ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

CAPACITY DEVELOPMENT PROGRAM

2001 ANNUAL REPORT

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Table of Contents   Page

Tables

Appendices

TABLE OF ACRONYMS

ACC   Arizona Corporation Commission
ADEQ   Arizona Department of Environmental Quality
ADHS   Arizona Department of Health Services
ADWR   Arizona Department of Water Resources
ALU   Adjacent Land Use
ASUA   Arizona Small Utilities Association
AWPCA   Arizona Water Pollution Control Association
CO   Community Water System
CWS   Community Water System
DWCEU   Drinking Water Compliance and Enforcement Unit
DWS   Drinking Water Section
DWSRF   Drinking Water State Revolving Fund
EPA   Environmental Protection Agency
GPS   Global Positioning System
IOC   Inorganic Contaminant
MAP   Monitoring Assistance Program
MAPER   Monitoring Assistance Program Electronic Reporting
MCL   Maximum Contaminant Level
MPL   Master Priority List
M/R   Monitoring/Reporting
NPDWSR   National Priority Drinking Water Regulations
NN   Nontransient Noncommunity Water System
PDH   Professional Development Hour
PDOU   Program Development and Outreach Unit
POE   Point of Entry
PWS   Public Water System
RFP   Request For Proposal
SDW   Safe Drinking Water
SDWA   Safe Drinking Water Act
SWAP   Source Water Assessment Program
SOC   Synthetic Organic Contaminant
TN   Transient Noncommunity Water System
VOC   Volatile Organic Contaminant
WHP   Wellhead Protection Program
WIFA   Water Infrastructure Finance Authority of Arizona
WSCC   Water Systems Coordinating Council

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EXECUTIVE SUMMARY

This report describes the methods developed and implemented by the Arizona Department of Environmental Quality (ADEQ) from October 1, 2000 through September 30, 2001 to ensure adequate technical, financial, and managerial capacity of existing public water systems (PWSs) as mandated by § 1420(c)(2) of the Safe Drinking Water Act (SDWA), 42 U.S.C. § 300g-9.

Capacity is defined as a water system's ability to consistently provide safe drinking water for its customers. Capacity development is an organized effort by the state of Arizona to help its drinking water systems improve their infrastructure, management, and financial operations so they can provide safe drinking water consistently, reliably, and cost effectively. In developing and implementing this program, 42 U.S.C. § 300g-9(c)(2) states that the State of Arizona must "*consider, solicit public comment on, and include as appropriate*" the following five elements:

A. Methods or criteria to prioritize systems.
B. Factors that encourage or impair capacity development.
C. How the State will use the authority and resources of the SDWA.
D. How the State will establish a baseline and measure improvements.
E. Procedures to identify interested parties.

ADEQ must identify new and existing resources to improve a PWS's capacity. Developing and implementing this program includes the following steps:

*   Collect and evaluate information.
*   Identify factors that encourage or impair capacity.
*   Annually evaluate and improve the strategy.
*   Implement the strategy.
*   Measure results.

These steps assess the capacity of public water systems by determining which systems require the most assistance through the use of a master priority list (MPL). However, there are systems which do not require assistance but are able to *provide* assistance through a mentoring or training program. In addition, there are capacity development efforts that provide a benefit to **ALL** public water systems regardless of their place on the MPL. Our approach is to work the MPL from both ends simultaneously to achieve the maximum benefit for all systems.

The capacity development team completed significant objectives since the strategy was implemented in August, 2000 including:

1) Compiling a Master Priority List of community (CO) and nontransient, noncommunity (NN) water systems that assigns priority for assistance (Appendix A).

2) Amending and implementing Title 18, Chapter 5, Article 1 of the *Arizona Administrative Code*, Classification of Treatment Plants and Certification of Operators, effective February 16, 2001.

3) Issuing a Request For Proposal and selecting third party vendors to conduct operator certification examinations.

4) Implementing Title 18, Chapter 4, Article 8 of the *Arizona Administrative Code*, Technical Assistance (tentative effective date December 2001).

5) Conducting public education and outreach by establishing and developing partnerships with the Arizona Corporation Commission, the Arizona Small Utilities Association, the Arizona Water Pollution Control Association, the Waterborne Disease Outbreak Task Force, and Tap Into Quality (a group of municipalities dedicated to providing communities with technically accurate and consistent information about safe drinking water in Arizona) to disseminate information and educate owners and operators of public water systems.

6) Establishing a mentoring program whereby public water systems with a solid compliance history assist smaller public water systems that may lack the resources to establish a good compliance history.

7) Compiling a list of new public water systems that were approved to operate after completing an adequate demonstration of technical, financial, and managerial capacity.

8) Completing an annual report of the operator certification program for the year 2001.

9) Preparing and submitting to the Environmental Protection Agency Administrator the success of enforcement mechanisms and initial capacity development efforts to improve technical, managerial, and financial capacity and a list of community water systems and nontransient, noncommunity water systems with a history of significant noncompliance and, to the extent practicable, the reasons for noncompliance (Appendix B).

10) Selecting measurable criteria and establishing baselines for each criterion to measure the success of the capacity development program.

