STRATEGY, PROGRESS, AND EFFICACY

OF

UTAH'S CAPACITY DEVELOPMENT PROGRAM

A Report to the Governor of Utah

In Fulfillment of

Section 1420(c)(3)

of the

Safe Drinking Water Act (SDWA)

Prepared

by

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1 INTRODUCTION

1.1 Federal Regulatory History of Drinking Water

The Safe Drinking Water Act (SDWA) was passed by Congress and signed by President Nixon in 1974. SDWA promulgated a federal program to promote the safety of drinking water delivered to citizens by public water systems (PWS's). SDWA authorized the Environmental Protection Agency to delegate, to any individual state, primary enforcement authority, or *primacy*, for its state program of Public Water System Supervision (PWSS). Delegation of primacy requires demonstration to EPA that the necessary capability exists at the state level. As first enacted in 1974, SDWA included grant funds to the states to administer regulation of PWS's with respect to many envisioned, federally adopted maximum chemical contaminant levels (MCL's). By 1985, some impatience was noted in Congress at the fact that adopted MCL's numbered only 23 some 11 years after adoption of SDWA.

A history of revisions to SDWA exists in the form of minor amendments in 1977, 1979, and 1980, and major amendments in 1986 and 1996, by Congress and the President. The 1986 Amendments expanded federal concern from the original chemical contaminants of interest to disease-causing microbial contaminants in drinking water. The previous slow pace of MCL promulgation was also remedied in the 1986 Amendments by specific direction to EPA to establish MCL's and MCLG's (maximum contaminant level goals) for 83 specific contaminants including synthetic chemical contaminants of ground water. The 1986 Amendments also established minimum treatment requirements for all surface waters because of Congress's perceived need to guarantee a barrier against microbiological contamination of those waters. Lead and copper contamination in drinking water at the consumer's tap, principally as a result of distribution system and fixture corrosion, was also addressed in the 1986 Amendments.

The most substantial changes to date in SDWA have occurred as a result of the 1996 Amendments. President Clinton signed the Safe Drinking Water Act (SDWA) Amendments of 1996 on August 6, 1996. The Amendments establish stronger prevention programs, increase State flexibility, give better information to consumers, and strengthen EPA's regulatory development process. Requirements for EPA regulation of specific numbers of new contaminants, as they were in 1986, were again fine-tuned with emphasis on flexibility for EPA in the selection of contaminants. EPA literature summarizes the four themes that underlie the 1996 Amendments as follows:

1. Better information for consumers, including the "right to know" (through consumer confidence reports and other provisions);

2. Regulatory improvements, including better science, prioritization of effort, and risk assessment;

3. New funding for States and communities through the Drinking Water State Revolving Fund (DWSRF); and,

4. New and stronger approaches to prevent contamination of drinking water (including source water protection, capacity development, and operator certification).

1.2 Drinking Water State Revolving Fund

1.2.1 DWSRF Funding

The creation of a Drinking Water State Revolving Fund (DWSRF) to assist communities in installing and upgrading drinking water system infrastructure is among the most important changes in the nation's drinking water program since passage of the original SDWA in 1974. President Clinton proposed this DWSRF in 1993 to advance the same kind of national commitment to safe drinking water as America has made to wastewater treatment and clean water through the Clean Water State Revolving Fund (CWSRF). The DWSRF was authorized at $599 million for Fiscal Year (FY) 1994, and $1 billion annually thereafter through FY 2003.

1.2.2 Set-Asides for Prevention Programs and Projects

EPA is able to assure that state activities proceed in conformance with federal perceptions of how best to protect drinking water quality because the 1996 Amendments permit EPA to dictate allocation of portions of the grant monies as *set-aside funds* for specific priority activities and other administrative requirements. As much as 10 percent of a state's capitalization grant may be used for implementation of source water protection, capacity development, and operator certification programs, as well as for the state's overall drinking water program [§1452(g)]. Up to 15 percent (no more than 10 percent for any one purpose) can be used for prevention projects in water systems, including source water protection loans, technical and financial assistance to systems as part of a state capacity development strategy, source water assessments, and wellhead protection [§1452(k)]. These parameters for state capitalization grant allocation from the 1996 Amendments, together with parameters from other legislation and regulations, result in an overall state capitalization allocation as represented in Figure 1. Also shown in Figure 1 are the actual anticipated allocations for the State of Utah Fiscal Year '01-'02 and its $8 million state capitalization grant.

