanced Training for Certified Operators
- Management self-evaluation tools for city councils, including roles, responsibilities, and model organization structures
- How to create a scope of work - (i.e.: sample forms, fill-in-the-blank, practical ideas)
- Provide computer program worksheets and tools to organize problems, assess them, and develop schedules for implementation
- Technical assistance to help small communities evaluate their operation & maintenance, management and financial status

3. Public Education

The OHD should consider these programs designed to educate water users in Oregon with respect to drinking water issues, and linking of water users with water suppliers. These programs also identify sources of drinking water information and provide or promote access to these sources.

Current Programs/Implementations

- PNWS-AWWA Programs for media connections
- Consumer Confidence Reports

- Public reports and warnings
- Individual water systems efforts to inform their own customers are mostly limited to largest, most progressive systems – flyers, public announcements, media, open houses, fairs, etc.
- Peer groups such as PNWS-AWWA produce literature – but charge money to make them available and the responsibility for distribution still falls on the water system operators
- PNWS-AWWA Education Committee
- PNWS-AWWA Conservation Committee
- PNWS-AWWA – has a very active public education and public information committee
- OHD Web Page (advertise in *Pipeline*, conferences)
- PUC database/answering inquiries

Future Programs/Options

- Water System newsletters: Guidelines by PNWS-AWWA
- State Drinking Water Program: recognition as well as penalties
- Distribution of *Pipeline* to news media
- Small/medium individual systems with limited funds will never be able to afford education efforts that cost money (i.e. mailers, media advertising) and would be least likely to pursue any type of education efforts which all take a certain amount of resources – staff time, expertise, housing, money, etc. Therefore larger organizations would have to take the lead in any mass public education efforts. However, larger organizations are not limited to State/Fed/County governments – perhaps larger systems, government, and peer group associations could share resources or partner together for any public education efforts
- Link small systems with PNWS-AWWA and OAWU
- Provide sample information program and “camera ready” pieces for informing water users about drinking water costs and issues

- Incorporate in circuit rider programs public information kits and/or training

4. Satellite Management

The OHD should explore existing models or develop new models for local communities to use to develop partnerships and support relationships between local water suppliers.

Current Programs/Implementations

- PNWS-AWWA
- OAWU
- OHD – Drinking Water Program
- Water System Master Plans/Consulting Engineers
- Urban Service and Cooperative Agreements (ORS 195) between cities/districts – for example, Suburban East Salem Water District and the City of Salem have an Urban Service Agreement where the city agrees to provide the water source for the district
- Regional planning – cities/counties/districts/ State agencies (DWP, DEQ, etc.)
- State review

Future Programs/Options

- Outreach Programs by central systems
- Comprehensive Water System Master Planning
- Councils of Government Assistance
- Interagency agreements for operations and safety programs
- Takeover/consolidation of some small systems by larger ones with the capability to operate them successfully – provide linkage mechanism to explore these possibilities
- Provide examples of contracted services between districts or cities

5. Source Water Assessment Plan

The OHD should help water systems make use of source water assessments and local drinking water protection plans for capacity development efforts.

Current Programs/Implementations

- Watershed Management Programs
- Groundwater/Wellhead Protection Planning
- Cross-Connection Control Plans
- Water System Master Plans
- Council of Government Watershed Protection Committees
- Sanitary Surveys by OHD and counties
- DWSRF Source Water Assessment Set-Aside Funding for delineation/assessment
- Current OHD/DEQ voluntary Wellhead Protection Program

Future Programs/Options

- OHD/DEQ currently developing guidance document on computing delineations and assessments through an advisory committee
- Provide technical assistance for small communities to complete assessments and elevate progress toward goals

6. Water System Plans

The OHD should develop a guidebook or self-assessment tool to assist water suppliers with the development of a water system plan. Plan contents: rates, budget, capital improvements, internal communications within water systems organization, external communications with other agencies/organizations, reporting on and evaluation of operations and efficiency, job descriptions, service contracting, other topics as identified.

Current Programs/Implementations

- Rates, budgets, capital improvements, system development charges; all are dependent on a comprehensive water system master plan developed by a competent and experienced engineer or engineering firm
- Management guidelines and manuals of practice are available from PNWS-AWWA
- Drinking Water Program (DWP) – Master Plan Requirements
- WRD – Water Management (Conservation) Plans
- DWP – Delineations, volunteer ground water protection plans

Future Programs/Options

- Programs should be developed to help water system operators become aware of management alternatives
- Peer review under PNWS-AWWA Qual Serv can be expanded to serve more systems and operators
- Convert OHD requirement for water system and other planning for all public water systems to a computer-driven, fill-in-the-blank type program
- PUC's Capacity Assessment Model – used for all systems (private as well as municipalities)
- Provide tools for self-evaluation and drafting job descriptions
- Provide follow up technical assistance training on how to make changes in operations, management processes, and budgeting.

SECTION D: MEASURING THE SUCCESS OF OREGON'S CAPACITY DEVELOPMENT STRATEGY

This *Report of Findings* offers the Drinking Water Advisory Committee (DWAC) suggestions about how the OHD might develop a strategy for improving the technical, financial and management capabilities of public water systems. In developing that strategy, the DWAC suggests that OHD measure the success of its capacity development efforts using the following measures:

1. *Oregon Benchmarks*

The Oregon Benchmarks system has been utilized by the Drinking Water Program to measure program success and progress. The following "benchmarks" provide important indicators to gauge the success of any capacity development programs:

- Percentage of population served by systems meeting standards.
- Percentage of population served by systems with adequately treated surface water supplies.
- Percentage of population served by systems with drinking water protection programs in place.

2. *Significant Noncompliance*

Ongoing evaluation of the listing of systems being recorded as significant non-compliers will help the OHD understand whether capacity development programs are truly effective over time. Expectations are that capacity development programs that are implemented as part of the State's strategy will cause a reduction in the number of water systems that are categorized as significant non-compliers.

3. *Annual Compliance Reports*

Other reports of compliance to safe drinking water requirements may be used by the OHD to gauge the success of capacity development efforts.

4. *Number of Certified Operators*

Water system operators are essential to the management capacity of any drinking water system. Monitoring the proper staffing of water system operations could be an important tool in measuring management capabilities of water systems.

5. *Other Technical, Financial, and Managerial Measures*

The OHD could also develop TFM indicators similar to those utilized in the DWSRF program to conduct ongoing analyses of existing water systems.

The OHD should keep careful records of assistance programs aimed at assisting water systems in improving capacity. Examples include, but are not limited to:

- Number of enhanced sanitary surveys or comprehensive performance evaluations conducted.
- Site visits for technical assistance (number and type of assistance rendered).
- Number of water systems that complete self-assessments of capacity. Comparison of assessments taken before and after receiving assistance would be particularly useful.

6. *Planning Activities*

The number of water systems which prepare capital facility management plans, business and/or financial plans or complete capacity self-assessments each year would be a good indicator of the success of the Strategy because it would reflect growing knowledge about and interest in capacity issues on the part of public water systems in the State.

A count of the activities carried out under the Strategy is an indicator of the magnitude of the effort, but only indirectly a measure of effectiveness. Whenever possible, OHD should follow capacity assistance efforts with some type of system specific assessment at a later date to determine if the assistance was effective and that the results obtained had lasting value.

SECTION E: PUBLIC INVOLVEMENT IN PREPARING THE OREGON CAPACITY DEVELOPMENT REPORT OF FINDINGS

The OHD called upon its Drinking Water Advisory Committee (DWAC) to provide a sounding board on issues for developing a set of findings for improving capacity that could then be presented to the general public. DWAC members, by combining their varied backgrounds and different perspectives deliberated to ensure that the group's *Report of Findings* would be balanced and comprehensive.

However, the DWAC could not possibly encompass in its membership all organizations and individuals within the State who might have an interest in this subject. In its first meeting, the DWAC examined the question of who else should be involved in the process of preparing a drinking water capacity development strategy. They concluded that certain key interest groups, beyond those already represented, should be encouraged to participate with the DWAC if at all possible. Additionally, other interested persons and organizations were invited to provide information regarding their position through an interview process or in writing. Finally, the public at large was engaged to the greatest extent possible through a series of public involvement initiatives. A questionnaire was developed to facilitate public input.

Other Public Involvement Initiatives

The DWAC agreed that their recommendations should be presented to the public at large, with an opportunity for comments and suggestions. Accordingly, special workshops will be held in Pendleton, Coos Bay, Astoria, and Medford in an attempt to obtain public reactions and input concerning the *Report of Findings*. Additionally, presentations will be given at three AWWA short schools in Eugene, Ontario, and Oregon City; OHD water system training courses conducted in 7 areas throughout Oregon; Oregon Association of Water Utilities workshops around the State, Rural Community Assistance Corporation workshops in LaGrande, Bend, McMinnville, and Grants Pass; and at the Oregon Environmental Health Association Conference in Portland. The presentations began in March and will conclude in mid-July. The information will also be publicized in the OHD *Pipeline* newsletter. Public comments will be received through July 31, 1999. Review of the comments by the DWAC will take place in August.