1. MASTER PRIORITY LIST CRITERIA

An inventory of public water systems affected by this program was conducted during December 2000. A list of criteria was selected and applied to each public water system. Each criterion is assigned a specific point value on the basis of its potential impact to public health. The more points a PWS is assigned, the higher it is placed on the MPL. Most of the data exists in the Arizona Safe Drinking Water (SDW) database. The SDW database allows for a relational query which may be easily exported to a spreadsheet for easy retrieval and maintenance. The list of systems was then sorted on the basis of the following criteria to develop the MPL:

Initial Monitoring Year

A PWS's initial monitoring year means the calendar year designated by the Department within a compliance period in which a public water system conducts initial monitoring at a point of entry. PWSs are assigned points on the basis of their assigned initial monitoring year.

The earlier a PWS's initial monitoring year occurs the more points are assigned. For example, the initial Phase II and V testing guidelines handed down by the U.S. EPA required PWSs to conduct initial sampling in 1993. At that time ADEQ divided the existing PWSs into 3 groups and assigned initial monitoring years

of 1993, 1994, and 1995. Because of the complexity of the rule many PWSs missed a portion of their sampling and reporting. This may have resulted in a major deficiency or other type of violation. These systems are assigned 5 points.

PWSs that were assigned an initial monitoring year of 1996, 1997, or 1998 were more aware of the type of sampling required by law and are assigned 2 points. The majority of PWSs that were assigned an initial monitoring year of 1999, 2000, or 2001 are required to file an elementary business plan pursuant to Title 18, Chapter 4, Article 6 of the *Arizona Administrative Code*, Capacity Development Requirements for a New Public Drinking Water System. Since these systems were evaluated for capacity development as a new system they score 0 points.

Initial Monitoring Year	Points
1993, 1994, 1995	5
1996, 1997, 1998	2
1999, 2000, 2001	0

Type of Public Water System

There are a total of 1,006 active PWSs operating in the State of Arizona that are affected by the capacity development strategy for existing systems (source: ADEQ Safe Drinking Water Database; October, 2001). The total number changes periodically through a combination of system mergers and system activity status. Of this total, 733 systems are community water systems (CO), 213 systems are nontransient noncommunity water systems (NN).

A community water system is a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. In general, these systems supply water to single family homes, trailer parks, and residential subdivisions. A PWS that is a community system is assigned 5 points.

A non-transient non-community water system is a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year. In general, these systems supply water to schools and places of employment. A PWS that is a nontransient noncommunity water systems is assigned 2 points.

A transient noncommunity water system (TN) is a noncommunity water system that does not regularly serve at least 25 of the same persons over six months of the year. In general, these systems supply water to restaurants, rest areas, and other cyclical businesses. Since the 682 TN systems are not required to be included in this strategy, they have been omitted from the MPL. It is likely that most of these systems could improve their capacity by complying with minimum guidelines established by the Drinking Water staff. ADEQ intends to develop a "one size fits all" policy approach to improving the capacity for systems falling under this classification. However, the Capacity Development Program acknowledges that certain TN systems may require some type of assistance. For those TN systems that require additional assistance, ADEQ will determine the type of assistance on a case by case basis.

System Type	Points
Community (CO)	5
Nontransient, noncommunity (NN)	2

Consecutive Indicator

A consecutive system is a PWS that obtains all of its water from another PWS that is regulated by the Department. This criterion identifies those systems that do little or no sampling. The more monitoring required of a public water system, the more capacity that is required. The consecutive indicator classifications are as follows:

0   PWS is not consecutive (default)
1   Not required to monitor any contaminants
2   Required to monitor ALL contaminants
3   Required to monitor for Total Coliform only
4   Required to monitor for inorganic contaminants only
5   Required to monitor for Total Coliform and inorganic contaminants only
6   Unregulated PWS
7   Active - Regulated by EPA or others

A PWS that has a 0 or 2 consecutive indicator is required to conduct the maximum amount of monitoring and is assigned 5 points. A PWS that has a 4 or 5 consecutive indicator is required to conduct only partial monitoring and is assigned 2 points. A PWS that has a 1, 3, 6, or 7 consecutive indicator is not required to monitor at all or conducts only total coliform monitoring and is therefore assigned 0 points.

Consecutive Indicator	Points
0, 2	5
4, 5	2
1, 3, 6, 7	0

Source Water

The source of drinking water obtained by a PWS may be an indicator of the system's capacity. Surface water is much more sensitive to contamination than groundwater or water that is purchased from another PWS. Therefore more complex and frequent monitoring is required.

A PWS that obtains all or a portion of its drinking water from a surface water source is susceptible to additional monitoring because of the sensitivity of the source water and is assigned 2 points. A PWS that obtains all of its drinking water from a groundwater source is assigned 0 points because groundwater is considered less susceptible to contamination and therefore conducts less monitoring.

Source	Points
Surface Water	2
Groundwater or Purchased water	0

Average Population Served

PWSs serving 10,000 persons or less supply drinking water to only 15% of the population in Arizona. However, these systems encompass nearly 95% of the total number of active PWSs in the state. Approximately 70% of the PWSs affected by this strategy serve 500 persons or less.

On the basis of number and frequency of customers served, and the presence of a municipal tax base to support public employees, public water systems that serve more than 10,000 persons are considered a lower priority. Exceptions may exist. For example, many municipal systems are not financially self-sufficient and may rely on municipal general fund subsidies to sustain operations. Therefore, those systems that serve more than 10,000 persons and are subsidized by general funds should not be automatically considered a low

priority. If the economy should slow, municipal sales tax collection and state sales tax collections that are shared with municipalities would decline. Since sales tax revenue accounts for a substantial part of a municipal general fund, the municipal water system that relies on these funds could be vulnerable to reduced capacity.