100% - Statutorial Options										
69% Min.	31% Max.									
	4% Max.	10% Max.				15% Max.				2% Max.
	Loan	Implementation Projects				Prevention Projects				Small
SRF		x%	x%	x%	x%	x%	x%	x%	x%	System
Loan Monies	Admin.	Program Admin.	Capacity Develop	Source Water Protect	Operato Cert.	Local Capacity Develop.	Source Water Protect	Well Head Protect.	Tech. Assist.	Tech. Assist.

100% - FY '02-03 - $8,052,500										
79%	21%									
	4%	10%				5%				2%
	Loan	Implementation Projects				Prevention Projects				Small
SRF		9%	0%	1%	0%	0%	0%	0%	5%	System
Loan Monies	Admin.	Program Admin.	Capacity Develop	Source Water Protect	Operato Cert.	Local Capacity Develop.	Source Water Protect	Well Head Protect.	Tech. Assist.	Tech. Assist.

Figure 1. Statutorial Parameters and Utah FY '01-'02 Allocations for State Capitalization Grant.

100% - FY '96-'97 - $12,558,800										
77%	21%									
	4%	2%				15%				2%
	Loan	Implementation Projects				Prevention Projects				Small
SRF		1.0%	0.2%	0.6%	0.0%	5%	10%	0%	0%	System
Loan Monies	Admin.	Program Admin.	Capacity Develop.	Source Water Protect	Operator Cert.	Local Capacity Develop.	Source Water Protect	Well Head Protect.	Tech. Assist.	Tech. Assist.

Figure 2. Utah FY '96-'97 Capitalization Grant Allocations.

The set aside provisions are an outgrowth of Congress's desire to place a high priority on prevention activities. Some of the activities are prescribed by the law because of their deemed importance on a national level. However, other activities are discretionary because of Congress's recognition that individual states and water systems may have needs and priorities that are not appropriately articulated in any uniform national prioritization. Thus, the new law provides wide discretion to states in both the design and implementation of their activities. This will enable states to further their individual priorities and to coordinate with other state and local activities that may help meet the objectives of the new prevention programs.

An example of the flexibility that this program affords the states can be seen by examining Utah's capitalization grant allocations for FY '96-'97, shown in Figure 2. At that time, substantial resources were allocated to the 15 percent set-aside option for prevention projects because of a State-wide, water system consolidation study (see Section 4.2) that was funded. In that particular year, source water protection needs could also be satisfactorily funded because of the flexibility of set-aside program provisions of the 1996 Amendments. Utah's experience is that the set-aside program empowers the State to tailor the allocation of capitalization grant monies to needs specific to Utah even if there is not a national consensus among states for the very same allocations.

1.2.3 Impact of Set-Asides on the States' Drinking Water Programs

The states' mission under the 1996 Amendments is the successful incorporation into their individual programs a new wave of complex and admistratively-intensive requirements in a very short timeframe. EPA designates these program requirements for the states as either *mandatory* or *voluntary*. The difference is that failure of a state to enact a *primacy-mandated* program by the allotted deadline can result in state forfeiture of *primacy* for its own Public Water System Supervision (PWSS) program and loss of the entire program capitalization grant whereas failure to enact a so-called *voluntary* program calls for loss of only a portion of the program capitalization grant, typically 20 percent.

Utah and other states have had, and continue to have, daunting challenges in the very near-term to meet EPA compliance deadlines for both *primacy-mandated* and *voluntary* programs. The states' PWSS programs in 2002 alone have faced primacy continuance deadlines for EPA's Arsenic Rule revisions, Consumer Confidence Reports proposal, Interim Enhanced Surface Water Treatment Rule implementation, Disinfection/Disinfection Byproducts Rule implementation, and Radionuclides Rule implementation. So-called *voluntary* program

deadlines – those linked to losses of only 20 percent or so of the capitalization grant program monies – have loomed in 2002 for the Drinking Water Revolving Fund (DWRF), Operator Certification, and Capacity Development programs.

1.2.4 Capacity Development Program Set-Aside

The 1996 Amendments create a program that builds nationally on the demonstrated success of several states in strengthening the technical, managerial, and financial capacity of water systems to reliably deliver safe drinking water. In order to receive the full allotment of funds to which they are entitled under the DWSRF, states have had to develop:

1. A program to ensure that all new community and new nontransient, noncommunity water systems commencing operation after October 1, 1999, demonstrate sufficient technical, managerial, and financial capacity to comply with national primary drinking water regulations (NPDWRs); and

2. A strategy to assist existing PWS's in acquiring and maintaining technical, managerial, and financial capacity to comply with SDWA requirements.