APPENDIX A: DRINKING WATER ADVISORY COMMITTEE MEETING HIGHLIGHTS

The DWAC met nine times in 1998 to consider developing a capacity strategy for public water systems. During the month of March 1999 the draft of the Oregon Capacity Development *Report of Findings* was prepared using input from DWAC members, OHD management, and public comments. There is a public record associated with these meetings. Persons wishing to obtain a more detailed record of the proceedings may do so by contacting the OHD public information clerical staff at (503) 731-4010.

Highlights of Oregon Drinking Water Advisory Committee

January 13, 1998

It was determined that the Capacity Development Strategy was one of the main things that needed to be worked on by the DWAC over the next several months. The DWAC committed to monthly meetings through June to address this.

February 18, 1998

The DWAC engaged in a discussion of technical assistance, with the goal of developing a sufficiently clear strategy for use of set-aside funds under the revolving loan program to enable the drinking water program to submit a work plan to EPA, call for proposals from service providers, and fairly evaluate those proposals.

March 18, 1998

Bill Jarocki explained that the Environmental Finance Center at Boise State University assists States in capacity development. He presented an overview of the capacity development program and distributed handouts. Bill Chamberlain distributed copies of the "Timeline to the SDWA Capacity Development Provisions." A brainstorming of the Oregon Capacity Development Strategy then ensued. Regarding statutory authority, discussions took place on technical, managerial, and financial capacity standards; construction; how to expand the existing plan review

process to include technical, managerial and financial capacity review; and other States' requirements that are relevant. It was determined that the DWAC should develop a draft/preliminary strategy first, then look at statutory/regulatory needs. A discussion on how to proceed then occurred. Several options for the development of the strategy were presented. It was determined that the EFC would assist DWAC as a technical resource by serving as a connection/linkage to other States, EPA headquarters, EPA region 10; assisting OHD staff persons with fact sheets, calls, committee support, scribing meetings, facilitating, soliciting and collecting comments, producing documents, product writing, and printing. The strategy would be developed primarily by DWAC, however, others groups would be invited to participate. A discussion of what products would be completed by June then followed. The formation of the DWAC was discussed, and Bill Jarocki listed some of the groups that were represented in that committee.

May 13, 1998

The DWAC covered element 1420(c)(2)(A). Technical, Financial, and Managerial sources of information were discussed. The Oregon Health Division has Sanitary Surveys, which provide technical information regarding inventory, hazards, etc; Comprehensive Performance Evaluations, which provide technical information regarding water treatment works and surface water; Plan Review, which provides technical information; Operator Certification, which provides technical information; Water Quality Data, which provides technical information; Compliance Status, which provides technical information through a water quality database and parametric data of test results; and Complaints/Contact Information, which provides technical and managerial information. The Oregon Health Division does not have water rights information. Cities have annual audits and turnover of local officials. The Public Utility Commission (PUC) will conduct a survey in June of 1998 to communities in database (2,000 companies). Financial information is reported on an annual basis. The PUC has revenue information, expenditure information, rate data, complaints, review testimony, NARUC Chart of Accounts, and corporate information available. RUS

has the Water Quality 2000 list. OEDD has “One Stop.” A flow chart was established for the Water Quality Database. Test Results would be the first category. If the system had no problems, it stopped there. If there were concerns with the system, there would be a staff follow-up. The next step would be to generate violation information. The last step would be to contact EPA. The DWAC then posed the question, “Who is in need of TFM Capacity improvement? The criteria to prioritize were selected as: population affected (numbers, percent at risk, etc.); severity of problems (need to complete a TFM assessment); degree of local interest; likelihood of success (local champion); understanding of the problem; a master plan; and capital improvement plans. Three groups were to be considered: loan applicants, new systems, and remaining systems. Reactive/Proactive and Bottom Up/Top Down strategies were then considered. Lastly, a short discussion of 1420(c)(2)(B) took place. It was determined that the EFC would set up a matrix of Federal, State, and Local level factors that impair and enhance TFM in institutional, regulatory, tax, legal, financial, and other areas. The matrix would be sent to the DWAC members to fill out and return to the EFC in time for the responses to be compiled before the next meeting.

June 17, 1998

Bill Jarocki distributed three handouts compiled from the assignment regarding Element B, and the DWAC went over them. Notes were taken from people’s comments and revised copies would be distributed at the next meeting. Bill suggested having a table listing each factor affecting capacity development and the enhancements and impairments for each. He also suggested checking the items that should be included in the strategy.

July 22, 1998

The DWAC went over the rating matrices of impairments and enhancements to capacity at the local, state, and federal levels – Element B. Bill Jarocki will provide these matrices in the draft strategy. Element A was then discussed. Mike Grimm went over the Risk Matrix Criteria handout, developed at DWAC request, and explained the different rating criteria. A sample of Idaho’s matrix was also distributed. A discussion followed as to which matrix to use. George White made motion to use the Oregon Health Division’s approach and have the EFC staff work on a point system with the possibility of deferring the section on source susceptibility until a later time when data is available from the drinking water protection program. The DWAC asked staff to consider how to incorporate “willingness to solve problem” by the water system/community into the matrix. Tom Penpraze seconded; it was voted on and approved.

August 19, 1998

The DWAC completed the matrices of impairments and enhancements to capacity at the local, state, and federal levels – Element B. The DWAC identified those elements to consider in the capacity development strategy. Mike Grimm reported that the draft risk matrix for Element A was complete, although a rating point system was not yet finished. It was determined that the major task to be completed at the next meeting would be to use the short list of identified impairments/enhancements at federal, state, and local levels to identify proposed programs and activities (Element C) for the Capacity Development Strategy. The EFC could then work with program staff to develop a draft strategy document for the DWAC to review.

September 23, 1998

A discussion of item 1420(c)(2)(C) took place. The DWAC worked on developing ideas for programs to address the impairments and enhancements identified in previous meetings. EFC will prepare a homework worksheet for DWAC members to use to determine these ideas before the next meeting. The plan is to have a preliminary draft strategy by the end of 1998. EFC will write the strategy and the DWAC will review it. Early in 1999, the preliminary draft strategy will be circulated to a broader audience, and comments received will be brought back to the DWAC for consideration in developing a final draft strategy. Mike Grimm then handed out copies of the revised draft risk matrix for 1420 (c)(2)(A) and explained the rating point system.

November 18, 1998

Bill Jarocki listed the final timetable for the strategy and the DWAC agreed with the following schedule: January – Draft of DWAC’s “Report of Findings;” February or March – Public input; April – DWAC response, Drinking Water Program’s plan for implementation; If Necessary – Rule hearings, then back to DWAC; September 2000 – Agency Plan for Implementation. The DWAC then discussed the compilation of the homework responses for 1420(c)(2)(C). It was suggested that the “Current” and “Future” Program categories be combined. Doug Wise noticed redundancies and wanted them removed. The EFC will re-work this section, but will not change the wording before it is sent out for public review. A discussion of Element D then followed. It was determined that progress will be measured by using the Benchmark, which is: 1) the percentage of population served by systems meeting standards, 2) the percentage of population served by surface water adequately

treated, 3) the percentage of population with drinking water protection programs in place, 4) the Significant Non-complier List, 5) the Annual Compliance Reports, 6) the number of certified operators, and 7) Technical, Financial, and Managerial measures. Bill Jarocki reminded the DWAC that the strategy is due by October 1999. Three areas will be presented: 1) show assessment tools for Technical, Financial, and Managerial, 2) programs such as 1420(C), and 3) solicitation of new ideas. Ideas were then generated as to how to get the word out to the various publics. Ideas that can be implemented immediately for presenting the 1420(C) evaluation included: 1) captive audiences (short schools, associations), 2) Internet and e-mail response, 3) newsletters (other organizations, Executive Summary, Fact Sheet), 4) public workshops, 5) Press Releases, and 6) the *Pipeline*. Additional ideas generated included: 1) videotape, 2) Ed-Net, 3) public service “spot” (Governor Kitzhaber, livability initiative), 4) water bill insert, and 5) Oregon Public TV. An evaluation of the 1420(C) Plan will be conducted by the DWAC to determine whether or not the list meets the DWAC’s needs.

February 17, 1999

A draft of the Oregon *Report of Findings* distributed to members of the DWAC and all visiting participants. The DWAC discussed the report in detail. A subcommittee was formed to complete sections of the report dealing with Sections A and E. The subcommittee will meet in March to put the finishing touches on the report. Copies of the final *Report of Findings* will be distributed to the DWAC at the April meeting. Members will vote whether to accept the report. Public meetings regarding the findings will begin in mid March, and continue through July. The report will then be taken to OHD management for approval.