Average Population Served	Points
<= 100	10
101 to 500	7
501 to 3,300	5
3,301 to 10,000	3
10,001 to 50,000	1
> 50,000	0

Owner Type

The type of PWS owner is an indicator of capacity and therefore a part of the prioritization process. Since capacity is defined as a water system's ability to consistently provide safe drinking water for its customers, an owner's decisions may directly effect maximizing this capacity. The following codes for owner types are currently used as input parameters in the Arizona's SDW database:

A   Limited Partnership
C   Corporations & Limited Liability Companies (not ACC regulated)
D   Domestic Water Improvement District / Irrigation District
E   National Forest Service Land
F   Federal Agencies
G   General Partnerships
H   School Districts
K   National Park Land
L   Colleges and Universities
M   Municipalities
N   County Agencies
P   ACC Regulated Utilities
R   Revoked / Defunct Corporations
S   State Agencies
T   Trusts
U   Unincorporated Sole Proprietor (not ACC regulated)
W   Unincorporated Water Associations (not ACC regulated)
X   Not Yet Determined
Z   Receivership

A PWS that has been revoked, is a defunct corporation, is owned by an unincorporated sole proprietor or unincorporated water association or is in receivership is determined to be 'at risk' and is assigned 5 points. All other owner types score zero points.

Owner Type	Points
R, U, W, Z	5
A-P, S, T, X	0

Compliance Violations - Major Deficiencies - MCL Violations

Compliance violations include sampling & reporting violations, exceeding contaminant triggers or maximum contaminant level (MCL) concentrations, and notices of violations or corrections. A PWS's priority increases proportionally to the number of violations. A high number of violations increases a system's priority. These failures may result in an enforcement action. Compliance violations are a serious threat to consumers being served by a delinquent system. Public water systems under consent orders are a high priority. A PWS that falls into one or more of these categories is assigned 10 points for each category. These three categories are weighted the heaviest because they are by far the most important when considering factors that may harm public health.

Any PWS with a compliance violation is assigned 10 points until the violation is satisfied. A baseline year of 1996 was selected for major deficiencies because it looks back one complete compliance period from the time this strategy was developed. A baseline year of 1999 was selected for MCL violations because that is the year the MAP program was implemented. Since part of the reason MAP was implemented was to fill the data gaps in a PWS's required monitoring, an MCL for a system may be identified where previously no data existed.

Compliance Violation	Points
YES	10
NO	0

Major Deficiency (01-JAN-1996)	Points
YES	10
NO	0

MCL Violation (01-JAN-1999)	Points
YES	10
NO	0

Certified Operator Status

A public water system must have a certified operator of the correct type and grade based on the system classification pursuant to the *Arizona Administrative Code*. A system that does not have a certified operator is assigned 5 points while a system that has an on-site operator or a remote operator is assigned zero points.

Certified Operator	Points
YES	0
NO	5

MAP Participant

The Monitoring Assistance Program (MAP) provides for the collection, transportation, analysis, and reporting of baseline volatile organic contaminants (VOCs), synthetic organic contaminants (SOCs), and inorganic contaminants (IOCs) for regulated public water systems serving 10,000 persons or less. The public water systems are still responsible for collecting, analyzing, and reporting asbestos, lead, copper, nitrate, nitrite, microbiological (total coliform) and radiochemical. The program was initially developed to fill in substantial data gaps in the sampling and analysis of small water systems thereby bringing them into compliance with the Safe Drinking Water Act Monitoring and Reporting Requirements. MAP is a mandatory program for PWSs serving 10,000 persons or less and optional for water systems serving populations greater than 10,000 persons or water systems owned by state and federal agencies. In addition, consecutive public

water systems (those systems that serve water purchased from another public water system) are excluded from MAP. Because of this reason PWSs that participate in MAP score 2 points. This program should virtually eliminate sampling and reporting violations.

The waiver program works in conjunction with MAP to achieve compliance with Safe Drinking Water Act Monitoring and Reporting Requirements. A waiver reduces the type and frequency of sampling for a system. Waivers are granted based on use, susceptibility, treatment type, or by rule. The intent of a waiver is to minimize the cost of monitoring through reduced sampling without compromising public health. Prior to MAP, fewer than 25% of all public water systems applied for reduced monitoring under the waiver program. For calender year 2001, monitoring waivers were issued to approximately 85% of the public water systems that qualified and were schedule to monitor during this compliance year (320/379). This not only saves money for MAP but also reduces the number of sampling and reporting compliance violations, thus allowing valuable resources to focus on other assistance activities.

MAP Participant	Points
YES	2
NO	0

Survey 2000

A short survey was employed to get an initial understanding of the number and types of water systems affected by this strategy. Since this was a voluntary survey and the question pertained to knowledge of each individual PWS, an additional 2 points was assigned as an indication that the responding systems may need help. A detailed summary of the survey response is included in the August 6, 2001 Capacity Development Enforcement Report (Appendix B).