States may use DWSRF set-aside funds for their capacity development and implementation efforts. States that do not meet the provision's requirements are subject to a 20 percent withholding from their DWSRF allotment. The capacity development provisions are intended to present states with an opportunity to creatively and comprehensively address the long-standing challenges and difficulties associated with small water systems. Capacity development strategy preparation affords states a chance to identify and prioritize systems most in need of assistance in enhancing their technical, managerial, and financial capacity. The rationale is that after states have identified and prioritized systems most in need, the states can then effectively target technical and financial assistance. Articulation of capacity development strategy also offers states the chance to consider how the resources and authorities of the SDWA, as well as other resources and authorities, can be used to:

- Assist PWS's in complying with national primary drinking water regulations;

- Encourage the development of partnerships among PWS's to enhance the technical, managerial, and financial capacity of the systems; and

- Assist PWS's in the training and certification of operators;

EPA hopes that capacity development strategies will lead to a greater emphasis by

small systems on self-assessment and long-term planning. Strategies may also prove to be a useful framework within which states explore integrated resource planning and its potential to help resolve conflicts over drinking water quality and management issues.

2 CAPACITY DEVELOPMENT PROGRAM

2.1 Origins of the Terminology of Capacity Development

Congress, through the 1996 Amendments to SDWA, recognized that protection of the public's drinking water supply requires ongoing vigilance in the operation and maintenance of public water system facilities. The need for capitalization and construction monies was recognized by Congress but not without the realization that public water systems would need to better develop the capability to operate and manage the infrastructure that the grant funds would underwrite if the monies were to have long-term benefit..

The seeds of the Capacity Development Program as defined in the 1996 Amendments to SDWA were couched in the language of earlier initiatives from EPA on water system *mobilization* and water system *viability assessment*. For semantical reasons, neither water system *mobilization* nor *mobility* seemed to convey the desired connotation of developing and sustaining resources within individual public drinking water systems to meet the challenges facing such water systems. And, *viability* seemed to too narrowly connote an all-or-nothing circumstance – viable versus nonviable – with scant recognition of the importance of further system improvement beyond mere viability.

Eventually, a consensus developed that each public water system could best protect the public's drinking water supply if each water system were to acquire and maintain skills or *capabilities* in the technical, managerial, and financial areas of water system operation. Although *capability development* would have proved to be a more accurate and appropriate label for the intended concepts and principles, the 1996 Amendments legitimized the more ambiguous, and somewhat inaccurate, terminology *capacity development*. Since 1996, an unfortunate amount of time has been expended by state regulators defending themselves as not being aligned with pro-unbridled growth and pro-development interests seeking to construct more wells and dams and reservoirs for *development of capacity.* Much confusion would have been averted had state regulators been able to be more accurately characterized as merely implementing EPA mandates for *development of capability* for public drinking water systems.

As a result – in the context of the 1996 Amendments to SDWA – capacity and capability will unfortunately be forever used interchangeably and therefore should both be considered to connote water system performance in accordance with accepted performance criteria. Capacity encompasses the technical, managerial, and financial capability of the water system to achieve, maintain, and plan for compliance with applicable drinking water standards given available water

resources and the characteristics of the service population. *Technical capacity* refers to the physical infrastructure of the water system, including but not limited to the adequacy of source water, infrastructure adequacy (source, treatment, storage, and distribution), and the ability of system personnel to implement the requisite technical knowledge. *Managerial capacity* refers to the management matrix of the water system, including but not limited to ownership accountability, staffing and organization, and effective linkages. *Financial capacity* refers to the financial resources of the water system, including but not limited to the revenue sufficiency, credit worthiness, and fiscal management and controls.

2.2 Capacity Development and the 1996 SDWA Amendments

Congress, in the 1996 Amendments to the Safe Drinking Water Act, directed EPA to provide guidance for the states in establishment of their capacity development programs. Several seminal publications have been prepared either directly by EPA or through its affiliation with other parties. These publications include:

> Information for States on Implementing the Capacity Development Provisions of the Safe Drinking Water Act Amendments of 1996. 1998. U.S. Govt. Pub. EPA 816-R-98-008.
>
> Handbook for Capacity Development: Developing Water System Capacity Under the Safe Drinking Water Act as Amended in 1996. 1999. U.S. Govt. Pub. EPA 816-R-99-012
>
> Developing Water System Managerial Capacity: Training Module. 2002. Drinking Water Academy and Environmental Protection Agency.

The fundamental goals of capacity development are (i) to protect public health by ensuring consistent compliance with drinking water standards, including federal and State regulations and other applicable standards of performance; (ii) to enhance performance beyond compliance through measures that bring about efficiency, effectiveness, and service excellence; and (iii) to promote continuous improvement through monitoring, assessment, and strategic planning. The underlying theme of the 1996 Amendments is that all water systems, regardless of size or other characteristics, can benefit from a program of continuous improvement.