APPENDIX B: CAPACITY DEVELOPMENT ENHANCEMENTS AND IMPAIRMENTS NOT SPECIFICALLY INCLUDED FOR STRATEGY CONSIDERATIONS

Several factors were identified relative to enhancements and impairments to technical, financial, and managerial capacity, which were not specifically included for strategy consideration in this *Report of Findings*. The tables in this appendix display these factors at the federal, state and local levels. The Drinking Water Advisory Committee considered all of these factors during its deliberations. In the final analysis, it was determined for a variety of reasons that the factors listed would not receive specific emphasis in this report. These reasons included the practical, operational, political and institutional barriers to addressing the impairments. The enhancements identified, while notable, were determined to need little or no practical action by the Drinking Water Program.

Persons reviewing these factors are invited to comment regarding any impairment and enhancement factors that they believe should be included for further consideration by the Oregon Health Division. For more specific explanations of any of the factors listed, please contact the Environmental Finance Center at Boise State University at (208) 426-1567.

Factors that Enhance or Impair Capacity at the Federal Level Not Noted in Findings

Factors that Enhance or Impair Capacity at the <i>Federal</i> Level Not Noted in Findings			
Factor	Description	Enhancement	Impairment
<i>Institutional</i>	Support for technical assistance	Yes	
	Training and education on water quality operations	Yes	
	Complex nature of process (and keeping “in the loop”) to the average person makes understanding (and planning strategy to achieve) compliance plateau		Yes
	EPA rules are cumbersome		Yes
	Ponderance of the system – e.g. making the changes to the Act, etc.		Yes
	These requirements in the first place		Yes
	States need to have input on training and educational materials in the region		Yes
<i>Regulatory</i>	Water quality standards	Yes	
	Operator certification	Yes	
	Flexible rules for compliance	Yes	
	Availability of rules on the Internet through Office of Ground Water and Drinking Water or American Water Works Association and like organizations	Yes	
	Grants/\$\$ for technical assistance	Yes	
	Capacity development	Yes	
	Offering variances or exceptions	Yes	
	Allowances for emergencies	Yes	
<i>Financial</i>	Federal Revolving Loan \$\$	Yes	
	Funding options for capital improvements that are affordable to all communities – end user simplicity	Yes	
	Grants, loans – Community Development Block Grant/USDA Rural Development	Yes	
	Loans/grants that are easy to apply for	Yes	
	Training and technical assistance funded	Yes	
	Lack of enough \$\$		Yes
<i>Legal</i>	Primacy requirement – State vs. Federal, closer to the people	Yes	
<i>Other</i>	Offer flexibility to systems	Yes	
	Clear communication	Yes	

Factors that Enhance or Impair Capacity at the <i>Federal</i> Level Not Noted in Findings			
Factor	Description	Enhancement	Impairment
Other	Lack of contact to US EPA (faces/names) makes support of rules/comment/compliance difficult		Yes

Factors that Enhance or Impair Capacity at the State Level Not Noted in Findings

Factors that Enhance or Impair Capacity at the State Level Not Noted in Findings			
Factor	Description	Enhancement	Impairment
Institutional	Concerted effort goes to educate water systems on rules	Yes	
	Service regulation of private water utilities	Yes	
	One-call program	Yes	
	Assistance from PUC	Yes	
	Plumbing codes and fire protection rules inconsistent between private property and community property		Yes
Regulatory	OHD does not create more stringent rules than Feds	Yes	
	On-time adoption allows for only one set of drinking water rules	Yes	
	Technical assistance	Yes	
	Assistance from PUC	Yes	
	Sanitary surveys to identify problems	Yes	
	Tracking compliance	Yes	
	Review and approval of system plans	Yes	
	Operator certification program	Yes	
	Offering variances or exceptions	Yes	
	Limited State resources prevent OHD from feeding new regulation information to water systems – they must learn to comment on proposed rules on their own		Yes
Financial	No fee for service issues	Yes	
	Inadequate \$\$ in State Revolving Fund to meet needs		Yes
	Time and proceedings for rate increases to allow for loan repayment (PUC)		Yes
Tax	Oregon tax limitations on operations financing		Yes
	Oregon double majority		Yes
Legal	Provide a “water district” type of municipal organization for small co-ops and associations	Yes	
	Urban growth boundary restrictions		Yes
	Difficult to get Water Resources Department approval on water rights		Yes
	50% voting turnout procedures for tax increase		Yes
Other	Comprehensive performance evaluations	Yes	

Factors that Enhance or Impair Capacity at the Local Level Not Noted in Findings

Factors that Enhance or Impair Capacity at the Local Level Not Noted in Findings			
Factor	Description	Enhancement	Impairment
Institutional	Education opportunities exist at many conferences/short schools – many water systems are represented at these	Yes	
	Up to date operation/maintenance program	Yes	
	Qualified, well paid staff	Yes	
	Clear/focused mission, goals, objectives, business and strategic plans	Yes	
	Master plan, adequate staffing	Yes	
	Stake holders (drinking water users) understand the importance (public education) of having drinking water system in compliance	Yes	

Factors that Enhance or Impair Capacity at the Local Level Not Noted in Findings			
Factor	Description	Enhancement	Impairment
<i>Institutional</i>	Effective communication – avenues to customers and users of system	Yes	
	Commitment of local leaders	Yes	
	Multiple counties – structural problems		Yes
	Many decisions made by a board representing lay people		Yes
	Uninformed City Council (i.e. no buy in from them to spend \$\$ on upkeep of system)		Yes
	Political determination rather than what is best for drinking water that my prevent regionalization of water systems		Yes
	Uniformed citizens		Yes
	Rigidity – cannot adapt		Yes
<i>Regulatory</i>	Public meeting (local) – opportunity for grievance forum	Yes	
	County/State cooperative relationship in drinking water program	Yes	
	Local comprehensive planning process	Yes	
	Need local enforcement authority defined and codified		Yes
	Not informed about rules and alternative compliance methods		Yes
	Ongoing and increasing cost of compliance – capital improvements, environmental rules (testing and equipment)		Yes
	Incomplete local knowledge of system regulations (need training)		Yes
<i>Financial</i>	Requirements in loan (DWSRF) rules requiring commitment of local funds	Yes	
	Water districts or water authorities seem to have advantages over cities for collecting and maintaining revenue sources	Yes	
	DWSRF – although insufficient in amount, it is a beginning point	Yes	
	Ability to increase utility rates	Yes	
	Lack of low interest loans to privately owned water utilities		Yes
	Drill own well – lower customer base – customers/dropouts		Yes
	Inadequate or no system development charges		Yes
	Low monthly user rates		Yes
When annexation leads to capital improvements		Yes	
<i>Tax</i>	General Obligation bonds	Yes	
	Ability to tax generally for system improvements	Yes	
	Local initiatives to limit rate increases		Yes
	Annexation – customers do not want to pay property taxes		Yes
<i>Legal</i>	Authority to set water rates which enhance system improvements	Yes	
	Tax authority	Yes	
	Bond authority	Yes	
	Borrowing authority	Yes	
	Oregon's land use laws could be an obstacle to water system consolidation outside urban growth boundaries		Yes
	Liability – law suit potential		Yes
	No allocation of service territory		Yes

APPENDIX C: INTENDED USE PLAN CAPACITY DEVELOPMENT PROGRAM STATE PROGRAM MANAGEMENT SET ASIDE UTILIZATION (JANUARY 15, 1998)

GENERAL

Developing the capacity of public water systems is a key theme of the 1996 Safe Drinking Water Act (SDWA). The term “capacity” as used here refers to the capability of the public water system to reliably produce safe drinking water now and in the future. Capacity does not refer to the amount of water a system can produce. There are three kinds of capacity; these are managerial, financial, and technical capacity.

The rationale for State efforts to build capacity of water systems is centered on the current inability of many systems, particularly small systems, to reliably meet the basic requirements of the safe drinking water standards. Lack of managerial, financial, or technical capacity presents a significant barrier to achieving compliance with standards and producing safe drinking water. Lack of capacity can manifest itself in a variety of undesirable outcomes, including persistent noncompliance with standards, disease outbreaks, aged and unmaintained infrastructure, lack of funds for meeting system needs, untrained or uninformed staff, and so forth. In theory, building capacity of water systems will lead to a reduction in these sorts of problems, and prevent additional problems as new drinking water standards are implemented in the future. This will further the overall goal of providing safe drinking water.