Survey 2000	Points
YES	2
NO	0

Technical Assistance

A PWS may be aware of the technical assistance program but unaware of the capacity development program. If a PWS receives technical assistance from ADEQ, WIFA, the Rural Water Association or other entities then zero points are assigned. This allows PWSs that have not received any technical assistance to move up on the MPL.

In order to eliminate duplicitous efforts and to gain an understanding about prioritizing systems for assistance, ADEQ will meet with staff from the Water Infrastructure Finance Authority of Arizona (WIFA) to determine the process WIFA staff use when deciding which system receives aid first. ADEQ will use the information to possibly lower a system's priority if the system already is receiving aid through another program.

ADEQ Technical Assistance	Points
YES	0
NO	5

WIFA Assistance	Points
YES	0

NO	5

Other Information

The current condition of a PWS's infrastructure will assist in assigning priority. A sanitary survey will evaluate the water source, facilities, equipment, and operation and maintenance of a PWS. A system that has an outdated infrastructure due to lack of positive cash flow may be a higher priority than a system that has an outdated infrastructure due to owner negligence.

The Source Water Assessment Program (SWAP) is an important part of this capacity development strategy. The SWAP is an inventory process for systems and assists systems in qualifying for waiver eligibility. By using the data collected for the SWAP program, ADEQ is able to identify adjacent land uses (ALU) within the designated ½-mile radius. On the basis of this information, ADEQ may initiate and grant waivers for contaminant groups on behalf of the PWSs (It also forms a starting point for small public water systems to implement a wellhead protection program). The SWAP program is also an effective tool in educating water systems of the hydrological characteristics of their system and how land use planning decisions can incorporate water quality concerns. Spatial data for ALUs collected by a global positioning system (GPS) in the Source Water Assessment Program may assist the prioritization process by identifying sensitive aquifers, unreported ALUs, and systems that are not taking full advantage of the waiver program. Currently 290 out of a total of approximately 1,700 PWSs, including TNs, have received their SWAP report.

The Wellhead Protection Program (WHP) is a voluntary program available from the Drinking Water Section, Monitoring and Assessment Unit. The WHP is practical pollution prevention focusing on a well or well field of a system. ADEQ staff provide technical support and coordinate community activities for WHP activities. A wellhead protection program is important for capacity development for all PWSs regardless of size. Currently the communities of Wickenberg, San Luis, and Showlow are developing and implementing a Wellhead Protection Program. The Drinking Water Section intends to improve this program by encouraging public water systems to develop a Wellhead Protection Program using the SWAP report as a starting point.

2. OPERATOR CERTIFICATION RULE DEVELOPMENT AND IMPLEMENTATION

On February 6, 1999, the EPA finalized the "Guidelines for the Certification and Recertification of the Operators of Community and Nontransient Noncommunity Public Water Systems." The Safe Drinking Water Act (SDWA) Amendments of 1996 required that the final guidelines be published in the Federal Register by February 6, 1999. The guidelines provide States with the minimum standards for the development, implementation and enforcement of operator certification programs for community and nontransient noncommunity public water systems. The Department's objective is to increase public health and safety by strengthening the existing criteria for the certification of operators of public water systems.

ADEQ held five stakeholder meetings and incorporated many of the suggestions by the stakeholder group into the rule. The rule establishes the requirements for certification and classification, examinations, renewal of certificates, expired certificates, revocation, reciprocity, and experience and education. The statutory authority for this rulemaking is provided by ADEQ's general rulemaking authority (A.R.S. § 49-104), the agency's designation of responsibility for the Clean Water Act and Safe Drinking Water Act in Arizona (A.R.S. § 49-202, which includes authorization to enter into contracts and agreements), ADEQ's designation as the agency responsible for ensuring the quality of potable water in public water systems in Arizona (A.R.S. §§ 49-351, 49-353), and ADEQ's responsibility for certifying operating personnel for potable water systems (A.R.S. § 49-352). The rule package was approved by the Governor's Regulatory Review Council and became effective on February 16, 2001. Final program approval by the EPA is expected by December 2001.

A major component of the rule is the repeal of all fees associated with exams, certification, and renewals. The Department reserves the right to administer operator certification examinations but has contracted with several third parties who are currently administering the examinations. This increases flexibility for the public water systems, as the third-party examiners are able to provide the examinations at a place and time that is more convenient for operators as well as offering examinations on a walk-in basis or by appointment. The program also requires 30 contact hours of continuing education in the water industry or closely related field by an operator renewing a certificate.

A certification program provides testing and training requirements for persons who will be responsible for the operation of water systems. Through the certification program, persons obtain and demonstrate their ability to safely operate drinking water systems. The operating requirements for public water systems range from simple to complex. Generally, smaller water systems are less sophisticated and easier to operate than larger water systems. Therefore, it is not appropriate or economical to require small systems to have an operator of the same competence as a larger water system. As system size increases, the complexity of the system increases. Because of this, it is necessary to devise a graduated classification system of water systems. Arizona's operator certification program provides for this graduated classification system in accordance with the EPA guidelines. The classification system operates on a point system, whereby points are accrued as population and system sophistication increases. The operator certification program ensures that all water systems, from the smallest to the largest, are supervised by operators who have experience and training commensurate with the sophistication of the system.