Congress, in the 1996 Amendments, ratified a philosophy that capable water systems are better positioned to consistently comply with applicable standards and provide customers with safe and reliable water service. Furthermore, capable systems also are better positioned to meet other standards of performance that are generally accepted in the industry or required by other regulatory agencies – e.g., the aesthetic quality of water (taste, color, and odor), water pressure,

water losses, or other measurable aspects of performance.

To this end, the 1996 Amendments contain capacity development provisions for new and existing water systems. First, states must comply with SDWA timelines for ensuring that new water systems have adequate technical, managerial, and financial capability. Second, states must develop a strategy for improving the technical, managerial, and financial capability of existing systems.

To promote compliance of the states with these requirements, the 1996 Amendments put restrictions on the allocation of public monies (via the State Revolving Fund) to water systems. Namely, SRF loans cannot be made to water systems that do not have adequate technical, managerial, and financial capability unless the funding will help the system achieve compliance and the system will make changes in operations to ensure capability.

In 1997 and 2000, EPA and the states developed lists of systems with a history of significant noncompliance (SNC) in the area of monitoring and reporting in anticipation of using these lists as compliance tools. Section 1420(b)(2) of the Safe Drinking Water Act required states to report to the U.S. Environmental Protection Agency (EPA) by August 6, 2001, on the success of enforcement mechanisms and initial capacity development efforts in assisting systems with a history of significant noncompliance to improve technical, managerial, and financial capacity. Utah and most, if not all, other states successfully submitted their reports to EPA in accordance with the deadline requirement.

3. UTAH CAPACITY DEVELOPMENT PROGRAM STRATEGY

3.1 Rule Promulgation

In Utah, the Drinking Water Board operates under authority granted in 1981 by Section 19-4-104 of the Utah Safe Drinking Water Act. The Utah Drinking Water Board is a 11-person board appointed by the Governor. The Board is empowered to adopt rules governing the design, operation, and maintenance of Utah's *public drinking water systems.* The Board meets monthly and the public is welcome to attend and participate in the meetings.

The Division of Drinking Water Director, appointed by the Executive Director of the Department of Environmental Quality, serves as Executive Secretary to the Drinking Water Board. The Division of Drinking Water (DDW) acts as the administrative arm of the Utah Drinking Water Board. The Division implements the rules that the Board adopts.

3.2 State Capacity Development Program for New Systems

Just as the 1996 SWDA Amendments represented an evolution of earlier EPA initiatives on resource mobilization and water system viability to an initiative on capability development (see Section 2.1), so too do the State of Utah's present day efforts in capacity development have their roots in the area of system viability, namely ***Rule 309-500-11 Financial Viability***, which became effective in 1998. The Rule stipulates:

> *Owners of new or existing water systems are encouraged to develop realistic financial strategies for recouping the costs of constructing and operating their systems. Plans for water system facilities shall not be approved when it is obvious that public health will eventually be threatened because the anticipated usage of the system will not generate sufficient funds to insure proper operation and maintenance of the system.*
>
> *Guidance: To permit an evaluation in this regard, capital and operating cost estimates should be provided along with the engineering plans and specifications for any proposed project.*

The State experience with application of the Rule was that it was well-intentioned but that a regulatory framework for adequate enforcement needed to be developed.

Congress recognized this circumstance on a national scale and the 1996 Amendments

enacted a provision to move the states to action, namely:

> **Section 1420(a):** *STATE AUTHORITY FOR NEW SYSTEMS- A State shall receive only 80 percent of the allotment that the State is otherwise entitled to receive under section 1452 (relating to State loan funds) unless the State has obtained the legal authority or other means to ensure that all new community water systems and new nontransient, noncommunity water systems commencing operation after October 1, 1999, demonstrate technical, managerial, and financial capacity with respect to each national primary drinking water regulation in effect, or likely to be in effect, on the date of commencement of operations.*

To this end, Utah Code 19-4-104(1)(a)(v) was promulgated and specifically grants authority to make rules regarding the Capacity Development Program and references Section 1420 of the Federal Safe Drinking Water Act. Utah's resulting Capacity Development Program Rule requires that new water systems demonstrate they have adequate technical, managerial, and financial capacity before they may be approved as a public water system (PWS). With its adoption, and establishment of an effective date of September 15, 1999, ***Rule R309-359 Capacity Development Program*** requires both new community and new nontransient noncommunity water systems to submit a Capacity Assessment Review, which is to include a Project Notification Form and a Business Plan (which is to consist of a Facility Plan, a Management Plan, and a Financial Plan).