The Act specifies three aspects of capacity development for State programs to address:

1. **BY November 1, 1999** Assure that new water systems (community and nontransient noncommunity) have technical, managerial, and financial capacity for regulatory compliance; and
2. **BY October 1, 2000** Develop and implement a strategy to assist existing systems in acquiring and maintaining capacity; and
3. **DURING FY 1997** Assure that water systems receiving drinking water State revolving loan funds have adequate capacity and comply with drinking water regulations, or that the funded project achieves regulatory compliance and the water system operator agrees to technical, managerial, or financial changes necessary to acquire and maintain capacity.

Failure to address the first two aspects of capacity development results a reduction in the allotment of drinking water State revolving loan funds in future years. State revolving loan funds can not be committed to water systems that are in significant noncompliance with regulations or water systems lacking capacity.

CURRENT STATE AUTHORITIES

Two provisions of the Oregon Drinking Water Quality Act (ORS 448) and ORS 197.180 (land use) give certain authorities now over proposed new water systems. ORS 448 authorizes the Health Division to require plan review of new water system facilities before construction and that these facilities meet construction standards. Land use statutes require that new water system facilities be certified as in compliance with local land uses plans before the Health Division review. In practice, land use planning in Oregon limits development of new public water systems because development is largely restricted to areas within urban growth boundaries that can be served by extensions of existing systems.

During the two-year period of 1996 and 1997, for example, the Division approved plans for 33 new public water systems, including 8 community systems, 2 nontransient noncommunity systems, and 23 transient noncommunity systems. During the first grant year, as a part of the plan review process, Division staff will apply the preliminary capacity assessment tool, described below, to new proposed water systems, notify the system owner or manager of the results and any recommendations, and place a copy of the assessment in the system file.

FUTURE STATE AUTHORITIES

Passage of the Safe Drinking Water Act in August 1996, postdated the schedule for agency legislative proposals for the 1997 Legislative Assembly. The Health Division intends to submit proposals for any additional needed authorities for capacity development to the 1999 Legislative Assembly.

ELEMENTS OF CAPACITY DEVELOPMENT

Again, there are three kinds of capacity; these are managerial, financial, and technical capacity.

Managerial capacity includes the following types of elements:

- Water system operation
- Water system master plan
- System governance and operation
- System policies
- Professional support - engineering and legal services
- Record keeping
- Violations of drinking water regulations
- Water user communication and involvement

Financial capacity includes:

- Total user charge revenues adequate to meet total system expenses
- Other revenue sources (if applicable)
- Affordability of customer user charges
- Cash budgeting
- Water system rate-setting process
- Production and utilization of an annual budget
- Production and utilization of a capital budget
- Production and utilization of a capital improvements plan
- Periodic financial audits
- Current bond rating

Technical capacity includes:

- Water treatment facilities construction and treatment performance
- Water source construction and protection
- Water source capacity
- Water storage, pumping, and distribution facility capacities
- Water storage, pumping, and distribution facility construction and protection
- Water distribution integrity/leakage

STATUS OF REGULATORY COMPLIANCE IN OREGON

Regulatory compliance by Oregon communities is generally similar to the national profile. Microbial contaminants include coliform bacteria and surface water treatment requirements, are the highest priority of the drinking water program, and make up the majority of regulatory violations that occur. These include both violations of maximum levels or treatment requirements and monitoring/reporting violations. The figure shows the total number of systems, the number of system that are significant noncompliers (SNCs) with multiple or repeat violations, the number of systems with no violations, and the number of systems that have infrequent violations (pre-SNCs), all by population size range.

The figure shows the following:

- Most Oregon communities serve 500 people or fewer.
- One-third of water systems in the size ranges of 25-500 and 501-3,300 were historical SNCs during 1994- 96.
- Small and very small water systems experience the bulk of historical noncompliance problems.

The 358 Oregon systems identified as historical SNCs include the following:

- 12 systems using surface water sources without filtration that are on formal compliance schedules but are still awaiting funding assistance
- 240 systems that failed to complete initial monitoring for lead and copper on schedule. This monitoring has since been completed.
- About 50 of these small and very small systems appear to have a fundamental lack of capacity.

STATUS OF CAPACITY DEVELOPMENT EFFORTS IN OREGON

As a result, much of the drinking water program effort is directed at small water systems in an effort to resolve compliance problems. This includes response to emergencies and disease reports, response to coliform bacteria detections and treatment failures, persistent monitoring violations, enforcement actions, and field consultations. These efforts are by necessity largely reactive in nature, rather than preventive, and consume most of the current available program resources.

The program recognizes the value of developing capacity at public water systems. Three of the five program goals address capacity issues and there are current program efforts that fall into these categories:

- Improve water system operation and management.
- Improve adequacy, reliability, and viability of public water systems.

- Increase public knowledge, participation, and support for safe drinking water issues.

A brief description of current efforts related to capacity development is given below.

Sanitary Surveys. A sanitary survey is an on-site review of a system's components and operations. The objectives of a survey are to identify and facilitate correction of actual and potential sanitary hazards and to evaluate the capability of the system to produce, store and deliver safe drinking water. It includes review and evaluation of the water sources; watershed and/or recharge areas; water system facilities and equipment; and operation and maintenance programs. A survey also offers an opportunity for staff to interact directly with the operators and provide assistance and information specific to each system's needs. The data from surveys is used to update existing water system records. It is computerized for ease in tracking and for reporting to the EPA. The sanitary survey is a valuable tool in determining vulnerability to hazardous material spills and disease outbreaks and aids in emergency response situations. It helps in assessing vulnerability of sources to potential contamination from land use practices and chemical use and disposal.

After survey information is entered into the computer database, it is printed and sent to the operator with a letter outlining requirements and recommendations made as a result. Staff may attend business meetings with a system's governing body to present the results of the survey and address items of concern. Direct interaction helps achieve voluntary compliance and promote improvements in facilities and operations. As a goal, a routine sanitary survey is to be performed for each public water system every five years. However, increasing higher priority workload to implement new drinking water standards has resulted in a substantial reduction in effort on sanitary surveys. However, the program is attempting to conduct more limited sanitary hazard inspections that focus only on risks of microbial contamination.

Operator Training. Staff also frequently participate as speakers and instructors at the training sessions sponsored by water supply organizations that operate in the Oregon. These training opportunities reach about 1,000 operators and managers per year. The demand for and attendance at the Water System Operator Training Course presented monthly around the State by program staff remains strong. Over 500 operators attend these sessions each year.

Operator Certification. Oregon requires State certification for operators of water distribution systems and treatment plants. Community water systems using groundwater sources serving more than 150 connections, and all community systems using surface water systems must have a certified operator. There are about 1500 operators certified at various levels. The certification program has generated a variety of training opportunities to assist operators in meeting their continuing education requirements.

Funding Assistance. Program staff liaison with State and federal funding assistance agencies, distribute information on all available funding programs, and provide outreach and assistance to communities searching for funding assistance to meet drinking water standards.

Master Plans. Rules for master plans provide basic requirements to guide community water system managers and engineering/planning staff or consultants as they plan for current and future water system facilities to meet water quality and capacity needs. The rules also describe the minimum scope of work for master plans proposed to funding agencies and require all communities serving more than 300 connections to maintain a current master plan. Each master plan is to cover at least a twenty-year time period. Master plans are valuable management tools for communities.

Plan Review. Plan review is required before construction begins on new water systems or on major modifications to existing systems. Larger systems with an engineer on staff and a current master plan have plan review exemptions for basic water line extensions and replacements and are required to submit a list of projects for annual review only.

Periodic Review of Local Land Use Plans. Oregon's Land Use Coordination law directs each State agency to coordinate its programs with Statewide goals and guidelines established by the Land Conservation and Development Commission (LCDC). The Health Division requires that applicants for construction plan review approval provide evidence that construction of the proposed facilities would be in accordance with the local comprehensive plan and

zoning provisions. Program staff review local periodic review work plans to assure that key drinking water issues were addressed. Program staff list of drinking water issues for use by local government planning units in preparing their periodic review work plans. Program staff encourage local governments to begin considering drinking water sources as critical resources and to adopt land use and zoning measures to protect these sources from future contamination.

Restructuring of Water Systems. Based on experience, the Drinking Water Program promotes a general approach to working with small systems to solve water quality problems. It recognizes the technical, financial and structural limitations of the large number of very small systems in Oregon and the ever-increasing level of complexity of the water quality problems they face. The Program's approach consists of a series of possible alternative solutions arranged from most desirable to least:

1. Encourage the consolidation or restructuring of small systems with nearby larger systems, which meet water quality standards.
2. Switch from inadequately treated surface water sources to groundwater sources, which do not require treatment.
3. Use groundwater sources even if they require some treatment to meet quality standards.
4. If the quality of the surface water source is good, use alternate technologies such as slow sand filters or cartridge or membrane filter technology for treatment.
5. Use traditional rapid sand filtration technology for treatment of normal quality surface water sources.