3. THIRD PARTY EXAMINATION VENDORS

On March 8, 2001 ADEQ issued a Request for Proposal (RFP) to solicit bids to conduct examinations for operator certification. Approximately 25 vendors attended a preproposal conference on March 5, 2001. From this group a total of 9 vendors submitted proposals. A final list of qualified vendors was selected based on the following criteria:

- Method of Approach.

- Successful and reliable experience in past performances related to the services requested in the proposal.

- Current professional references including point of contact, phone number, type of services provided, which Key Personnel participated in the referenced projects with an explanation of this person's responsibilities on each project, and date of contract initiation.

- Background information on the organization that may be helpful in evaluating its background, history, resources, or track record with other clients in work that is related to the needs of the Department.

- Resumes of Key Personnel detailing previous employment for the last two years, training, general or special experience, and a chronology and description of previous work performed of a like nature and an explanation of why that person is the best person for performing the requirements of the RFP.

- Conflict of Interest Disclosure.

- Examination Fee.

On May 5, 2001, ADEQ approved four vendors to provide examination services for the state. The four vendors are:

- Technical Learning Consultants
- The Arizona Small Utilities Association
- Gateway Community College
- EnviroEd

4. TECHNICAL ASSISTANCE RULE DEVELOPMENT AND IMPLEMENTATION

The Water Infrastructure Finance Authority (WIFA), established pursuant to A.R.S. §49-1201 et seq., provides financial assistance to political subdivisions, tribes, and eligible drinking water facilities for constructing, acquiring, or improving wastewater treatment facilities, drinking water facilities, nonpoint source projects, and other related water quality facilities and projects. The Department, pursuant to this rulemaking, will work with WIFA to increase capacity development of public water systems in Arizona by providing technical assistance to public water systems that do not come under the purview of WIFA's operations.

The rulemaking adds a new article to the *Arizona Administrative Code*, 18 A.A.C. 4, Article 8, Technical Assistance and is primarily technical and administrative in nature. The purpose of the rulemaking is to establish a program to assist water systems in complying with standards imposed by federal and state laws, rules, and regulations. Pursuant to the new rules, the Department will provide information and technical assistance to owners and operators of water systems.

One component of Article 8 is the creation of a master priority list for all community and noncommunity public water systems; the list will be published in the annual capacity development report. The master priority list will rank public water systems according to criteria set forth in R18-4-803. The Water Infrastructure Finance Authority will utilize the master priority list in its funding decision process for technical assistance for community and noncommunity public water systems.

This rulemaking will have no discernable economic impact on the Department, other public agencies, state revenues, private persons, businesses, consumers, small businesses, or private and public employment. However, the Department anticipates that there will be an indirect impact on the public water systems and the public they serve as a result of the use of the Department's ranking of public water systems by the Water Infrastructure Finance Authority. The following subsections address the impact of changes to the monitoring assistance program.

ADEQ may incur a slight increase in administrative costs, and the state will incur normal rule development costs incidental to rulemaking, including review by the Governor's Regulatory Review Council and the cost of publication by the Office of the Secretary of State. The Water Infrastructure Finance Authority will utilize the data in the master priority list developed pursuant to R18-4-803, and therefore may receive a small economic benefit as a result of the Department's evaluation, which likely minimizes the evaluation work of the Authority.

A public water system that receives the benefit of technical assistance from the Department may also receive an economic benefit, as the technical assistance will improve technical, managerial, or financial components of a public water system. The addition of Article 8 should not increase the cost of doing business to comply with these rules for affected public water systems.

This rulemaking will indirectly benefit consumers served by affected public water systems, in the form of savings which public water systems could pass on to consumers.

5. OUTREACH DEVELOPMENT AND CAPACITY DEVELOPMENT PARTNERSHIPS

Website Data Access

The objective of disseminating information to the public and regulated community in an efficient and effective manner is two-fold. For example, the primary objective of making information readily available

is to increase compliance. Secondly by making this information available through the Internet, the burden of retrieving this information by staff personnel is removed allowing valuable human resources to focus on other activities. The information currently available for web publishing include:

• Sampling schedules,
• List of operator certificate expiration,
• List of contaminants for source water approval, and
• List of approved analytical laboratories

ADEQ is in the process of developing an electronic reporting format for systems participating in MAP. The Monitoring Assistance Program Electronic Reporting (MAPER) program will enable a PWS or their laboratory representative to submit analytical data in an electronic format. This process will eventually be extended to all PWSs.

Public water systems may connect to the ADEQ website to review MAP schedules. Since MAP only monitors for regulated IOCs, VOCs, and SOCs, the Drinking Water Section proposes to expand the on-line schedules to include all regulated and unregulated contaminants that require monitoring by all public water systems for purposes of improving sampling accuracy and thus improving system capacity. Fiscal reports for public water systems are available from the ACC (most non-governmental PWSs) and through WIFA. By sharing data and resources, PWSs may benefit through the advice of financial analysis methods provided by these cooperating agencies and thus may be applied to this capacity development strategy.