The Facility Plan is intended to provide a description of the scope of the water services that will be provided by the proposed community or nontransient noncommunity water system and must include:

> 1. A description of the nature and extent of the area to be served and provisions for extending the water supply system to meet growth;
>
> 2. An assessment of current and expected drinking water compliance based on monitoring data from the proposed water source;
>
> 3. A description of the alternatives considered, including interconnections with other existing water systems, and the technical, managerial, financial, and operational reasons for the approach selected; and,
>
> 4. An engineering description of the facilities to be constructed, including the construction phases and future phases as well as future plans for expansion and an estimate of the full cost of any required construction, operation, and maintenance.

The Management Plan is intended to describe what is needed for the proposed community or nontransient noncommunity water system to provide for effective management and operation of

the system. It must include:

> 1. Documentation that the applicant has water rights, and the legal right and authority to construct, operate, and maintain the system;
>
> 2. An Operating Plan that describes the tasks to be performed in managing and operating the system including administrative and management organization charts, plans for staffing the system with certified operators, and provisions for an operations and maintenance manual; and,
>
> 3. Documentation of management credentials of operations personnel and documentation of cooperative agreements or service contracts including demonstration of compliance with the water system operator certification rule.

The Financial Plan is intended to describe the proposed community or nontransient noncommunity water system's revenues, cash flow, income, and debt for meeting the costs of construction and the costs of operation and maintenance for five years from the date the applicant expects to begin system operation.

After the Division deems that the information submitted by the applicant is complete, the Division conducts a Capacity Assessment Review. The applicant is notified in writing whether or not the proposed new system has met the Rule requirements for technical, financial, and managerial (TFM) capacity. ***R309-352 Capacity Development Program*** stipulates that no new community water system, nor nontransient noncommunity water system, shall be approved in the absence of demonstrated adequate capacity.

3.3 State Capacity Development Program for Existing Systems

Congress, in the 1996 Amendments, worked from the premise that enhancing and ensuring the technical, financial, and managerial capability of small water systems is the best strategy for correcting and preventing noncompliance with public drinking water system requirements. To this end,

> **Section 1420(c):** *CAPACITY DEVELOPMENT STRATEGY- (1) IN GENERAL- Beginning 4 years after the date of enactment of this section, a State shall receive only--(A) 90 percent in fiscal year 2001; (B) 85 percent in fiscal year 2002; and (C) 80 percent in each subsequent fiscal year, of the allotment that the State is otherwise entitled to receive under section 1452 (relating to State loan funds), unless the State is developing and implementing a strategy to assist public water systems in acquiring and maintaining technical, managerial, and financial capacity.*

was included in the legislation to prompt states to adhere to this philosophy. Utah implemented the wishes of Congress on several regulatory fronts. The *State of Utah Administrative Rules for Public Drinking Water Systems* ***Rule 309-705, Financial Assistance: Federal Drinking Water Project Revolving Loan Program***, has several components that interface with issues of system capacity and systems with histories of significant noncompliance. The purpose of ***Rule 309-705, Financial Assistance: Federal Drinking Water Project Revolving Loan Program*** is to establish criteria for financial assistance to public drinking water systems in accordance with a federal grant established under 42 U.S.C. 300j *et seq.,* federal Safe Drinking Water Act. The Rule defines an *eligible water system* as any community drinking water system, either privately or publicly owned, and nonprofit noncommunity water systems.

Historically, State financial assistance through ***Rule 309-705*** has been sought by water systems across the entire compliance spectrum – i.e., from significant noncompliance, as measured by a *not approved* State water system rating, to exemplary compliance, as measured by an *approved* State water system rating. An important stipulation of ***Rule 309-705-4(3)(a)*** is that no financial assistance is authorized for any project for a water system in significant noncompliance, as measured by a *not approved* rating, unless the project will resolve all outstanding issues causing the noncompliance. ***Rule 309-705-5(3)*** further requires that as part of the application and project initiation procedures, Board staff (i.e., Division staff) will prepare a Capacity Development analysis of the applicant water system.

Thus, the elements of the State's Capacity Development Program for new community water systems and nontransient noncommunity water systems (see Section 2.2 State Capacity Development Program for New Systems) can be utilized in the analysis of those existing water systems in significant noncompliance.