The Program encourages managers of small systems that experience water quality problems to consider all available options before proceeding with a solution. This up-front consideration of alternatives improves the probability of a lasting and most economical solution. This process requires considerable effort by Program technical staff in meeting with system managers, consulting engineers, governing boards and water users.

The Oregon drinking water statutes authorize the Health Division to request court action by the county district attorney whenever a water system presents or threatens to present a public health hazard requiring immediate action to protect the public health, safety, or welfare. The action may petition for mandatory injunction compelling the water supplier to cease operation or make improvements to remove the hazard. If the water supplier refuses to comply with the order of the court, the court may appoint a "special master" to operate and improve the system as necessary. The court may also order sale of the system to a responsible party.

The concept of restructuring water systems as a fundamental way of solving certain water quality and quantity problems is not new. As costs increase to meet new drinking water standards, system operators and governing boards are being drawn toward alternative solutions because they make good management sense. As evidence of this trend, the number of community water systems dropped from 994 in 1988 to 882 now. In addition, Statewide land use planning requirements serve to greatly limit the number of new community water systems developed in Oregon.

Alternate Treatment Technologies. Program staff promote use of alternate treatment technologies to small water systems. Program staff developed construction standards for alternate water treatment technologies such as cartridge filters and slow sand filters. These filters are easy to operate and, if properly designed, provide adequate treatment for very small systems using surface water sources.

Public Information. Program staff interact directly with the news media on a variety of water specific issues, especially those involving drinking water contamination. In addition to media coverage of specific water system problems, media attention also focuses on the Statewide implementation of new drinking water standards. Program staff respond to numerous media inquiries about the impact of national legislation in Oregon. Staff assist water systems in communicating information to their water users about drinking water quality problems. Program staff supply standard public notification language specific to the contaminant found, and help communities prepare press information.

Several useful information packets are maintained and distributed by staff for water system managers and the public. Specific summaries of water testing requirements are available for community, nontransient noncommunity, noncommunity, and State regulated water systems. Other summaries address plan review requirements, public notification procedures, and lists of certified laboratories. An information packet is available to help homeowners comply with new rules for collecting and reporting results of samples from their private wells. Information on wells and springs for homeowners is available, as is information on home water treatment units. Drinking Water Program and local health department staff respond to many requests, usually by telephone, from the public on drinking water issues. To deal effectively with this workload, the Program continues a phone assignment that is rotated daily among technical staff members. The phone person is responsible for answering general telephone calls on technical issues and responding to requests for information.

PROPOSED USE OF SET ASIDE FUNDS

The Drinking Water Advisory Committee recommended using Drinking Water State Revolving Loan Funds to support new efforts to help water systems improve their capacity to provide safe drinking water. The committee focused on the following issues prior to preparation of the first year capitalization grant application:

- Developed an understanding of the capacity development concepts and requirements under the 1996 SDWA. Developed a common understanding of terms and words associated with capacity development.
- Reviewed existing capacity assessment tools and developed a preliminary assessment tool. The DWAC appointed a subcommittee on capacity assessment to lead this effort and solicited assistance and support from the Region X Environmental Finance Center (EFC) at Boise State University. The preliminary assessment tool is attached as Appendix D. The preliminary tool will be used to evaluate Oregon applicants for first year construction loans. During the first grant year, Division staff will also apply the preliminary capacity assessment tool to all new proposed public water systems regardless of funding assistance as a part of the plan review process, and will place a capacity review memo in the system file.
- Developed tasks and a schedule for design and implementation of a Statewide capacity development strategy.

Work during the first year will focus on:

Development of a detailed capacity development strategy. This work will be led by the Drinking Water Advisory Committee, with assistance and support from the Region X EFC and with stakeholder involvement. The strategy will propose needed State statutory authorities and budget resources to meet the requirements of the Safe Drinking Water Act, and to support the Oregon strategy in the long term. These proposed authorities will be presented to the 1999 Oregon Legislative Assembly for action. Strategy development will include further development of capacity assessment methodology and development of measurement criteria, based on experience with the preliminary assessment tool. In future years, the strategy and assessment tools will be reviewed, evaluated, and revised as necessary each year by the advisory committee

Application of the strategy and revised assessment methodology to proposed new community water systems and public water systems that are significant noncompliers, following development of the Statewide strategy. Fifty (50) systems will be assessed for technical, managerial, and financial capacity. Proposals for carrying out this work under contract will be solicited from service providers and organizations Statewide. Contracts will include detailed scopes of work and timelines for delivery of final assessment reports to assessed communities and the State program.

Evaluation of results. During the first year, efforts will focus on two measurable and discreet deliverables - the capacity development strategy and the first detailed assessments. In future years, the overall effort will be evaluated in the basis of improvements in overall compliance figures (Oregon Annual Compliance Report, and Oregon Benchmarks) and number of systems that are Significant Noncompliers.

CAPACITY DEVELOPMENT TASKS AND SCHEDULE, YEAR ONE

Task	Month
DWAC and stakeholders begin work on Capacity Development Strategy	1
Review of draft strategy by DWAC	3
Review of final draft strategy by DWAC	4
Begin preparation of contract documents for capacity assessment of communities	4-5
Circulation of final draft strategy for public comment	4-5
Final DWAC review of strategy and contract documents	6
Request for proposals for contract work	7
Select contractor(s)	8
Contract work	9-12

REFERENCES

Biennial Report - 1992-94. Oregon Health Division, Drinking Water Program (April 1995).

Initial Summary of Current State Capacity Development Activities - EPA 816-S-97-001. US Environmental Protection Agency, Office of Water (January 1997).

Staff Report on Capacity Development. Oregon Health Division, Drinking Water Program for Drinking Water Advisory Committee (February 1997).

Idaho DEQ Water System Capacity Assessment Tool for SRF Loans - Preliminary Report (version 2.0). Environmental Finance Center 10, Boise State University, Boise ID (March 1997).

Drinking Water Advisory Committee Recommendation - Drinking Water State Revolving Loan Fund and Primacy Program (April 1997).

Guidance for States on Implementing Capacity Development Provisions of the Safe Drinking Water Act. Prepared for the Small Systems Working Group for the National Drinking Water Advisory Committee, Revised Final Draft (July 1997).

APPENDIX D: PRELIMINARY ASSESSMENT TOOL TO EVALUATE
OREGON DRINKING WATER STATE REVOLVING FUND LOAN
APPLICANTS

WATER SYSTEM CAPACITY
ASSESSMENT INDICATORS FOR
SDWRLF LOANS

MANAGERIAL, FINANCIAL AND TECHNICAL CAPACITY ASSESSMENT
INDICATORS FOR OREGON SDWRLF LOANS

DRAFT REPORT

OCTOBER, 1997

OREGON DRINKING WATER ADVISORY COMMITTEE

INTRODUCTION

During the 104th Congress, significant amendments were made to the Safe Drinking Water Act (SDWA); notably in regard to the responsibility of the state primacy agency to improve the capacity of public water systems (PWSs) to comply with safe drinking water standards. For the first time, Congress also ensured that states would receive financial resources in the form of capitalization grants for Drinking Water State Revolving Funds (SDWRLFs).

Congressional intent for the use of SDWRLF resources have been fully reflected in the U.S. EPA's Drinking Water State Revolving Fund: Final Guidance document (February, 1997). This guidance describes projects that will not be eligible for SRF funding:

“A DWSRF Fund may not provide any type of assistance to a system that lacks the technical, managerial or financial capability to maintain SDWA compliance, unless the State determines that the financial assistance from the DWSRF will allow the system to maintain long-term capability to stay in compliance (section 1452(a)(3)(B)(I)).”

It is essential, then, for the State to develop and implement a methodology that will yield a determination of PWS capacity or capability. The capacity assessment methodology would encompass the assessment criteria necessary to determine whether or not a PWS -- applying for SDWRLF assistance -- possesses necessary capability to “stay in compliance.” This draft report offers a synthesis of the work that has been done by the USEPA, the states, and public and private technical assistance providers regarding capacity measurement. This report introduces measurement criteria for technical capacity; fiscal and financial management capacity; and general management capacity.

SECTION 1: TECHNICAL CAPACITY MEASUREMENT QUESTIONS

Overview

The technical capacity questions in this section are designed to help describe the condition of the physical components of the drinking water system and its water sources. The questions address the following water system components:

- water treatment facilities (construction and level of treatment)
- water sources (construction and protection)
- water source capacity
- water storage, pumping and distribution capacities
- water distribution system integrity (construction and protection)

For the purpose of determining whether the state could confidently loan its funds to a water system, the questions are designed to address the critical issue of whether or not capital investment will enable the public water system to comply with existing and expected drinking water rules for a reasonable period of time. The expected result of infrastructure improvement is assessed regardless of the source of capital financing. The source of financing can be the Drinking Water State Revolving Fund (SDWRLF), existing capital resources on hand, or other alternative capital financing mechanisms.