To assist PWSs in tracking their compliance status and to assist in scheduling mandatory water testing, the Drinking Water Compliance and Enforcement Unit (DWCEU) has developed a Compliance Assessment Package. A PWS may download the appropriate forms and call DWCEU to request an up-to-date "Data Printout Report", which includes all data received by ADEQ. A PWS can use the compliance assistance forms, along with the "Data Printout Report", to track current compliance with drinking water rules. Once a PWS has completed their assessment, they may contact DWCEU for a review. DWCEU is also developing a Compliance Assessment Package for Surface Water Systems. The following documents are available on the ADEQ web site:

Assessment Forms for Community (CWS) and Nontransient Noncommunity (NN) Groundwater Systems
http://www.adeq.state.az.us/environ/water/compliance/download/assess.pdf; 135 KB; 05/26/00; 23 pages, includes ALL monitoring and reporting categories divided into three year compliance periods: 1993-1995; 1996-1998 & 1999-2001, subdivided into quarters. Please note, Each Point of Entry (POE) requires a separate assessment form. If the PWS has three POEs, you must use three assessment forms.

Community Water System (CWS) and/or Nontransient Noncommunity (NN) Groundwater Worksheet
http://www.adeq.state.az.us/environ/water/compliance/download/cws-nn.pdf; 19 KB; 12/08/99; Six pages, includes ALL monitoring and reporting categories with Rule Citations and a brief summary of the required water testing that must be performed.

Assessment Forms and Worksheet for Transient Noncommunity (TN) Groundwater System
http://www.adeq.state.az.us/environ/water/compliance/download/tnassessf.pdf; 27 KB; 12/08/99; Four pages, Assessment Forms include ALL monitoring and reporting categories divided into 3 year compliance periods: 1993-1995; 1996-1998 & 1999-2001, subdivided into quarters. Please note, Each POE requires a separate assessment form. If the PWS has three POEs, you must use three assessment forms. Worksheet includes ALL monitoring and reporting categories with Rule Citations and a brief summary of the required water testing that must be performed.

Contaminant List Codes for CWS - NN or TN
http://www.adeq.state.az.us/environ/water/compliance/download/contcode.pdf; 13 KB; 09/30/00; Two pages, this list is used to identify the different contaminants listed in the Data Printout Report and

includes ALL monitoring and reporting contaminants with Triggers & Maximum Contaminant Levels (MCL).

Education and Outreach

The Capacity Development Program is the primary drinking water program used to reach the regulated community and the general public for general education and public outreach. The main types of outreach used to inform and educate include:

- Technical Workshops,
- Customer Service and Stakeholder Meetings, and
- The SPLASH Newsletter and the ADEQ Web Page.

Technical Workshops

ADEQ presents technical workshops statewide and also conducts workshops with other government regulators and nonprofit organizations. ADEQ partners with the Arizona Small Utilities Association (ASUA) and the Arizona Corporation Commission (ACC) to disseminate technical information to operators, owners, managers and communities about current safe drinking water programs and rules. ASUA has a membership of several hundred small water facilities and utilities however, membership is not limited to utilities of a certain size. The ACC regulates approximately 400 public water systems. This partnership allows all entities to interact with facilities that may not otherwise attend a workshop sponsored separately by ADEQ, ASUA, or ACC. Topics included in the workshops are: Operator Certification Rule, Safe Drinking Water Rule and rule updates, the Source Water Assessment Program, the Wellhead Protection Program, Capacity Development and the Monitoring Assessment Program. In addition, each audience has an opportunity to raise issues specific to a geographic area of the state. These outreach efforts provide Arizonans who reside outside the densely populated metropolitan areas access to safe drinking water technical assistance. A total of 20 technical workshops were conducted and attended by approximately 500 persons. ADEQ also informs workshop attendees about future rulemaking at both the state and federal level. These sessions are very popular and well attended.

In addition to technical workshops, ADEQ participates in educating local elementary and high school students. Several days prior to the presentation, handouts and other materials are delivered to the classrooms for study and in-class preparation for the session. ADEQ instructors then present the material covering topics such as: hydrological cycle, uses of water, sources of water, non-point source pollution, and recycling. A groundwater flow model is used in conjunction with the presentation to provide the students a representation of how water is used. A career in the field of water and wastewater treatment is also summarized. A total of 12 school presentations were conducted by the Drinking Water Section and attended by approximately 270 persons.

Stakeholder Meetings and Customer Service

The Capacity Development Program and the Operator Certification Program make extensive use of Stakeholder meetings to gather information and consider the concerns of the regulated community. Stakeholder meetings are an integral part of any rule making process.

Customer service is addressed on a daily basis, via telephone calls and email, to assist owners/operators of new and existing PWSs complete capacity development requirements. Customer assistance is also an integral part of the operator certification program. Staff personnel assist operators requesting information about renewing a certificate, workshop schedules and other information related operator certification. Formal presentations are used by the Drinking Water Section to educate the certified operators on how the new rule is implemented. This information is also explained at an individual level when an operator contacts the operator certification coordinator for assistance. The operator certification coordinator also maintains

interactions with the examination contractors to ensure that the requirements of the rule and applicable certification are met.

SPLASH Newsletter and ADEQ Web Page

The SPLASH newsletter is a drinking water quarterly published by the Capacity Development Program. Content includes articles, facts, and news related to drinking water and the related state programs. The publication also includes a schedule of technical workshops and other technical events.

ADEQ Online is an effective tool used by Capacity Development to improve the technical and managerial capacity of PWSs. The following summary lists the items for download and their approximate monthly hits:

- MAP Sampling Schedules   1,000
- Operator Certification Fact Sheet   250
- Operator Certification Renewal Forms   150
- Operator Certificate PDH Renewal Form 150
- Operator Certification Rule   100
- Workshop Schedule   50
- Compliance Assessment Forms   50
- PDOU Web Page   50
- Capacity Development Document   50
- SPLASH Newsletter   50
- Operator Certification Reciprocity Form 50
- Expired Certificate Table   50

The Capacity Development staff has identified electronic media as one of the major tools that can be maximized to enhance the capacity of ALL public water systems.