3.4 Improvement Priority System (IPS) Rule

The *State of Utah Administrative Rules for Public Drinking Water Systems* ***Rule 309-150, Improvement Priority System Rule***, establishes a system for assessing deficiency points against public water systems on the basis not only of the monitoring and reporting shortcomings addressed in the *EPA SNC List* but also a spectrum of other public health concerns. *IPS* deficiency points for administrative violations, infrastructure construction irregularities, unauthorized water sources, use of unapproved water infrastructure, and a host of other transgressions are typically assigned at the time of the periodic sanitary survey of each water system. *IPS* deficiency points for failure to comply with monitoring and reporting requirements are typically assigned as soon as the deviations from these requirements are noted in the State's

data base. ***Rule 309-150*** requires that a community water system that is assessed more than 150 deficiency points on a sanitary survey must be classified by the Utah Division of Drinking Water as *not approved*.

3.5 Utah Top 25 SNC List

To supplement the *EPA Significant NonCompliance (SNC) List*, the State has additionally developed a *Utah Top [Worst] 25 Significant NonCompliance (SNC) List*, which is generated on a quarterly basis from the worst 25 scores of all public water system *IPS* scores (i.e., highest points). Historically, water systems with severe technical, managerial, and financial challenges have repeatedly appeared on this list quarter after quarter. In contrast, water systems with greater resources in these areas – those systems who may appear on the list because of a singular or isolated transgression, such as use of an unauthorized well, or who may have uncharacteristically neglected ongoing maintenance to the extent that deficiencies have accumulated to 150 points or more – may appear but once on the list before satisfactorily remedying the *IPS* deficiency points.

3.6 Utah Rating Change List

The utility of the *Utah Top [Worst] 25 SNC List* has been supplemented by the State's generation of an additional quarterly list that flags water systems whose rating (by virtue of its *IPS* score below or above the 150 point threshold) has changed from its previous quarter's rating of *approved* or *disapproved.* This *Utah [Water System] Rating Change List* thus represents a convenient method to identify on a quarterly basis those systems that have either returned to compliance from noncompliance or have newly fallen into noncompliance status.

3.7 Enforcement and Compliance Summary

In summary, the State utilizes three tools – the periodic *EPA SNC List,* the quarterly *Utah Top [Worst] 25 SNC List*, and the quarterly *Utah Rating Change List* – to assist in the goal of returning noncompliant systems to compliance and preventing compliant systems from falling into noncompliance. Historically, these tools have been successful at identifying systems in need of compliance assistance so that the appropriate resources of the State and the Division can be used in the resolution of noncompliance issues for public drinking water systems.

4. UTAH CAPACITY DEVELOPMENT PROGRAM PROGRESS

4.1 County-by-County System Consolidation Study

4.1.1 Background

In 1998, the Drinking Water Board authorized $625,000 to fund Regional Water Management Plans. The Community Impact Board and the Community Development Block Grant Board contributed additional monies to the project to result in a $975,000 budget. Community as well as nontransient noncommunity water systems were evaluated with a focus on managerial, technical, and financial capability. A separate section on each of these areas is devoted to discussion of capability shortcomings. The section on management capability additionally identifies from one to several options for each water system to remedy its deficiencies. Throughout each of the studied counties, typical management deficiencies identified include maintenance and operations understaffing, inadequate consumer confidence reporting, and incomplete monitoring. Technical capability deficiencies common to many systems are insufficient source capacity and inadequate infrastructure. Identified financial capability shortcomings include insufficient revenue base, capital project expenditure constraints, etc.

The resultant Regional Water Management Plans discuss possibilities of joint source protection efforts, sharing of managers, operators, equipment, and facilities (existing and proposed), and especially consolidation of water systems. Plans were developed for 24 of Utah's 27 counties. The three counties for which county-wide regional plans were not developed – Salt Lake, Utah, and Davis Counties – have a preponderance of water systems so large as to have been determined by EPA and the Division of Drinking Water to not be in need of regional planning. The Drinking Water Board did authorize monies for studies of certain problem water systems from the *EPA Significant NonCompliance (SNC) List* and the *Utah Top (Worst) 25 Significant NonCompliance (SNC) List* (see Section 3.5), however. A list of the reports that the Division of Drinking Water has received in conjunction with the county-wide consolidation studies, as well as smaller area-focused studies, is given in Table 1.

Individual water systems were all given the opportunity to accept or reject the various recommendations contained in their respective county's Water Management Plan. Any water system with a record of noncompliance who chose not to accept the recommendations of its county's Water Management Plan is ineligible to receive SRF loan funds from the State.

TABLE 1. PUBLISHED REPORTS FROM UTAH'S COUNTY BY COUNTY WATER SYSTEM CONSOLIDATION STUDY.

Beaver County Regional Water Management Plans. 1999. Five County Association of Governments and Jones & DeMille Engineering.