How to Use the Results of the Analysis

The technical capacity conditions are expressed through a set of questions utilizing a series of binary decision points; a decision tree format. The “best-case” scenario for each question is to begin with two consecutive “yes” answers. This indicates that technical capacity is currently sufficient for the technical category and technical capacity will be in place for SDWA compliance in the near future.

For each question, if two consecutive “no” answers are given at any point in answering the question, that means that a technical capacity deficiency exists; a “show stopper” condition. The existence of deficiency may be cause for suspending the remainder of the capacity evaluation. This is obviously the “worst-case” situation.

Some questions, or sub-components of individual questions may lead to a need for further clarification as indicated by the “No [Please Explain:] (then Go to Question #n)” prompt. When this occurs, there may be an opportunity for more information to be provided that clarifies the technical capacity to comply with the Oregon Drinking Water Rules.

Who Should Answer These Questions?

The examination of existing capacity (a.k.a. capability or viability) assessment tools reveals that self-assessment of technical capacity is the usual approach. Self-assessment might still be appropriate in obtaining a “ball-park” estimate of technical capability, but for purposes of the SDWRLF there must be assurance that the SDWRLF financing will allow the water system to maintain long-term capability to stay in compliance with the 1996 Safe Drinking Water Act (sec. 1452(a)(3)(B)(I)) requirements.

It is recommended that the technical capacity analysis be conducted, and the following questions be completed by a professional engineer or Drinking Water Section (DWS) personnel (this may include County Health Department personnel on contract. Since DWS staff is involved in the rating projects for possible DWSFR financing, it may be appropriate for them to complete this section of the capability analysis on behalf of the applicant. An alternative would be for the water system's engineer to complete the analysis with review by appropriate DWS staff.

TECHNICAL CAPACITY MEASUREMENT QUESTIONS

1. Existing water sources are constructed and protected according to the requirements of the Oregon Drinking Water Rules. Systems that purchase 100% of their water from other sources may skip to question #2.

Yes

If yes, will this system be likely to meet water source construction and protection requirements that are reasonably expected to be enacted through the Oregon Drinking Water Rules during the next five years?

- a. Yes (Go to Question #2)
- b. No [Please Explain:] (then Go to Question #2)

No

If no, is the public water system expecting to finance the improvement necessary to completely comply with these requirements of the Oregon Drinking Water Rules with its own financial resource(s) or some other alternative financing mechanism(s) exclusive of the SDWRLF program?

Yes

If yes, **by using non-SDWRLF resources**, will this system be likely to meet water source construction and protection requirements that are reasonably expected to be enacted through the Oregon Drinking Water Rules during the next five years?

- a. Yes (Go to Question #2)
- b. No [Please Explain:] (then Go to Question #2)

No (Go to Question #2)

Financing is expected from the SDWRLF (Go to a.)

a. If SDWRLF financing is expected, will the capital expenditure financed through the proposed SDWRLF loan enable this public water system to completely comply with the source construction and protection requirements of the Oregon Drinking Water Rules?

Yes (go to b.)

No [Please Explain:] (then Go to Question #2)

b. If this public water system receives a SDWRLF loan for the purpose of improving water system source construction and protection, will this system be likely to meet such requirements that are reasonably expected to be enacted through the Oregon Drinking Water Rules during (option A) the term of the loan? (option B) the next five years?

Yes (Go to Question #2)

No (Go to Question #2)

2. The necessary water treatment facilities exist, are functional, and meet the construction and treatment performance standards of the Oregon Drinking Water Rules.

Yes

If yes, will this system be likely to meet water treatment facility requirements that are reasonably expected to be enacted through the Oregon Drinking Water Rules during the next five years?

- a. Yes (Go to Question #3)
- b. No [Please Explain:] (then Go to Question #3)

No

If no, is the public water system expecting to finance the improvement(s) necessary to completely comply with these requirements of the Oregon Drinking Water Rules with its own financial resource(s) or some other alternative financing mechanism(s) exclusive of the SDWRLF program?

Yes

If yes, **by using non-SDWRLF resources**, will this system be likely to meet water treatment facility requirements that are reasonably expected to be enacted through the Oregon Drinking Water Rules during the next five years?

- a. Yes (Go to Question #3)
- b. No [Please Explain:] (then Go to Question #3)

No (Go to Question #3)

Financing is expected from the SDWRLF (Go to a.)

a. If SDWRLF financing is expected, will the capital expenditure financed through the proposed SDWRLF loan enable this public water system to completely comply with the current water treatment facility requirements of the Oregon Drinking Water Rules?

Yes (Go to b.)

No [Please Explain:] (then Go to Question #3)

b. If this public water system receives a SDWRLF loan for the purpose of improving its water treatment facilities, will this system be likely to meet water treatment facility requirements that are reasonably expected to be enacted through the Oregon Drinking Water Rules during (option A) the term of the loan? (option B) the next five years?

Yes (Go to Question #3)

No (Go to Question #3)

3. Water source capacity is adequate to meet current normal and peak demands and the system does not suffer from inadequate water pressure (<20psi) as required by the Oregon Drinking Water Rules.

Yes

If yes, will this system be likely to meet water demands that are reasonably expected during the next five years?

- a. Yes (Go to Question #4)
- b. No [Please Explain:] (then Go to Question #4)

No

If no, is the public water system expecting to finance the improvement necessary to meet demands with its own financial resource(s) or some other alternative financing mechanism(s) exclusive of the SDWRLF program?

Yes

If yes, **by using non-SDWRLF resources**, will this system be likely to meet water demands that are reasonably expected during the next five years?

- a. Yes (Go to Question #4)
- b. No [Please Explain:] (then Go to Question #4)

No (Go to Question #4)

Financing is expected from the SDWRLF (Go to a.)

a. If SDWRLF financing is expected, will the capital expenditure financed through the proposed SDWRLF loan enable this public water system to meet current water system demands?

- Yes (Go to b.)
- No [Please Explain:] (then Go to Question #4)

b. If this public water system receives a SDWRLF loan for the purpose of improving its water system source capacity, will this system be likely to meet water demands that are reasonably expected during (option A) the term of the loan? (option B) the next five years?

- Yes (Go to Question #4)
- No (Go to Question #4)

4. Water storage, pumping and distribution facilities have adequate capacity to meet current normal and peak demands, maintaining at least 20 psi, as required by the Oregon Drinking Water Rules.

Yes

If yes, will this system be likely to meet water storage, pumping and distribution facility water demands that are reasonably expected during the next five years?

- a. Yes (Go to Question #5)
- b. No [Please Explain:] (then Go to Question #5)

No

If no, is the public water system expecting to finance the improvement necessary to completely comply with the requirements of the Oregon Drinking Water Rules with its own financial resource(s) or some other alternative financing mechanism(s) exclusive of the SDWRLF program?

Yes

If yes, **by using non-SDWRLF resources**, will this system be likely to meet water storage, pumping and distribution facility water demands that are reasonably expected during the next five years?

a. Yes (Go to Question #5)

b. No [Please Explain:] (then Go to Question #5)

No (Go to Question #5)

Financing is expected from the SDWRLF (Go to a.)

a. If SDWRLF financing is expected, will the capital expenditure financed through the proposed SDWRLF loan enable this public water system to meet the current water storage, pumping and distribution demands of the system.

Yes (Go to b.)

No [Please Explain:] (then Go to Question #5)

b. If this public water system receives a SDWRLF loan for the purpose of improving its water storage, pumping, and distribution capacity, will this system be likely to meet demands that are reasonably expected during (option A) the term of the loan? (option B) the next five years?

Yes (Go to Question #5)

No (Go to Question #5)

5. Existing water storage, pumping, and distribution facilities are structurally sound meet the construction requirements of the Oregon Drinking Water Rules.

Yes

If yes, will this system be likely to meet water storage, pumping and distribution facilities requirements that are reasonably expected to be enacted through the Oregon Drinking Water Rules during the next five years?

a. Yes (Go to Question #6)

b. No [Please Explain:] (then Go to Question #6)

No

If no, is the public water system expecting to finance the improvements necessary to completely comply with the requirements of the Oregon Drinking Water Rules with its own financial resource(s) or some other alternative financing mechanism(s) exclusive of the SDWRLF program?

Yes

If yes, **by using non-SDWRLF resources**, will this system be likely to meet water storage, pumping and distribution facility requirements that are reasonably expected to be enacted through the Oregon Drinking Water Rules during the next five years?

a. Yes (Go to Question #6)

b. No [Please Explain:] (then Go to Question #6)

No (Go to Question #6)

Financing is expected from the SDWRLF (Go to a.)

a. If SDWRLF financing is expected, will the capital expenditure financed through the proposed SDWRLF loan enable this public water system to completely comply with the current water storage, pumping and distribution facility requirements of the Oregon Drinking Water Rules?