6. MENTOR PROGRAM

The Drinking Water Section has informally started its Mentor Program to involve predominantly large public water systems with a history of compliance to provide guidance and training for smaller public water systems that have less resources and possibly a history of noncompliance. The objective of this program is to develop a volunteer force of large complex PWSs to provide 'pro bono' technical or managerial assistance to small PWSs. In addition this program would encourage small PWSs in nearby regions to assist each other in daily operations and maintenance of systems. An initial incentive to provide impetus to the program has been created whereby operator certification professional development hours are assigned to the mentor and trainee. This mentoring process may have a 'value' that creates a career or financial incentives to volunteers. Currently the communities of Kingman and Flagstaff are working with the Department to develop programs that capture these objectives.

7. NEW PUBLIC WATER SYSTEMS THAT COMPLETED CAPACITY DEVELOPMENT

Several issues on program implementation were discussed in a letter to Jill Korte of the U.S. EPA, Region IX dated September 24, 1999. Topics included coordination of the approval process, facility eligibility, required elements of the rule, acceptance of other agency determinations concerning regulatory compliance, and public water facility status on our master priority list.

ADEQ is identified as the lead agency coordinating all technical, managerial and financial capacity processes and applications. The capacity development process may occur simultaneously while the engineering staff are reviewing infrastructure plans for the public water facility.

The capacity development rules were developed using a stakeholder process; finalization of the rules resulted in new requirements for new Community water systems and new Nontransient Noncommunity water systems commencing operations after October 1, 1999. A 'new' public water system is defined as ". . . .

> *a public water system as defined in A.R.S. 49-352(B)(1), to which the Department issues its first unique public water system identification number on or after October 1, 1999."* R18-4-101, Ariz. Admin. Code.

The Drinking Water Section requires new systems to submit a completed application and documentation in an elementary business plan for technical, managerial, and financial capacity of the proposed facility. The requirements may be met in a variety of ways. The Capacity Development Coordinator works with each applicant so that requirements are met, with maximum flexibility employed for function over format.

The Capacity Development Program accepts financial determinations made by Arizona Corporation Commission or the Arizona Department of Water Resources.

The required elements for evaluating Capacity Development for a new facility are listed Title 18, Chapter 4, Article 6 of the *Arizona Administrative Code*. The program coordinator considers a number of factors for the technical portion of the evaluation. The drinking water source, water treatment, design and infrastructure, and identification of a certified operator are critical to the responsible operation and public health of a public water facility. The managerial portion of the evaluation includes facility ownership, job descriptions, operations and maintenance plans and possible future infrastructure and capital improvement plans. The financial portion of the evaluation includes the revenue streams and cash flow for the continued provision of safe drinking water to consumers.

During the planning and evaluation process, it was presumed that a typical review should occur in the following order: 1) financial, 2) managerial, and 3) technical. On a case-by-case basis, we have found that the order of review is not a critical factor in overall capacity development evaluations. The capacity development process is directly related to the engineering review of a new system. A new water system cannot commence construction without an Approval to Construct (ATC) and ultimately an Approval of Construction (AOC). These authorizations are issued by ADEQ or a delegated government entity. ADEQ effectively is the single control point in the capacity development evaluation program.

From October 1, 1999 through September 30, 2001, the following fourteen systems were evaluated for technical, managerial, and financial capacity pursuant to Title 18, Chapter 4, Article 6 of the *Arizona Administrative Code* (Appendix C). These systems are approved to operate as public water systems in the state of Arizona.

1)	Whitney Ranch Estates Property Owners Association (May 1, 2001) - John Whitney, Jerold Miles
2)	Beardsley Water Company Inc. (July 18, 2001) - Boyd Weed
3)	GHR Development(August 2, 2001) - Ralph McGrath
4)	Norte Vista Water Supply System (October 3, 2001) - Gary Lane
5)	Sonoran Ridge System; Water Utility of Greater Buckeye (October 4, 2001) - John Mihlik
6)	Granite Mountain Ranch (October 6, 2001) - John Mihlik
7)	Palo Verde Mountain Community Water Cooperative (January 30, 2001) - Terry Moore
8)	Triple G Dairy(February 14, 2001) - Ben Gingg
9)	Harcuvar Company; Outback Acres (March 26, 2001) - James Downing
10)	Mountainview Well Association (April 6, 2001) - Sidney Body
11)	Eagle Crest Ranch (May 7, 2001) - Rebecca Dameron
12)	Quintero Golf Course (June 6, 2001) - Murray Sharkey

13) Belmont Mountain Dairy (June 19, 2001) - Neal Loftdahl
14) Empirita Water Company (July 19, 2001) - James Vermilyea

8. 2001 OPERATOR CERTIFICATION ANNUAL REPORT

In addition to the previously discussed rulemaking and the approval of third party vendors, the operator certification program accomplished the following:

- Issue operator certificates within 7 days following the receipt of a roster of individuals that passed an examination from each vendor (average time = 2 days).