Box Elder County Regional Water Management Plan. 1999. Hansen, Allen, and Luce, Inc.

Cache County Countywide Comprehensive Plan.. Countywide Planning & Development Office.

Carbon County Regional Water Management Plan. 1999. Hansen, Allen, & Luce, Inc.

Daggett County Culinary Water Master Plan. 1999. Sunrise Engineering, Inc.

Davis County. Several reports on individual water systems.

Duchesne County Regional Water Management Plan. 2000. Franson-Noble and Associates.

Emery County Regional Water Management Plan. 1999. Hansen, Allen, & Luce, Inc.

Garfield County Regional Plan. 1999. Five County Association of Governments and Jones & DeMille Engineering.

Grand County Regional Public Drinking Water Facilities Plan. 2000. Association for the Tree of Life.

Iron County Regional Water Management Plan. 1999. Five County Association of Governments and Leslie & Associates, Inc.

Juab County Regional Water Management Plans. 1999. Six County Association of Governments and Franson-Noble & Associates.

Kane County Regional Plan. 1999. Alpha Engineering Company.

Millard County Regional Water Master Plan. 1999. Sunrise Engineering.

Morgan County Regional Water Management Plan. 1999. Weston, Inc.

Piute County Regional Plan. 1999. Jones and DeMille Engineering.

Rich County Water Systems Management Plan. 2002. Sunrise Engineering, Inc.

Salt Lake County. Several reports on individual water systems and subregions of water systems.

TABLE 1. PUBLISHED REPORTS FROM UTAH'S COUNTY BY COUNTY WATER SYSTEM CONSOLIDATION STUDY (CONT'D).

Sanpete County Regional Water Master Plan. 1999. Sunrise Engineering.

Sevier County Regional Water Management Plans. 1999. Six County Association of Governments and Franson-Noble & Associates.

Summit County Regional Water Management Plan. 2001. Montgomery Watson Harza.

Tooele County Regional Drinking Water Management Plan. 1999. Ward Engineering Group.

Uintah County Regional Water Management Plan. 2000. Uintah Water Conservancy District.

Utah County. Several reports on individual water systems.

Wasatch County Regional Water Management Plan. 1999. Hansen, Allen, and Luce, Inc.

Washington County Regional Plan. 1999. Five County Association of Governments and Alpha Engineering Company.

Wayne County Water Management Plan. 1999. Jones & DeMille Engineering.

Weber County. 1999. Ogden Valley Regional Water Management Plan.

4.1.2 Case Study: Spring Glen Water Company, Carbon County

Spring Glen Water Company is a small mutual water company with no full-time employees in Carbon County. All system operation and maintenance is done by volunteers. The system obtains its water by wholesale purchase from the Price River Water Improvement District (PRWID). Spring Glen Water Company serves the culinary water needs for the town of Spring Glen located about 5 miles northwest of Price City. Spring Glen currently serves 280 connections and expects to serve 363 connections by the year 2020. The Spring Glen water system is located within the Price River Water Improvement District (PRWID) boundaries. As such, the property owners of the system pay levies for two existing general obligation bonds for PRWID water system improvements. In addition, the property owners of the system pay a service fee to PRWID for the wholesale water they obtain from PRWID. The Spring Glen Water Company shareholders own their water system infrastructure and, as such, any necessary maintenance, improvements, or repairs must be paid for by the shareholders. They do not have access to some of the major funding sources to improve their water system that PRWID does. They do not receive full benefit of the PRWID infrastructure, such as maintenance personnel and equipment on a full-time basis. The water system management faces imminent challenges of source capacity, infrastructure maintenance, and budgeting.

The Carbon County Regional Water Management Plan identified several options that would improve upon the water system's present circumstances. Each option consists of some degree of consolidation, such as contracting with the larger PRWID for operation and maintenance responsibilities, outright annexation by PRWID, consolidation with the immediately adjacent Carbonville Water Company, or even affiliation with one or more of the nearby water systems such as Bacon Rine Ridge Water Company, Pinnacle Peak Water Company, Riverview Water Company, or South Price Water Company to form a regional water system.

4.1.3 Case Study: Ogden Valley

In Weber County, 50 water systems participated in the development of the Water Management Plan for that subregion of the county. As with all of the county plans, the participant water systems were studied for means by which capacity for each could be enhanced by partnerships of either sharing or consolidation. Recommendations of the Plan included multiple options of consolidation, especially for smaller water systems – particularly those with a history of significant noncompliance.

The advantages of consolidation for smaller water systems described in the Plan are

numerous. These include more reliable water supply and water quality, reduced water supply costs, reduced fire insurance premiums, and operations and maintenance benefits due to more skilled operators and better equipment and infrastructure.