Yes (Go to b.)

No [Please Explain:] (then Go to Question #6)

b. If this public water system receives a SDWRLF loan for the purpose of improving its water storage, pumping and distribution facilities, will this system be likely to meet such requirements that are reasonably expected to be enacted through the Oregon Drinking Water Rules during (option A) the term of the loan? (option B) the next five years?

Yes (Go to Question #6)

No (Go to Question #6)

6. Water distribution system leakage does not exceed 25%.

Yes

If yes, will this system be likely to meet or exceed this standard during the next five years?

a. Yes (Go to NEXT SECTION)

b. No [Please Explain:] (then Go to NEXT SECTION)

No

If no, is the public water system expecting to finance the improvement necessary to improve its distribution system and thus reduce the incidence of distribution leaks with its own financial resource(s) or some other alternative financing mechanism(s) exclusive of the SDWRLF program?

Yes

If yes, **by using non-SDWRLF resources**, will this system be likely to meet or exceed this distribution leak standard during the next five years?

a. Yes (Go to NEXT SECTION)

b. No [Please Explain:] (then Go to NEXT SECTION)

No (Go to NEXT SECTION)

Financing is expected from the SDWRLF (Go to a.)

a. If SDWRLF financing is expected, will the capital expenditure financed through the proposed SDWRLF loan enable this public water system to reduce leakage to less than 25%?

Yes (Go to b.)

No [Please Explain:] (then Go to NEXT SECTION)

b. If this public water system receives a SDWRLF loan for the purpose of reducing water leakage to 25% or less, will this system be likely to sustain this standard during (option A) the term of the loan? (option B) the next five years?

Yes (Go to NEXT SECTION)

No (Go to NEXT SECTION)

7. Does this water system have current “as built” engineering drawings of the system facilities?

Yes (Go to Question #8.)

No (Go to Question #8.)

sources: “The Small System Guide to Viability.” Community Resource Group, Inc. Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

8. Violations of Oregon Drinking Water Rules

Has this water system been in violation of the Oregon Drinking Water Rules on one or more occasions in the last twelve (12) months?

No

Yes

If yes, how many of these violations resulted from inadequate technical capacity, and how many of these violations resulted from inadequate management capacity? [Please indicate:] (then continue)

a. Violation(s) due to lack of technical capacity (number):

Will the system improvements proposed for funding through the SDWRLF or other capital improvement financing source(s) significantly reduce the likelihood of repeat violation(s) in the next five years?

Yes

No [Please explain:] (then Go to b.)

b. Violation(s) due to lack of managerial capacity (number):

Will the system improvements proposed for funding through the SDWRLF or other capital improvement financing source(s) significantly reduce the likelihood of repeat violation(s) in the next five years?

Yes

No [Please explain:]

note: It is hoped that violations related to technical capacity (or the lack thereof) will likely not continue should SDWRLF or other capital resources be extended to repair or upgrade the water system. However, if the determination is made that the incidence of violations due either to the lack of managerial or technical capacities is not likely to change after a SDWRLF or other capital improvement is made, then the OHD may wish to require specific management or technical capacity improvements as loan conditions.

source: Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

SECTION 2: MANAGERIAL CAPACITY MEASUREMENT QUESTIONS

Overview

This section addresses the general management capacity of the water system. The questions assess staff and board capabilities and whether these resources have created an organization condition that supports proper financial management and technical operations (or system management).

The questions in this section address the following general management components:

- water system operation
- system governance and oversight
- system policies
- professional support regarding engineering and legal services
- record keeping
- violations of drinking water regulations
- water user communication and involvement

Source(s) Used in Developing Fiscal Capacity Questions

The source or sources used in developing the management capacity measurements are indicated with each question.

How to Use the Results of the Analysis

This section asks the water system to provide documents that can be reviewed to verify general management policies and practices. These documents can also provide substantial additional information to support the technical and financial capacity analyses.

Who Should Answer these Questions?

For the most part, this section should be relatively easy for the operator and management team of a water system to answer. Question #4 asks for the submittal of written policies when available.

MANAGERIAL CAPACITY MEASUREMENT QUESTIONS

1. Does this water system employ the services of a certified operator?

Yes [Please give name and year of certification:] (Go to Question #2)

No

If no, for the person responsible for the water system, please indicate the following:

- Years of experience:
- Specific water system operation training and education

(please list in detail):

Sources: Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University "Self-Assessment Manual for Iowa Water System Viability." Iowa Dept. of Natural Resources

2. Does this water system have a governing board, board of directors, or officers?

No (Go to Question #4)

Yes

If yes, please indicate the following:

- Number of board members or officers:
- Average number of years of experience or service per member:
- Years of experience or service of the longest serving board member:
- Total number of water system-related training events attended by one or more board members in the last two (2) years:

source: "The Small System Guide to Viability." Community Resource Group, Inc.

3. Is there a formal communication linkage between the water system operator and one or more members of the governing board or board of directors?

Yes [Please describe:] (then Go to Question #4)

No (Go to Question #4)

source: "The Small System Guide to Viability." Community Resource Group, Inc.

4. Water System Policies

a. Does this water system have a *written* System Operations Manual or Policy?

Yes [Please submit a copy of the Operations manual/policy:] (then Go to b.)

No (Go to b.)

b. Does this water system have a *written* Organization Bylaws or Board Governance Policy?

Yes [Please submit a copy of the Board Governance policy:] (then Go to c.)

No (Go to c.)

c. Does this water system have a *written* Personnel Policy?

Yes [Please submit a copy of the Personnel Policy:] (then Go to d.)

No (Go to d.)

d. Does this water system have a *written* Operating Emergency Plan?

Yes [Please submit a copy of the Emergency plan.]

No

note: Good business practice demands that the various policies indicated above should be in written form, adopted and periodically reviewed by a water system. OHF may require these policies to be put in place as a condition of SDWRLF loan approval. As systems are reviewed, it may become apparent that specific training and technical assistance in policy development may be necessary.

source: "The Small System Guide to Viability." Community Resource Group, Inc.

5. Does this water system routinely engage, as needed, the services of professional engineers?

No (Go to Question #6)

Yes

If yes, are engineering services utilized on a full-time, part-time or on an as needed basis? [Please indicate:] (then Go to Question #6)

note: Lack of engineering capability may affect the ability of the water system to maintain integrity of the technical components of the system, and limits its ability to stay abreast of system requirements, emerging technologies, etc.

source: Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

6. Does this water system routinely engage, as needed, the services of attorneys?

No (Go to Question #7)

Yes

If yes, are legal services utilized on a full-time, part-time or on an as needed basis? [Please indicate:] (then Go to Question #7)

note: Lack of legal capability may affect the ability of the water system to effectively respond to changes in drinking water rules. Additionally, at times legal capability is necessary for effective response to compliance and enforcement notices.

source: Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

7. Record Keeping

a. Does this water system have current "as built" engineering drawings of the system facilities?

Yes (Go to b.)

No (Go to b.)

b. Does this water system effectively maintain system operating records for operator, board member, customer, and OHD reference?

Yes (Go to c.)

No (Go to c.)

c. Does this water system effectively maintain records of correspondence with OHD and/or local County Health Department (and where appropriate; the Oregon Public Utilities Commission)?

Yes (Go to d.)

No (Go to d.)

d. Does this water system effectively maintain records of the results from required water testing?

Yes

No

sources: "The Small System Guide to Viability." Community Resource Group, Inc. Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

8. Does this water system communicate periodically with its water users on water quality, supply, and service issues? Is there a mechanism for public involvement in water system decisions?

Yes

No

source: OHD.

SECTION 3: FINANCIAL CAPACITY MEASUREMENT

SUBSECTION 3A: FISCAL CAPACITY MEASUREMENT QUESTIONS

Overview

Overall financial capacity for a water system can be assessed by examining both the fiscal condition (and factors that affect fiscal condition) and the financial management of the system. The former describes the ability of the water system to raise the resources necessary for proper operation, the latter assessment is of the management of those fiscal resources.

Subsection 3A focuses on the fiscal capacity of the public water system; the user charge system (a.k.a. rates or fees). Section 3 examines financial management.

The questions in this section address the following fiscal capacity components:

- total user charge revenues versus total system expenses
- other revenue sources (if applicable)
- affordability of customer user charges
- cash budgeting
- water system rate setting frequency

For the purpose of determining whether the state could confidently loan its funds to the system, the questions are designed to address the critical issue of whether or not a public water system has the ability to return principal and interest payments through its revenue raising capacity.

The first step in assessing capacity is answering the important question as to whether capital investment will make a difference in bringing a system into a long-term compliance situation. Answering the question of whether the water system can afford to pay back what it borrows is the second step.