- Design and print a new certificate template including a high quality paper and 4-color printing.

- Post a list of operator's certificate expiration dates by month on the ADEQ website.

- Develop and populate a new operator certification database that tracks personal information, certificate information, and employment information. This information includes collecting 40% of the active certified operators Social Security Numbers as required by law. When the total number approaches 70% the Program will implement electronic uploading of exam data to free up current human resources.

- Develop and populate a new facility database that tracks the treatment and distribution characteristics of each facility and then calculates the correct grade on the basis of the number of points assigned for each characteristic.

- Create a relationship between the facility tables and the PWS Inventory table to provide the field inspectors with a 'quick look' of the grade of each public water systems and the names and grades of the certified operators that are employed there.

Administrative oversight of the approved vendors providing operator certification examinations has experienced broad success. Examination schedules provide flexibility to the owners and operators of public water systems by locating the examination sites near and around communities where operators reside and by increasing the exam frequency to accommodate the diverse schedules of the operators.

A summary of the scope of examinations offered by the vendors approved by ADEQ to provide examination services is compiled in Tables 1 and 2. EnviroEd and Gateway Community College did not have any examination dates for the period covered by this report.

Table 1. Examination Summary for the Arizona Small Utilities Association

ARIZONA SMALL UTILITIES ASSOCIATION (9 dates)	Grade 1	Grade 2	Grade 3	Grade 4	Total
Collection Pass	27	5	0	3	35
Collection Fail	14	1	1	0	16
Total	41	6	1	3	51
% Pass	66%	83%	0%	100%	69%
Distribution Pass	*53*	*20*	*5*	*5*	*83*
Distribution Fail	*21*	*4*	*6*	*1*	*32*
Total	*74*	*24*	*11*	*6*	*115*
% Pass	*72%*	*83%*	*45%*	*83%*	*72%*
Water Treatment Pass	19	5	4	2	30
Water Treatment Fail	20	2	3	0	25
Total	39	7	7	2	55
% Pass	49%	71%	57%	100%	55%
Wastewater Treatment Pass	*10*	*8*	*4*	*4*	*26*
Wastewater Treatment Fail	*6*	*6*	*6*	*5*	*23*
Total	*16*	*14*	*10*	*9*	*49*
% Pass	*63%*	*57%*	*40%*	*44%*	*53%*

Table 2. Examination Summary for Technical Learning Consultants

TECHNICAL LEARNING CONSULTANTS (21 dates)	Grade 1	Grade 2	Grade 3	Grade 4	Total
Collection Pass	88	31	9	12	140
Collection Fail	30	21	12	8	71
Total	118	52	21	20	211
% Pass	75%	60%	43%	60%	66%
Distribution Pass	*175*	*43*	*17*	*17*	*252*
Distribution Fail	*119*	*15*	*12*	*7*	*153*
Total	*294*	*58*	*29*	*24*	*405*
% Pass	*60%*	*74%*	*59%*	*71%*	*62%*
Water Treatment Pass	36	16	16	9	77
Water Treatment Fail	18	6	5	4	33
Total	54	22	21	13	110
% Pass	67%	73%	76%	69%	70%
Wastewater Treatment Pass	*37*	*39*	*13*	*9*	*98*
Wastewater Treatment Fail	*22*	*14*	*10*	*4*	*50*
Total	*59*	*53*	*23*	*13*	*148*
% Pass	*63%*	*74%*	*57%*	*69%*	*66%*

9. REPORT ON THE SUCCESS OF ENFORCEMENT MECHANISMS, INITIAL CAPACITY DEVELOPMENT EFFORTS AND LIST OF PUBLIC WATER SYSTEMS WITH A HISTORY OF SIGNIFICANT NONCOMPLIANCE

The information describing this objective is contained in a report that was submitted to the U.S. Environmental Protection Agency on August 6, 2001 (Appendix B).

10. ESTABLISHING BASELINES & MEASURING IMPROVEMENTS

The following criteria are selected to establish baselines and measure the success of the capacity development program. A portion of the baseline data was collected from years 1998 through 1999, while the majority of the baseline data was collected from the years 2000 - 2001. As this program evolves, data will be collected and normalized annually.

Capacity improvement can be measured immediately for the PWSs under Arizona's jurisdiction in a relatively generalized manner. This will enable the program to produce a report that describes the success of the capacity development strategy and progress made toward improving the technical, managerial, and financial capacity of all PWSs in Arizona. Some aspects of capacity development outlined in this report may take several years before improvements can be measured. In the future, ADEQ intends to discriminate between factors that indicate immediate improvement and those which will occur over a period of years. The focus is on improving actual capacity for existing systems, while minimizing an academic statistical approach.

Table 3. Criteria to Measure the Success of the Capacity Development Program

Indicator	Baseline
Number of Education and Outreach Events	24
Number of Persons Impacted by Outreach	600
Number of Public Water Systems with an MCL	47
Number of Public Water Systems with a Major Deficiency	287
Number of Public Water Systems with a Compliance Violation	438
Number of Public Water Systems without a Certified Operator	139
Number of Public Water Systems that Received WIFA Assistance	51
Number of Public Water Systems that Received ADEQ Assistance	0
Number of Public Water Systems Participating as a Mentor	2
Number of Public Water Systems with a Wellhead Protection Program	3
Number of Public Water Systems that have Received their SWAP Report	290