4.2 Program Efficacy for Existing Systems

As previously discussed (see Section 3.3), Utah's SRF Program has criteria for financial assistance that are interwoven with the national commitment to technical, financial, and managerial capability development among water systems. ***Rule 309-705, Financial Assistance: Federal Drinking Water Project Revolving Loan Program***, contains stipulations that monies will not be awarded to noncompliant water systems unless all of the noncompliance issues are to be satisfactorily resolved by the intended projects. Division staff complete capacity development analyses for each loan applicant to ascertain if, in fact, the proposed projects and requested monies will move a noncompliant water system into compliant status. In the time since ***Rule 309-705*** became effective on May 16, 2000, the State has conducted these mandated Capacity Development analyses for each applicant in significant noncompliance status. In several instances, staff intervened to stipulate a need for modifications, or work scope changes, to insure that all outstanding issues causing the noncompliance status of the applicant would be resolved by the monies forthcoming under ***Rule 309-705.***

5. UTAH CAPACITY DEVELOPMENT PROGRAM EFFICACY

5.1 Jurisdictional Considerations

In the somewhat brief history of federal Capacity Development Program guidelines, and the State Capacity Development Program, there is ample evidence of success. This has been in the areas of addressing and understanding issues of technical, financial, and management capacity for both new water systems (see Section 3.2 State Capacity Development Program for New Systems) and SRF Program applicants with existing water systems in noncompliance (see Section 3.3 Program Role for Existing Systems).

There remains outside of the scope of the State's successes to date, however, the collective group of existing water systems in significant noncompliance who are not seeking State financial assistance for water projects. Certainly, the State could initiate capacity assessments of these water systems. But in the absence of a statutory requirement for capacity assessment of all water

systems analogous to that mandated for loan applicants, it is unlikely that the State will have the resources to address the nonapplicant significant noncompliers.

5.2 Other Considerations

A number of challenges to ideally perfect success of the Capacity Development Program in Utah remain today. Within some county and other jurisdictional boundaries, there remain regional frictions and competitions that make rival water systems reluctant to negotiate with one other. Water rights considerations are also a significant impediment to water system consolidation and cooperation. Today, moreso than ever, water rights owners – very often the homeowners themselves with a water service area – are disinclined to sell or otherwise relinquish control over these precious holdings even for the prospect of improved water system operation. In Utah, some of these vested water rights go back in time 100 years and more.

Some private water system operators or owners are also resistant to relinquishment of water system control because of a perception that the water utility is too vital to the local economic and business interests of users, such as farmers and ranchers. There is great reluctance to transfer drinking water responsibility to a governmental agency, for example, that may be viewed as an absentee steward in some remote county seat or even farther.

Lastly, there are almost always local concerns about costs whenever capacity development is discussed. Although in some instances system consolidation may be of benefit to all parties, more often than not consolidation discussion involves incorporation of a nearly or fully nonviable water system into an existing viable water system. In one instance, the State of Utah was able to consummate one such consolidation by awarding infrastructure monies to resolve concerns of the better water system but generally funds that can be used for this purpose are extremely limited.

6. CONCLUSIONS

The 1996 Amendments to SDWA ushered in a new era of drinking water regulation in which the underlying premise is that capable water systems are better positioned than incapable water systems are to consistently comply with applicable standards and provide customers with safe and reliable water service. To this end, the 1996 Amendments contain capacity, or capability, development provisions for new and existing water systems. To comply with these federal mandates, the State of Utah has implemented the required Capacity Development Program, per authority of ***R309-352 Capacity Development Program***, to ensure that new public drinking water systems have adequate technical, managerial, and financial capability. And, to comply with federal mandates on existing water systems and development of their capabilities, the Utah Division of Drinking Water has developed programs for operator training and certification, compliance education, financial assistance, and other areas encompassed by and implemented the 1996 Amendments-mandated strategy for improving the technical, managerial, and financial capabilities of existing public drinking water systems. Aspects of the State's financial programs are contained in ***Rule 309-705, Financial Assistance: Federal Drinking Water Project Revolving Loan Program*** and the point system for system compliance in ***Rule 309-150, Improvement Priority System Rule***. Utah's strategy for identification and assistance of less-than-capable water systems relies heavily upon compiled and updated lists of drinking water systems – the periodic *EPA SNC List,* the quarterly *Utah Top [Worst] 25 SNC List*, and the quarterly *Utah Rating Change List* – to assist in the goal of returning noncompliant systems to compliance and preventing compliant systems from falling into noncompliance.