Source(s) Used in Developing Fiscal Capacity Questions

The source or sources used in developing the fiscal capacity measurements are indicated with each question.

How to Use the Results of the Analysis

While the technical capacity questions utilize a series of binary decision points, the fiscal capacity questions are often answered by providing data elements that can be analyzed using common equations. Please refer to the “notes” section of each question for specific information on the formulas and how the answers to the questions might be utilized.

Who Should Answer These Questions?

The examination of existing fiscal capacity assessment tools reveals that self-assessment of financial capacity is the usual approach. The water system operator and/or management team should be able to provide the answers for many of the questions. For purposes of the SDWRLF there must be assurance that the water system will have the financial capacity to be able to maintain compliance with the 1996 Safe Drinking Water Act (sec. 1452(a)(3)(B)(I)) requirements. Fiscal

capacity and financial management capacity information provided by the water system can meet this assurance requirement when accompanied by standard financial management documents such as certified financial audit reports.

FISCAL CAPACITY MEASUREMENT QUESTIONS

1. Water System Revenues From User Charges Meet or Exceed Expenses

Total Fiscal Year User Charge Revenues - Total Fiscal Year Water System Expenses \geq 0

Yes (Go to Question #3)

No (Go to Question #2)

source: "Financial Viability Manual for New and Expanding Small Water Systems. Washington State Department of Health

2. If Total Revenues from user charges less the total water system expenses is less than zero (0), are other funds contributed to water system operations to offset system expenses?

Yes

If yes, what is(are) the source(s) of these additional other revenue funds?

What is the total amount of these additional revenues in the current year water system budget?

No (Go to Question #3)

note: In some cases water systems may supplement user charges with other revenues. This practice is usually discouraged because the full costs of operations should be met by revenues. However, where user fees are supplemented, the OEDD should obtain information regarding the specific situation and the dependability of the supplemental resources.

source: "Financial Viability Manual for New and Expanding Small Water Systems." Washington State Department of Health

3. Water System Rate Affordability Index (current)

For residential customers only, please indicate the following using most current information:

- Average Residential Water System User Charge (in dollars and cents)
- Frequency of Water System Billing (e.g., 12, 6, or 4 times per year)
- Average Median Household Income (AMHI)

(indicate county or local AMHI in dollars) i.e., $U/m \leq 1.5\%(AMHI/m)$ where, $U/m = \text{Avg. Residential User Charge per Month} / \text{Avg. Median Household Income per Month}$

note: The State of Washington Drinking Water Program uses an "affordability range" of 1.25 to 1.75%. The disadvantaged community threshold is 2.0% of 80% of the statewide non-metropolitan average median household income. In any case, a figure above 2.0% should be investigated further; especially if the residents are paying additional user charges for wastewater, solid waste and other utility services.

Sources: "Financial Viability Manual for New and Expanding Small Water Systems." Washington State Department of Health. Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

4. Water System Rate Affordability Index (future)

For residential customers only, please indicate the following after calculating the expected Average Residential Water System User Charge inclusive of any new debt expenses related to capital improvements in the next five years:

- Average Residential Water System User Charge (in dollars and cents)
- Frequency of Water System Billing (e.g., 12, 6, or 4 times per year)
- Average Median Household Income

(indicate county or local AMHI in dollars) i.e., $U/m \leq 1.5\%(AMHI/m)$ where, $U/m = \text{Avg. Residential User Charge per Month (AMHI/m) Avg. Median Household Income per Month}$

note: This measure considers the affordability of user charges when incorporating additional capital improvements. Will additional debt be matched by increased rates? Will the rates be affordable?

sources: "Financial Viability Manual for New and Expanding Small Water Systems." Washington State Department of Health. Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

5. Does the water system include a cash reserve within its annual budget for cash flow and emergency purposes?

Yes

If yes, is the operating cash on hand greater than or equal the average monthly operations and maintenance plus general and administration expenses?

i.e., Operating Cash (annual) $\geq 1/12 (O + M + G + A)$

where: O = operations expenses

M = maintenance expenses

G = general expenses

A = administrative expenses

No (Go to Question #6)

note: A water system budget that incorporates a cash budget equivalent to one and one-half the monthly O&M and General & Administrative expenses is conscious of the need to be prepared for emergencies, payment delinquencies, and other short-term cash flow problems.

sources: "The Small System Guide to Viability." Community Resource Group, Inc. "Financial Viability Manual for New and Expanding Small Water Systems." Washington State Department of Health

6. Water System Rates Review

A. Does the water system management review the user fee, user charge, or rate system at least once every two years?

Yes (Go to B.)

No

If no, what was the date of the most recent water system rates (user fees, charges) review?

What was the date of the previous water system rates (user fees, charges) review?

note: It is good practice for a water system to review its rates on an annual basis. The longer the interval between water system rate reviews, the less likely the system will be to adjusting to significant changes in expenses. The higher the interval, the less likely the system will be able to raise user charges to meet expenses related to new or amended drinking water rules.

sources: "The Small System Guide to Viability." Community Resource Group, Inc. Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

B. What resources and guidance does the water system use for setting water user rates, fees or charges?

[Please List:] (then Go to Subsection 3B)

source: Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

SUBSECTION 3B: FINANCIAL MANAGEMENT MEASUREMENT QUESTIONS

Overview

Together with Subsection 3A, this section helps to assess the overall financial capacity for a water system. The former section describes the ability of the water system to raise the resources necessary for proper operation, the following questions help assess the management of those fiscal resources.

The questions in this section address the following financial management components:

- production and utilization of an annual budget
- production and utilization of a capital budget
- production and utilization of a capital improvements plan
- periodic financial audits
- current bond ratings

For the purpose of determining whether the state could confidently loan its funds to the system, the questions are designed to address the critical issue of whether or not a public water system has financial management controls that enhance its ability to return SDWRLF principal and interest payments.

Source(s) Used in Developing Fiscal Capacity Questions

The source or sources used in developing the fiscal capacity measurements are indicated with each question.

How to Use the Results of the Analysis

This section asks the water system to provide documents that can be reviewed to verify financial management practices. These documents will also provide support for information provided in the fiscal capacity measurement section.

FINANCIAL MANAGEMENT MEASUREMENT QUESTIONS

1. Does this water system produce and utilize an annual budget?

Yes [Please submit current annual budget document] (Go to Question #2)

No (Go to Question #2)

sources: "The Small System Guide to Viability." Community Resource Group, Inc. "A Dozen Questions to Assess Small System Viability." Apogee Research Inc.

2A. Does this water system utilize an infrastructure and/or depreciation account?

Yes

If yes, does the infrastructure (or depreciation) account forecast capital improvement requirements for five (5) or more years?

[Please submit document] (Go to Question #2B)

No [Please explain:] (then Go to Question #2B)

note: The use of a five-year capital plan is a positive indicator of financial management and supports the assessment of technical capacity conditions. A capital plan is an indication that the water system is cognizant of the need for financing infrastructure upgrade and/or replacement.

source: "A Dozen Questions to Assess Small System Viability." Apogee Research Inc.

2B. Does this water system utilize a capital improvement plan?

Yes [Please submit current capital improvements plan]

If yes, does the capital improvement plan forecast system impacts and needs for five (5) or more years?

Yes (Go to Question #3)

No [Please explain:] (then Go to Question #3)

No (Go to Question #4)

note: The use of a capital improvement plan is a positive indicator of financial management and supports the assessment of technical capacity conditions. A capital improvement plan is an indication that the water system is cognizant of the need for planning infrastructure upgrade and/or replacement, growth and other factors that might require financing.

source: "A Dozen Questions to Assess Small System Viability." Apogee Research Inc.

3. Does this water system produce periodic financial reports or audits (if required)?

Yes

If yes, please submit copies of the two most recent financial reports or audits.

No [Please explain:] (then Go to Question #4)

note: The OEDD should consider the requirement that SDWRLF recipients submit at least one financial report or audit document. Water systems should have financial reports or audits as a matter of good business practice. The financial report or audit allows for verification of financial condition. The review of consecutive audits would allow OEDD to observe whether auditor recommendations (if any) in one audit were indicated as accomplished in the subsequent audit. If a loan applicant cannot produce a recent audit document, detailed review of existing financial reporting documents will be performed to determine financial condition.

source: "The Small System Guide to Viability." Community Resource Group, Inc.

4. Does the corporate entity responsible for this water system have a bond rating?

Yes

If yes, please indicate the following:

- Bond Rating Company Name:
- Current Bond Rating:

No

source: Bill Jarocki, Tim Wilkinson, Environmental Finance Center, Boise State University

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“Restructuring: A Manual for Drinking Water Systems” *The Cadmus Group, Inc.*, Prepared for USEPA Office of Ground and Drinking Water, Third Draft, March 2, 1995.

We will include updates to this section with final document.

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